GENERAL EMBRYOLOGICAL INFORMATION SERVICE

VOLUME 16, part 2

COUNTRIES OUTSIDE EUROPE

data collected during 1976

Utrecht-Netherlands

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SUBJECT COVERAGE

Invertebrates, Vertebrates, and Man
developmental biology, including:

descriptive embryology
experimental embryology
physiological embryology

developmental genetics
developmental pathology and teratogenesis

metamorphosis
regeneration
asexual reproduction and development

Plants and Unicellular Organisms
experimental morphology
developmental physiology

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DIRECTORY OF NAMES AND ADDRESSES
with Subjects of Research

(alphabetical order)

Unless stated otherwise, information in this directory is based upon data sheets which were sent to the institutes listed in the Directory of Institutes, and returned to the editors before August 1976. Scientists were asked to state their name, degree(s), address, and research subjects in so far as recent, unpublished work in developmental biology was concerned.

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Entries without research subjects:

a. Persons listed on the sheets as being engaged in research in developmental biology, without further specification of subjects.

b. Persons with a complete entry in vol. 15 who have not returned their sheets. Name, degrees, and addresses were reprinted unchanged from vol. 15 and may be partially out of date.

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d. Some persons who have not returned data sheets for two or more volumes have been listed nevertheless; cases in point are several I.S.D.B. members.

e. Persons listed in vol. 15 whose death has come to our attention (marked †).

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ABBOTT, Miss U. K.; Ph.D., Prof. – Dept. of Avian Sci., Univ. of California, DAVIS, CA 95616, U.S.A.

ABE, K.; D.Sc. – Biol. Inst., Yamaguchi Univ., Yoshida, YAMAGUCHI, 753 Japan

a Development of megaspore and female gametophyte. Abelia spec., Lonicera spec., Viburnum spec., Weigelia spec. and others (Caprifoliaceae), Hydrangea spec., Saxifraga spec. and others (Saxifragaceae s.l.)

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a Morphology and histochemistry of the hemopoietic system in embryonic and adult condition. Homo sapiens and other spp. (Mammalia)

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ADAMS SMITH, W. N.; D. Phil., M. D., Prof. – Med. School, Kuweit Univ., P.O.Box 5969, KUWEIT, Kuweit

a Teratogenic influences of a variety of known teratogens upon heart development. Rattus norvegicus (Rodentia)

ADELMANN, H. B.; Dr., Prof. (Emer.) – Div. of Biol. Sci., Cornell Univ., Stimson Hall, ITHACA, NY 14853, U.S.A.

a History of embryology and its interpretation

ADLER, R.; M.D. – Inst. de Biol. Celular, Fac. de Med., Paraguay 2155, 1121 BUENOS AIRES, Argentina

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b Electron microscopy of developing nervous system. Same species as a

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AGARWAL, L. P.; Prof. – Dr. Rajendra Prasad Centre for Ophthalm. Sci., All India Inst. of Med. Sci., NEW DELHI–110016, India

a Lens regeneration after extracapsular removal and implantation of cytolysed foetal lid epithelium or cytolysed amnion and inert acrylic or glass beads (histochemistry). Oryctolagus cuniculus (Lagomorpha), Macaca mulatta (Primates)

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b Endocrine control of development. (Insecta)

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a Development of alkaline and acid phosphatases, cholesterol, ATP, some dehydrogenases, DNA, RNA, and testosterone levels in the developing testis (histochemical and biochemical methods for phosphomonoesterases). Gallus gallus (Aves)

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ALEXANDER, G.; D.Agr. – Ian Clunies Ross Anim. Res. Lab., Div. of Anim. Product., CSIRO, P. O. Box 239, BLACKTOWN, NSW 2148, Australia

a Investigation of the physical and physiological relations between maternal and embryonic tissues. Ovis spec. (Artiodactyla)

ALLEN, E. R.; Assoc. Prof. – Dept. of Anat., Med. Center, Louisiana State Univ., 1542 Tulane Ave., NEW ORLEANS, LA 70112, U.S.A.

a Immunochemical studies of actin and myosin synthesis in somites. Gallus domesticus (Aves)

b Morphological (ultrastructural) organization of contractile protein in myogenic tissue into functional sarcomeres. Gallus domesticus (Aves), Sus scrofa (Artiodactyla)

c Control of ribosomal synthesis in oocytes. Acheta domesticus (Orthoptera)

ALLEN, J. N.; Dr. – Div. of Neurol., Ohio State Univ. Hosp. Med. Sch., 463 Means Hall, COLUMBUS, OH 43210, U.S.A.

a The postnatal development of activity of several acid hydrolases in the brain. Rattus norvegicus (Rodentia)

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c Activity of the pentose pathway in neonatal brain compared with the mature organ. Same species as a

ALLEN, W. R.; Ph.D. – Dept. of Biol., Univ. of California, RIVERSIDE, CA 92502, U.S.A.

ALLISON, J. E.; Ph.D., Prof. – Dept. of Anat. Sci., Univ. of Oklahoma Health Sci. Ctr., P. O. Box 26901, OKLAHOMA-City, OK 73190, U.S.A.

a Genital and urinary anomalies with emphasis on hermaphroditic alterations. Rattus rattus (Rodentia)

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ALTMAN, J.; Prof. – Dept. of Biol. Sci., Purdue Univ., WEST LAFAYETTE, IN 47907, U.S.A.

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AMANUMA, A.; D.Sc. – Lab. of Biol., Gifu Coll. of Dent., 1851 Takano, Hozumi-cho, Motosu-gun, GIFU-ken, Japan.

a Electron microscopy and experiments on differentiation of embryonic gonads. Gallus domesticus (Aves)

AMES, I. H.; Ph.D. – Dept. of Anat., Upstate Med. Ctr., State Univ. of New York, 766 Irving Ave., SYRACUSE, NY 13210, U.S.A.

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ANDERSEN, O. F.; B.A. – Merck Inst. for Therap. Research, RAHWAY, NJ 07065, U.S.A.

a Studies on fertilization. Mesocricetus auratus (Rodentia)

ANDERSON, D. T.; D.Sc., Prof. – School of Biol. Sci., Univ. of Sydney, Zool. Bldg., SYDNEY, N.S.W. 2006, Australia

a Comparative embryology. Patiriella exigua (Asteroidea)

ANDERSON, E.; Prof. – Dept. of Anat. and Lab. of Human Reprod. and Reprod. Biol., Harvard Med. Sch., 45 Shattuck St., BOSTON, MA 02115, U.S.A.

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ANDREW, Miss A.; Ph.D., Assoc. Prof. – Dept. of Anat., Univ. of the Witwatersrand, Hospital St., JOHANNESBURG 2001, S. Africa

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AOTO, T.; D.Sc., Prof. – Zool. Inst., Fac. of Sci., Hokkaido Univ., N.10, W.8, SAPPORO, 060 Japan

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ARIMA, Sh.; D.Agr., Prof. – Lab. of Anim. Morphol., Biol. Inst., Nara Women's Univ., Kitauoya-Nishi-Machi, NARA, Japan.

ARKING, R.; Ph.D. – Dept. of Biol., Wayne State Univ., DETROIT, MI 48202, U.S.A.

a Use of temperature-sensitive autonomous cell-lethal mutations to study: 1. factors controlling regeneration following heat induced cell death; 2. role of such a mutation in causing the formation of allotypic structures; 3. developmental organization of the imaginal disc. Drosophila melanogaster (Diptera)

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ARMAYOR, Miss M. R.; Biochem. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S.M. de TUCUMÁN, Argentina

a Chemical factors involved in fertilization: jelly coats and diffusible factors. Bufo arenarum (Anura)

ARMS, Mrs. K.; D.Phil. – Dept. of Neurobiol. and Behavior, Langmuir Lab., Cornell Univ., ITHACA, N.Y. 14850, U.S.A.

ARMSTRONG, J. B.; Ph.D., Assoc. Prof. – Dept. of Biol., Univ. of Ottawa, OTTAWA, Ont. K1N 6N5, Canada

a Mutagenesis, mutant isolation, and characterization of developmental mutants. Ambystoma mexicanum (Urodela)

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ARMSTRONG, Ph.B.; M.D., Prof. – Dept. of Anat., Upstate Med. Ctr., State Univ. of New York, 766 Irving Ave., SYRACUSE, NY 13210, U.S.A.

No work on developmental biology in progress.

ARNOLD, J. M.; Ph.D., Prof. – Kewalo Lab., Pacif. Biomed. Res. Ctr., Univ. of Hawaii, 41 Ahui St., HONOLULU, HI 96813, U.S.A.

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ARTZT, K.; Ph.D. – Dept. of Anat., Med. Coll., Cornell Univ., 1300 York Ave., NEW YORK, NY 10021, U.S.A.

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a Biochemistry of cell organelle biogenesis during early seed germination. (Angiospermae)

ASAI, E.; M.Sc. – Biol. Inst., Kanazawa Med. Univ., UCHINADA-machi, Ishikawa-ken, 920–02 Japan

a Regeneration. Dugesia japonica, Bdellocephala brunnea (Turbellaria)

ASAKURA, K. – Biol. Inst., Kanazawa Med. Univ., UCHINADA-machi, Ishikawa-ken, 920–02 Japan

a Reaggregation of dissociated cells. (Porifera)

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ASNANI, Miss M.; M.Sc. – Dept. of Zool., Fac. of Sci., M.S. Univ. of Baroda, BARODA 390002, India

a Liver, spleen, and lymph gland regeneration. (Reptilia; Aves)

ATIENZA, Miss S. B.; M.Sc. – Dept. of Cell Biol., Roche Inst. of Molec. Biol., NUTLEY, NJ 07110, U.S.A.

a Progesterone biosynthesis and metabolism by blastocyst and trophoblast cultures. Mus musculus (Rodentia)

b Mechanism of blastocyst implantation. Same species as a

ATKIN, I.; B.Sc. – Dept. of Zool., Hebrew Univ., JERUSALEM, Israel

a The origin of gonocytes. Gallus spec. (Aves)

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a Metamorphosis: regulation of intracellular transcriptional and translational processes by thyroid and pituitary hormones; chromosomal and ribosomal protein. Rana catesbeiana (Anura)

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AUCLAIR, W.; Ph.D., Assoc. Prof. – Dept. of Biol., Sch. of Sci., Rensselaer Polytechn. Inst., TROY, N.Y. 12181, U.S.A.

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a Interaction of cellular and environmental factors in tumor histogenesis in vitro. Homo sapiens (Primates)
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AYVAZ-ZADEH, Miss B. – Dept. of Vet. Anat., Western Coll. of Vet. Med., Univ. of Saskatchewan, SASKATOON, Sask. S7N 0W0, Canada
AZAR (GEALIJA), Mrs. I.; M.Sc. – Dept. of Zool., Hebrew Univ., JERUSALEM, Israel
a Autoradiography of cell migrations between epiblast and hypoblast, and their possible role in embryonic differentiation. (Aves)
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AZIZ, F. K.; M.Sc. – Dept. of Zool., Fac. of Sci., Alexandria Univ., Moharram Bey, ALEXANDRIA, Egypt.
Temporarily: Dept. of Embryol., Leningrad State Univ., Mendeleevsky St. 5, LENINGRAD 199164, U.S.S.R.
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BACHOP, W. E.; Ph.D. – Dept. of Anat., National College, 200 E. Roosevelt Rd., LOMBARD, IL 60148, U.S.A.
a Light microscopy of yolk sac syncytium. Notothenia neglecta (Teleostei)
BACHVAROVA, Mrs. R.; Ph.D. – Dept. of Anat., Med. Coll., Cornell Univ., 1300 York Ave., NEW YORK, NY 10021, U.S.A.
a Gene expression in oogenesis. Mus musculus (Rodentia)
b Maternal and embryonic control of early development. Same species as a
BAETZ, A. L.; Ph.D. – Natl. Anim. Dis. Ctr., Agric. Res. Serv., P. O. Box 70, AMES, IA 50010, U.S.A.
a Techniques to sample amniotic and allantoic fluids repeatedly; examination of their constituents to compare normal animals with those infected with agents causing abortion. Bos taurus (Artiodactyla)
b Enzymatic diagnostic or immunologic test on maternal plasma in order to predict fetal death or placental disruption. Same species as a
BAGLIONI, C.; M.D., Prof. – Dept. of Biol., Massachusetts Inst. of Technol., CAMBRIDGE, MA 02139, U.S.A.
BAGNARA, J. T.; Ph.D., Prof. – Dept. of Cell. and Developm. Biol., Univ. of Arizona, TUCSON, AZ 85721, U.S.A.
a Various aspects of the development and endocrinology of pigmentation. Many spp. (Amphibia)
b Ultrastructure of chromatophores. Same species as a
c Developmental physiology of xantophores, erythrophores, and iridophores. Same species as a
d Neural crest: pattern formation on dorsal surface. (Anura)
e Reproductive biology: gonadal analysis, gonadotrophin analyses. Rana pipiens, R. berlandieri forreri, R. blairi, R. magnaocularis, R. new spp. and hybrids (Anura)
BAGWELL, J. N.; Ph.D. – Dept. of Anat., Louisiana State Univ., 1542 Tulane Ave., NEW ORLEANS, LA 70112, U.S.A.
a Size-age relationships and external morphology during development. Meriones unguiculatus (Rodentia)
b The nature and timing of events during palatal closure. Same species as a
BAILEY, R. P.; Ph.D. – Dept. of Anat. and Cell Biol., Univ. of Pittsburgh, PITTSBURGH, PA 15261, U.S.A.

a Development of anomalies of the lymphatic system. Mus musculus (Rodentia), Homo sapiens (Primates)
b Vasculogenesis

BAKER, Mrs. P. C.; Ph.D. – Dept. of Zool., Univ. of California, BERKELEY, CA 94720, U.S.A.

BAKER, R. F.; Ph.D., Assoc. Prof. – Dept. of Biol. Sci., Univ. of South. Calif., University Park, LOS ANGELES, CA 90007, U.S.A.
a Developmental genetics and regulation of macromolecular synthesis. (Echinoidea)

BAKER, W. K.; Ph.D., Prof. – Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, 1101 E. 57th St., CHICAGO, IL 60637, U.S.A.

BAL, A. K.; D.Phil., Assoc. Prof. – Dept. of Biol., Mem. Univ. of Newfoundland, ST. JOHN'S, Nfld. A1C 5S7, Canada.
a Ultrastructure of embryo cells and enzyme patterns during germination. Allium cepa (Liliaceae)
b Localization of cellulolytic enzymes during development and differentiation. Allium cepa (Liliaceae), Pisum sativum (Papilionaceae)
c Germination. Rubus chamaemorus (Rosaceae)
d Developmental physiology of symbiotic root nodules. Glycine max (Papilionaceae)

BALINSKI, B. I.; Dr.biol., Prof. – 19 Oban Avenue, Blairgowrie, 2001 JOHANNESBURG, S. Africa

BALLARD, W. W.; Ph.D., Prof. – Dept. of Biol. Sci., Dartmouth Coll., HANOVER, NH 03755, U.S.A.
a Morphogenetic movements in embryos. (Teleostei; Holostei; Chondrostei. Elasmobranchii)
b Monograph on developmental anatomy. Ambystoma spec. (Urodela)
c Morphogenetic movements and fate map. Catostomus commersoni (Cypriniformes), Gobius niger, Perca flavescens (Perciformes; Teleostei)

BAND, R. N.; Ph.D., Prof. – Dept. of Zool., Coll. of Nat. Sci., Michigan State Univ., EAST LANSING, MI 48824, U.S.A.
a Mechanism of cell-to-cell adhesion. Acanthamoeba castellanii (Rhizopoda)
b Divalent ion function in encystation. Same species as a
c Serum requirement and encystation. Entamoeba histolytica (Rhizopoda)

BANK, H. L.; Ph.D. – Dept. of Pathol., Med. Univ. of S. Carolina, 80 Barre St., CHARLESTON, SC 29401, U.S.A.
a Teratogenic effects of freezing on embryos. Mus musculus (Rodentia)

BARBER, Mrs. M. L.; Ph.D., Assoc. Prof. – Dept. of Biol., Calif. State Univ., 18111 Nordhoff St., NORTHRIDGE, CA 91324, U.S.A.
a Changes in lipids and enzymes in cell surface at fertilization (using cell ghosts). Strongylocentrotus purpuratus, Lytechinus pictus (Echinoidea)
b Effect of teratogenic agents on lipids and enzymes of cell surface in early development. Same species as a

BARBIERI, F. D.; Dr.Biochem., Prof. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina
a Chemical factors involved in fertilization: jelly coats and diffusible factors. Bufo arenarum (Anura)
b Conversion of the vitelline to the fertilization membrane. Same species as a
c Spermatozoon in determination of bilateral symmetry. Same species as a

BARNARD, Mrs. S. B.; Dr. – Exp. Embryol. Res. Unit of the M.R.C., Dept. of Anat., Univ. of the Orange Free State, P. O. Box 339, BLOEMFONTEIN 9300, S. Africa
a Experiments on inner ear development. Gallus domesticus (Aves)

BARR, H. J.; Ph.D. – Center for Genet., Med. Center, Univ. of Illinois, 1853 W. Polk St., CHICAGO, IL 60612, U.S.A.

BARTELS, P. G.; Prof. – Dept. of Biol. Sci., Univ. of Arizona, TUCSON, AZ 85721, U.S.A.

BATTLE, Miss H. I.; Ph.D., Prof. (Emer.) – Dept. of Zool., Univ. of W. Ontario, LONDON, Ont. N6A 5B7, Canada
a Radiological and dermatoglyphic study of a hereditary anomaly: brachydactyly type A4 (Temtamy type) involving brachymesophalangy of digits II and V together with foreshortening of the terminal phalanx of digit I in hands and to a lesser extent in feet. Homo sapiens (Primates)

BAVEJA, Miss R.; M.S., Prof. – Dept. of Obstet. and Gynecol., M.L.N. Med. Coll., Allahabad Univ., ALLAHABAD 1, India

BEALL, J. R.; Ph.D. – Schering Corp., P. O. Box 32, LAFAYETTE, N.J. 07848, U.S.A.

BEAMS, H. W.; Ph.D., Prof. (Emer.) – Dept. of Zool., Univ. of Iowa, IOWA-City, IA 52242, U.S.A.
a The effects of ultracentrifugation in dividing cells
b Effects of ultracentrifugation. (Bacteria; Cyanophyceae)
c Cytokinesis: a comparative study
d Germ cell determinants

BECERRA de GUZMAN, Mrs. M.; M.D. – Cat. de Embriol., Fac. de Med., Univ. de Los Andes, MÉRIDA, Venezuela
a Developmental failure (anomalies) of the hand. Homo sapiens (Primates)

BECKER, R. O.; M.D., Prof. – Dept. of Orthop. Surg., Upstate Med. Ctr., Vet. Adm. Hosp., SYRACUSE, NY 13210, U.S.A.
a Role of electrical phenomena (as part of the biological control system) in control of growth processes, especially bone growth. Homo sapiens and others (Mammalia)
b Perineural cells (Schwann, glia): their electrical activity and function. Same species as a
c Capacity for Schwann cells to convert to other type of nerve cells in vitro. Same species as a

BEEBE, D. C.; Ph.D. – Lab. of Molec. Genet., Natl. Inst. of Child Health and Human Developm., Natl. Inst. of Health, BETHESDA, MD 20014, U.S.A.

BEHRMAN, S. J.; M.D., Prof. – Dept. of Obstet. and Gynecol., Ctr. for Res. in Reprod. Biol., L 3100 Women's Hosp., ANN ARBOR, MI 48109, U.S.A.
a Trophoblast: isolation and identification of placenta-specific protein (Primates)
BEIG, D.; Ph.D. – Dept. de Morfol. Anim., Univ. Estadual Paulista, Rua 10, 2527, C.P. 178, 13.500 RIO CLARO, S.P., Brazil
a Ultrastructure of the seminiferous tubules including spermiogenesis during postembryonic development. Trigona postica (Hymenoptera)
b Organogenesis and differentiation of the genital system (comparative study in 3 castes during postembryonic development. Same species as a
c Morphogenesis and functional development of corpora allata (including neurohormone production). Same species as a
d Control of polymorphic development with special reference to environmental factors. (Meliponini, Hymenoptera)
BEKOFF, Mrs. A. C.; Ph.D. – Dept. of Environm., Popul. and Organismic Biol., Univ. of Colorado, BOULDER, CO 80309, U.S.A.
a Development of specific motoneuron connections in the early embryo, especially functional matching of central and peripheral connections (electrophysiology). Gallus gallus (Aves)
BELL, E.; Ph.D., Prof. – Dept. of Biol., Massachusetts Inst. of Technol., CAMBRIDGE, MA 02139, U.S.A.
BEN-OR (MILSTEIN), Mrs. S. – Dr. – Dept. of Physiol., Hebrew Univ., Hadassah Med. School, P. O. Box 1172, JERUSALEM, Israel
BENDER, H. A.; Ph.D., Prof. – Dept. of Biol., Univ. of Notre Dame, NOTRE DAME, IN 46556, U.S.A.
a Phenogenetic studies of the ovarian tissue of female-sterile mutants. Drosophila melanogaster (Diptera)
b Physiological genetics. Same species as a
c Genetics. Coelopa frigida (Diptera)
BENIRSCHKE, K.; M.D., Prof. – Dept. of Obstet. and Gynecol., Univ. of Calif. San Diego, LA JOLLA, CA 92037, U.S.A. also: San Diego Zoo, P. O. Box 551, SAN DIEGO, CA 92112, U.S.A.
a Cytomegalovirus-infection of placenta. Homo sapiens (Primates)
b Placental pathology. Same species as a
c Cytogenetics (Aves, Mammalia)
d Ovum transport and transplantation; chimerism. Mesocricetus auratus (Rodentia), Dasypus novemcinctus (Edentata)
e Reproductive physiology, primarily endocrinology. Dasypus novemcinctus (Edentata)
BENNETT, D.; Dr., Prof. – Dept. of Anat., Med. Coll., Cornell Univ., 1300 York Ave., NEW YORK, NY 10021, U.S.A.
a Effect of mutant genes on embryonic development. Mus musculus (Rodentia)
b Cell surface antigens in spermatogenesis and embryonic development. Same species as a
BENSON, S. C.; Ph.D. – Dept. of Biol. Sci., Calif. State Univ., HAYWARD, CA 94542, U.S.A.
a Molecular and biochemical events underlying spicule and pigment synthesis (collagen and tyrosinase synthesis is measured in whole animals and isolated cell populations). (Echinoidea)
BENZO, C. A.; Ph.D. – Dept. of Anat., Upstate Med. Ctr., State Univ. of New York, 766 Irving Ave., SYRACUSE, NY 13210, U.S.A.
a Development and control of glycogen metabolism in embryonic and neonatal liver. Gallus domesticus (Aves)
b The role of hormones in the ultrastructural and biochemical development of embryonic liver in organ culture. Same species as a
c Structural and functional differentiation of the endocrine pancreas. Same species as a
BER, A.; M.D., M.V.D., Prof. – Endocrinol. Unit of the Rogoff-Wellcome Med. Res. Inst., Beilinson Hosp., PETAH-TIKWA, Israel
a Histone content of developing ovaries. Bos taurus (Artiodactyla)
BERESFORD, W. A.; D.Phil., Prof. – Dept. of Anat., Med. Ctr., West Virginia Univ., MORGANTOWN, WV 26506, U.S.A.
a The influence of hypervitaminosis A on the developing temporo-mandibular joint. Rattus norvegicus (Rodentia)
b Development of the penile bone (transmission and scanning electron microscopy). Same species as a
c Transplantation of the genital tubercle to the brain. Same species as a
BERG, W. E.; Ph.D., Prof. – Dept. of Zool., Univ. of California, BERKELEY, CA 94720, U.S.A.
BERGER, J. D.; Ph.D. – Dept. of Zool., Univ. of Brit. Columbia, VANCOUVER, B.C. V6T 1W5, Canada
a Nuclear differentiation, DNA synthesis and developmental genetics. Paramaecium aurelia (Ciliata)
b Developmental genetics of cell shape and the division process. Same species as a
BERGTROM, G.; Ph.D. – Biol. Sci. Group, Univ. of Connecticut, Box U–42, STORRS, CT 06268, U.S.A.
a Hemoglobin synthesis during larval development. Chironomus spec. (Diptera)
BERMAN (KRAMER), Mrs. B.; B.Sc. (Hons.) – Dept. of Anat., Univ. of the Witwatersrand, Hospital St., Hillbrow, JOHANNESBURG 2001, S. Africa
a Experiments on the possible origin of individual pancreatic islet cell types from the trunk neural crest. Gallus domesticus (Aves) (with A. ANDREW)
b Origin of the endocrine cells of the gastro-intestinal tract. Same species as a (with A. ANDREW)
BERNFIELD, M. R.; M.D., Prof. – Dept. of Pediat., Stanford Univ., 300 Pasteur Drive, STANFORD, CA 94305, U.S.A.

a Embryonic epithelia: synthesis of macromolecules (collagen, mucopolysaccharide, RNA, enzymes) during inductive interactions in vitro. Mus musculus (Rodentia)
b Morphogenetic role of extracellular materials (collagen, mucopolysaccharide) during in vitro development of salivary submandibular epithelia. Same species as a
c Cellular adhesion and recognition. Gallus domesticus (Aves)

BERRILL, N. J.; Ph.D. – 410 Swarthmore Ave., SWARTHMORE, PA 19081, U.S.A.

BERRY, S. J.; Ph.D., Prof. – Dept. of Biol., Wesleyan Univ., MIDDLETOWN, CT 06457, U.S.A.
a Nucleic acid metabolism during differentiation (ultracentrifugation, gradient centrifugation, autoradiography, chromatography). Hyalophora cecropia (Lepidoptera)
b Endocrine control of differentiation (light and electron microscopy, autoradiography, organ culture). (Saturniidae, Lepidoptera)
c RNA synthesis during oogenesis (autoradiography, electron microscopy, gradient centrifugation). Various spp. (Lepidoptera)
d Protein synthesis in specialized organs (autoradiography, electron microscopy, gradient centrifugation). Same species as a
e Morphogenesis in the CNS (light and electron microscopy, autoradiography, histochemistry, enzyme assays). Same species as c

BERSU, E. T.; Ph.D. – Dept. of Anat., Univ. of Wisconsin, 1255 Linden Drive, MADISON, WI 53706, U.S.A.
a Variations occuring in malformations caused by aneuploidy and mutations (gross anatomy), especially phenotypes of 13–, 18–, and 21–trisomy syndromes. Homo sapiens (Primates)

BERTALANFFY, F. D.; Ph.D., Prof. – Dept. of Anat., Univ. of Manitoba, 750 Bannatyne Ave., WINNIPEG, Man. R3E 0W3, Canada
a Rates of cell division of neoplastic populations. Rattus rattus, Mus musculus (Rodentia)
b Mitotic rates of regenerating liver parenchyma. Rattus rattus (Rodentia)
c Cell renewal and cytodynamics of normal cell populations. Same species as b
d Effects of cytosine arabinoside on cell development and proliferation. Same species as b
e Combined treatment of normal and malignant cell populations with cytosine arabinoside and x-irradiation. Mus musculus (Rodentia)

BETZ, T. W.; Ph.D., Assoc. Prof. – Dept. of Biol., Fac. of Sci., Carleton Univ., OTTAWA, Ont. K1S 5B6, Canada
a Endocrine ontogenesis. Gallus domesticus (Aves)
b Hormonal and other factors controlling differentiation of the duodenum, spleen, neural retina, adeno-hypophysis, hemoglobin, yolk sac, hatching and growth of the embryo. Same species as a

BHARGAVA, I.; D.Sc., Prof. – Dept. of Postgrad. Stud. in Anat. Sci., Jundi Shapur Univ. Med. School, P.B. 1059, AHWAZ, Iran
a Stereology of the placenta at different stages in single and multiple pregnancies. Homo sapiens (Primates) (with Y. DODGE)
b Microanatomy of the umbilical arteries in relation to their nutrition and luminal control. Same species as a (with F. JAVADNIA)
c Age changes in the placenta. Same species as a (With B. JAVAHERI)
d Graphical self instruction approach to teaching of embryology. (with D. M. DAVAI)

BHASKARAN, G.; Ph.D., Assoc. Prof. – Inst. of Developm. Biol. and Dept. of Biol., Texas A & M Univ., COLLEGE STATION, TX 77843, U.S.A.
a Pattern formation in the integument: 1. differentiation of abdominal histoblasts: developmental capacity, regulation, cell interaction; 2. cellular and biochemical aspects of the posterior margin induced pattern transformation. Sarcophaga bullata, Musca domestica (Diptera), Galleria mellonella, Manduca sexta (Lepidoptera)
b Hormonal control of growth and development. Sarcophaga bullata (Diptera). Hyalophora cecropia (Lepidoptera)

BIDDLE, F. G.; Ph.D. – Dept. of Biol., McGill Univ., P. O. Box 6070, MONTREAL, Que. H3C 3G1, Canada.
a Genetic control of the response variation to cleft palate-inducing teratogens in inbred strains. Mus musculus (Rodentia)
b Biochemical mechanisms responsible for maternal protection against glucocorticoid induction of cleft palate. Same species as a

BIGGERS, J. D.; D.Sc., Ph.D., Prof. – Lab. of Human Reprod. and Reprod. Biol., Harvard Med. Sch., 45 Shattuck St., BOSTON, MA 02115, U.S.A.

BILQEES, Mrs. F. M.; Ph.D. – Dept. of Zool., School of Parasitol., Univ. of Karachi, KARACHI 32, Pakistan

BIRGE, W. J.; Ph.D., Prof. – Sect. on Regulat. and Developm. Biol., Sch. of Biol. Sci., Univ. of Kentucky, Funkhouser Bldg., Rm 104, LEXINGTON, KY 40506, U.S.A.

BIRKY, C. W., Jr.; Ph.D. – Dept. of Genet., Ohio State Univ., 1735 Neil Ave., COLUMBUS, OH 43210, U.S.A.
a Developmental polymorphism induced by environmental factors: comparative studies of stocks from different countries. Asplanchna spec. (Rotifera)

BISHOP, D. W.; Ph.D., Prof. – Dept. of Physiol., Med. Coll. of Ohio, P. O. Box 6190, TOLEDO, OH 43614, U.S.A.

BLACK, R. E.; Ph.D., Prof. – Dept. of Biol., Coll. of William and Mary, WILLIAMSBURG, VA 23185, U.S.A.
a Tracer studies of metabolic pathways in embryos. Chrysaora quinquecirrha (Scyphozoa), Arbacia punctulata (Echinoidea)
b Development of enzymes in embryos. Same species as a

BLACKLER, A. W.; Ph.D., Prof. – Sect. of Genet., Developm. and Physiol., Div. of Biol. Sci., Cornell Univ., Emerson Hall, ITHACA, NY 14850, U.S.A.

a Regulation of nucleolar expression in hybrids. Xenopus spp. (Anura)
b External influences on reproductive potential in early embryos. Xenopus laevis (Anura)

BLAMIRE, J.; Ph.D. – Dept. of Biol., Brooklyn Coll., NEW YORK, Brooklyn, NY 11210, U.S.A.
a DNA, RNA and protein metabolism during embryogenesis and early development; isolation and characterization of morphological and developmental mutants; use of inhibitors on nucleic acid metabolism and their consequences; Volvox carteri (Chlorophyceae)
b Relationship between nuclear and mitochondrial DNA during asexual reproduction, mating and meiosis; control pathways. Saccharomyces cerevisiae (Saccharomycetales)

BLASBERG, B.; D.M.D. – Dept. of Histol., Embryol. and Genet., Sch. of Dent. Med., Univ. of Pennsylvania, 4001 Spruce St., PHILADELPHIA, PA 19174, U.S.A.
a Fusion process in the palate studied in organ culture. Mus musculus (Rodentia)

BLAYDES, D. F.; Ph.D., Assoc. Prof. – Dept. of Biol., West Virginia Univ., Brooks Hall, MORGANTOWN, WV 26506, U.S.A.
a Mode of action of cytokinins in development. Glycine max (Papilionaceae)

BLOCH, D. P.; Ph.D., Prof. – Bot. Dept., Univ. of Texas, AUSTIN, TX 78712, U.S.A.
No work on developmental biology in progress

BLONDHEIM, Mrs. S. A.; M.Sc. – Dept. of Entomol., Hebrew Univ., JERUSALEM, Israel
a Embryonic development of hybrids. Dociostaurus genei x D. curvicercus, Acrotylus insubricus x A. patruelis (Acrididae, Orthoptera)

BLOOM, S. E.; Ph.D. – Dept. of Poultry Sci., N.Y. State Coll. of Agric. at Cornell Univ., 215 Rice Hall, ITHACA, NY 14853, U.S.A.
a Cytology, development, and reproductive performance of mitotic mutants, especially the effects of age and sex on the development of binucleated erythrocytes. Meleagris gallopavo (Aves)
b Effects of selected environmental chemicals on morphogenesis and genetic constitution of early embryos. Gallus domesticus (Aves)

BLOUNT, R. F.; Ph.D., Prof. – Dept. of Anat., Med. Branch, Univ. of Texas, GALVESTON, TX 77550, U.S.A.
a Morphological changes in kidney during development and aging. Mus musculus (Rodentia)

BLUMENFELD, M.; Ph.D. – Dept. of Zool., Univ. of Minnesota, MINNEAPOLIS, MN 55455, U.S.A.
a Replication of satellite DNA's during development from embryo to adult (thermal denaturation and analytical ultra-centrifugation). Drosophila virilis (Diptera)

BODE, H. R.; Ph.D. – Dept. of Developm. and Cell Biol., Univ. of Calif., IRVINE, CA 92717, U.S.A.
a Regulation of interstitial cell differentiation into the four types of nematocysts. Hydra spec. (Hydrozoa)
b Cellular basis of pattern formation (polarity of head regeneration). Same species as a

BODEMER, C. W.; Ph.D. – Dept. of Biomed. Hist., Sch. of Med., Univ. of Washington, SEATTLE, WA 98195, U.S.A.
a History of embryology, 1600–1900

BODENSTEIN, D.; Ph.D., Prof. – Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTESVILLE, VA 22903, U.S.A.
a Developmental biology. (Insecta; Amphibia)
b Endocrinology (Insecta)

BOELL, E. J.; Ph.D., D.Sc., Prof. – Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, CT 06520, U.S.A.
a Changes in enzymatic activity of embryonic tissues during growth and differentiation. (Amphibia; Aves)
b Mitochondrial differentiation during pre- and post-partum development. Mus musculus (Rodentia)
c Metabolism, motility, and fertilizability of spermatozoa. (Mammalia)

BONNER, J. T.; Ph.D., Prof. – Dept. of Biol., Princeton Univ., PRINCETON, NJ 08540, U.S.A.

BONNY PILO; Dr. – Dept. of Zool., Fac. of Sci., M. S. Univ. of Baroda, BARODA 390002, India
a Liver, spleen, and lymph gland regeneration. (Reptilia; Aves)

BOOGAARD, Ms. C. L.; M.Sc. – Dept. of Zool., Univ. of Brit. Columbia, VANCOUVER, B.C. V6T 1W5, Canada
a Regulation of macronuclear regeneration. Paramecium tetraaurelia (Ciliata)

BOONE, M. A.; Ph.D., Prof. – Poultry Sci. Dept., Coll. of Agric., Clemson Univ., CLEMSON, SC 29631, U.S.A.
a Effect of high ambient temperature on semen and egg production. Gallus domesticus (Aves)
b Development of drug bio-assay system by growing embryos in beakers. Same species as a

BOONE, W. R.; M.S. – Dairy Sci. Dept., Coll. of Agric., Clemson Univ., CLEMSON, SC 29631, U.S.A.
a In vitro culture of early embryonic stages. Bos taurus, Ovis aries (Artiodactyla)

BORACK, L. I.; Ph.D., Assoc. Prof. – Dept. of Zool. and Physiol., Rutgers Univ., 195 University Ave., NEWARK, N.J. 07102, U.S.A.

BOROJEVIC, R.; Sc.D. – Fundation Gonçalo Muniz, SALVADOR, Brasil

BOVING, B. G.; M.D. – Dept. of Anat., Wayne State Univ., 540 E. Canfield Ave., DETROIT, MI 48201, U.S.A.
a Blastocyst spacing, orientation, and implantation mechanisms. Oryctolagus cuniculus (Lagomorpha)
b Relation of trophoblast invasion to blood vessels underlying uterine epithelium, and the anatomical, mechanical, and chemical basis for it. Oryctolagus cuniculus (Lagomorpha), Macaca mulatta (Primates)
c Identification and function of non-cellular blastocyst coverings. Same species as a
d Structure and function of trophoblast knobs. Same species as a
e Mechanism of blastocyst transport by uterus. Same species as a

f Origin and development of epithelia of uterus and vagina. Homo sapiens (Primates) (with R. L. BOVING)

BOVING, R. L. – Dept. of Anat., Wayne State Univ., 540 E. Canfield Ave., DETROIT, MI 48201, U.S.A.

a Origin and development of epithelia of uterus and vagina. Homo sapiens (Primates) (with B. G. BOVING)

BRAT, Miss C.; M.Sc. – Dept. of Zool., Univ. of Gorakhpur, GORAKHPUR 273001, India

BRAUN, A. C.; Ph.D., Prof. – Lab. of Plant Biol., Rockefeller Univ., 66th St. and York Ave., NEW YORK, N.Y. 10021, U.S.A.

BRESSLER, R. S.; Ph.D. – Dept. of Anat., Mount Sinai Sch. of Med., City Univ. of New York, Fifth Ave. and 100th St., NEW YORK, N.Y. 10029, U.S.A.

a Postnatal development of testis cell types and function; role of hormones; initiation of spermatogenesis. Mus musculus, Rattus spec. (Rodentia), Homo sapiens (Primates)

b Postnatal development of adult-type secretion in submandibular gland; effects of isoproterenol on precocious appearance of adult proteins (gel electrophoresis). Rattus spec. (Rodentia)

BRICK, I.; Ph.D., Prof. – Biol. Dept., New York Univ., Washington Square, NEW YORK, NY 10003, U.S.A.

a Genetic control of cell surfaces in the development of pigment pattern. Ambystoma mexicanum (Urodela)

b Quantitative cell adhesion studies in the gastrula. Rana pipiens (Anura)

c Electrokinetics and time-lapse cinematography of somatopleure and neural crest cells. Same species as a

d Cell surface specializations of presumptive germ layer cells of blastula and gastrula (scanning and transmission E.M.). Rana pipiens, Xenopus laevis (Anura)

e Hypoblast formation. Callus gallus (Aves)

f Acetylcholinesterase activity in blastoderm during hypoblast and mesoderm formation. Same species as e

g Cytochemical localization of serotonin in blastula and gastrula. Same species as b

BRIGGS, R. W.; Ph.D., Prof. – Dept. of Zool., Indiana Univ., Jordan Hall 224, BLOOMINGTON, IN 47401, U.S.A.

BRINKLEY, Miss L. L.; Ph.D. – Dept. of Oral Biol., Dental School, Univ. of Michigan, ANN ARBOR, MI 48109, U.S.A.

a Experiments on in vitro development of the secondary palate. Mus musculus (Rodentia)

BRODY, S.; Ph.D. – Dept. of Biol., C–016, Univ. of Calif. San Diego, LA JOLLA, CA 92093, U.S.A.

a Developmental genetics. Neurospora crassa (Ascomycetes)

b Biochemical mechanisms in morphogenesis. Same species as a

BROMLEY, S. C.; Ph.D., Assoc. Prof. – Dept. of Zool., Michigan State Univ., EAST LANSING, MI 48824, U.S.A.

a Hormonal and neural influences in limb regeneration. Notophthalmus viridescens and other spp. (Urodela)

BRONJEN, Mrs. E.; – Dept. of Gen. Biol., Inst. of Biol. Sci., Fed. Univ. of Minas Gerais, Rue Carangola 288 – 4° andar, C.P. 253, BELO HORIZONTE, Brazil

a Effect of insecticides on spermatogenesis. Triatoma infestans (Hemiptera)

BROOKBANK, J. W.; Ph.D., Prof. – Dept. of Zool., Univ. of Florida, GAINESVILLE, FL 32611, U.S.A.

BROOKS, Miss M. A.; Ph.D., Prof. – Dept. of Entomol., Fish., and Wildlife, Univ. of Minnesota, ST. PAUL, MN 55108, U.S.A.

a The effect of intracellular symbiotic microorganisms on vitellogenesis and embryonic development. Blattella germanica, Periplaneta americana (Blattodea)

b Growth and differentiation of cells in vitro modified by infection with intracellular microorganisms. Blattella germanica (Blattodea)

c The duration of viability of oocyte symbiotes cultured in extracellular conditions. Same species as b

d Nutrients required for ovarial transmission of symbiotes. Macrosteles fascifrons (Homoptera)

BROWDER, L. W.; Ph.D., Assoc. Prof. – Dept. of Biol., Univ. of Calgary, CALGARY, Alta. T2N 1N4, Canada

BROWN, D. D.; M.D. – Dept. of Embryol., Carnegie Inst. of Wash., 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A. also: Dept. of Biol., Johns Hopkins Univ., Charles and 34th Sts., BALTIMORE, Md 21218, U.S.A.

BROWN, E. H.; Ph.D., Assoc. Prof. – Dept. of Genet. and Developm., Univ. of Illinois, 515 Morrill Hall, URBANA, IL 61801, U.S.A.

a Genetic and cytological aspects of oogenesis. Drosophila melanogaster (Diptera)

BROWN, I. R.; Ph.D. – Dept. of Zool., Univ. of Toronto, TORONTO, Ont. M5S 1A1, Canada

a Transcription of non-repeated DNA in development (intracellular location of non-repeated transcripts and mRNA polyadenylation in neural tissue). Oryctolagus cuniculus (Lagomorpha)

BROWN, K. S.; M.D. – Developm. Genet. Sect., Natl. Inst. of Dent. Res., Natl. Inst. of Health, Bldg. 30, Rm 106, BETHESDA, MD 20014, U.S.A.

a Developmental genetics of craniofacial malformations: cleft lip and palate, cleft palate, open eye, and cranioschisis (mendelian traits and some threshold characters). Mus musculus (Rodentia)

b Modification of spontaneous malformation rates in inbred strains by environmental manipulation, diet, hormones or teratogens. Same species as a

BROWN, R. D.; Ph.D. – Dept. of Embryol., Carnegie Inst. of Wash., 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.

BROWN, T. T., Jr.; D.V.M., Ph.D. – Dept. of Pathol., Coll. of Vet. Med., Oklahoma State Univ., STILLWATER, OK 74074, U.S.A.

a Teratogenic effect of the bovine viral diarrhea virus, especially on cerebellum and eye (immunology). Bos taurus (Artiodactyla), Mus musculus, Cricetulus migratorius (Rodentia)

BRUMMETT, Miss A. R.; Ph.D., Prof. – Dept. of Biol., Coll. of Arts and Sci., Oberlin Coll., OBERLIN, OH 44074, U.S.A.

a Biochemical changes concomitant with differentiation in the developing embryo. Fundulus heteroclitus (Teleostei)

b Scanning and transmission electron microscopy of morphogenetic movements in early embryos. Same species as a

c Scanning electron microscopy of the oocyte and its investing layers. Xenopus laevis (Anura)

BRUST, R. A.; Ph.D., Prof. – Dept. of Entomol., Fac. of Agric., Univ. of Manitoba, WINNIPEG, Man. R3T 2N2, Canada

a Effect of photoperiod and temperature on the induction and termination of diapause in larvae and embryos. Wyeomyia smithii, Aedes atropalpus (Culicidae, Diptera)

b Autogeny. Culicidae, Simuliidae, Tabanidae (Diptera)

BRYAN, J. H. D.; Ph.D., Prof. – Dept. of Zool., Univ. of Georgia, ATHENS, GA 30602, U.S.A.

a Cytochemistry of gamete formation. Mus musculus (Rodentia)

b Differentiation of spermatozoa in mutants (light- and electron microscopy). Same species as a

c Histological and cytochemical studies of the brain during development of hydrocephaly in neonatal mutants. Same species as a

d Histological and ultrastructural studies of developing defective incisor teeth in neonatal mutants. Same species as a

e Development of mutant tissue transplanted to tolerant wild-type hosts (emphasis on spermatogenesis in tissue from male-sterile mutants). Same species as a

BRYAN, J. K.; Ph.D., Assoc. Prof. – Dept. of Biol., Syracuse Univ., 130 College Place, SYRACUSE, NY 13210, U.S.A.

a Changing patterns of enzyme regulation during growth of seedlings; mechanisms contributing to in vivo alteration of enzyme activites; subcellular enzyme localization. Zea mays (Gramineae)

BRYANT, P. J.; Ph.D. – Center for Pathobiol., Univ. of California, IRVINE, CA 92664, U.S.A.

a Regeneration and duplication in imaginal discs. Drosophila melanogaster (Diptera)

b Ultrastructure of imaginal discs. Same species as a

c Cell death in imaginal discs. Same species as a

d Wound healing in imaginal discs. Same species as a

BRYANT (POYNTZ), Mrs. S. V.; Ph.D. – Dept. of Developm. and Cell Biol., Univ. of California, IRVINE, CA 92717, U.S.A.

a Regulation and pattern formation in young blastemas. Triturus viridescens (Urodela)

BRYDEN, M. M.; Ph.D., D.Sc.V.M. – Sch. of Anat., Univ. of Queensland, St. Lucia, BRISBANE, Qld. 4067, Australia

a Prenatal and postnatal development. Antarctic spp. (Pinnipedia)

b General embryology. Ovis aries (Artiodactyla)

BÜHLER, Mrs. M. I.; Biochem. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina

a Oocyte maturation: energetic metabolism as an expression of cytoplasmic maturation. Bufo arenarum (Anura)

BURCHILL, B. R.; Ph.D. – Dept. of Physiol. and Cell Biol., Univ. of Kansas, LAWRENCE, KS 66045, U.S.A.

a Role of cyclic AMP in oral regeneration. Stentor coeruleus (Ciliata)

BURDI, A. R.; Ph.D., Assoc. Prof. – Dept. of Anat., Med. School, Univ. of Michigan, Med. Sci. Bldg. II, ANN ARBOR, MI 48109, U.S.A.

a Variabilities and polymorphisms in prenatal dental development. Homo sapiens (Primates)

b Sexual dimorphisms in facial embryogenesis. Same species as a

c Prenatal growth patterns of head and face. Same species as a

d Tissue interactions during early development of the skull. Gallus domesticus (Aves)

e Confirming the teratologic model: developmental parallelisms between man and monkey. Macaca nemestrina, Homo sapiens (Primates)

BURDON-JONES, C.; Ph.D., Prof. – Depts. of Marine Biol., Bot. and Zool., James Cook Univ. of N. Queensland, Post Office, JAMES COOK UNIVERSITY, Qld. 4811, Australia

a Development and regeneration. Rhabdopleura normani, Cephalodiscus spec. and other spp. (Pterobranchia, Hemichordata)

BURNS, R. K.; Ph.D. – 303 N. Second St., BRIDGEWATER, VA 22812, U.S.A.

BURNSIDE, Miss M. B.; Ph.D. – Dept. of Physiol.-Anat., Univ. of Calif., BERKELEY CA 94720, U.S.A.

a Cell shape determination (and mechanism of its change) using primarily neural plate formation as a model for morphogenetic cell elongation. Taricha torosa, Ambystoma maculatum (Urodela)

BURTON, A. L.; M.D., Prof. – Dept. of Anat., Health Sci. Center, Univ. of Texas, 7703 Floyd Curl Drive, SAN ANTONIO, TX 78284, U.S.A.

a Development of mast cells in embryonic skin. Rattus norvegicus (Rodentia)

BUSS, E. G.; Ph.D., Prof. – Dept. of Poultry Sci., Pennsylvania State Univ., 203 Anim. Industr. Bldg., UNIVERSITY PARK, PA 16802, U.S.A.

a Means by which diploid parthenogenic males arise. Meleagris gallopavo (Aves)

b Cytology and development of animals producing altered sex ratios among progeny. Gallus gallus (Aves)

BUTLER, H.; M.D., B.Chir. – Dept. of Anat., Univ. of Saskatchewan, SASKATOON, Sask. S7N 0W0, Canada

a Implantation, placentation, and early embryology, Galago s. senegalensis (Primates)

BUTLER, W. L.; Ph.D., Prof. – Dept. of Biol., B–022, Univ. of Calif., San Diego, LA JOLLA, CA 92093, U.S.A.
a Photosynthesis and the development of the photosynthetic apparatus. (Spermatophyta)
b Photocontrol mechanisms of cellular metabolism and development. (Bacteria; Plantae; Animalia)
BUTROS, J. M.; Ph.D., Prof. – Biol. Dept., American Univ. of Beirut, BEIRUT, Lebanon
BUTTERWORTH, F. M.; Ph.D., Prof. – Dept. of Biol. Sci., Oakland Univ., ROCHESTER, MI 48063, U.S.A.
a Hormonal and genetic control of development of adipose tissue on cellular and biochemical level (microsurgery, transplantation, cytology, biochemistry, organ culture). Drosophila melanogaster (Diptera)
b The role of the internal environment and of development of lysosomes on rate of programmed cell death of the larval fat body. Drosophila spec (Diptera)
c Ecdysone-protein complexes in blood and specific tissues. Drosophila hydei (Diptera)
d Biochemistry of male lipid and ultrastructure of male-sterile mutants. Same species as a
BUTZEL, H. M., Jr.; Ph.D., Prof. – Dept. of Biol. Sci., Union Coll., SCHENECTADY, NY 12308, U.S.A.
a Developmental genetics: mating types and morphogenesis; analysis of mating type proteins. Paramecium aurelia, Didinium nasutum, Tetrahymena pyriformis (Ciliata)
BYRD, E. W., Jr.; M.A. – Marine Biol. Res. Div., Scripps Inst. of Oceanography, Univ. of Calif., San Diego, P. O. Box 1529, LA JOLLA, CA 92093, U.S.A.
a Biochemistry of fertilization, particularly activation of enzymes at fertilization. Strongylocentrotus purpuratus and other marine spp. (Invertebrata)
b Histone phosphorylation and modification during cell cycle and spermatogenesis. Xenopus spec., Bufo spec., Rana spec. (Anura), Strongylocentrotus purpuratus (Echinoidea)
CABADA, M. O.; Biochem. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina
a Chemical factors involved in fertilization: testicular factors, jelly coats. Bufo arenarum (Anura)
b Fertilization membrane formation: chemical and immunological approaches. Same species as a
c Effect of hormones on proteins and nucleic acid synthesis in ovarian tissue and early development. Same species as a
CAHN, R. D.; Dr. – Dept. of Zool., Univ. of Washington, SEATTLE, WA 98195, U.S.A.
CAIRNS, J. M.; Ph.D. – Springville Labs., Roswell Park Mem. Inst., SPRINGVILLE, NY 14141, U.S.A.
a Mechanisms controlling growth in wing buds. Gallus domesticus, Coturnix c. japonica, Cairina moschata (Aves)
b Changes in cell cycle, size, motility, and adhesivity in wing mesoderm responding to the ectodermal ridge factor. Same species as a
c Response by the host mesoderm to a graft of polarizing region; timing, spatial factors, and nature of early response. Same species as a
CALABRESE, A.; Ph.D. – Biol. Lab., Natl. Marine Fish. Serv., Middle Atlantic Coastal Fish. Ctr., 212 Rogers Ave., MILFORD, CT 06460, U.S.A.
a Effects of heavy metals on developing embryos. Spisula solidissima, Mulinia lateralis, Mercenaria mercenaria, Crassostrea virginica (Lamellibranchia)
CAMARGO, Miss C. A.; M.Sc. – Dept. de Genet., Fac. de Med., Univ. de São Paulo, C. P. 301, 14100 RIBEIRÃO PRÊTO, Brazil
CAMERON, I. L.; Ph.D., Prof. – Dept. of Anat., Health Sci. Center, Univ. of Texas, 7703 Floyd Curl Drive, SAN ANTONIO, TX 78284, U.S.A.
a Synchronous cell differentiation. Tetrahymena vorax (Ciliata)
b Cell proliferation and differentiation. Gallus gallus (Aves)
c Cell homing. Same species as b
d Patterns in development. Same species as b
CAMPBELL, R. D.; Ph.D., Prof. – Dept. of Developm. and Cell Biol., Univ. of California, IRVINE, CA 92717, U.S.A.
a Morphogenesis: relations between movements, adhesions, and shapes of epithelial cells, and the animal shapes they produce. Hydra littoralis (Hydrozoa)
CANTINO, E. C.; Ph.D. – Dept. of Bot. and Plant Pathol., Michigan State Univ., Rm. 242 Plant Biol. Bldg., EAST LANSING MI 48823, U.S.A.
a Relation between biochemical and morphological differentiation. Blastocladiella emersonii, B. britannica (Phycomycetes)
b Relation between changes in fine structure and germination in motile cells and associated biochemical differentiation. Same species as a
c Cell-organelle interactions in motile cells, especially the role of the DNA-containing gamma particles in encystment. Same species as a
d Isolation and characterization of the "side-body" components (symphyomicrobody, lipid globules) in motile cells and their roles in cell activity and encystment. Blastocladiella emersonii (Phycomycetes)
CAPLAN, A. I.; Dr. – Biol. Dept., Case Western Reserve Univ., CLEVELAND, OH 44106, U.S.A.
a Transcript diversity, and composition and changes in muscle chromatin as functions of muscle development in vitro
b Relationship between intercellular NAD (nicotinamide-adenine dinucleotide) pool sizes and muscle and cartilage development from embryonic limb mesenchymal cells
CARLSON, B. M.; M.D., Ph.D. – Dept. of Anat., Univ. of Michigan, 4622 Med. Sci. Bldg. II, ANN ARBOR, MI 48109, U.S.A.
a Supernumerary limb formation. Triturus viridescens, Ambystoma mexicanum (Urodela)

b Minced muscle regeneration. Ambystoma mexicanum (Urodela), Rana spec. (Anura), Rattus norvegicus (Rodentia)
c Muscle and limb morphogenesis in regenerates. Same species as a
d Regeneration and transplantation of muscles. Rattus norvegicus (Rodentia), Felis catus (Carnivora) (with J. FAULKNER and E. GUTMANN (Praha))
e Morphogenesis of embryonic limb muscles. Ambystoma mexicanum (Urodela) (with M. GRIM, Praha)
f Regeneration of digits and digital pads, Hyperolius viridiflavus (Anura)

CARMONA de UZCATEGUI, Mrs. M. L.; Dr. Biol., Assoc. Prof. – Cat. de Embriol., Fac. de Med., Univ. de Los Andes, MERIDA, Venezuela
a Development of the vascular system, especially of the skin and its orifices (injection-preparations). Sus domesticus (Artiodactyla), Canis familiaris (Carnivora), Homo sapiens (Primates)
b Developmental pathology of the skeletal system. Homo sapiens (Primates)
c Teratogenesis of craniofacial defects. Same species as b
d Some aspects of comparative embryology and morphology of the placenta. Various species, a.o. Homo sapiens (Mammalia)

CARNEGIE, Mrs. J. A.; B.Sc. – Dept. of Reprod. Physiol., Anim. Res. Inst., OTTAWA, Ont. K1A 0C6, Canada
a Comparative aspects of early embryo-uterine interaction leading to implantation. Ovis aries, Bos taurus, Sus scrofa (Artiodactyla)

CARPENTER, S. J.; Ph.D., Assoc. Prof. – Dept. of Anat./Cytol., Dartmouth Med. School, HANOVER, NH 03755, U.S.A.
a Placental ultrastructure. (Rodentia)
b Teratogenic effects of heavy metals, electron microscopy. Same species as a

CARROLL, E. J., Jr.; Ph.D. – Dept. of Zool., Univ. of Maryland, COLLEGE PARK, MD 20742, U.S.A.
a Biochemistry of fertilization: block to polyspermy, protease enzymology. Strongylocentrotus purpuratus (Echinoidea)
b Control of enzyme systems in developmental processes. Same species as a, and Dendraster exentricus (Echinoidea)

CASSENS, R. G.; Ph.D., Prof. – 272 Muscle Biol. Lab., Univ. of Wisconsin, 1805 Linden Drive, MADISON, WI 53706, U.S.A.
a Myogenesis and influence of nerve on development of fiber types. (Mammalia)

CASSIDY, J. D., O. P.; Ph.D. – Dept. of Biol. Sci., Northwestern Univ., Hogan Hall, EVANSTON, IL 60201, U.S.A.
a Oogenesis. Habrobracon juglandis (Hymenoptera)

CASTON, J. D.; Ph.D., Prof. – Dept. of Anat., Developm. Biol. Center, Case Western Reserve Univ., 2119 Abington Rd., CLEVELAND, OH 44106, U.S.A.
a Nucleic acids and protein synthesis during development (ribosomes). Rana pipiens, Xenopus laevis (Anura)
b Role of folate binders (high affinity) in regulation of folate metabolism and utilization during normal and neoplastic development

CATHER, J. N.; Ph.D., Prof. – Div. of Biol. Sci., Univ. of Michigan, ANN ARBOR, MI 48109, U.S.A.
a The differentiation of the shell gland. Ilyanassa obsoleta and other spp. (Gastropoda; Lamellibranchia)
b Cellular interactions. (Annelida; Mollusca and other Spiralia)
c The role of the vegetal body in the development of fresh-water species. Bithynia tentaculata and other spp. (Gastropoda)

CAUNA, N.; M.D., D.Sc., Prof. – Dept. of Anat. and Cell Biol., Univ. of Pittsburgh, 3550 Terrace St., PITTSBURGH, PA 15261, U.S.A.
a Regeneration of nerve endings in skin and nasal mucosa. Rattus spec. (Rodentia), Homo sapiens (Primates)

CAVENEY, S.; Dr.Phil. – Dept. of Zool., Univ. of W. Ontario, LONDON, Ont. N6A 5B7, Canada
a Pattern formation during postembryonic growth: establishment, stability and regulation of polarity in the epidermis. Tenebrio molitor (Coleoptera)
b Developmental physiology of the epidermis, with emphasis on the electrophysiology of intercellular communication during metamorphosis. Same species as a

CERON, G.; Ph.D. – Dept. of Anat., Jefferson Med. Coll., 1020 Locust St., PHILADELPHIA, Pa. 19107, U.S.A.
a Control of cell interactions during morphogenesis. Hydra littoralis (Hydrozoa)
b Cell reaggregation as a model system for studying teratogenic action of drugs. Same species as a

CHALLICE, C. E.; D.Sc., Ph.D., Prof. – Dept. of Physics, Fac. of Sci., Univ. of Calgary, CALGARY, Alta. T2N 1N4, Canada
a Light and electron microscopy of the developing heart, especially the conducting system. Mus musculus (Rodentia), Oryctolagus cuniculus (Lagomorpha)

CHAMBERLAIN, J. G.; Ph.D. – Dept. of Anat., Sch. of Dent., Univ. of the Pacific, SAN FRANCISCO, CA 94115, U.S.A.
a Pathogenesis of experimentally induced congenital hydrocephalus: 6-aminonicotinamide injected during pregnancy. Rattus rattus (Rodentia)
b Intra-amniotic injections of metabolites and antimetabolites as replacement therapy during teratogenesis. Same species as a
c Scanning electron microscopy of developing brain (including macrophages). Same species as a

CHAMBERLAIN, J. P.; Ph.D. – Div. of Biol. Sci., Univ. of Michigan, ANN ARBOR, MI 48109, U.S.A.
a The regulation of gene transcription in embryos. Lytechinus variegatus (Echinoidea)

CHAMBERS, C. A. – Biol. Div., Oak Ridge Natl. Lab., P. O. Box Y, OAK RIDGE, TN 37830, U.S.A.
a Characterization and study of function of satellite DNAs. Pagurus pollicaris, Cardisoma guanhumi, Gecarcinus lateralis (Decapoda, Crustacea) (with D. M. SKINNER, N. T. CHRISTIE, and C. A. HOLLAND)
CHANDRA MOHAN NAIDU, R.; M.Sc. – Dept. of Zool., Government Coll., ANANTAPUR 515001, India
a Reevaluation of the teratogenic potential of chloramphenicol. Gallus domesticus (Aves)
b Effect of methionine on development. Same species as a
c Role of cysteine, methionine and ascorbic acid in larval regeneration. Rana tigrina (Anura)
d Origin, distribution, and morphology of motor end-plates in the embryo. Same species as a
e Effect of steroid hormones on development. Same species as a
f Neurosecretion in the larval regeneration process. Same species as c
g Neuro-endocrine involvement in the appendage regeneration. Paratelphusa hydrodomus (Decapoda, Crustacea)
CHANG, C. Y.; Ph.D. – Inst. of Zool., Acad. Sinica, Haitien, PEKING (53), People's Republ. of China
CHASE, H. B.; Ph.D., Prof. – Div. of Biol. and Med. Sci., Brown Univ., PROVIDENCE, R.I. 02912, U.S.A.
a Developmental genetics of hair growth phases, using mutants hairless (hr), Rex (Re), and satin (sa). Mus musculus (Rodentia)
b Hereditary anophthalmia as influenced by teratogens. Same species as a
c Regeneration in vibrissal follicles. Perameles nasuta, Trichosurus vulpecula (Marsupialia)
CHAUDHRY, H. S.; D.Phil., Prof. – Dept. of Zool., Fac. of Sci., Univ. of Gorakhpur, GORAKHPUR 273001, India
CHEN, Wen-Tien; M.S. – Dept. of Biol., Yale Univ., NEW HAVEN CT 06520, U.S.A.
a Embryogenesis. Halisarca dujardini, H. nahantensis (Porifera)
CHENG, Th. C.; Ph.D., Prof. – Dept. of Biol., Lehigh Univ., BETHLEHEM, PA 18015, U.S.A.
CHEPENIK, K.; Ph.D., Assoc. Prof. – Dept. of Anat., Jefferson Med. Coll., 1020 Locust St., PHILADELPHIA, PA 19107, U.S.A.
a Phospholipid metabolism and transport as it relates to cellular membrane biogenesis and composition during normal and abnormal embryogenesis. Rattus norvegicus (Rodentia)
b Placental lipid metabolism and transport during normal and abnormal differentiation. Same species as a
CHIBUZO, G. A.; D.V.M. – Tuskegee Inst., Sch. of Vet. Med., TUSKEGEE, AL 36088, U.S.A.
a Serial sections of embryos at spaced ages, available for inspection. Cani familiaris, Felis catus (Carnivora), Bos taurus, Ovis aries (Artiodactyla), and other Mammalia (with H. E. EVANS, Ithaca)
b Comparable developmental stages. Canis familiaris (Carnivora), Homo sapiens (Primates) (with H. E. EVANS)
CHIPLONKAR, J. M.; M.Sc. – Dept. of Zool., Univ. of Poona, Ganeshkind, POONA 411007, India
CHRISMAN, C. L.; Ph.D. – Dept. of Anim. Sci., Purdue Univ., Lilly Hall of Life Sci., WEST LAFAYETTE, IN 47907, U.S.A.
a Effect of maternal hyperthermia on chromosome abnormalities; spindle fiber dysfunction (blastocyst to eighth day). Mus musculus (Rodentia)
b Gonadotropin induced ovulation and chromosome abnormalities and congenital defects in embryo, fetus, and neonate. Same species as a
CHRISPEELS, M. J.; Ph.D. – Dept. of Biol., C–016, Univ. of Calif. San Diego, LA JOLLA, CA 92093, U.S.A.
a Mechanism of protein secretion and cell wall formation in phloem explants and cell culture. Nicotiana tabacum (Solanaceae) Daucus carota (Umbelliferae)
b Biochemical mechanism of senescence in cotyledons of Phaseolus aureus and leaves of Zea mays; control of proteolysis and autolysis in cells. (Papilionaceae; Gramineae)
CHRISTIE, N. T. – Biol. Div., Oak Ridge Natl. Lab., P. O. Box Y, OAK RIDGE, TN 37830, U.S.A.
a Characterization and study of function of satellite DNAs. Pagurus pollicaris, Cardisoma guanhumi, Gecarcinus lateralis (Decapoda, Crustacea) (with D. M. SKINNER, C. A. CHAMBERS, and C. A. HOLLAND)
b Organization of the genome. Gecarcinus lateralis, Geryon quinquedens (Decapoda, Crustacea) (with D. M. SKINNER and C. A. HOLLAND)
CHUANG HSIAO HIU; Dr.rer.nat.habil. – Lab. of Developm. Physiol., Inst. for Exper. Biol., Acad. Sinica, 320 Yo Yang Rd., SHANGHAI, People's Republ. of China
CHURCH, N. S. †; Ph.D. – Agric. Canad. Res. Stat., SASKATOON, Sask., Canada
CHURCH, R. B.; Ph.D., Prof. – Div. of Med. Biochem., Health Sci. Ctr., Univ. of Calgary, CALGARY, Alta T2N 1N4, Canada
a RNA transcriptional complexity during pre and post implantation development. (Mammalia)
b Analysis of RNA transcription by repetitive and non-repetitive DNA in developing neural tissue. Mus musculus (Rodentia), Oryctolagus cuniculus (Lagomorpha)
c Embryo transplantation and manipulation. (Mammalia)
d Developmental studies of genome expression. Muntiacus (Artiodactyla)
CLARK, A. M.; Ph.D., Prof. – Dept. of Biol. Sci., Univ. of Delaware, NEWARK, DE 19711, U.S.A.
a Control of differentiation through analysis of mosaics. Habrobracon juglandis (Hymenoptera)
CLAXTON, J. H.; Ph.D. – Dept. of Agric. Biol., Univ. of New England, ARMIDALE, N.S.W. 2351, Australia
CLAYCOMB, W. C.; Ph.D. – Dept. of Cell Biophys., Baylor Coll. of Med., HOUSTON, TX 77030, U.S.A.
a Differentiation of cardiac muscle in fetus and neonate. Rattus rattus (Rodentia)

CLELAND, R. E.; Ph.D., Prof. – Dept. of Bot., Univ. of Washington, SEATTLE, WA 98195, U.S.A.
a Effects of auxin on physical and biochemical properties of cell walls. Avena sativa (Gramineae)
b Control of development and regeneration. Griffithsia pacifica (Rhodophyceae)
CLEMENT, A. C.; Ph.D., Prof. – Dept. of Biol., Emory Univ., ATLANTA, GA 30322, U.S.A.
a Experimental analysis of early embryonic determination. Ilyanassa obsoleta (Gastropoda)
CLEMETSON, C. A. B.; M.D., Prof. – Dept. of Obstet. and Gynecol., Methodist Hosp., 506 Sixth St., Brooklyn, NEW YORK, NY 11215, U.S.A.
a Electrochemical aspects of ovo-implantation. Rattus norvegicus (Rodentia)
CLERMONT, Y.; Ph.D., Prof. – Dept. of Anat., McGill Univ., P. O. Box 6070, Station A, MONTREAL, Que. H3C 3G1, Canada
No work on developmental biology in progress
CLUTTER, Ms. M. E.; Ph.D. – Dept. of Biol., Yale Univ., NEW HAVEN, CT 06520, U.S.A.
a Experimental embryogenesis including fine structural changes of cell surfaces, structural and functional aspects of polytene chromosomes. Phaseolus coccineus (Papilionaceae)
b Experimental embryogenesis of a high-protein species. Psophocarpus tetragonolobus (Leguminosae)
COALSON, R. E.; Ph.D., Prof. – Dept. of Anat. Sci., Univ. of Oklahoma Health Sci. Ctr., P. O. Box 26901, OKLAHOMA-City, OK 73190, U.S.A.
a Studies on insulin in the developing pancreas. Gallus domesticus, Columba livia (Aves), Rattus norvegicus, Cavia porcellus (Rodentia)
COELHO, O. P. – Dept. of Morphol., Fac. de Cienc. Med., Univ. Catolica de Curitiba, 80.000 CURITIBA, Parana, Brazil
COELINGH BENNINK, H. J. T.; M.D. – Dept. of Obstet. and Gynecol., Ctr. for Res. in Reprod. Biol., Women's Hosp., ANN ARBOR, MI 48109, U.S.A.
a Cervical mucus and immune reactions. (Primates)
COHEN, M. H.; Prof. – Dept. of Biophys. and Theoret. Biol., Div. of Biol. Sci., Univ. of Chicago, 920 E. 58th St., CHICAGO, IL 60637, U.S.A.
COHEN, Ph. P.; Ph.D., M.D., Prof. – Dept. of Physiol. Chem., Univ. of Wisconsin, 1215 Linden Drive, MADISON, WI 53706, U.S.A.
COHEN, S.; Ph.D., Prof. – Dept. of Biochem., Med. Sch., Vanderbilt Univ., NASHVILLE, TN 37203, U.S.A.
COHN, S. A.; Ph.D., Prof. – Dept. of Anat., Ctr. for Health Sci., Univ. of Tennessee, 800 Madison Ave., MEMPHIS, TN 38163, U.S.A.
COLE, M. B., Jr.; Ph.D. – Dept. of Orthop. Surg., Loyola Univ., 2160 So. 1st Ave., MAYWOOD, IL 60153, U.S.A.
a Oogenesis, especially nucleocytoplasmic interactions in primary oocytes (cytochemistry, electron microscopy, autoradiography). Rana pipiens (Anura)
b Effects of electric current, magnetic fields, and denervation on regeneration and growth, especially of musculoskeletal system. Rattus rattus (Rodentia), Homo sapiens (Primates)
c Light and electron microscopic cytochemistry of developing tissues especially bone. Same species as b
COLEMAN, J. R.; Ph.D., Assoc. Prof. – Div. of Biol. and Med. Sci., Brown Univ., PROVIDENCE, RI 02912, U.S.A.
a Differentiation of embryo cells in culture, particularly skeletal muscle: synthesis and processing of RNA, effects of nucleoside analogs on cellular differentiation, developmental physiology and ultrastructure. Gallus domesticus (Aves)
b Organization of DNA in the genome. Same species as a
c Development of insulin responsiveness in skeletal muscle. Rattus norvegicus (Rodentia)
COLEMAN, R. D.; D.D.S., Prof. – Dept. of Anat., Sch. of Dent., Univ. of Calif., 3rd & Parnassus Aves., SAN FRANCISCO, CA 94143, U.S.A.,
COLLIER, J. R.; Ph.D., Prof. – Dept. of Biol., Brooklyn Coll., Bedford Ave. & Ave. H, NEW YORK, Brooklyn, NY 11210, U.S.A.
a Nucleic acid and protein synthesis, especially transcription and regulation of the genome during embryogenesis: 1 RNA and protein synthesis during early development; 2. the role of DNA-dependent RNA synthesis in embryogenesis. Ilyanassa obsoleta (Gastropoda)
COLLINS, M. F.; Ph.D. – Dept. of Anat., Health Center, Univ. of Connecticut, FARMINGTON, CT 06032, U.S.A.
COLWIN, A. L.; Ph.D., Prof. – 320 Wooderest Rd., KEY BISCAYNE, FL 33149, U.S.A.
COLWIN, Mrs. L. HUNTER; Ph.D., Prof. – 320 Wooderest Rd., KEY BISCAYNE, FL 33149, U.S.A.
CONKLIN, J. L.; Ph.D., Prof. – Dept. of Anat., Michigan State Univ., EAST LANSING, MI 48823, U.S.A.
a Histochemistry and ultrastructure of angiogenesis and hematopoiesis in the early embryo. Gallus domesticus (Aves)
CONNELY, T. G.; Ph.D. – Dept. of Anat., Med. Sch., Univ. of Michigan, Med. Sci. Bldg II, ANN ARBOR, MI 48109, U.S.A.
a Pituitary gland enhancement of lens regeneration from the dorsal iris in organ culture. Notophthalmus viridescens (Urodela)
b Developmental cytology of functional cell types in the pituitary, using immunohistochemical techniques. Ambystoma mexicanum (Urodela)
c Quantitative studies of growth and morphogenesis in regeneration blastemas. Same species as a
CORLISS, C. E.; Ph.D., Assoc. Prof. – Dept. of Anat., Ctr. for Health Sci., Univ. of Tennessee, 800 Madison Ave., MEMPHIS, TN 38163, U.S.A.
COSTELLO, D. P.; Ph.D., Prof. – Dept. of Zool., Univ. of N. Carolina, CHAPEL HILL, NC 27514, U.S.A.

COULOMBRE, A. J.; Ph.D. – Sect. Exp. Embryol., Lab. of Vision Res., Natl. Eye Inst., Natl. Inst. of Health, Bldg. 6, Rm 203, BETHESDA, MD 20014, U.S.A.
a Basement membranes in ocular morphogenesis. Gallus domesticus (Aves)
b Growth and morphogenesis of the cornea. Same species as a

COULOMBRE (LACY), Mrs. J. L. †; B.S. – Natl. Eye Inst., N.I.H., BETHESDA, MD 20014, U.S.A.

COULSON, Mrs. P. B.; Ph.D. – Dept. of Zool., Univ. of Tennessee, KNOXVILLE, TN 37916, U.S.A.

COUNCE (NICKLAS), Mrs. S. J.; Ph.D., Assoc. Prof. – Dept. of Anat., Duke Univ., DURHAM, NC 27710, U.S.A.
a Mutants altering morphogenetic patterns studied to define genetic properties of organelles and cellular behavior implicated in cell shape change and movement. Drosophila melanogaster (Diptera)
b Molding of nervous system, embryonic hypodermis, and apodemal attachments involve patterned (temporal, spatial) cell death. Heteropeza spec., Miastor spec. (Diptera)

COUSINEAU, G. H.; Ph.D., Assoc. Prof. – Lab de Biol. Molée., Dépt. de Biol., Univ. de Montréal, C.P. 6128, MONTREAL 101, QUE, Canada
a Macromolecule synthesis in the embryo; cell division and differentiation. Strongylocentrotus purpuratus (Echinoidea)

COWARD, S. J.; Ph.D., Assoc. Prof. – Dept. of Zool., Univ. of Georgia, ATHENS, GA 30602, U. S. A.
a Fine structure and physiology of regeneration, with emphasis on the stability of phenotype and stem cell populations. Dugesia dorotocephala, Bdelloura candida, Phagocata gracilis (Turbellaria)
b Fine structure of gametogenesis and early development, with special attention to chromatoid bodies and early cytodifferentiation. Limulus polyphemus (Xiphosura), Chironomus tentans (Diptera)

COWDEN, R. R.; Dr. phil., Prof. – Coll. of Med., East Tennessee State Univ., JOHNSON CITY, TN 37601, U.S.A.
a Cytology and cytochemistry of transplantation immunity: role of lymphocytes and macrophages. Necturus maculosus (Urodela)
b Cytochemistry of chromatin in embryology by image analysis techniques, ultrastructure, and fluorescence cytochemistry. Ascaris lumbricoides (Nematoda)

COX, P. G.; Ph.D., Assoc. Prof. – Dept. of Biol. Sci., Mississippi Coll., P. O. Box 4045, CLINTON, MS 39058, U.S.A.

CRAGG, B. G.; Ph.D. – Dept. of Physiol., Monash Univ., P. O Box 92, CLAYTON, Viet. 3168, Australia
a Development of synapses in visual cortex. Felis domestica (Carnivora)
b Development of synapses in the cortex. Homo sapiens (Primates)

CRAIG, D. A.; Ph.D., Assoc. Prof. – Dept. of Entomol., Univ. of Alberta, EDMONTON, Alta. T6G 2E3, Canada
a Descriptive embryology. (Nematocera, Diptera)

CRAWFORD, R. B.; Ph.D., Prof. – Dept. of Biol., Trinity Coll., HARTFORD, CT 06106, U.S.A.
a The relationship of the synthetic pathways of adenosine triphosphate to morphogenesis and differentiation. Fundulus heteroclitus (Teleostei), Ambystoma maculatum (Urodela)
b The kinetics of RNA synthesis during early embryogenesis, especially in relation to energetics metabolism. Same species as a
c Activation of hexokinase activity in embryos. Ambystoma maculatum (Urodela)
d Relationship of free amino acid pool to protein synthesis in embryos. Same species as a
e Effects of pesticides on embryogenesis. Fundulus heteroclitus (Teleostei)
f Ionic requirements and enzymology of amino acid transport in eggs and embryos. Echinarachnius parma, Strongylocentrotus purpuratus and other spp. (Echinodermata)

CROWELL, P. S.; Ph.D., Prof. – Dept. of Zool., Indiana Univ., Jordan Hall 224, BLOOMINGTON, IN 47401, U.S.A.

CRUZ LANDIN, Mrs. C. da; Ph.D., Assoc. Prof. – Dept. de Morfol. Anim., Fac. de Filos. Ciênc. e Letras, C. P. 178, RIO CLARO 13.500, Brazil
a Ultrastructure of flight muscle morphogenesis. Melipona quadrifasciata anthidiodes (Hymenoptera)
b Origin of the salivary, mandibular, hypopharyngal, and postpharyngal glands during pupation. Camponotus rufipes (Hymenoptera)
c Nuclear behavior during salivary gland differentiation (morphology, volume and amount of DNA). Same species as a
d Senescence of larval tissues (morphology, histochemistry). Trigona (Scaptotrigona) postica (Hymenoptera)

CUNHA, G. R.; Ph.D. – Dept. of Anat., Sch. of Med., Stanford Univ., STANFORD, CA 94305, U.S.A.
a Role of hormones in the development of structures composed of epithelium and mesenchyme (prostate, seminal vesicles, preputial gland, vagina). Mus musculus (Rodentia)
b Tissue interactions in carcinogenesis. Same species as a

CUTLER, L. S.; D.D.S., Ph.D. – Dept. of Oral Biol., Sch. of Dent. Med., Univ. of Connecticut Health Center, FARMINGTON, CT 06032, U.S.A.
a Epithelial-mesenchymal interactions in the differentiation of the submandibular gland and in carcinogenesis (electron microscopy). Rattus spec. (Rodentia)
b Electron microscopic cytochemistry of various enzymes (alkaline phosphatase, adenyl cyclase and phosphodiesterase) during differentiation of the submandibular gland. Same species as a
c Role of Ca-ions, cyclic AMP, and beta-receptors in he secretory process in developing submandibular gland. Same species as a

DAENTL, Ms. D. L.; M.D. – Dept. of Anat., Sch. of Med., Univ. of Calif., 630 S., 3rd & Parnassus, SAN FRANCISCO, CA 94143, U.S.A.

DAHM, K. H.; Dr.rer.nat., Prof. – Inst. of Developm. Biol., Texas A & M Univ., COLLEGE STATION, TX 77843, U.S.A.

a Juvenile hormone identification in different species and stages; biosynthesis in vivo and in vitro. Hyalophora cecropia, Manduca sexta (Lepidoptera), Leptinotarsa decemlineata, Tenebrio molitor (Coleoptera), Periplaneta americana, Nauphoeta cinerea (Blattodea)

DAIKOKU, Sh.; M.D., Ph.D., Prof. – Dept. of Anat., Tukushima Univ., 3 chome, Kuramoto-cho, TOKUSHIMA, 770 Japan

a Experimental embryology of the endocrine organs. Rattus rattus (Rodentia)

b Embryology of the motor and sensory nerve terminals. Homo sapiens (Primates)

c Functional development of the hypothalamo-hypophysial system. Same species as a

DALTON, H. C.; Ph.D., Prof. – Dept. of Biol., Coll. of Sci., Pennsylvania State Univ., 208 Life Sciences I, UNIVERSITY PARK, PA 16802, U.S.A.

DAN, Mrs. J. C.; Ph.D., Prof. – Embryol. Sect., Dept. of Biol., Ochanomizu Univ., 2–1–1 Otsuka, Bunkyo-ku, TOKYO, 112 Japan

DAN, K.; Ph.D., Prof. – Tokyo Metropolitan Univ., 1–1 chome, Yakumo-machi, Meguro-ku, TOKYO, Japan

DAN (SOHKAWA), Mrs. M.; D.Sc. – Lab. of Developm. Biol., Dept. of Biol., Osaka City Univ., 459 Sugimoto-cho, Sumiyoshi-ku, OSAKA, 558 Japan

a Induction of conjugation. Physarum polycephalum (Eumycetozoina)

b Cell studies in early embryogenesis. (Echinodermata), Bufo bufo (Anura)

DANIEL, J. C., Jr.; Ph.D., Prof. – Dept. of Zool., Univ. of Tennessee, KNOXVILLE, TN 37916, U.S.A.

a Early development and uterine physiology. (Mammalia)

DAS, G. D.; Ph.D., Assoc. Prof. – Dept. of Biol. Sci., Purdue Univ., WEST LAFAYETTE, IN 47907, U.S.A.

a Proliferation, migration, and differentiation of transplanted neuron precursors and undifferentiated neurons of the brain. (Mammalia)

b Neuroembryogenesis and morphogenesis of the cerebellum. Rattus spec. (Rodentia)

c Electron microscopy of cell-to-cell interactions in the differentiation of neurons and glia cells. Same species as b

d Cellular aspects of teratology in the cerebellum and cerebral cortex of embryos following low-level x-ray irradiation and/or administration of N-ethyl-N-nitrosourea. Same species as b

D'ASARO, C. N.; Ph.D., Assoc. Prof. – Gamma Coll., Fac. of Biol., Univ. of W. Florida, PENSACOLA, FL32504, U.S.A.

a Spawning and larval development. (Prosobranchia, Gastropoda)

b Development and culture, Arenicola cristata (Polychaeta)

DASGUPTA, B.; Ph.D., Prof. – Dept. of Zool., Presidency Coll., College St., CALCUTTA–12, India

a Asexual reproduction and development. Hepatocystis r. rayi (Haemosporidia, Sporozoa) in Petaurista magnificus (Rodentia)

DAVAI, D. M.; M.D. – Dept. of Postgrad. Stud. in Anat. Sci., Jundi Shapur Univ., P.B. 1059, AHWAZ, Iran

a Graphical self instruction approach to teaching of embryology. (with I. BHARGAVA)

DAVE, Y. S.; Ph.D. – Dept. of Bot., Sardar Patel Univ., VALLABH VIDYANAGAR 388120, Gujarat, India

a Morphogenetic studies on tendrils. Bauhinia spec. (Caesalpinaceae), Antigonon leptopus (Polygonaceae), Cardiospermum halicacabum (Sapindaceae; Vitaceae. Passifloraceae)

b Structural organization and development of shoot apex, axillary buds, nectaries, trichomes, and stomata. Pedilanthus tithymaloides (Euphorbiaceae)

c Developmental morphology, histochemistry, and ultrastructure of fruits and seeds, especially pericarp epidermis. (Solanaceae and other Dicotyledonae)

DAVENPORT, R.; Ph.D., Assoc. Prof. – Dept. of Genet. and Developm., Univ. of Illinois, 515 Morrill Hall, URBANA, IL 61801, U.S.A.

a Biochemistry of cellular interactions during oogenesis. Oncopeltus fasciatus (Hemiptera)

b Gene transcription during pre-larval development. Ascidia nigra (Ascidiacea)

DAVIDSON, E. H.; Ph.D., Assoc. Prof. – Div. of Biol., Calif. Inst. of Technol., PASADENA, CA 91109, U.S.A.

a Molecular biology of oogenesis and early development, particularly gene activation. Ilyanassa obsoleta (Gastropoda), Strongylocentrotus purpuratus (Echinoidea), Engystomops pustulosus, Xenopus laevis (Anura)

DAVIS, F. C.; Ph.D. – Dept. of Zool., Univ. of Florida, GAINESVILLE, FL 32611, U.S.A.

DAVIS, G. R. F.; Ph.D. – Agric. Canada Res. Stat., 107 Science Crescent, SASKATOON, Sask. S7N 0X2, Canada

a Effect on larval growth of novel proteins; correlation with amino acid requirements. Tenebrio molitor (Coleoptera)

DAVIS, J. C.; Ph.D. – Dept. of Popul. Dynamics, Sch. of Hygiene and Publ. Health, Johns Hopkins Univ., 615 N. Wolfe St., BALTIMORE, MD 21205, U.S.A.

a Morphogenetic movements of immature testicular cells in culture; especially acquisition of structures similar to testicular tissue in situ. Rattus spec. (Rodentia)

DAWID, I. B.; Ph.D. – Dept. of Embryol., Carnegie Inst. of Wash., 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.

DEAN, D.; Ph.D., Prof. – Dept. of Oceanogr., Ira C. Darling Ctr. for Res., Teaching, and Serv., (Marine Lab.), Univ. of Maine, WALPOLE, ME 04573, U.S.A.
a Reproductive biology. Nereis virens (Polychaeta)
DEARLOVE, G. E.; Ph.D. – Dept. of Biochem., Baylor Coll. of Med., HOUSTON, TX 77030, U.S.A.
a Isozyme patterns of developing larval and regenerating limbs (LDH, MDH, GOT, Esterase, 6–PGD). Ambystoma maculatum (Urodela)
b Minimal amount of dedifferentiated tissue required to continue limb regeneration following denervation in adults. Notophthalmus viridescens (Urodela)
DE BAVAY, J. M. F. X.; B.Sc. – Dept. of Zool., Sch. of Biol. Sci., Univ. of New England, ARMIDALE, N.S.W. 2351, Australia
DECK, J. D.; Ph.D., Assoc. Prof. – Dept. of Anat., Univ. of Virginia, Jordan Med. Bldg., 1300 Jefferson Park Ave., CHARLOTTESVILLE, VA 22901, U.S.A.
a Cytological changes in muscle after injury. Diemictylus viridescens (Urodela)
b Wound healing and scar formation in skin. Sus spec. (Artiodactyla), Homo sapiens (Primates)
c The influence of leg innervation on the appearance of continually-growing bony calluses following amputation. Rattus spec. (Rodentia)
DECKER, J. D.; Ph.D., Assoc. Prof. – Dept. of Anat., Coll. of Med., Univ. of Missouri, COLUMBIA, MO 65201, U.S.A.
a Neurogenesis and the development of behavior. (Reptilia; Aves; Mammalia)
b Grafts of vascular umbilical cord tissue from Homo sapiens (Primates) to Canis familiaris (Carnivora)
DECKER, R. S.; Ph.D. – Dept. of Cell Biol., Health Sci. Center, Univ. of Texas, 5323 Harry Hines Blvd., DALLAS, TX 75235, U.S.A.
a Ultrastructure and electrophysiology of the assembly of cell junctions in vivo and in vitro. Rana pipiens, R. catesbeiana (Anura), Mus musculus, Rattus spec. (Rodentia)
b Lysosomal activation during organogenesis: biochemical and cytochemical changes in lysosomal activity during cell differentiation and remodeling. Gallus gallus (Aves). Rana pipiens, R. catesbeiana (Anura)
de FABRO, Miss S. P.; Ph.D., Prof. – Inst. de Biol. Cel., Univ. Nac. de Córdoba, C.P. 362, CÓRDOBA, Argentina
a Sorbitol-dehydrogenase and acid phosphatase during embryonic development: kinetics, molecular forms, cytochemical localization, etc. Gallus domesticus (Aves)
DE GENNARO, L. D.; Ph.D., Prof. – Dept. of Biol., Le Moyne Coll., LeMoyne Heights, SYRACUSE, NY 13214, U.S.A.
a Growth and differentiation of glycogen body (ultrastructure, metabolism). Gallus domesticus (Aves)
b Effects of lead on development of nervous system. Gallus domesticus (Aves), Mus musculus (Rodentia)
DeHAAN, R. L.; Ph.D., Prof. – Dept. of Anat., Emory Univ., ATLANTA, GA 30322, U.S.A.
a Pacemaker formation and the initiation of the heartbeat; developmental electrophysiology and spontaneous activity of embryonic heart cells in tissue culture; rate regulation in the developing heart. Gallus gallus (Aves)
b Communication and electrical coupling among cells; differentiation of membrane function. Same species as a
c Cellular mechanisms underlying cardiac morphogenesis; regulation of cell adhesiveness, motility and mitotic activity. Same species as a
DE JAGER, Mrs. L.; B.Sc. – Exp. Embryol. Res. Unit of the M.R.C., Dept. of Anat., Univ. of the Orange Free State, P. O. Box 339, BLOEMFONTEIN 9300, S. Africa
a Origin of the cartilaginous cochlear capsule. Gallus domesticus (Aves)
De LAHUNTA, A.; D.V.M., Ph.D., Prof. – Dept. of Anat., N.Y. State Vet. Coll., Cornell Univ., ITHACA, N.Y. 14850, U.S.A.
a Teratogenesis of griseofulvin (malformations of eyeballs, skull, and brain). Felis domestica (Carnivora)
b Incidence of spinal dysraphism; its relationship to vertebral column malformations. domestic Mammalia
del PINO, E. J.; Biochem. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S.M. de TUCUMÁN, Argentina
a Chemical factors involved in fertilization: jelly coats and diffusible factors. Bufo arenarum (Anura)
b Vitelline envelope: 1. physiocochemical properties; 2. lectin receptors involved in fertilization. Same species as a
del PINO, Miss E. M.; Ph.D., Prof. – Inst. de Cienc., Pontificia Univ. Católica del Ecuador, Apartado 2184, QUITO, Ecuador
a Morphological and physiological maternal adaptations for embryonic incubation and characteristics of embryonic development in the maternal pouch. Gastrotheca riobambae, Flectonotus pygmaeus (Hylidae, Anura)
del RÍO, A. G. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina
a Sperm maturation: epididymal activity. Cavia porcellus, Rattus norvegicus (Rodentia)
DeMAGGIO, A. E.; Ph.D., Prof. – Dept. of Biol. Sci., Dartmouth Coll., HANOVER, NH 03755, U.S.A.
a Experimental developmental morphology. (Pteridophyta; Spermatophyta)

DENT, J. N.; Ph.D., Prof. – Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTESVILLE, VA 22903, U.S.A.
a Metamorphic patterns. Various species (Amphibia)
b Hormonal effects in integumentary structures. (Amphibia)
DERBY, A. A.; Ph.D. – Biol. Dept., Univ. of Missouri-St. Louis, 8001 Natural Bridge Rd., ST. LOUIS, MO 63121, U.S.A.
a Effect of thyroxine and prolactin in tail resorption in vivo and in vitro. (Amphibia)
b Epithelial wound healing of tailfin pieces in vitro. Rana pipiens (Anura)
DESALU, A. B. O.; Dr. – Dept. of Anat., Univ. of Ibadan, IBADAN, Nigeria
DE TERRA (WHITTAKER), Mrs. N.; Ph.D. – Dept. of Anat., Hahnemann Med. Coll., PHILADELPHIA, PA 19102, U.S.A.
a Morphogenesis and nucleo-cytoplasmic interactions (microsurgery, autoradiography, electron microscopy). Stentor coeruleus (Ciliata)
DEVREOTES, P.; B.A. – Dept. of Embryol., Carnegie Inst. of Wash., 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.
DiBERARDINO, Miss M. A.; Ph.D., Prof. – Dept. of Anat., Med. Coll. of Pennsylv., 3300 Henry Ave., PHILADELPHIA, PA 19129, U.S.A.
a Nuclear, chromosomal, cytoplasmic and protein changes during development. Rana pipiens (Anura)
b Nucleo-cytoplasmic exchange of non-histone proteins in embryos. Same species as a
DICKEY, J. F.; Ph.D., Assoc. Prof. – Dept. of Dairy Sci., Coll. of Agric., Clemson Univ., CLEMSON, SC 29631, U.S.A.
DICKINSON, W. J.; Ph.D. – Biol. Dept., Univ. of Utah, 201 Biol. Bldg., SALT LAKE CITY, UT 84112, U.S.A.
DICKSON, A. D.; M.D., Prof. – Div. of Pathol., Fac. of Med., Univ. of Calgary, CALGARY, Alta. T2N 1N4, Canada
DICKSON, D. R.; Ph.D., Prof. – Dept. of Pediat., Mailman Ctr. for Child Developm., Univ. of Miami, P. O. Box 520006, Biscayne Annex, MIAMI, FL 33137, U.S.A.
a Normal embryology and developmental morphology of the head and neck; specific interest in anatomical bases of craniofacial anomalies such as cleft palate. Homo sapiens (Primates) (with W. MAUE-DICKSON)
DIEHL, F. A.; Ph.D., Assoc. Prof. – Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTESVILLE, VA 22903, U.S.A.
DILLARD, W. L.; Ph.D. – Dept. of Zool., Univ. of Oklahoma, 730 Van Vleet Oval, Rm. 222, NORMAN, OK 73069, U.S.A.
a RNA biosynthesis in nucleate and anucleate cells. Acetabularia mediterranea, A. crenulata, Acicularia schenki (Chlorophyta)
b Macromolecular changes during microstome-macrostome transformation. Tetrahymena vorax, T. pyriformis (Ciliata)
DiMAMBRO, E.; B.S. – Biol. Sci. Group, Univ. of Connecticut, Box U–42, STORRS, CT 06268, U.S.A.
a Hemoglobin synthesis during larval development. Chironomus spec. (Diptera)
DIMOND, Sister M. T.; Ph.D., Prof. – Dept. of Biol., Trinity Coll., WASHINGTON, DC 20017, U.S.A.
a Effect of light on development. Terrapene carolina carolina, Chelydra serpentina (Chelonia)
DINSMORE, Ch. E.; Ph.D. – Dept. of Anat., Rush Med. Coll., CHICAGO, IL 60612, U.S.A.
a Tail regeneration following amputation and autotomy. Plethodon cinereus, Eurycea bislineata (Plethodontidae, Urodela)
b Central nervous system regeneration. Plethodon cinereus, Notophthalmus viridescens (Urodela)
DIXON, K. E.; Ph.D. – Sch. of Biol. Sci., Flinders Univ., BEDFORD PARK, S.A. 5042, Australia
a Germ plasm and germ cells. Xenopus laevis (Anura), Mus musculus (Rodentia)
b Nuclear transplantation and nuclear restrictions. Xenopus laevis (Anura)
DIXON, S. E.; Ph.D., Prof. – Dept. of Environm. Biol., Univ. of Guelph, GUELPH, Ont. N1G 2W1, Canada
DOANE, Mrs. W. W.; Ph.D. – Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, CT 06520, U.S.A.
a Developmental and physiological genetics of amylase isozymes: analysis of genetic regulatory mechanisms in cellular differentiation as revealed through the combined techniques of biochemistry, genetics and cytogenetics. Drosophila melanogaster, D. hydei and other spp. (Diptera)
b Developmental and experimental analysis of mutants characterized by abnormalities in lipid and carbohydrate metabolism, as well as in endocrine and reproductive physiology. Drosophila melanogaster (Diptera)
DODGE, Y.; Ph.D. – Dept. of Postgrad. Stud. in Anat. Sci., Jundi Shapur Univ., P.B. 1059, AHWAZ, Iran
a Stereology of the placenta at different stages in single and multiple pregnancies. Homo sapiens (Primates) (with I. BHARGAVA)
DOHERTY, R. A.; M.D. – Dept. of Pediat., Genet., Radiat. Biol. and Biophys., Univ. of Rochester, 260 Crittenden Bd., ROCHESTER, NY 14642, U.S.A.
DONADY, J. J.; Ph.D. – Dept. of Biol., Wesleyan Univ., MIDDLETOWN, CT 06457, U.S.A.
a Genetic control of cell differentiation: analysis of neuron and myocyte differentiation in mutant embryonic cells (in vitro cell culture, light microscopy, autoradiography). Drosophila melanogaster (Diptera)
b Genetic control of oogenesis and early embryonic development: analysis of maternal lethal genes and chromosomal rearrangements affecting early embryonic development. Same species as a

DONALDSON, E. M.; D.Sc., Ph.D. – Dept. of Environm., Fish. and Mar. Serv., Vancouver Lab., 4160 Marine Drive, WEST VANCOUVER, B.C. V7V 1N6, Canada
a Reproduction (all aspects). Oncorhynchus gorbusha, O. tshawytscha, O. kisutch, Ctenopharyngodon idellus (Teleostei)
DONALDSON, W. E.; Ph.D., Prof. – Poultry Sci. Dept., Sch. of Agric. and Life Sci., N. Carolina State Univ., Box 5307, RALEIGH, NC 27607, U.S.A.
a The effects of maternal diet on embryonic fat metabolism (fatty acid biosynthesis, oxidation, and interconversion). Gallus domesticus, Coturnix japonica (Aves)
DOOHER, G. B.; Ph.D. – Dept. of Anat., Med. Coll., Cornell Univ., 1300 York Ave., NEW YORK NY 10021, U.S.A.
a Effects of mutant genes on spermatogenesis. Mus musculus (Rodentia)
DORFMAN, A.; Ph.D., Prof. – Depts. of Pediat. and Biochem., Univ. of Chicago, 1101 E. 57th St., CHICAGO, IL 60637, U.S.A.
DOSSEL, W. E.; Ph.D., Prof. – Dept. of Anat., Creighton Univ., 2500 California St., OMAHA, NE 68178, U.S.A.
No work on developmental biology in progress
DOTSU, Y.; D.Agric., Prof. – Dept. of Maricult., Fac. of Fish., Nagasaki Univ., 1–14 Bunkyo-machi, NAGASAKI, 852 Japan
a Embryonic and larval development. (Gobioidei, Teleostei)
b Larval development of marine species. Panulirus japonicus (Decapoda, Crustacea)
DRACHMAN, D. B.; M.D., Prof. – Dept. of Neurol., Johns Hopkins Univ. Hosp., 601 N. Broadway, BALTIMORE, MD 21205, U.S.A.
a Infection of embryonic skeletal muscle with Coxsackievirus producing infectious myopathy, and secondarily resulting in joint fixation (clubbing or arthrogryposis multiplex congenita). Gallus domesticus (Aves)
b Development of bones in embryos paralyzed with botulinum toxin: biochemical parameters of bone. Same species as a
c Trophic interactions between nerves and muscles in development; role of cholinergic transmission and other factors. Same species as a
DRESDEN, M. H.; Ph.D., Assoc. Prof. – Dept. of Biochem., Baylor Coll. of Med., 1200 Moursund Ave., HOUSTON, TX 77030, U.S.A.
a Limb regeneration. Triturus viridescens (Urodela)
b Isoenzymes in development and regeneration. Same species as a
c Collagen synthesis and degradation; collagenolytic enzymes. Same species as a
d Mechanism of transformation from cercaria to schistosomula. Schistosoma mansoni (Trematoda)
DRUM, R. W. – BELLINGHAM, WA, U.S.A. see GORDON, R.
DUBEY, P. N.; D.Phil., Prof. – Dept. of Anat., Med. Coll., NAGPUR 3, M.S., India
a Histogenesis of tibia. Rana tigrina (Anura), Hemidactylus spec. (Lacertilia), Gallus domesticus (Aves)
b The effect of mitomycin-C on embryonic cells. Gallus domesticus (Aves)
DUERKSEN, J. D.; Ph.D., Prof. – Dept. of Biol., Univ. of Calgary, CALGARY, Alta. T2N 1N4, Canada
DuFRAIN, R. J.; Ph.D. – Med. and Health Sci. Div., Oak Ridge Assoc. Univ., P. O. Box 117, OAK RIDGE, TN 37830, U.S.A.
a Effect on preimplantation stages in chemically defined media of irradiation: chronic (beta from 3H) and acute 137Cs gamma and 250 kVp X-ray). Mus musculus (Rodentia)
b Mathematical model for determining cell cycle length and times of cleavage in preimplantation embryos in vivo and in vitro following hormonally induced superovulation. Same species as a
c Chromosome aberrations in somatic cells and 6 day blastocyst cells of females treated with streptonigrin or irradiation; is the transmissible aberration frequency in germ cells predicted by any somatic cell type? Oryctolagus cuniculus (Lagomorpha)
DUKE, J. L.; Ph.D. – Dept. of Obstet. and Gynecol., Ctr. for Res. in Reprod. Biol., Women's Hosp., ANN ARBOR, MI 48109, U.S.A.
a Placenta-specific antigens. (Primates)
b Abortifacient activity of placenta-specific antisera. (Primates)
DUKE, K. L.; Ph.D., Assoc. Prof. – Dept. of Anat., Med. Ctr., Duke Univ., DURHAM, NC 27710, U.S.A.
a Comparative histology of the ovary, including developmental stages and history of germ cells. (Mammalia)
b Development of rete ovarii. Various spp. (Mammalia)
DUNG, H. C.; Ph.D. – Dept. of Anat., Health Sci. Center, Univ. of Texas, 7703 Floyd Curl Drive, SAN ANTONIO, TX 78284, U.S.A.
a Etiology of developmental abnormalities in the "lethargic" and "torpid" mutants. Mus musculus (Rodentia)
b Immunology of "lethargic" mutant. Same species as a
DUNN, B. E. – Poultry Sci. Dept., Clemson Univ., Coll. of Agric., CLEMSON, SC 29631, U.S.A.
a Embryo culture in vitro; metabolism of calcium and other minerals. Gallus domesticus (Aves)
DURAN de LOPEZ, Mrs. L.; M.D., Assoc. Prof. – Cat. de Embriol., Fac. de Med., Univ. de Los Andes, MÉRIDA, Venezuela
a Developmental pathology, especially rachischisis, sympodia, anomalies of the urogenital system, etc. Homo sapiens (Primates)

b Developmental and functional anatomy of the mammary gland in relation with hormonal control, especially of the placenta and the gonads. (Rodentia), Homo sapiens (Primates)
c Histo- and toxoplasmosis as teratogenic factors. Same species as a (with E. KLEISS)
d Development of the inguinal duct. Same species as a

DWORKIN, M.; Ph.D., Prof. – Dept. of Microbiol., Univ. of Minnesota, 1060 Mayo Mem. Bldg., (Mayo Box 196), MINNEAPOLIS, MN 55455, U.S.A.
a Cell interactions during growth and development: 1. cell surface interactions; 2. developmental death; 3. population differentiation; 4. cooperative feeding during growth. Myxococcus xanthus (Myxobacteria)

EAKIN, R. M.; Ph.D., Prof. – Dept. of Zool., Univ. of California, BERKELEY, CA 94720, U.S.A.
a Electron microscopy of induction systems. Hyla regilla (Anura)
b Development of photoreceptors. Helix aspersa (Gastropoda), and other spp. (Invertebrata)

EBERT, J. D.; Ph.D., Prof. – Marine Biol. Lab., WOODS HOLE, MA 02543, U.S.A.

ECHAVE LLANOS, J. M.; M.D., Prof. – Inst. de Embriol., Biol. e Histol., Fac. de Cienc. Med., Univ. Nac. de La Plata, 60 y 120, LA PLATA, Argentina

EDDS (LUCKENBILL), Mrs. L.; Ph.D. – Dept. of Neurosci., Children's Hosp. Med. Ctr., 300 Longwood Ave., and Dept. of Neuropathol., Harvard Med. School, BOSTON, MA 02115, U.S.A. correspondence: 512 Dedham St., NEWTON, MA 02159, U.S.A.
a Neural development. (Heterosomata, Teleostei), Gallus domesticus (Aves)

EDDS, M. V., Jr.†; Ph.D., Prof. – Mass. Inst. of Technol., JAMAICA PLAIN, MA 02130, U.S.A.

EDWARDS, B. F.; Ph.D. – Dept. of Biol., Reed Coll., PORTLAND, OR 97202, U.S.A.
a Development and evolution of immunologic memory; both "cooperative" (T-B) and B cell only responses are being studied using haptens e.g. 2, 4, 6-trinitrophenyl, conjugated to erythrocyte carriers. Triturus viridescens (Urodela), Xenopus laevis, Rana pipiens (Anura)

EGAMI, N.; Ph.D., Prof. – Zool. Inst., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan
a Change in radiation-sensitivity during embryonic development. Oryzias latipes (Teleostei)
b Embryology of endocrine organs. Same species as a

EGUCHI, G.; Ph.D., Assoc. Prof. – Lab. of Cell Sci., Inst. of Biophys. and Molec. Biol., Univ. of Kyoto, Kitashirakawa, Sakyo-ku, KYOTO, 606, Japan
a Molecular and cellular events in Wolffian lens regeneration. Triturus pyrrhogaster (Urodela)
b Stability in the differentiation of cells from eye tissues in clonal cell culture. Gallus gallus (Aves), Mus bactrianus (Rodentia) (with T. S. OKADA and M. TAKEICHI)

EICHENBRENNER, J.; M.D. – Dept. of Embryol. and Teratol., Ch.Sheba Med. Ctr., Tel-Aviv Univ., TEL-AVIV, Israel
a Physio-pathology of cervical mucus in reproductive failure. Homo sapiens (Primates) (with D. M. SERR and L. A. NEBEL)

EISENBERG ZALIK, Mrs. S.; Ph.D., Assoc. Prof. – Dept. of Zool., Fac. of Sci., Univ. of Alberta, EDMONTON, Alta. T6G 2E1, Canada
a The cell surface during morphogenetic movements in the embryo: 1. isolation of cell populations by density gradient centrifugation; 2. cell electrophoresis; 3. isolation of cell membrane; 4. cell affinities. Xenopus laevis (Anura), Gallus domesticus (Aves)
b Lens regeneration: 1. clonal cell culture; 2. transplantation of individual cells; 3. morphogenetic potentials of the cell population in the dorsal iris; 4. cell surface changes during metaplasia. Triturus viridescens, Taricha granulosa (Urodela), Xenopus laevis (Anura)

ELINSON, R. P.; Ph.D. – Ramsay Wright Zool. Labs., Dept. of Zool., Univ. of Toronto, 25 Harbord St., TORONTO, M5S 1A1, Ont., Canada
a Activation response of the egg; behavior and activity of the sperm and egg pronuclei prior to first cleavage. Rana pipiens and other spp. (Amphibia)
b Lethal hybrids, especially those cases where unilateral incompatibility exists. Rana ssp., Bufo spp (Anura)

ELLGAARD, E. G.; Ph.D. – Dept. of Biol., Tulane Univ., NEW ORLEANS, LA 70118, U.S.A.
a RNA and protein metabolism in salivary glands during development. Drosophila melanogaster (Diptera)
b The relationship between mitochondrial metabolism and temperature-sensitive chromosomal puffs. Same species as a

ELLIOTT, D. S.; Ph.D. – Elliott Embryol. Enterprises, Inc., Route 2, Box 29, MITCHELL, NE 69357, U.S.A.
a Methods of culture and storage of embryos, of superovulation, and of embryo recovery and transfer. Bos taurus (Artiodactyla)

EL MEKKAWY, D. A.; M.Sc. – Dept. of Zool., Fac. of Sci., Alexandria Univ., Moharram Bey, ALEXANDRIA, Egypt.
Temporarily: Inst. of Zool., Johannes Gutenberg Univ., 6500 MAINZ, B.R.D. (Germany)
a A comparative study of histogenesis and cytogenesis of the retina. Xenopus laevis, Hymenochirus boettgeri (Anura)

ELMER, W. A.; Ph.D., Assoc. Prof. – Dept. of Biol., Emory Univ., ATLANTA, GA 30322, U.S.A.
a Cell interactions during early limb morphogenesis in the mutant Brachypodism: 1. regulatory mechanisms related to stability of the chondrogenic phenotype; 2. synthesis and turnover of membrane components. Mus musculus (Rodentia)
b Isolation and characterization of a growth regulator in chondrodystrophic animals. Same species as a

EMERSON, C. P., Jr.; Ph.D. – Dept. of Biol., Univ. of Virginia, CHARLOTTESVILLE, VA 22903, U.S.A.

ENDO, Y.; D.Sc., Prof. – Dept. of Biol., Keio Univ., YOKOHAMA-Hiyoshi, Japan

ENLOW, D. H.; Ph.D., Prof. – Dept. of Anat., Med. Ctr., West Virginia Univ., MORGANTOWN, WV 26506, U.S.A.

EPEL, D.; Ph.D., Prof. – Marine Biol. Res. Div., Scripps Inst. of Oceanogr., Univ. of Calif., San Diego, P. O. Box 1529, LA JOLLA, CA 92093, U.S.A.
a Biochemistry and physiology of fertilization, especially chemistry of cortical granules and cortical reactions, block to polyspermy, and activation. Strongylocentrotus purpuratus and other marine spp. (Invertebrata)
b Role of cations, especially Ca, in activating development. Same species as a
ERHART, F. A.; M.D., Ph.D., Prof. – Sect. of Neuroanat., Dept. of Anat., Univ. de São Paulo, Caixa Postal 2921, SÃO PAULO, Brazil
a Degeneration and regeneration of peripheral nerve fibres. Gallus domesticus (Aves), Canis familiaris (Carnivora)
ERICKSON, Miss C. A.; M.Phil. – Dept. of Biol., Yale Univ., NEW HAVEN, CT 06520, U.S.A.
a Contact behaviour; generation and maintenance of tissue cell form in culture. Normal and polyoma virus transformed baby hamster kidney fibroblasts. Mesocricetus auratus (Rodentia)
ESCHENBERG, Miss K. M.; Ph.D., Prof. – Dept. of Biol. Sci., Clapp Lab., Mount Holyoke Coll., SOUTH HADLEY, MA 01075, U.S.A.
ETHERIDGE, A. L.; Ph.D., Assoc. Prof. – Dept. of Biol., Univ. of Arkansas, MONTICELLO, AR 71655, U.S.A.
a Suppression of kidney formation by neural crest cells. Xenopus laevis (Anura), Ambystoma maculatum (Urodela)
b Origin of the 8th cranial ganglion cells. Same species as a
c Growth and food conversion rates. Xenopus laevis (Anura)
ETKIN, W.; Ph.D., Prof. – Dept. of Anat., Albert Einstein Coll. of Med., Yeshiva Univ., 1300 Eastchester Rd. and Morris Park Ave., NEW YORK, Bronx, NY 10461, U.S.A.
ETO, K.; D.D.S., Ph.D. – Dept. of Pedodont., Tokyo Med and Dent. Univ., 1–5–45, Yushima, Bunkyo-ku, TOKYO, Japan
a Experimental induction and suppression of cleft lip. Mus musculus (Rodentia)
b Experimental study of primary palate in whole embryo culture. Rattus spec. (Rodentia)
ETOH, H.; Ph.D. – Div. of Biol., Natl. Inst. of Radiol. Sci., 9–1, 4-chome, Anagawa, CHIBA, 280 Japan
a Effect of ionizing radiation on various embryonic stages, particularly long-term effects of low doses. Oryzias latipes (Teleostei)
EVANS, H. E.; Ph.D., Prof. – Dept. of Anat., N.Y. State Vet. Coll., Cornell Univ., ITHACA, NY 14850, U.S.A.
a Skeletal development in regard to inter-litter variation utilizing cesarian removals. Canis familiaris (Carnivora)
b Veratrum induced cyclopia. Ovis aries (Artiodactyla)
c Cyclopia. Same species as a
d Serial sections of embryos at spaced ages, available for inspection. Canis familiaris, Felis catus (Carnivora), Bos taurus, Ovis aries (Artiodactyla), and other Mammalia (with W. O. SACK, Ithaca, R. C. WILLIAMS, G. CHIBUZO, Tuskegee, and A. G. WATSON, Palmerston North (New Zealand)
e Development of the atlas-axis complex. Same species as a (with A. G. WATSON)
f Comparable developmental stages. Canis familiaris (Carnivora), Homo sapiens (Primates) (with A. G. WATSON and G. CHIBUZO)
g Development and replacement of teeth. (Cyprinidae, Teleostei)
EWEN, A. L. B.; Ph.D. – Agric. Canada Res. Stat., 107 Science Crescent, SASKATOON, Sask. S7N 0X2, Canada
a Physiology and functional morphology of reproduction. Melanoplus sanguinipes (Orthoptera)
b Insect hormones and analogues: effects on embryogenesis; uses as insecticides. Same species as a
EYAL (GILADI), Mrs. H.; Ph.D., Prof. – Dept. of Zool., Hebrew Univ., JERUSALEM, Israel
a Differentiation potencies of the uterine embryo and its ultrastructure. Gallus domesticus (Aves)
b A normal table of uterine developmental stages. Same species as a
c The development of symmetry in the uterine embryo. Same species as a
d Interaction between epiblast and hypoblast. Same species as a
FAIN, Mrs. M. J.; Ph.D. – Ctr. for Pathobiol., Univ. of California, IRVINE, CA 92717, U.S.A.
a Developmental capacities of embryonic and mature imaginal disc cells in context of cell-cell communication in pattern formation and regulation. Drosophila melanogaster (Diptera)
FAINSTAIN (HAMERMAN), Mrs. N.; M.Sc. – Dept. of Zool., Hebrew Univ., JERUSALEM, Israel
a Ultrastructural changes in the egg from ovulation through fertilization and cleavage. Gallus domesticus (Aves)
b Reserve materials of the embryo; correlation between their metabolism and ultrastructural changes during intrauterine stages. Same species as a
FALK, R.; Ph.D., Prof. – Dept. of Genet., The Hebrew Univ., JERUSALEM, Israel
a Time of determination and temperature sensitive period of the homeotic mutation proboscipedia. Drosophila melanogaster (Diptera)
FALLON, J. F.; Ph.D. – Dept. of Anat., Med. Sch., Univ. of Wisconsin, MADISON, WI 53706, U.S.A.
a Cell death during limb morphogenesis. Gallus domesticus (Aves), Homo sapiens (Primates)
b Role of polarizing zone in limb development. Gallus domesticus (Aves). Mus musculus (Rodentia), Sus scrofa (Artiodactyla), Homo sapiens (Primates)
FAMBROUGH, D. M., Jr.; Ph.D. – Dept. of Embryol., Carnegie Inst. of Washington, 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.
FANKHAUSER, G.; Ph.D., Prof. (Emer.) – Dept. of Biol., Princeton Univ., PRINCETON, NJ 08540, U.S.A.

FANTEL, A.; Ph.D. – Centr. Lab. for Hum. Embryol., Dept. of Pediat., Univ. of Washington, SEATTLE, WA 98195, U.S.A.
a Morphology and development of the placenta. (Mammalia)
b Placental transfer; fetomaternal potassium relations. Rattus spec. (Rodentia)
c Teratogenesis
FARBEROV, A. – Dept. of Zool., Hebrew Univ., JERUSALEM, Israel
a Influence of X-rays on the development of the eye. Rana temporaria (Anura)
b Influence of retina on the histogenesis of the lens. Same species as a
FAULKNER, J. – Dept. of Anat., Univ. of Michigan, Med. Sci. Bldg. II, ANN ARBOR, MI 48109, U.S.A.
a Regeneration and transplantation of muscles. Rattus norvegicus (Rodentia), Felis catus (Carnivora) (with B. M. CARLSON)
FAUSTO-STERLING, Ms. A.; Ph.D. – Div. of Biol. and Med. Sci., Brown Univ., PROVIDENCE, R.I. 02912, U.S.A.
a Selection for temperature-sensitive mutants of oogenesis and embryogenesis, and their analysis. Drosophila melanogaster (Diptera)
b Analysis of the "rudimentary" locus at the biochemical level. Same species as a
FEDINEC, A. A.; Ph.D., Prof. – Dept. of Anat., Ctr. for Health Sci., Univ. of Tennessee, 800 Madison Ave., MEMPHIS, TN 38163, U.S.A.
FEDOROFF, S.; Ph.D., Prof. – Dept. of Anat., Univ. of Saskatchewan, Health Sci. Bldg., SASKATOON, Sask. S7N 0W0, Canada
a Development of nervous system. Mus musculus (Rodentia)
FEIN, A.; M.Sc. – Dept. of Embryol. and Teratol., Ch. Sheba Med. Ctr., Tel-Aviv Univ., TEL-AVIV, Israel
a Morpho-functional characteristics of the early polar trophoblast during implantation. (Rodentia) (with L. A. NEBEL)
FELDMAN, M.; Ph.D. – Dept. of Cell Biol., Weizmann Inst. of Sci., REHOVOT, Israel
FELDMAN, M. L.; Ph.D. – Dept. of Anat., Boston Univ., 80 E. Concord St., BOSTON, MA 02118, U.S.A.
a Postnatal development of cochlear nucleus
b Neurogenesis and postnatal development in cerebral cortex (electron microscopy and Golgi impregnation). Rattus norvegicus (Rodentia)
FELTS, W.; Ph.D., Prof. – Dept. of Anat. Sci., Univ. of Oklahoma Health Sci. Ctr., P. O. Box 26901, OKLAHOMA-CITY, OK 73190, U.S.A.
a Biomechanics of bone including developmental changes. (Soricidae, Insectivora), Mus musculus, Rattus spec. (Rodentia), (Cetacea; Pinnipedia), Homo sapiens (Primates)
FERKOVICH, S. M.; Ph.D. – Insect Attract., Behav. and Basic Biol. Res. Lab., Agric. Res. Serv., U.S.D.A., 1700 S.W. 23rd Drive, P. O. Box 14565, GAINESVILLE, FL 32604, U.S.A.
a Isolation of carrier proteins in the haemolymph which are responsible for transporting juvenile hormone from site of synthesis in corpus allatum to target tissues. Plodia interpunctella (Lepidoptera)
b Juvenile hormone binding to receptor sites in target tissues. Same species as a
FERM, V. H.; M.D., Ph.D., Prof. – Dept. of Anat./Cytol., Dartmouth Med. Sch., HANOVER, NH 03755, U.S.A.
a Teratogenic effects of heavy metals and environmental factors. Mesocricetus auratus (Rodentia)
FERNALD, R. L.; Ph.D., Prof. – Dept. of Zool., Univ. of Wash., SEATTLE, WA 98195, U.S.A.
FERNÁNDEZ, Mrs. S. N.; Pharm. M. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina
a Influence of oviductal secretions on vitelline membrane properties and its involvement in fertilization. Bufo arenarum (Anura)
FERREIRA da SILVA, C. – Sect. of Neuroanat., Dept. of Anat., Univ. de São Paulo, C.P. 2921, SÃO PAULO, Brazil
a Degeneration and regeneration of peripheral nerve fibres. Gallus domesticus (Aves)
b Development of central nervous system. Same species as a
FERRIS, W. R.; Dr. – Dept. of Biol. Sci., Univ. of Arizona, TUCSON, AZ 85721, U.S.A.
FINNEGAN, C. V.; Ph.D., Prof. – Dept. of Zool., Univ. of Brit. Columbia, VANCOUVER V6T 1W5, B.C., Canada
a Analysis of postgastrula axial mesoderm differentiation in vitro. Taricha torosa, Ambystoma gracile (Urodela), Gallus domesticus (Aves)
b Cytochemical and electron microscopic examination of myoblast, endo- and ectomesenchymal differentiation. Taricha torosa, Ambystoma gracile (Urodela)
FIORENTINI, Miss M. L. – Dept. of Biol., Fairleigh Dickinson Univ., 285 Madison Ave., MADISON, NJ 07940, U.S.A.
FISCHMAN, D. A.; M.D., Assoc. Prof. – Depts. of Anat. and Biol., Univ. of Chicago, 1103 East 57th St., CHICAGO, IL 60637, U.S.A.
FISER, P. S.; Ph.D. – Dept. of Anim. and Poultry Sci., Ontario Agric. Coll., Univ. of Guelph, GUELPH, Ont. N1G 2W2, Canada
a Cloning and in vitro study of blastoderm cells; identification of "totipotent" cells disaggregated from unincubated blastoderms (histochemistry and electron microscopy). Gallus domesticus (Aves)
b Development of the feather follicle in homozygous "wiry" mutant embryo (light microscopy). Same species as a
c Cloning of separated blastomeres (in vitro development; micromanipulation). Mus musculus (Rodentia)

d Embryo transfer and freezing. Bos taurus (Artiodactyla), Mus musculus (Rodentia)

FISHER, D. L.; Ph.D. – Dept. of Anat., Univ. of Michigan, Med. School Bldg II, ANN ARBOR, MI 48109, U.S.A.

a Teratogenesis, with emphasis on the preimplantation stages during cultivation. Mus musculus (Rodentia)

b Postimplantation in vitro development and teratology. Same species as a

c Ovarian transplantation with emphasis on embryogenesis. Same species as a

FISHER, K.R.S.; Ph.D. – Dept. of Biomed. Sci., Ontario Vet. Coll., Univ. of Guelph, GUELPH, Ont. N1G 2W2, Canada

a Development of neurons in the embryonic spinal cord, in vitro study using very young, staged embryos and tritiated thymidine cell labeling. Gallus domesticus (Aves)

b Gonadogenesis and sex development in gonads of very young embryos. Same species as a

FISHER, L. J.; Ph.D. – Dept. of Anat., Med. Sch., Univ. of Michigan, Med. Sci. Bldg II, ANN ARBOR, MI 48109, U.S.A.

a Development of the synaptic organization of the retina, using quantitative electron microscopic techniques. Rana pipiens, Xenopus laevis (Anura), Mus musculus (Rodentia), Oryctolagus cuniculus (Lagomorpha)

FITZGERALD, L. R.; Ph.D., Assoc. Prof. – Dept. of Anat., Ctr. for Health Sci., Univ. of Tennessee, 800 Madison Ave., MEMPHIS, TN 38163, U.S.A.

FITZHARRIS, T. P.; Ph.D. – Dept. of Anat., Med. Univ. of S. Carolina, 80 Barre St., CHARLESTON, SC 29401, U.S.A.

a Nerve regeneration; control mechanisms in regeneration and expression of polarity. Sabella melanostigma, Branchiomma nigromaculata, Sabellastarte magnifica (Polychaeta)

b Formation of valves and septa in the heart. Gallus domesticus (Aves)

c Role of the extracellular matrix (cardiac jelly) in heart differentiation, morphogenesis and motility. Same species as b

FITZSIMMONS, R. C.; Ph.D., Assoc. Prof. – Dept. of Poultry Sci., Univ. of Brit. Columbia, VANCOUVER, BC V6T 1W5, Canada

a Interrelationships of the bursa of Fabricius, the thymus and the ontogeny of the immune system in the embryo. Gallus domesticus (Aves)

FLICKINGER, C. J.; M.D., Prof. – Dept. of Anat., Univ. of Virginia, Jordan Med. Bldg., 1300 Jefferson Park Ave., CHARLOTTESVILLE, Va. 22901, U.S.A.

a Fetal and postnatal development of the male sex accessory organs (light and electron microscopy). Rattus rattus (Rodentia)

FLICKINGER, R. A.; Ph.D., Prof. – Div. of Cell and Molec. Biol., State Univ. of New York, 102 Health Sci. Bldg., BUFFALO NY 14214, U.S.A.

a Patterns of replication and transcription during S-phase and their correlation with changes in chromatin proteins, studied in partially synchronized limb bud mesenchyme cells ($3\frac{1}{2}$ day embryo). Gallus domesticus (Aves)

FORD, P.; Ph.D., Assoc. Prof. – Dept. of Zool., Univ. of Brit. Columbia, VANCOUVER B.C. V6T 1W5, Canada

a Developmental histochemistry. Raja binoculata (Elasmobranchii)

b Histochemistry and ultrastructure of formation and derivation of egg membranes. Squalus spec. (Elasmobranchii)

FORET, J. F.; Ph.D., Assoc. Prof. – Dept. of Zool., Univ. of New Hampshire, Spaulding Bldg., DURHAM, NH 03824, U.S.A.

a Role of cyclic nucleotides in limb regeneration. Ambystoma spec., Notophthalmus viridescens (Urodela)

FORMAN, M.; Ph.D., Assoc. Prof. – Dept. of Biol. Sci., Purdue Univ., WEST LAFAYETTE, IN 47907, U.S.A.

a Synthesis of regulatory macromolecules during embryo development. Fucus furcatus (Phaeophyta)

b Control and synthesis of cell walls. Same species as a

FORREST, H. S.; Ph.D., D.Sc., Prof. – Dept. of Zool., Univ. of Texas, AUSTIN, TX 78712, U.S.A.

a RNA synthesis in very early development of eggs and at later stages; examination of the products of RNA polymerase activity (electron microscopy). Oncopeltus fasciatus (Hemiptera)

b Structure and function of a small protein from embryonic cytoplasm which binds strongly to DNA, and varies in amount during development. Same species as a

FOSKET, D. E.; Ph.D., Assoc. Prof. – Dept. of Developm. and Cell Biol., Univ. of California, IRVINE, CA 92717, U.S.A.

a Cytokinin control of cell division in cultured cells (control of availability of specific cell division proteins through an effect on protein synthesis at the translational level). Glycine max (Papilionaceae)

FOWLER, J. A.; Ph.D. – Dept. of Biol., State Univ. of New York, STONY BROOK, NY 11794, U.S.A.

a Developmental controls (genetic, environmental). Oryzias latipes (Teleostei)

b Theoretical models of developing systems above the cellular level

FOX, D. J.; Ph.D. – Dept. of Zool., Univ. of Tennessee, KNOXVILLE, TN 37916, U.S.A.

a In vitro characterization of the regulatory enzymes associated with fat synthesis in the ob/ob mutant. Mus musculus (Rodentia)

FRANCIS, D. W.; Ph.D. – Dept. of Biol. Sci., Univ. of Delaware, NEWARK, DE 19711, U.S.A.

a Study of the overall character of the sequence of gene controlled processes during cell differentiation, using the enzyme complement of developmental mutants. (Acrasiales)

FRANCOEUR, R. T.; Ph.D., Prof. – Dept. of Biol., Fairleigh Dickinson Univ., 285 Madison Ave., MADISON, NJ 07940, U.S.A.
FRANK, G. H.; D.Sc. – Dept. of Zool., Univ. of Durban-Westville, Private Bag X54001, DURBAN, S. Africa
a Developmental morphology and evolution of the columella auris. (Aves)
b Early ontogeny of the visceral skeleton, particularly the composition of, and secondary contributions to, the hyoid arch. (Vertebrata)
FRANKEL, J.; Ph.D., Prof. – Dept. of Zool., Univ. of Iowa, IOWA-City, IA 52242, U.S.A.
a Morphogenesis. Tetrahymena spec. (Ciliata)
b Developmental genetics: analysis of the cortical pattern. Tetrahymena pyriformis (Ciliata)
FRANKLIN, L. E.; Ph.D. – Dept. of Reprod. Physiol., Delta Region. Primate Res. Ctr., Tulane Univ., COVINGTON, LA 70433, U.S.A.
FRASER, F. C.; Ph.D., M.D., Prof. – Dept. of Biol., McGill Univ., P. O. Box 6070, – Stat. A, MONTREAL, Que, H3C 3G1, Canada
a Maternal and environmental factors (e.g. diet) influencing the frequency of cleft lip and palate. Mus musculus (Rodentia)
b Pathogenesis of vitamin A-induced exencephaly. Same species as a
FRASER, R. C.; Ph.D., Prof. – Dept. of Zool., Univ. of Tennessee, KNOXVILLE, TN 37916, U.S.A.
a Biosynthesis of hemoglobins in the embryo and characteristics of embryonic erythroid cells. Gallus domesticus (Aves)
FREDERICKSON, R. G.; Ph.D., Assoc. Prof. – Dept. of Anat., Med. Ctr., West Virginia Univ., MORGANTOWN, WV 26506, U.S.A.
a High voltage electron microscopy of developing connective tissue in the notochordal sheath of early embryos. Gallus domesticus (Aves)
b The effect of inhibited protein-polysaccharide and collagen synthesis on the formaton of unit collagen fibrils and the normal differentiation of epithelial and connective tissue cells. Same species as a
FREEMAN, G.; Ph.D., Assoc. Prof. – Dept. of Zool., Univ. of Texas, AUSTIN, TX 78712, U.S.A.
a Factors responsible for setting up localizations of developmental potential during early embryogenesis. Mnemiopsis leidyi, Bolinopsis microptera (Ctenophora), Cerebratulus lacteus (Nemertina), Lymnaea peregra (Gastropoda)
b Origin of the cells which form new individuals during asexual reproduction. Botrylloides diegense (Ascidiacea)
FRIEDLÄNDER, M.; Ph.D. – Lab. of Cell Biol., Negev Univ., BEER-SHEVA, Israel
FRIEDMAN, H. P.; Ph.D., Assoc. Prof. – Biol. Dept., Univ. of Missouri-St. Louis, 8001 Natural Bridge Rd., ST. LOUIS, MO 63121, U.S.A.
a Development of nervous system specific antigens. (Mammalia)
b Differentiation antigens of lymphocytes: study of specific T-cell membrane antigens by lymphocytotoxicity. Macaca mulatta, Homo sapiens (Primates)
c Differences in antigens in motile versus non-motile sperm. Bos taurus (Artiodactyla)
FRITZ, H. I.; Ph.D., Assoc. Prof. – Dept. of Biol. Chem., Coll. of Sci. and Engin., and Sch. of Med., Wright State Univ., Col. Glenn Highway, DAYTON, OH 45431, U.S.A.
a Embryonic nutrition. Gallus domesticus (Aves), Didelphis marsupialis, Caluromys derbiana, Marmosa spec. (Marsupialia)
b Experimental teratogenesis. (Marsupialia; Placentalia)
c The immune response in implantation. (Mammalia)
FROMSON, D. R.; Ph.D. – Dept. of Biol., McGill Univ., MONTREAL H3C 3G1, Que., Canada
a RNA synthesis during embryonic development. Lytechinus pictus, Arbacia punctulata, Strongylocentrotus purpuratus (Echinoidea)
b Presence and function of poly(A) tracts in embryo RNA. Lytechinus pictus, Arbacia punctulata (Echinoidea)
c Translation in vitro of poly(A)+ and poly(A)– mRNAs and characterization of the product polypeptides. Lytechinus pictus, Strongylocentrotus purpuratus (Echinoidea)
d Examination and characterization of the 5' terminal nucleotides in poly(A)+ and poly(A)– mRNAs; methylation of these nucleotides. Same species as c
FRY, Miss A. F.; Ph.D., Assoc. Prof. – Dept. of Zool., Ohio Wesleyan Univ., DELAWARE, OH 43015, U.S.A.
a Histochemical patterns in the tadpole tail during normal and thyroxine-induced metamorphosis. Rana pipiens (Anura)
b The effects of prolactin on tail height and tail skin of the male. Notophthalmus viridescens (Urodela)
FRYE, B. E.; Ph.D., Prof. – Div. of Biol. Sci., Univ. of Michigan, ANN ARBOR, MI 48109, U.S.A.
a Prolactin, somatotropin and thyroxine interactions during development, growth, and metamorphosis. Rana pipiens (Anura), Ambystoma mexicanum (Urodela), Gallus domesticus (Aves)
b Endocrine regulation of carbohydrate metabolism, especially changing patterns of control during metamorphosis. Rana pipiens (Anura), Ambystoma mexicanum, A. tigrinum (Urodela)
FUCHS, M. S.; Ph.D., Assoc. Prof. – Dept. of Biol., Univ. of Notre Dame, NOTRE DAME, IN 46556, U.S.A.
a Hormonal and biochemical aspects of ovarian development. Aedes aegypti, Drosophila melanogaster (Diptera)
FUJII, T.; Ph.D., Prof. (Emer.) – Zool. Inst., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan
a The mechanism of chemical carcinogenesis. Rattus norvegicus (Rodentia)
FUJIMOTO, T.; M.D., Prof. – Dept. of Anat., Kumamoto Univ., 2–1–1 Honjo, KUMAMOTO, 860 Japan

a Germ cell origin and migration. Caretta olivacea (Chelonia), Gallus domesticus (Aves), Homo sapiens (Primates)
b Teratogenic effects of methylmercuric chloride. Mus musculus, Rattus spec. (Rodentia)

FUJISAWA, H.; Ph.D. – 2nd Dept. of Anat., Kyoto Pref. Univ. of Med., Kawaramachi-Hirokoji, Kamikyo-ku, KYOTO, 602 Japan
a Mechanisms of tissue reconstitution from dissociated retinal cells. Gallus gallus (Aves)
b Mechanisms of inter-cellular communication in developing nervous system. Gallus spec. (Aves)
c Neuro-muscular junction in vivo and in vitro. Gallus gallus (Aves), Mus musculus, Rattus spec. (Rodentia)

FUKE, M.; D.Sc. – Biol. Inst., Fac. of Sci., Univ. of Kanazawa, Marunouchi-1, KANAZAWA, Japan
a Reaggregation of dissociated cells. Callyspongia elongata (Porifera)
b Cytological properties of polar lobe. Ostrea gigas (Lamellibranchia)

FULLER, M. S.; Ph.D., Prof. – Dept. of Bot., Univ. of Georgia, ATHENS, GA 30602, U.S.A.
a Development of motile cells; contractile proteins. Aquatic species (Blastocladiales, Phycomycetes)
b Mitosis. (Fungi)

FULLILOVE, Miss S. L.; Ph.D. – Cell Res. Inst., Biol. Labs., 220, Univ. of Texas, AUSTIN, TX 78712, U.S.A.
a Golgi apparatus in development and neoplastic transformation

FULTON, C. M.; Ph.D., Prof. – Dept. of Biol., Brandeis Univ., WALTHAM, MA 02154, U.S.A.
a Cell differentiation and morphogenesis including regulation of cell shape and motility, and synthesis and assembly of flagella and associated organelles. Naegleria gruberi (Rhizopoda)

FURUSAWA, M.; D.Sc., Assoc. Prof. – Lab. of Developm. Biol., Dept. of Biol., Osaka City Univ., 459 Sugimoto-cho, Sumiyoshi-ku OSAKA, 558 Japan
a Immunology of the structural molecules of the erythrocyte membrane. Mus musculus (Rodentia)
b Erythroid differentiation of Friend virus-induced tumor cells. Same species as a

FURUYA, M.; Prof. – Dept. of Bot., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan
a Sexual differentiation. Gelasinospora reticulispora (Ascomycetes), Lygodium japonicum (Filicinae)
b Photocontrol of cell division, growth, and germination. Pteris vittata (Filicinae)
c Phytochrome-dependent development. Pisum sativum (Papilionaceae)

FUTRELLE, R. P.; Ph.D. – Dept. of Genet. and Developm., Univ. of Illinois, 515 Morrill Hall, URBANA, IL 61801, U.S.A.
a Cell motion and contact in aggregation phenomena, particularly in chimaeras. Dictyostelium spec., Polysphondylium spec. (Acrasiales)
b Computer techniques for the data gathering from, and the analysis of, movie films recording cell motion in development. (general applicability)
c Mathematical modelling of cell motion and pattern formation. Same species as a

GABRIEL, M. L.; Ph.D., Prof. – Biol. Dept., Brooklyn Coll., NEW YORK, Brooklyn, NY 11210, U.S.A.
a Development of vertebrae; meristic variation. (Teleostei)

GAGE, L. P.; Ph.D. – Dept. of Cell Biol., Roche Inst. of Molec. Biol., NUTLEY, N.J. 07110, U.S.A.
a Silk gland development and differentiation, especially silk fibroin synthesis in vitro, fibroin message synthesis and isolation of the fibroin gene. Bombyx mori (Lepidoptera) (with R. F. MANNING and D. R. SAMOLS)

GALBRAITH, D. B.; Ph.D., Assoc. Prof. – Dept. of Biol., Trinity Coll., HARTFORD, CT 06106, U.S.A.
a Role of epithelial-mesenchymal interactions in development and differentiation of tooth germs; especially effect of procollagen upon the development of embryonic tooth rudiments continuously exposed to the proline analogue, L-azetidine-2-carboxylic acid in vitro. Mus musculus (Rodentia)
b Expression of genes at the agouti locus; 1. histochemical localization of sulfhydryl reducing compounds in melanocyte cytoplasms of genetically yellow, black and agouti mice; 2. dermal-epidermal interactions and expression of genes; 3. phenotypic expression of various agouti-locus compounds. Same species as a

GALE, T. F.; Ph.D. – Dept. of Anat./Cytol., Dartmouth Med. School, HANOVER, NH 03755, U.S.A.
a Teratogenic potential of several heavy metals (mercury and cadmium). Mesocricetus auratus (Rodentia)

GALL, J. G.; Ph.D., Prof. – Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, CT 06520, U.S.A.
a In situ nucleic acid hybridization in lampbrush chromosomes. Triturus spec. (Urodela)
b rDNA gene amplification during macronuclear development. Tetrahymena pyriformis (Ciliata)

GALSTON, A. W.; Ph.D., Prof. – Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, CT 06520, U.S.A.
a Analysis of molecular basis for the developmental roles of hormones such as indole-3-acetic acid and of light (absorbed by phytochrome) Pisum sativum, Albizzia julibrissin, Samanea saman (Leguminosae)
b Plant protoplasts: preparation by the use of cell-wall digesting enzymes; culture; cell wall regeneration; attempts to achieve fusion. Pisum sativum (Papilionaceae), Avena sativa (Gramineae), Nicotiana tabacum (Solanaceae)
c Study of interactions between light and circadian rhythms controlling K+flux and leaf movements, as a paradigm for the study of photoperiodism. Albizzia julibrissin, Samanea saman (Leguminosae)

GALUN, E.; Ph.D. – Dept. of Plant Genet., Weizmann Inst. of Sci., P. O. Box 26, REHOVOT, Israel

GANCHROW, D.; Ph.D. – Dept. of Anat. and Embryol., Hebrew Univ. – Hadassah Med. School, P.O.B. 1172, JERUSALEM 91000, Israel
a Light and scanning electron microscopy of the development of nerve-taste bud connections in the fetus. Homo sapiens (Primates)
b Pathogenesis of anencephaly in the light of theories of primary degeneration and brain overgrowth. Same species as a
GARBER, Mrs. B. B.; Ph.D., Assoc. Prof. – Depts. of Anat. and Biol., Univ. of Chicago, 1103 East 57th St., CHICAGO, IL 60637, U.S.A.
GARFIELD, S. A.; Ph.D. – Dept. of Anat., Univ. of Virginia, Jordan Med. Bldg., 1300 Jefferson Park Ave., CHARLOTTESVILLE, VA 22901, U.S.A.
a Effect of estrogen on immature hepatocytes – induction of vitellogenin and other lipoproteins. Gallus domesticus (Aves)
GARRIDO, O.; M.V. – Inst. de Embriol., Univ. Austral de Chile, Casilla no. 567, VALDIVIA, Chile
a Search for a technique for direct experimental study of limb morphogenesis. Rattus spec. (Rodentia)
b Reproductive adaptations. Concholepas concholepas and related species (Muricidae, Gastropoda)
GASSER, R. F.; Ph.D., Prof. – Anat. Dept., Med. Ctr., Louisiana State Univ., 1542 Tulane Ave., NEW ORLEANS, LA 70112, U.S.A.
a Neuromuscular development. Mus musculus. Rattus spec. (Rodentia), Homo sapiens (Primates)
b Effects of biomechanical fields on cell differentiation during embryogenesis. Homo sapiens (Primates)
GATTO, I. M.; Dent., Prof. – Univ. of Alagoas, MACEIO, Brazil
Temporarily: Dept. of Morphol., Univ. of Sao Paulo, P.O.B. 301, 14.100 RIBEIRAO PRETO, S.P., Brazil
a Teratogenetic effect of nicotin. Rattus spec. (Rodentia)
GAUDIN, A. J.; Ph.D., Assoc. Prof. – Dept. of Biol., Calif. State Univ., 18111 Nordhoff St., NORTHRIDGE, CA 91324, U.S.A.
a Osteocranial development. Bufo boreas, Scaphiopus hammondi (Anura)
GAVIN, R. H.; Ph.D. – Dept. of Biol., Brooklyn Coll., NEW YORK, Brooklyn, NY 11210, U.S.A.
a Assemblage of molecular components into structures: biochemical characterization of basal bodies, microtubules and filaments, and the protein-interactions of these organelles which bring about the assembly of the oral apparatus. Tetrahymena pyriformis (Ciliata)
GAY, Miss H.; Ph.D., Prof. – Div. of Biol. Sci., Univ. of Michigan, ANN ARBOR, MI 48109, U.S.A.
a Molecular structure of chromosomes during genetic activity, especially nucleic acids and proteins of heterochromatin and euchromatin (electron microscopy, cytochemistry, autoradiography, biochemistry) Drosophila melanogaster (Diptera)
GEORGE, J. C.; Ph.D., Prof. – Dept. of Zool., Univ. of Guelph, GUELPH, Ont. N1G 2W1, Canada
a Ultrastructural studies on the embryo. Lychas tricarinatus (Scorpionidea, Arachnida)
b Development of the supraneural haematopoietic tissue. Petromyzon marinus (Cyclostomata)
GERBI, Miss S. A.; Ph.D. – Div. of Biol. and Med. Sci., Brown Univ., Box G, PROVIDENCE, R.I. 02912, U.S.A.
a Amplified DNA (DNA puffs). Sciara coprophila (Diptera)
b Satellite DNAs (in situ hybridization). Same species as a
GILANI, S. H.; Ph.D. – Dept. of Anat., New Jersey Med. Sch., 100 Bergen St., NEWARK, N.J. 07103, U.S.A.
GILES, E. T.; Ph.D., D.I.C., Assoc. Prof. – Dept. of Zool., Sch. of Biol. Sci., Univ. of New England, ARMIDALE, N.S.W. 2351, Australia
GILSON, Miss B. E.; Ph.D. – Dept. of Anat., Jefferson Med. Coll., 1020 Locust St., PHILADELPHIA, PA 19107, U.S.A.
a Inductive interactions in drug-induced teratogenesis. Gallus spec. (Aves)
GINZBURG, Mrs. D.; Ph.D. – Inst. of Life Sci., Hebrew Univ., JERUSALEM, Israel
a Differentiation of spores into vegetative cells. Bacillus subtilis (Bacteria)
GLADE, R. W.; Ph.D., Prof. – Dept. of Zool., Marsh Life Sci. Bldg., Univ. of Vermont, BURLINGTON, VT 05401, U.S.A.
GLASS, Ms. L. E.; Ph.D., Assoc. Prof. – Dept. of Anat., Sch. of Med., Univ. of Calif., SAN FRANCISCO, CA 94143, U.S.A.
GLOBERSON, A.; Dr. – Dept. of Cell Biol., Weizmann Inst. of Sci., P. O. Box 26, REHOVOT, Israel
a In vitro studies on immune reactivity of cells from the yolk sac and embryonic liver at different stages of gestation. Mus musculus (Rodentia)
b Studies on the immunological status of newborn spleen. Same species as a
GOEL, S. C.; Ph.D. – Dept. of Zool., Univ. of Poona, Ganeshkind, POONA, 411007, India
a Histological, cytochemical, teratological and in vitro studies on the development of limbs and gonads. Calotes versicolor (Lacertilia, Reptilia)
b Mechanism of water uptake by developing eggs. Same species as a
c Biochemical analysis of development with special reference to excretory processes. Same species as a
d Biochemistry of the development of the lens and pineal eye. Calotes versicolor (Lacertilia, Reptilia), Gallus spec. (Aves)
GOETINCK, P. F.; Ph.D., Prof. – Dept. of Anim. Genet., Storrs Agric. Exper. Station, Univ. of Connecticut, STORRS, CT 06268, U.S.A.
a Mesoderm-ectoderm interaction in differentiation (limb, scales, and feathers). Gallus domesticus (Aves)
b Chondroitin sulfate and collagen metabolism in micromelic mutants. Same species as a

GOFF, R. A.; Ph.D., Prof. – Dept. of Zool., Univ. of Oklahoma, 730 Van Vleet Oval, Rm. 222, NORMAN, OK 73069, U.S.A.
a Analysis of the development of the appendicular skeleton by means of x-rays. Gallus domesticus (Aves)
b Histochemical analysis of morphogenesis. Same species as a

GOICOECHEA, O. – Inst. de Embriol., Univ. Austral de Chile, Casilla no. 567, VALDIVIA, Chile
a Search for a technique for direct experimental study of limb morphogenesis. Rattus spec. (Rodentia)
b Teratogenic action of antagonistic substances in embryo development in ovo. Gallus domesticus (Aves)

GOLDBERG, R. B.; Ph.D. – Canc. Res. Ctr., Univ. of Brit. Columbia, VANCOUVER, B.C. V6T 1W5, Canada
a The timing and pattern of nuclear protein synthesis and replacement during spermatogenesis (cell separation). Mus musculus (Rodentia)
b Factors influencing the expression of differentiated function in adrenal cells in vitro. Rattus rattus (Rodentia)

GOLDBERG, S.; M.D. – Dept. of Biol. Struct., Sch. of Med., Univ. of Miami, P. O. Box 520875, Biscayne Annex, MIAMI, FL 33152, U.S.A.
a Development of the retina and visual pathways. Gallus domesticus (Aves)
b Neuronal regeneration in the retina and visual pathways. Rana catesbeiana (Anura), Gallus domesticus (Aves), Rattus rattus (Rodentia)
c Specification of morphological polarity in the retina. Same species as a

GOLDHOR, Miss S.; Ph.D. – Sch. of Nat. Sci. and Mathemat., Hampshire Coll., AMHERST, MA 01002, U.S.A.
a Developmental changes in membranes. Rana pipiens (Anura)

GOLDIE, M.; Ph.D. – Dept. of Biol., Loyola Univ., 6525 N.Sheridan Rd., CHICAGO, IL 60626, U.S.A.
a Effects of excess nutrients on early development in ovo and in vitro. Gallus domesticus (Aves)
b Effect of cytochalasin on the embryo. Same species as a
c Teratogenicity of biodegradable detergents. Same species as a

GOLDSMITH, Mrs. M. H. M.; Ph.D., Assoc. Prof. – Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN CT 06520, U.S.A.
a Growth and development in response to hormones; hormone transport; tropistic responses. Zea mays, Avena sativa (Gramineae), Coleus blumei (Labiatae)

GOLDSMITH, Ms. M. R.; Ph.D. – Dept. of Developm. and Cell Biol., Univ. of California, IRVINE, CA 92717, U.S.A.
a Characterization of kinetics of chorion protein biosynthesis (timing, rate, duration), in mutants showing pleiotropic effects on chorion composition; measurement of translational efficiency to establish molecular basis of defect. Bombyx mori (Lepidoptera)
b Determining linkage of chorion protein structural genes to establish whether chromosomal organization reflects pattern of expression during development, evolutionary relatedness, or phenotypic functions. Same species as a

GOLDWASSER, E.; Prof. – Dept. of Biochem. and Commit. on Developm. Biol., Div. of Biol. Sci., Univ. of Chicago, CHICAGO, IL 60637, U.S.A.

GONA, A. G.; Ph.D., Assoc. Prof. – Dept. of Anat., New Jersey Med. Sch., 100 Bergen St., NEWARK, NJ 07103, U.S.A.

GONDOS, B.; M.D., Assoc. Prof. – Dept. of Pathol., Sch. of Med., Univ. of Calif., SAN FRANCISCO, CA 94143, U.S.A.
a Ultrastructure of ovarian and testicular germ cell development. Oryctolagus cuniculus (Lagomorpha), Homo sapiens (Primates)
b Ultrastructure of fertilization and cleavage. Oryctolagus cuniculus (Lagomorpha)
c Structural and biochemical maturation of the testis. Same species as b

GOPINATH, G. M.; M.Sc. – Dept. of Zool., Fac. of Sci., M.S. Univ. of Baroda, BARODA 390002, India
a Development of integument and plumage. (Aves)

GORDON, R.; Ph.D. – Image Processing Unit, Natl. Canc. Inst., N.I.H., Bldg 36, Rm 4D28, BETHESDA, MD 20014, U.S.A.
a The change of shape of the neural plate during neurulation is analyzed experimentally, mathematically, and by computer simulation in terms of physical forces generated by the behavior of its constituent cells; development of a generally applicable theory of morphodynamics, based on continuum mechanics; this work is being extended to neural tube and eye formation. Taricha torosa (Urodela)
b Methods to analyze the postnatal development of linear receptive fields of cells in the visual cortex. Felis domestica (Carnivora) (with H. V. B. HIRSCH, Albany, N.Y.)
c Valve morphogenesis explained in terms of instabilities in diffusion limited precipitation of amorphous hydrated silica (computer simulation of striae formation at macroscopic and molecular levels). Licomorpha spec., Navicula spec. (Diatomeae) (with R. W. DRUM, Bellingham, WA)
d Individual melanocytes are followed in three dimensions by a computer driven microscope to investigate formation of the first stripes in the embryo. Brachydania rerio (Teleostei)

GOSS, R. J.; Ph.D., Prof. – Div. of Biol. and Med. Sci., Brown Univ., PROVIDENCE, RI 02912, U.S.A.
a Organ growth regulation. Rattus rattus (Rodentia)
b Appendage regeneration. various spp. (Mammalia)

GOTTLIEB, G.; Ph.D. – Psychol. Lab., Dorothea Dix Hosp., RALEIGH, NC 27611, U.S.A.
a Behavioral development of fetuses and embryos. Anas platyrhynchos, Gallus gallus (Aves)
GOUDSMIT, Miss E. M.; Ph.D., Assoc. Prof. – Dept. of Biol. Sci., Oakland Univ., ROCHESTER, MI 48063, U.S.A.
a Neurosecretory regulation of galactogen and glycogen synthesis in the albumen gland (electron microscopy, organ culture, biochemistry) Helix pomatia (Gastropoda)
GOULD-SOMERO, M. C.; Ph.D. – Dept. of Biol., B-022, Univ. of Calif. San Diego, LA JOLLA, CA 92093, U.S.A.
a Oogenesis, fertilization, and early development, especially growth and differentiation of oocytes, their acquisition of fertilizability, control of specific syntheses before and after fertilization. Urechis caupo (Echiura)
GRABOWSKI, C. T.; Ph.D., Prof. – Lab. for Quant. Biol., Dept. of Biol., Univ. of Miami, P. O. Box 249118, CORAL GABLES, FL 33124, U.S.A.
a Effects of oxygen deficiency on embryos and fetuses. Gallus domesticus (Aves), Rattus spec. (Rodentia), Oryctolagus cuniculus (Lagomorpha)
b Physiology of embryonic fluids in normal and abnormal development. Same species as a
c Development of cardiac physiology. Same species as a
d Teratology of atmospheric pollutants. Same species as a
e Behavioral teratology. Same species as a
GRANGER (PARSONS), Mrs. N.; Ph.D. – Dept. of Developm. and Cell Biol., Univ. of California, IRVINE, CA 92717, U.S.A.
a Control of the corpora allata by the brain during larval development; identification of an allatotropin and of the pars intercerebralis of the larval brain which produce it. Galleria mellonella (Lepidoptera)
b External stimuli (such as temperature and crowding) and neuroendocrine feedback mechanisms affecting the allata-controlling center of the brain. Same species as a
c Control of the prothoracic glands by brain neurosecretion during larval development; relationship of the prothoracotropic function of the larval brain to its allatotropic function. Same species as a
GRANT, Ph.; Ph.D. – Dept. of Biol., Univ. of Oregon, EUGENE, OR 97403, U.S.A.
a Specification of visual and motor neuron connections. Xenopus laevis (Anura)
b Actin as a factor in morphogenesis. Rana pipiens (Anura)
c Nucleocytoplasmic interactions during aging of eggs. Same species as b
GRAVER, H. T.; D.D.S., Ph.D. – Dept. of Histol., Embryol. and Genet., Sch. of Dent. Med., Univ. of Pennsylvania, 4001 Spruce St., PHILADELPHIA, PA 19174, U.S.A.
a Effects of operations on formation of dental lamina and tooth buds in the regenerating mandible. Triturus viridescens (Urodela)
b Lung regeneration. Same species as a
GRAY, D. J.; Ph.D., Prof. (Emer.) – Dept. of Anat., Sch. of Med., Stanford Univ., STANFORD, CA 94305, U.S.A.
a Prenatal development of limb bones, vertebral column, and costovertebral joints. Homo sapiens (Primates)
GRAY, Miss F. H.; Ph.D. – Dept. of Biol., Washington-Lee Univ., LEXINGTON, VA 24450, U.S.A.
GREEN, P. B.; Ph.D., Prof. – Dept. of Biol. Sci., Stanford Univ., STANFORD, CA 94305, U.S.A.
a Biophysics of morphogenesis. Nitella spec., Chara spec. (Charophyceae)
GREENBERG, Mrs. J. H.; Ph.D. – Natl. Inst. of Dent. Res., Natl. Inst. of Health, BETHESDA, MD 20014, U.S.A.
a Differentiation and biochemistry of cranial neural crest cells in vitro; influence of glycosaminoglycans on their migration and differentiation. Gallus domesticus (Aves)
GREENE, R. M.; Ph.D. – Natl. Inst. of Dent. Res., Natl. Inst. of Health, BETHESDA, MD 20014, U.S.A.
a Role of cyclic nucleotides in palatal epithelial differentiation and in developing limb bud (protein binding, radioimmunoassay, immunofluorescence)
b Disproportionate dwarsfism in a mutant exhibiting achondroplastic-like limb development. Mus musculus (Rodentia)
GRIENGARD, O.; Ph.D. – Dept. of Biochem., Canc. Res. Inst., New England Deaconess Hosp., 185 Pilgrim Rd., BOSTON, MA 02215, U.S.A.
a Hormonal regulation of enzyme synthesis in fetal and newborn liver, kidney, brain and spleen. Rattus spec. (Rodentia)
b Enzyme synthesis in explants of fetal liver cultured in vitro. Same species as a
GREENWOOD, M. S.; Ph.D. – Res. Lab., Weyerhaeuser Co., P. O. Box 1060, HOT SPRINGS, AR 71901, U.S.A.
GREGG, J. H.; Ph.D., Prof. – Dept. of Zool., Univ. of Florida, GAINESVILLE, FL 32611, U.S.A.
GREGG, J. R.; Ph.D., Prof. – Dept. of Zool., Duke Univ., DURHAM, NC 27706, U.S.A.
No work on developmental biology in progress
GRIYSON, R. I.; Ph.D., Assoc. Prof. – Dept. of Plant Sci., Univ. of W. Ontario, LONDON, Ont. N6A 5B7, Canada
a Hormonal components of flower development in male-sterile mutants (organ culture, gibberellin extraction and characterization). Lycopersicum esculentum (Solanaceae), Zea mays (Gramineae), Nigella damascena (Ranunculaceae)
GRILLO, T. A. I.; Prof. – Div. of Human Biol. and Behav., Fac. of Health Sci., Univ. of Ife, ILE-IFE, Nigeria
GROBSTEIN, P.; Ph.D. – Dept. of Pharmacol. and Physiol. Sci., Univ. of Chicago, 1101 E. 57th St., CHICAGO, IL 60637, U.S.A.

GROSCH, D. S.; Ph.D. – Dept. of Genet., North Carolina State Univ., Gardner Hall, RALEIGH, NC 27607, U.S.A.
a Egg production and survival of embryos after mother has ingested, or been injected with, chemical agents; without and with irradiation. Habrobracon spec. (Hymenoptera)
b The effects of space flight on reproductive performance (weightlessness, dynamic factors of launching and recovery, and radiation effects.) (Insecta)
c Mosaic and gynandromorph formation (techniques for altering proportion obtained). Same species as a

GROSS, P. R. – Dept. of Biol., Massachusetts Inst. of Technol., CAMBRIDGE, MA 02139, U.S.A.

GRUBB, R. B.; Ph.D. – Dept. of Anat. Sci., Univ. of Oklahoma Health Sci. Ctr., P. O. Box 26901, OKLAHOMA-City, OK 73190, U.S.A.
a Intestinal regeneration: origin and developmental potentiality of blastemal cells. Notophthalmus viridescens (Urodela)
b Jaw regeneration: origin and developmental potentiality of blastemal cells. Same species as a

GULYAS, B. J.; Ph.D. – Natl. Inst. of Child Health and Human Developm., Natl. Inst. of Health, Auburn Bldg. Rm 203, BETHESDA, MD 20014, U.S.A.
a Biochemistry and ultrastructure of formation and fate of annulate lamellae, nucleolar function, and blastocyst formation. Oryctolagus cuniculus (Lagomorpha), Rattus spec. (Rodentia)
b Cleavage plane formation. Mus musculus, Rattus spec. (Rodentia), Oryctolagus cuniculus (Lagomorpha)
c Polyspermy. Oryctolagus cuniculus (Lagomorpha)
d Induced parthenogenesis; ultrastructure and culturing of such eggs. Same species as c
e The effects of the fetal pituitary on the development of fetal gonads. Macaca mulatta (Primates)

GUMBRECK, L.; Ph.D., Prof. (Emer.) – Dept. of Anat. Sci., Univ. of Oklahoma Health Sci. Ctr., P. O. Box 26901, OKLAHOMA-City, OK 73190, U.S.A.
a Development of genital, ophthalmic, and urinary anomalies as related to genes, with emphasis on hermaphroditic alterations. Rattus rattus (Rodentia)

GUPTA, D. K.; M.Sc. – Dept. of Biochem., Fac. of Sci., Allahabad Univ., ALLAHABAD 211002, India
a Glycerol metabolism during development. Philosamia ricini (Lepidoptera)
b Lipids, lipase, transaminases and inorganic cations in the haemolymph during development and metamorphosis. Same species as a

GUPTA, Miss P.; M.Sc. – Dept. of Biochem., Fac. of Sci., Allahabad Univ., ALLAHABAD 211002, India
a Effect of photoperiod on some enzymes (lipase, phosphorylase, phosphatases, transaminases, proteases) and metabolites (glycogen, total carbohydrates, total lipids, protein) in the haemolymph during diapause and larval-pupal development. Antheraea mylitta (Lepidoptera)

GUPTA, S. K.; M.Sc. – Dept. of Biochem., Allahabad Univ., ALLAHABAD 211002, India
a Some enzymes (aminotransferase, arginase, proteases, phosphorylase) and metabolites (total free amino acids, proteins, glucosamine, total carbohydrates, glycogen, free sugars, citrate, pyruvate, lactate, nucleic acids, urea and uric acid) during embryogenesis. Antheraea mylitta (Lepidoptera)
b Beta-glucuronidase activity in different tissues: haemolymph, fat body, intestine, muscle and intestinal fluid, during pupal development. Same species as a

GURAYA, S. S.; Ph.D., D.Sc., Prof. – Dept of Zool., Punjab Agric. Univ., LUDHIANA, Punjab, India
a Comparative morphology, histochemistry, and biochemistry of oocyte growth. (Vertebrata)
b Comparative morphology, histochemistry, and biochemistry of development and maturation of ovary and testis. Millardia meltada, Cavia porcellus (Rodentia), Homo sapiens (Primates)
c Morphology, histochemistry and biochemistry of oocyte growth and of embryology. (Acanthocephala) (with V. R. PARSHAD)

GWATKIN, R. B. L.; Ph.D. – Merck Inst. for Therap. Research, RAHWAY, NJ 07065, U.S.A.
a Studies on fertilization, implantation, and early development. Mesocricetus auratus, Mus musculus (Rodentia)

HADFIELD, M. G.; Ph.D. – Kewalo Lab., Pacif. Biomed. Res. Ctr., Univ. of Hawaii, 41 Ahui St., HONOLULU, HI 96813, U.S.A.
a Externally induced metamorphosis and settling in marine larvae. (Gastropoda)
b Embryology and larval biology. Aplysia spec. (Gastropoda)

HALEY, L. E.; Ph.D., Assoc. Prof. – Dept. of Biol., Dalhousie Univ., HALIFAX, N.S., Canada
a The time of activation of genes controlling some enzymes in development. Mytilus edulis, Crassostrea virginica (Lamellibranchia)

HALEY, S. R.; Ph.D., Assoc. Prof. – Dept. of Zool., Univ. of Hawaii, 2538 The Mall, HONOLULU, HI 96822, U.S.A.
a Origin of germ line, prelarval development, reproductive cycling, and developmental adaptations of Hawaiian forms. Clibinarius zebra, Calcinus latens, C. laevimanus (Anomura, Decapoda, Crustacea)
b Origin of the germinal disc: cell lineage studies to determine the cell line(s) which give rise to the germinal disc in embryos which initially cleave holoblastically. Same species as a
c Origin of the extraembryonic membranes and egg attachment. Same species as a
d Reproduction and prelarval development with emphasis on sex determination. Hippa pacifica (Decapoda, Crustacea)

HALL, B. K.; Ph.D., Prof. – Dept. of Biol., Dalhousie Univ., Life Sci. Ctr., HALIFAX, N.S. B3H 4J1, Canada
a The origin of cartilage and bone from common germinal cells. Gallus domesticus (Aves)
b Hormonal control of skeletal development. Same species as a
c Epithelial-mesenchymal interactions in skeletal development. Same species as a

HALPERIN, W.; Ph.D., Assoc. Prof. – Dept. of Bot., Univ. of Washington, SEATTLE, WA 98195, U.S.A.
a The chemical basis for embryogenic phenotype (cell culture). Daucus carota (Umbellifera)
b Effects of cytokinins on cell wall metabolism, with special reference to tracheid development. Helianthus tuberosus, Pelargonium spp., Coleus spp. (Angiospermae)
c In vitro studies on crown gall. (Angiospermae)

HAMA, T.; D.Sc., Prof. – Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa, NAGOYA 464, Japan
a Morphogenetic movement and epigenetic development of head and trunk organizers; aging mechanism of presumptive ectoderm. Cynops pyrrhogaster (Urodela)
b Culture, differentiation, and ultrastructure of pigment cells. Oryzias latipes (Teleostei)

HAMABATA, A.; M.D., Assoc. Prof. – Dept. de Bioquim., Centro de Invest. y de Estud. Avanzados, Inst. Politéen. Nac., Apartado Postal 14–740, MEXICO 14, D.F., Mexico

HAMADA, K.; Ph.D., Prof. – Lab. of Embryol. and Genet., Fac. of Fish., Hokkaido Univ., HAKODATE, Japan
a Development of the chloride cell of anadromous species. (Gasterosteidae; Gobiidae, Teleostei)

HAMADA, S. H.; Ph.D. – Dept. of Biol. Sci., Fordham Univ., NEW YORK, Bronx, NY 10458, U.S.A.
a The role of glycoproteins in forelimb regeneration (labelled glucose, electron microscopic radioautography, blastema culture). Taricha torosa (Urodela)
b The reaggregation of disaggregated embryos in culture (effects of biochemical inhibitors and of an "enhancing factor"; time lapse phase microscopy and electron microscopy). Strongylocentrotus purpuratus (Echinoidea)

HAMBURGER, V.; Ph.D., Prof. (Emer.) – Dept. of Biol., Washington Univ., Skinker and Lindell Ave., ST. LOUIS, MO 63130, U.S.A.

HAMBURGH, M.; Prof. – Dept. of Biol., City Coll. of the Univ. of New York, Convent Ave. & 139th St., NEW YORK, NY 10031, U.S.A.
also: Dept. of Anat., A. Einstein Coll. of Med., Eastchester Rd. & Morris Park Ave., NEW YORK, Bronx, NY 10461, U.S.A.

HAMILTON, H. L.; Ph.D., Prof. – Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTESVILLE, VA 22903, U.S.A.
a Organogenesis. Gallus domesticus (Aves)

HAMMOND, W. S.; Ph.D.; Assoc. Prof. – Dept. of Anat., Upstate Med. Ctr., State Univ. of New York, 766 Irving Ave., SYRACUSE, NY 13210, U.S.A.
No work on developmental biology in progress

HAMNER, Ch. E.; D. V. M., Ph.D. – Dept. of Obstet. and Gynecol., Div. of Reprod. Biol., Univ. of Virginia Med. Sch., Box 179, CHARLOTTESVILLE, VA 22903, U.S.A.
a The composition of oviduct secretions of ovariectomized females with and without estrogen and progesterone injections and the effect of these secretions on sperm metabolism, fertilizing ability and blastocyst development. Oryctolagus cuniculus (Lagomorpha), Felis catus (Carnivora)
b The role of steroids in capacitation of sperm in the female reproductive tract. (Mammalia)
c Reproductive physiology; artificial insemination technique, sperm characterization, seminal plasma constituents, in vitro fertilization. Felis catus (Carnivora)

HAMPEL, A. E.; Ph.D., Assoc. Prof. – Dept. of Biol. Sci., Northern Illinois Univ., Montgomery Hall, DeKALB, IL 60115, U.S.A.
a Protein and nucleic acid synthesis in late tailbud stages (incorporation study). Xenopus laevis (Anura)

HANADA, A.; DVS – Natl. Inst. of Anim. Industry, CHIBA-shi, 280 Japan
a Fertilization of ova. Bos taurus, Capra hircus (Artiodactyla)

HANAOKA, Y.; M.Sc. – Dept. of Comp. Endocrinol., Inst. of Endocrinol., Gunma Univ., Showa-machi, MAEBASHI, 371 Japan

HANCOCK, R. L.; M.D., Assoc. Prof. – Div. of Med. Biochem., Health Sci. Ctr., Univ. of Calgary, CALGARY, Alta T2N 1N4, Canada
a Alpha-fetoprotein in developing and neoplastic liver. Rattus spec. (Rodentia), Homo sapiens (Primates)

HANSON, E. D.; Ph.D., Prof. – Dept. of Biol., Wesleyan Univ., MIDDLETOWN, CT 06457, U.S.A.
a Developmental genetics of oral structures (techniques: electron microscopy, UV microbeam, nucleic acid and protein antimetabolites) Paramecium aurelia, P. trichium (Ciliata)
b Mutations which affect structural integrity of the cell, esp. conditional mutants (chemical mutagenesis, breeding analyses, light and electron microscopy). Paramecium aurelia (Ciliata)
c Functional analysis of fine structure of cell cortex (techniques: electron and light microscopy, chemical and physical agents which disrupt fine structure). Same species as b

HANZELY, L.; Ph.D., Assoc. Prof. – Dept. of Biol. Sci., Northern Illinois Univ., DeKALB, IL 60115, U.S.A.
a Ultrastructue of the mode of nucleolar reformation. Allium sativum (Liliaceae)
b Fine structure and cytochemistry of microbodies. (Algae)

HARADA, H.; D.Sc. – Dept. of Biol. Sci., Univ. of Tsukuba, IBARAKI-KEN, 300–31 Japan
a Hormonal control of somatic embryogenesis (tissue culture). Petunia inflata, P. hybrida, Antirrhinum majus, Pharbitus nil (Angiospermae)

HARDY, Ms. M. H.; Ph.D., Prof. – Dept. of Biomed. Sci., Ontario Vet. Coll., Univ. of Guelph, GUELPH, Ont. N1G 2W2, Canada
a Development of asebia (ab/ab) homozygotes: changes in the dermis before birth, changes in sebaceous gland secretion, hair follicle orientation, and endocrine organs. Mus musculus (Rodentia)
b Induction of mucous metaplasia of skin and hair follicles in vitro by vitamin A (electron

microscopy, separation and recombination of dermis and epidermis, autofluorescence of vitamin A). Same species as a

c Differentiation of the dermis, its cell types and intercellular matrix in 12–18 day embryos (histochemistry, light and electron microscopy). Same species as a

d Identification of "totipotent" cells disaggregated from unincubated blastoderms which give rise to blastulae and blastodises (histochemistry and electron microscopy). Gallus domesticus (Aves) (with P. FISER, Ontario Agric. Coll., Guelph)

HARRIS (FELDMAN), Mrs. P. J.; Ph.D., Assoc. Prof. – Biol. Dept., Univ. of Oregon, EUGENE, OR 97403, U.S.A.

a Centriole replication and separation, using mercaptoethanol to induce direct divisions from one to four cells (electron microscopy). Strongylocentrotus purpuratus, Dendraster excentricus (Echinoidea)

b Intracellular membrane systems and their role in regulating cytoplasmic ion concentrations, including ionic control of microtubule and microfilament polymerization during cleavage (cytochemistry, electron microscopy). Strongylocentrotus purpuratus (Echinoidea)

c Role of microtubules and microfilaments in the migration of pigment vesicles and other particles following fertilization. Same species as b

HARRISON, J. R.; Ph.D., Prof. – Dept. of Zool., State Univ. of New York, OSWEGO, N.Y. 13126, U.S.A.

a In vitro studies on growth and differentiation of retinal pigment in the embryonic eye: analysis of developmental factors contained in the yolk-albumen of the egg. Gallus domesticus (Aves)

b Uptake of glucose by early primitive streak to early somite embryos (isotope techniques). Same species as a

c Glucose and amino acid metabolism in the early embryo. Same species as a

HARTH, M. S.; Ph.D. – Div. of Res., N. Carolina Dept. of Ment. Health, Dorothea Dix Hosp., Box 7532, RALEIGH, NC 27611, U.S.A.

HARTMANN, J. F.; Ph.D. – Merck Inst. for Therap. Research, RAHWAY, NJ 07065, U.S.A.

a Prepenetration reactions in fertilization. Mesocricetus auratus (Rodentia)

HASEGAWA, M.; D.Sc., Prof. – Lab. of Biol., Women's Coll. of Tokai-Gakuen, Tenpaku-cho, Tenpaku-ku, NAGOYA, 468 Japan

a Restitution of the eye. (Teleostei)

b Morphogenesis of the retinal pigment cell. (Cobitidae, Teleostei)

HASELKORN, R.; Ph.D., Prof. – Dept. of Biophys. and Theoret. Biol., Univ. of Chicago, 1101 E. 57th St., CHICAGO, IL 60637, U.S.A.

HASHIMOTO, K.; M.D., Prof. – Dept. of Med., Div. of Dermatol., Univ. of Tennessee, Vet. Adm. Hosp., 1030 Jefferson Ave., MEMPHIS, TN 38104, U.S.A.

a Embryogenesis of cutaneous fine structures. Homo sapiens (Primates)

HASHIMOTO, K.; D.Sc. – Biol. Lab., Kozu High School, Tennoji-ku, OSAKA, Japan

HASSELL, J. R.; Ph.D. – Lab. of Developm. Biol. and Anomal., Natl. Inst. of Dent. Res., N.I.H., Bldg. 30, Rm 434, BETHESDA, MD 20014, U.S.A.

a Role of glycoprotein synthesis and cell migration in growth regulation of facial structures. (Mammalia)

HASWELL, Ms. P.; M.Sc. – Dept. of Zool., Univ. of Brit. Columbia, VANCOUVER, B.C. V6T 1W5, Canada

a Creatine kinase in early development. Xenopus laevis (Anura)

HAY, D. M.; Ch.B., Prof. – Div. of Obstet. & Gynecol., Health Sci. Ctr., Univ. of Calgary, CALGARY, Alta. T2N 1N4, Canada

a Ante-natal monitoring of the fetus. Homo sapiens (Primates)

b Alpha-fetoprotein in pregnancy. Rattus spec., Ovis aries, Macaca mulatta, Homo sapiens (Mammalia)

c Beta-cortisol in pregnancy. Macaca mulatta, Homo sapiens (Primates)

HAY, Miss E. D.; M.D., Prof. – Dept. of Anat., Harvard Med. School, 25 Shattuck St., BOSTON, MA 02115, U.S.A.

a Localization of regeneration cells. Planaria spec. (Turbellaria), Triturus viridescens (Urodela)

b Fine structure of the developing cornea, and localization and identification of proteins secreted by the epithelium (autoradiography and chromatography). Gallus domesticus (Aves)

c Migration of corneal endothelium and mesenchymal cells; role of glycosaminoglycans in cell migration and development. Same species as b

d Secretion of collagen by neural tube and other embryonic epithelia; its role in tissue interaction. Same species as b

HAY, R. J.; Ph.D. – Cell Cult. Dept., Amer. Type Culture Collection, 12301 Parklawn Drive, ROCKVILLE, MD 20852, U.S.A.

a Lung and pancreatic cell cultures for studies of differentiation, physiology, and senescence. (Mammalia)

HAYASHI, Y.; Ph.D., Prof. – Daizawa 2–18–18, Setagaya-ku, TOKYO, Japan

HAYASHI, Y.; M.D. – Dept. of Developm. Pathol., Res. Inst. of Environm. Med., Nagoya Univ., Furo-cho, Chikusa-ku, NAGOYA, 464 Japan

a Electron microscopy of experimentally induced malformations of the central nervous system. Mus musculus, Rattus norvegicus (Rodentia)

b Effects of low-dose x-irradiation upon the developing brain. Mus musculus (Rodentia) (with Y. KAMEYAMA and K. HOSHINO)

HEARSON, L. L.; Ph.D., Assoc. Prof. – Dept. of Biol., Wabash Coll., CRAWFORDSVILLE, IN 47933, U.S.A.

HEATH, H. D.; Ph.D., Prof. – Dept. of Biol. Sci., Calif. State Univ., HAYWARD, CA 94542, U.S.A.
a Growth regulation in larvae. Taricha torosa (Urodela)
b Tentacle regeneration. Hydra littoralis, Chlorohydra viridissima (Hydrozoa)

HEATON, Mrs. M. B.; Ph.D. – Dept. of Neurosci., Coll. of Med., Univ. of Florida, GAINESVILLE, FL 32610, U.S.A.

HEIM, W. G.; Ph.D., Prof. – Dept. of Biol., Colorado Coll., COLORADO SPRINGS, CO 80903, U.S.A.
a Serum proteins during ontogeny. Gallus domesticus (Aves), Rattus rattus (Rodentia)
b Alpha-2-macroglobulin during development, regeneration and various physiological states. Rattus rattus (Rodentia)
c Biochemistry of early development. Oryzias latipes (Teleostei)

HEIN, Miss R. R.; Ph.D., Prof. – Biol. Dept., Upsala Coll., Prospect St., EAST ORANGE, NJ 07019, U.S.A.
a Effect of chemical agents (usually metals) on development, and possible correlation with the effect of selected enzyme systems present in developing and regenerating tissues. Dugesia dorotocephala (Turbellaria), (Echinodermata)

HEMING, B. S.; Ph.D., Assoc. Prof. – Dept. of Entomol., Univ. of Alberta, EDMONTON, Alta. T6G 2E3, Canada
a Metamorphosis. Frankliniella fusca, Haplothrips verbasci and other spp. (Thysanoptera)
b Embryogenesis. Haplothrips verbasci (Thysanoptera)
c Late embryogenesis: central nervous system, stomatogastric system and sense organs. Lytta viridana (Meloidae, Coleoptera)

HENDRICKX, A. G.; Ph.D. – Calif. Primate Res. Ctr., Univ. of California, DAVIS, CA 95616, U.S.A.
a Temporal relationships of ovulation, fertilization, and early embryonic development. Macaca mulatta, M. radiata, Papio cynocephalus (Primates)
b Teratogenic effects of corticosteroids (triamcinolone) on development of skull, lymphoid and nervous systems. Same species as a

HENDRIKS, Mrs. D. M. – Exp. Embryol. Res. Unit of the M.R.C., Dept. of Anat., Univ. of the Orange Free State, P. O. Box 339, BLOEMFONTEIN 9300, S. Africa
a Experiments on the development of the endolymphatic system. Gallus domesticus (Aves)

HENDRIX, R. W.; Ph.D. – Dept. of Ophthalmol., Children's Hosp. Med. Center, BOSTON, MA 02115, U.S.A.

HENNEN, Miss S.; Ph.D., Assoc. Prof. – Dept. of Biol., Marquette Univ., 530 North 15th St., MILWAUKEE, WI 53233, U.S.A.
a Nucleo-cytoplasmic interactions in development. (Amphibia)
b Localization of rDNA sequenees in chromosomes. (Amphibia)

HERKOVITS, J.; M.D. – Lab. de Invest. Embriol., CONICET, Paraguay 2155, 2° piso, BUENOS AIRES, Argentina
a Cell shape and cell contact in early development, in normal and experimental conditions. Bufo arenarum (Anura)

HERMAN, L.; Ph.D., Prof. – Dept. of Pathol., Downstate Med. Center, State Univ. of New York, 450 Clarkson Ave., NEW YORK, Brooklyn, N.Y. 11203, U.S.A.

HERNANDEZ de BARRIOS, Mrs. C. E.; M.D., Assoc. Prof. – Cat. de Embriol., Fac. de Med., Univ. de Los Andes, MÉRIDA, Venezuela
a Histochemistry of the developing placenta. Homo sapiens (Primates)
b Anomalies of the nasal cavity. Same species as a

HEROLD, R. C.; Ph.D., Assoc. Prof. – Dept. of Histol., Embryol., and Genet., Sch. of Dent. Med., Univ. of Pennsylvania, 4001 Spruce St., PHILADELPHIA, PA 19174, U.S.A.
a Relation of dentinogenesis and dermal bone formation. Squalus acanthias (Selachii; Teleostei), Ambystoma spec. (Urodela)
b Comparative development and ultrastructure of dentines (osteodentine and vasodentine). Esox lucius, Gadus callarias (Teleostei)
c Development of embryonic skeletal structure; normal ultrastructure, and effect of sodium fluoride. Echinarachnius parma (Echinoidea)
d Developmental pathology of odontogenesis. Homo sapiens (Primates)
e Teratogenic effects of cortisone and vitamin A on development of primary and secondary fetal palate in organ culture. Mus musculus (Rodentia)

HERRMANN, H.; M.D., Prof. – Biol. Sci. Group, Genet. and Cell Biol. Sect., U-125, Univ. of Connecticut, STORRS, CT 06268, U.S.A.

HEYWOOD, S. M.; Ph.D., Prof. – Dept. of Genet. and Cell Biol., Univ. of Connecticut, STORRS, CT 06268, U.S.A.
a Role of RNA and protein synthesis and cell surface receptors in muscle cell differentiation. Gallus domesticus (Aves)

HIBBARD, E.; Ph.D., Assoc. Prof. – Dept. of Biol., Pennsylvania State Univ., 208 Life Sciences I, UNIVERSITY PARK, PA 16802, U.S.A.

HICKEY (WEBER), Mrs. E. D.; Ph.D. – Biol. Dept., Russell Sage Coll., TROY, N.Y. 12180, U.S.A.

HICKS, G. S.; Ph.D. – Dept. of Biol., Dalhousie Univ., Life Sci. Centre, HALIFAX, N.Sc., Canada

HIGASHINAKAGAWA, T.; D.Sc. – Dept. of Embryol., Carnegie Inst. of Wash., 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.

HILD, W. J.; M.D., Prof. – Dept. of Anat., Med. Branch, Univ. of Texas, GALVESTON, TX 77550, U.S.A.
a In vitro development of retinal explants; differentiation of sensory cells and synaptic complexes. Rattus norvegicus (Rodentia), Felis domestica (Carnivora)

HILFER, S. R.; Ph.D., Assoc. Prof. – Dept. of Biol., Temple Univ., Broad & Berks St., PHILADELPHIA, PA 19122, U.S.A.

HILL, Mrs. S. DOUGLAS; Ph.D. – Dept. of Zool., Michigan State Univ., 220 Nat. Sci. Bldg., EAST LANSING, MI 48823, U.S.A.

HINDS, J. W.; Ph.D. – Dept. of Anat., Boston Univ., 80 E. Concord St., BOSTON, MA 02118, U.S.A.

a Golgi impregnation and electron microscopic study of neurogenesis and gliogenesis in the olfactory bulb. Mus musculus (Rodentia)

b Early neurogenesis in spinal cord and cerebral cortex (electron microscopy, Golgi impregnation). Same species as a

c Analysis of developing retina using serial electron microscopic sections. Same species as a

HINSCH, Miss G. W.; Ph.D., Assoc. Prof. – Dept. of Biol., Univ. of South Florida, TAMPA, FL 33620, U.S.A.

a Ultrastructure and hormonal controls of development and reproductive maturation in females. Libinia emarginata (Decapoda, Crustacea)

b Ultrastructural study of development. (Cnidaria)

HIRADHAR, P.; Ph.D. – Dept. of Zool., Fac. of Sci., M.S. Univ. of Baroda, BARODA 390002, India

a Tail regeneration in the adult, especially evaluation of endocrine involvement and physiological responses; evocation of regenerative response by transplantation; evaluation of morphogenetic interactions between stump and regenerate. Hemidactylus flaviviridis (Lacertilia)

HIRAKOW, R.; M.D., Prof. – Dept. of Anat., Saitama Med. Sch., 38 Morohongo, Moroyama, Iruma-gun, SAITAMA, 350–04 Japan

a Ultrastructural differentiation of the heart. (Vertebrata)

HIRAMA, M. N.; D.Sc. – Kanebo Inst. for Canc. Res., 1–9–1, Misaki-cho, Hyogo-ku, KOBE, 652 Japan

a Pattern and regulation of nucleic acid and protein synthesis in early development. Hemicentrotus pulcherrimus (Echinoidea)

HIRAMOTO, Y.; D.Sc., Prof. – Biol. Lab., Tokyo Inst. of Technol., O-Okayama, Meguro-ku, TOKYO, 152 Japan

a Cell division. (Echinoidea; Asteroidea)

b Physical properties of egg cytoplasm. Same species as a

HIROSHIMA, T.; B.Sc. – Biol. Inst., Kanazawa Med. Univ., UCHINADA-machi, Ishikawa-ken, 920–02 Japan

a Reaggregation of dissociated cells. Callyspongia elongata (Porifera)

HIRSCH, H. V. B. – Dept. of Biol. Sci., State Univ. of New York, ALBANY, NY 12222, U.S.A.

a Methods to analyze the postnatal development of linear receptive fields of cells in the visual cortex. Felis domestica (Carnivora) (with R. GORDON, Bethesda, Md.)

HISHIDA, T.; D.Sc., Prof. – Lab. of Biol., Gifu Coll. of Dent., 1851 Takano, Hozumi-cho, Motosu-gun, GIFU-ken, Japan

a Sex differentiation and sex reversal. Oryzias latipes (Teleostei)

HOADLEY, L. † Prof. (Emer.) – CAMBRIDGE, MA 02138, U.S.A.

HOAR, R. M.; Ph.D. – Teratol. Sect., Dept. of Toxicol., Res. Div., Hoffmann-La Roche Inc., Bldg. 100, NUTLEY, NJ 07110, U.S.A.

a Placental endocrine activity. Cavia porcellus (Rodentia)

b Maternal hyperadrenalism and the interrelationship of thyroid and adrenal activities of the embryo. Same species as a

c Development of the structure and function of the yolk sac placenta and its relationship to birth defects. Rattus norvegicus (Rodentia)

d Maternal hypothyroidism and the interrelationship of thyroid and ovarian activities in the maintenance of pregnancy and fetal development. Same species as a

HOLLAND, C. A. – Biol. Div., Oak Ridge Natl. Lab., P. O. Box Y, OAK RIDGE, TN 37830, U.S.A.

a Interacting controls of regeneration and molting. Gecarcinus lateralis (Decapoda, Crustacea) (with D. M. SKINNER and J. McCarthy)

b Characterization and study of function of satellite DNAs. Pagurus pollicaris, Cardisoma guanhumi, Gecarcinus lateralis (Decapoda, Crustacea) (with D. M. SKINNER, C. A. CHAMBERS, and N. T. CHRISTIE)

c Organization of the genome. Same species as a (with D. M. SKINNER, and N. T. CHRISTIE)

HOLLINSHEAD, Ms. M. B.; Ph.D., Assoc. Prof. – Dept. of Anat., New Jersey Med. Sch., 100 Bergen St., NEWARK, NJ 07103, U.S.A.

HOLLYDAY, Miss M. A.; Ph.D. – Dept of Biol., Washington Univ., Skinner and Lindell Ave., ST. LOUIS, MO 63130, U.S.A.

HOLLYFIELD, J. G.; Ph.D. – Dept. of Ophthalmol., Coll. of Phys. and Surg., Columbia Univ., 630W. 168th St., NEW YORK, N.Y. 10032, U.S.A.

HOLMES, P. V.; Ph.D. – Div. of Morphol. Sci., Health Sci. Center, Univ. of Calgary, CALGARY, Alta. T2N 1N4, Canada

HOLMSTEDT, J. O. V.; D.D.S., Ph.D. – Dept. of Anat., Louisiana State Univ., 1100 Florida Ave., NEW ORLEANS, LA 70119, U.S.A.

a Mechanisms of secondary palate formation (light microscopy, electron microscopy and autoradiography; normal development and spontaneous cleft lip and palate). Mus musculus (Rodentia)

b Development of eyelids (light microscopy, electron microscopy and autoradiography; comparison with secondary palate). Same species as a

HOLOWINSKY, A. W.; Ph.D., Assoc. Prof. – Div of Biol. and Med. Sci., Brown Univ., PROVIDENCE, R.I. 02912, U.S.A.

a Early events in light induced chloroplast development: membrane biogenesis. Euglena gracilis (Euglenophyceae)

b Effect of culture conditions on chloroplast replication. Same species as a

HOLTFRETER, J. K. F.; Ph.D., Prof. – Dept. of Biol., Univ. of Rochester, ROCHESTER, NY 14627, U.S.A.
No work on developmental biology in progress

HONDA, S. I.; Ph.D., Prof. – Dept. of Biol. Sci., Coll. of Sci. and Engin., Wright State Univ., Col. Glenn Highway, DAYTON, OH 45431, U.S.A.
a Structure and function of organelles, especially chloroplasts. (Angiospermae)

HOPPE, P. C.; Ph.D. – The Jackson Lab., BAR HARBOR, ME 04609, U.S.A.
a Fertilization in vitro and embryo development. Mus musculus (Rodentia)
b Requirements for epididymal sperm maturation; sperm metabolism; effects of gamete aging on development. Same species as a
c Parthenogenesis. Same species as a

HORI, I.; D.med. – Biol. Inst., Kanazawa Med. Univ., UCHINADA-machi, Ishikawa-ken, 920–02 Japan
a Morphology of connective tissue. Dugesia japonica (Turbellaria)
b Regeneration of basement membrane. Same species as a
c Electron microscopic cytochemistry of collagen fibril. (Invertebrates)

HORI, R.; D.Sc., Prof. – Biol. Inst., Toyama Univ., Gofuku 3190, TOYAMA, 930 Japan
a Activation analysis of trace elements (Mn, Zn and V) in the egg and their absorption from the surrounding medium. Hemicentrotus pulcherrimus (Echinoidea), Halocynthia roretzi (Ascidiacea), Oryzias latipes (Teleostei)
b Submicroscopic structure of the cortex and cortical alveoli of the unfertilized egg and the fertilization phenomena. Oryzias latipes (Teleostei)

HORIUCHI, S.; B.Sc. – Dept. of Biol., Coll. of Gen. Educ., Osaka Univ., Toyonaka, OSAKA, 560 Japan
a Cell kinetics of developing digestive organs. Rhacophorus spec., Xenopus spec., Rana spec. (Anura)

HORSFALL, W. R.; Ph.D., Prof. – Dept. of Entomol., Univ. of Illinois, 320 Morrill Hall, URBANA, 61801, U.S.A.

HOSHINO, K.; M.D., Dr. Med. Sci., Prof. – Dept. of Anat., Univ. of Manitoba, 750 Bannatyne Ave., WINNIPEG, Man. R3E 0W3, Canada
a Development, growth, and teratogenesis of mammary glands after prenatal exposure to hormones and carcinogen. Mus musculus (Rodentia)
b Influences of hormones and carcinogen upon mammary growth of male and female immature animals. Same species as a
c Regeneration of transplanted mammary and salivary glands. Same species as a
d Structural and functional teratogenesis of mammary glands by glucocorticoids. Same species as a

HOSHINO, K.; M.D., D. Med. Sc., Assoc. Prof. – Dept. of Developm. Pathol., Res. Inst. of Environm. Med., Nagoya Univ. Furo-cho, Chikusa-ku, NAGOYA, 464 Japan
a Morphogenesis of genetic microphthalmia. Mus musculus (Rodentia) (with Y. KAMEYANA and S. ODA)
b Autoradiography of the generation cycle in the neural cells of the embryonic brain. Same species as a
c Effects of low-dose x-irradiation upon the developing brain. Same species as a (with Y. KAMEYAMA and Y. HAYASHI)
d Influences of intrauterine environment on the manifestation of genetic malformations. Same species as a (with Y. KAMEYAMA and S. ODA)

HOSICK, H. L.; Ph.D. – Dept. of Zool., Wash. State Univ., PULLMAN, WA 99163, U.S.A.

HOSTETLER, J. R.; Ph.D., Assoc. Prof. – Dept. of Anat., Ohio State Univ., 333 West 10th Ave., COLUMBUS, OH 43210, U.S.A.
a Effect of in vivo administration of phytohemagglutinin on fetal hemopoietic organs (light and electron microscopy). Oryctolagus cuniculus (Lagomorpha)
b Light and electron microscopic histochemical analysis of supporting tissues in areas of hemopoiesis in embryos. (Aves; Mammalia)

HOTTA, Y.; Ph.D. – Dept. of Biol., B-022, Univ. of Calif. San Diego, LA JOLLA, CA 92093, U.S.A.
a Regulation of DNA synthesis during meiotic development. Trillium erectum, Lilium longiflorum, Tulipa gesneriana, Vicia faba, Bellevalia romana (Angiospermae)
b Cell transformation, especially of meiotic cells by biopolymer molecules in vitro. Lilium longiflorum, Triticum aestivum (Angiospermae)
c Meiotic cell culture in vitro and the regulation of the meiotic process. Rattus spec. (Rodentia)
d Characterization of r-protein (meiotic DNA binding protein) and the localization in meiotic cells. Lilium longiflorum (Liliaceae), Rattus spec. (Rodentia)
e Mechanism of chromosomal condensation in meiotic cells in comparison with somatic ones. Same species as d

HOUGH (RAYMOND), Mrs. B.; Ph.D. – Div. of Biol., Calif. Inst. of Technol., PASADENA, CA 91109, U.S.A.
a Molecular biology of oogenesis and early development, particularly gene activation. Hyanassa obsoleta (Gastropoda), Strongylocentrotus purpuratus (Echinoidea). Engystomops pustulosus, Xenopus laevis (Anura)

HOWES, R. I.; D.D.S., Ph.D. – Dept. of Anat. Sci., Univ. of Oklahoma Health Sci. Ctr., P. O. Box 26901, OKLAHOMA-City, OK 73190, U.S.A.
a Histologic and morphogenic development of tooth crowns and roots (ectopic tooth transplants). Rana pipiens (Anura), Iguana iguana (Lacertilia), Heterodontis francisci (Elasmobranchii) and other lower Vertebrata

HRUDKA, F.; D.V.M., D.Sc., Prof. – Dept. of Vet. Anat., Western Coll. of Vet. Med., Univ. of Saskatchewan, SASKATOON, Sask. S7N 0W0, Canada
HSÜ (LIANG), Mrs. C. Y.; Ph.D., Prof. – Dept. of Biomorph., Natl. Defense Med. Ctr., P. O. Box 7432, TAIPEI 107, Taiwan, Rep. of China
a Experimental sex differentiation. (Anura)
HUANG, F. L.; Ph.D. – Dept. of Zool., Natl. Taiwan Univ., TAIPEI 107, Taiwan
HUANG, L.; Ph.D. – Dept. of Embryol., Carnegie Inst. of Wash., 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.
HUANG, Ms. Sue-Ying; B.Sc. – Dept. of Zool., Univ. of Brit. Columbia, VANCOUVER, B.C. V6T 1W5, Canada
a Histone synthesis in different regions of the early embryo. Xenopus laevis (Anura)
HUBBERT, W. T.; D.V.M., Prof. – Dept. of Epidemiol. and Comm. Health, Sch. of Vet. Med., Louisiana State Univ., BATON ROUGE, LA 70803, U.S.A.
a Vertical transmission of infection and its effect on fetus and neonate. Bos taurus (Artiodactyla)
HUGHES, A. F. W. †; Ph.D., Prof. – Dept. of Anat., Developm. Biol. Ctr., Case Western Reserve Univ., CLEVELAND, OH 44106, U.S.A.
HUGHES, R. L.; Ph.D. – Sch. of Anat., Univ. of Queensland, St. Lucia, BRISBANE, Qld. 4067, Australia
a Functional anatomy of the reproductive system, especially ultrastructure of gametogenesis and gonad function. Many spp. (Monotremata; Marsupialia)
b Feto-maternal relationship with reference to the evolution of viviparity. Same species as a
HUMPHREY, R. R.; Ph.D., Prof. (Emer.) – Dept. of Zool., Indiana Univ., Jordan Hall 224, BLOOMINGTON, IN 47401, U.S.A.
a Developmental genetics. Ambystoma mexicanum (Urodela)
HUMPHREYS, T. D.; Ph.D., Assoc. Prof. – Kewalo Lab., Pacif. Biomed. Res. Ctr., Univ. of Hawaii, 41 Ahui St., HONOLULU, HI 96813, U.S.A.
a RNA and protein synthesis in embryos. Colobocentrotus atratus, Lytechinus pictus, Tripneustes gratilla (Echinoidea)
b Characterization of aggregation factor. Microciona prolifera, Terpioz zeteki, Haliclona occulata (Porifera)
c Relationship of cell contacts to growth control, as expressed in nucleic acid synthesis regulation, in embryonic skin fibroblasts. Gallus domesticus (Aves)
HUMPHREYS, W. J.; Ph.D., Prof. – Dept. of Zool., Univ. of Georgia, Barrow Hall, ATHENS, GA 30602, U.S.A.
a Ultrastructure of blastomeres in mosaic eggs. Mytilus edulis (Lamellibranchia)
b Desiccated cytoplasm of viable, encysted embryos, studied by transmission EM, freeze-fracturing, and scanning EM. Artemia salina (Anostraca, Crustacea)
c Inhibition and induction of the acrosome reaction in spermatozoa. Oryctolagus cuniculus (Lagomorpha)
HUMPHRIES, A. A., Jr.; Ph.D., Prof. – Dept. of Biol., Emory Univ., ATLANTA, GA 30322, U.S.A.
a Oogenesis and maturation. (Amphibia)
b Fertilization. (Amphibia)
c Oogenesis and development in marsupial species. Gastrotheca riobambae, G. ovifera, Flectonotus pygmaeus (Anura)
HUNT, E. L.; Ph.D., D.Sc., Prof. – Dept. of Biol., Emory Univ., ATLANTA GA 30322, U.S.A.
a Developmental pathology of the endocrine pancreas. Gallus domesticus (Aves)
HUNT, Miss L. M.; Ph.D. – Dept. of Biol., Univ. of Notre Dame, NOTRE DAME, IN 46556, U.S.A.
a Development under various conditions, particularly effects of juvenile hormone on control of larval pigment deposition. Lygaeus kalmii and other Lygaeidae (Hemiptera)
b Definition of the term metamorphosis, particularly as it applies to the supernumerary instars of Hemimetabola. (Lygaeidae, Hemiptera)
HUSKEY, R. J.; Ph.D. – Dept. of Biol., Univ. of Virginia, CHARLOTTESVILLE, VA 22903, U.S.A.
a Developmental genetics of early embryogenesis. Volvox carteri (Chlorophyta)
b Regulation of differentiation. Same species as a
HUTCHISON, C. F.; B.S. – Merck Inst. for Therap. Research, RAHWAY, NJ 07065, U.S.A.
a Studies on fertilization. Mesocricetus auratus (Rodentia)
HYODO (TAGUCHI), Mrs. Y.; Ph.D. – Div. of Biol., Natl. Inst. of Radiol. Sci., 9–1, 4-chome, Anagawa, CHIBA, 280 Japan
IBATA, Y.; M.D., Dr.Med.Sci., Prof. – Dept. of Anat., Kyoto Pref. Univ. of Med., Kawaramachi Hirokoji, KYOTO, 602 Japan
a Synaptogenesis in the central nervous system (histochemistry, electron microscopy). Rattus spec. (Rodentia)
b Development of the neuro-muscular junction in vivo and in vitro. Mus musculus, Rattus spec. (Rodentia)
c Development of sympathetic nerve ending. Same species as a
IDE, C.; M.D. – Dept. of Anat., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan
IDE, H.; D.Sc. – Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa, NAGOYA 464, Japan
a Transformation between chromatophores in vitro. Rana catesbeiana (Anura)
b Regulation of pigment formation in the retinal pigment epithelium of the embryo. Gallus domesticus (Aves)
Ii, I.; M.Sc. – Dept. of Biophys. and Biochem., Univ. of Tokyo, 7–3–1, Hongo, Bunkyo-ku, TOKYO, 113 Japan
a Glutathione reductase in early development. Hemicentrotus pulcherrimus, Anthocidaris crassispina, Pseudocentrotus depressus (Echinoidea)

IKENISHI, K.; B.Sc. – Lab. of Biol., Gifu Coll. of Dent., 1851 Takano, Hozumi-cho, Motosu-gun, GIFU-ken, Japan
a Qualitative and quantitative analysis of the mesoderm induced in early blastula ectoderm after varying duration of contact with inducer. Ambystoma mexicanum (Urodela)
b Origin of primordial germ cells. Same species as a

IKEUCHI, T.; D.Sc. – Chromos. Res. Unit., Hokkaido Univ., N.10, W.8, SAPPORO, 060 Japan
a Chromosome studies in early embryogenesis, with special reference to induced and spontaneous abortions, and sex ratio. Homo sapiens (Primates)

IKUSHIMA, N.; D.Sc. – Biol. Lab., Kansai Med. School, HIRAKATA, 573 Japan
a Differences of adhesiveness between cells of various parts of embryos. (Amphibia)

ILAN, J.; Ph.D., Prof. – Dept. of Anat., Developm. Biol. Ctr., Case Western Reserve Univ., 2119 Abington Rd., CLEVELAND, OH 44106, U.S.A.
a The regulation of protein synthesis and the control of mRNA translation during development and morphogenesis. (with Judith ILAN)

ILAN, Mrs. Judith; Ph.D. – Dept. of Anat., Developm. Biol. Ctr., Case Western Reserve Univ., 2119 Abington Rd., CLEVELAND, OH 44106, U.S.A.
a Studies on the regulation of protein synthesis and the control of mRNA translation during development and morphogenesis. (with J. ILAN)

IMAHORI, K.; D.Sc., Prof. – Dept. of Biol., Coll. of Gen. Educ., Osaka Univ., Toyonaka, OSAKA, 560 Japan
a Morphogenesis, especially of sporelings. (Charophyceae)
b Origin and cytogenesis of prokaryotic and eukaryotic cells. Chara spec., Nitella spec. (Charophyceae), Bryopsis spec. (Chlorophyceae)

IMBERSKI, R. B.; Ph.D., Assoc. Prof. – Dept. of Zool., Div. of Life Sci., Univ. of Maryland, COLLEGE PARK, MD 20742, U.S.A.
a Developmental genetics of enzymes and isozymes. Drosophila spp. (Diptera), Ephestia kühniella (Lepidoptera)
b Control of growth and differentiation of imaginal disc cells. Same species as a
c Changes in chromosomal proteins during development. Same species as a

INFANTE, A. A.; Ph.D., Assoc. Prof. – Dept. of Biol., Wesleyan Univ., MIDDLETOWN, CT 06457, U.S.A.
a Control of protein and nucleic acid synthesis during embryonic development (density gradient centrifugation, in vivo and in vitro protein synthesis, electrophoretic separations), Strongylocentrotus purpuratus, Lytechinus pictus (Echinoidea)
b Role of a DNA-nuclear membrane complex in DNA-synthesis (enzymology, gradient centrifugation, light and EM autoradiography, cell synchrony). Strongylocentrotus purpuratus (Echinoidea) and several cell lines (Mammalia)

INOUE, T.; M.Sc. – Dept. of Vet. Obstet., Fac. of Vet. Med., Hokkaido Univ., N 18, W 9, SAPPORO, 060 Japan
a Kinetics of spermatogenesis, especially with regard to the role of Sertoli cells. Mustela vison (Carnivora)

INOUE, Y.; Dr. – Dept. of Bot., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan
a Formation of sexual organs. Gelasinospora reticulispora (Asomycetes)

INOUE, Mrs. Y. – Biol. Lab., Doshisha Univ., Karasuma Imadegawa, Kamikyo-ku, KYOTO, Japan
a Culture of embryonic heart cells. Cynops pyrrhogaster (Urodela)

INOUYE, M.; B.Sc. – Dept. of Embryol., Inst. of Developm. Res., Aichi Pref. Colony, Kamiya-cho, KASUGAI, Aichi 480–03, Japan
a Fetal brain lesions caused by maternal administration of monosodium glutamate and allied chemical substances. Mus musculus (Rodentia)
b Teratogenicity of mutagenic substances. Mus musculus (Rodentia) (with U. MURAKAMI)

ISHIKAWA, M.; D.Sc., Prof. – Biol. Inst., Ehime Univ., MATSUYAMA, Ehime, 790 Japan
a Physiology of fertilization and artificial parthenogenesis. Hemicentrotus pulcherrimus, Pseudocentrotus depressus (Echinoidea)
b Metamorphosis. Halocynthia roretzi, Chelyosoma siboya, Ciona intestinalis (Tunicata)
c Isolation of centrioles from sperm, and their behaviour in fertilized and activated eggs. Hemicentrotus pulcherrimus (Echinoidea)

ISHIKAWA, T.; D.V.M., Prof. – Dept. of Vet. Obstet., Fac. of Vet. Med., Hokkaido Univ., N 18, W 9, SAPPORO, 060 Japan
a Cytogenetics of congenital anomalies. Bos taurus (Artiodactyla)

ISHIMODA, T.; D.Sc. – Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa, NAGOYA 464, Japan
a Comparative biochemistry of tropomyosin from adult and embryonic muscles. (Invertebrata; Vertebrata)
b Biochemistry and immunochemistry of glucose-6-phosphate dehydrogenase from eggs. Anthocidaris crassispina, Hemicentrotus pulcherrimus (Echinoidea)

ISHIZAKI, H.; D.Sc., Assoc. Prof. – Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa, NAGOYA 464, Japan
a Circadian rhythm in ecdysone release from prothoracic glands, especially neuroendocrine and/or neurotransmitter mediation. Papilio xuthus (Lepidoptera)

ISONO, N.; Ph.D. – Embryol. Sect., Biol. Dept., Tokyo Metropolitan Univ., 2–1–1, Fukazawa, Setagaya-ku, TOKYO, 158 Japan
a Effects of surface active agents on fertilization and embryonic development. Hemicentrotus pulcherrimus, Anthocidaris crassispina, Pseudocentrotus depressus (Echinoidea), Mytilus edulis (Lamellibranchia)

b Quantitative and qualitative changes of amino acids during development of the embryo. Hemicentrotus pulcherrimus, Anthocidaris crassispina, Pseudocentrotus depressus (Echinoidea)

IUCHI, I.; D.Sc. – Zool. Inst., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan

a Ontogeny of hemoglobins in embryos and larvae. Salmo gairdneri (= irideus) (Teleostei)

b Mechanism of hatching. Same species as a and Oryzias latipes (Teleostei)

IUCIF, S.; Ph.D. – Dept. of Morphol., Univ. of São Paulo, P.O.B. 301, 14.100 RIBEIRÃO PRÊTO, S.P., Brazil

a Allometry and morphology of postnatal animals, treated with excess vitamin A. Rattus spec. (Rodentia)

b Allometry of dental arch under hydrocortisone treatment. Same species as a

c Lacrimal and Harderian glands under treatment with excess vitamin A. Same species as a

IWAMATSU, T.; Ph.D. – Dept. of Biol., Aichi Univ. of Educ., Igaya-cho, KARIYA, Aichi Pref., 448 Japan

a The acquisition of developmental capacity by the oocyte during maturation in vitro. Oryzias latipes (Teleostei)

b Differentiation of primordial germ cells implanted into the eye cavity of castrated adults. Same species as a

IWASA, K.; D.Sc. – Dept. of Biol., Coll. of Gen. Educ., Osaka Univ., Toyonaka, OSAKA, 560 Japan

a Comparative morphology and biochemistry of cell wall and jelly coat. Chlamydomonas reinhardi, Volvox aureus, V. carteri (Chlorophyceae), Navicula pelliculosa, Phaeodactylum tricornutum (Diatomeae)

b Physiology and biochemistry of development and differentiation of unicellular and coenobial forms. Chlamydomonas reinhardi, Eudorina elegans, Volvox aureus, V. carteri (Chlorophyceae), Phaeodactylum tricornutum (Diatomeae)

IWASAKI, T.; Ph.D. – Div. of Biol., Natl. Inst. of Radiol. Sci., 9–1, 4-chome, Anagawa, CHIBA, 280 Japan

a Effects of ionizing radiations on oogenesis and embryonic development (cytology). Artemia salina (Anostraca, Crustacea)

IWASAWA, H.; D.Sc., Prof. – Biol. Inst., Fac. of Sci., Niigata Univ., NIIGATA, 950–21 Japan

a Embryological study on endocrine correlation. (Amphibia)

b Comparative embryology of reproductive organs. (Anura, Urodela)

c Mechanism of sex differentiation (electron microscopy, organ culture). Rana spp., Xenopus laevis (Anura)

IWATA, F.; D.Sc., Prof. – Zool. Inst., Fac. of Sci., Hokkaido Univ., N.10, W.8, SAPPORO, 060 Japan

a Comparative embryology, especially taxonomic interrelationships. (Nemertina)

b Development and regeneration. Lineus vegitus (Nemertina)

c Comparative embryology. Notoplana humilis (Polycladida, Turbellaria), Pugettia quadridens (Brachyura, Decapoda, Crustacea)

IYER, R. D.; M.Sc. – Div. of Genet., Indian Agric. Res. Inst., NEW DELHI-110012, India

IZAIKE, Y.; BVS – Natl. Inst. of Anim. Industry, CHIBA, 280 Japan

a Development and aging of placenta (DNA synthesis, mitosis, histochemistry). Rattus norvegicus (Rodentia), Oryctolagus cuniculus (Lagomorpha), Bos taurus, Capra hircus, Sus scrofa domesticus (Artiodactyla) (with T. SUGA)

b Implantation and lost implantation (uterine pregnancy preparation). Same species as a (with T. SUGA)

c Fructose formation in embryo, chorion, and placenta. Capra hircus, Bos taurus (Artiodactyla) (with T. SUGA)

d Uterine environment for development of fertilized ova. Same species as c (with T. SUGA)

IZAWA, K.; B.Fish. – Fac. of Fish., Mie Univ., Edobashi, TSU, Mie, 514 Japan

IZZARD, C. S.; Ph.D. – Dept. of Biol. Sci., State Univ. of New York, 1400 Washington Ave., ALBANY, NY 12222, U.S.A.

a Asexual reproduction, especially morphogenesis and ultrastructure. Botryllus schlosseri (Ascidiacea)

b Motility in fibroblast-like cells and its role in morphogenesis (critical optical techniques). Xenopus laevis (Anura), Gallus domesticus (Aves), Mus musculus (Rodentia)

JACOBSON, A. G.; Ph.D., Prof. – Dept. of Zool., Univ. of Texas, AUSTIN, TX 78712, U.S.A.

a Experiments on the development of the hypothalamus-adenohypophysis complex and its role in reproduction. Gallus domesticus (Aves), Taricha torosa, Ambystoma mexicanum (Urodela)

b Somite, notochord, and neural plate determination and morphogenesis; ultrastructural, cinematographic and experimental analysis. Same species as a

c Form changes in coherent sheets of cells mediated by programmed cell-shape changes (eye, early embryonic germ layers, extra-embryonic membranes). Same species as a

d Shaping of the early brain. Gallus domesticus (Aves)

JACOBSON, M.; Ph.D., Prof. – Dept. of Physiol. and Biophys., Univ. of Miami Sch. of Med., P. O. Box 520875, MIAMI, FL 33152, U.S.A.

JAFFE, L. F.; Ph.D., Prof. – Dept. of Biol. Sci., Purdue Univ., WEST LAFAYETTE, IN 47907, U.S.A.

a Transcellular developmental currents and ion fluxes through developing cells (vibrating probe detecting nanovolt differences). Fucus furcatus, Pelvetia fastigiata (Phaeophyta), Lilium spec. (Liliaceae)

b Ionic gradients during development (autoradiography). Same species as a

c Free calcium changes during early development (aequorin). Oryzias latipes (Teleostei)

d Nature and role of endogenous electrical currents through regenerating systems. Rana pipiens, Triturus viridescens, Xenopus laevis (Anura)

JAFFEE, O. C.; Prof. – Biol. Dept., Univ. of Dayton, DAYTON, OH 45469, U.S.A.
a Effects of altered physiologic states upon heart development by studying direct hemodynamic changes. Gallus gallus (Aves)
b Effects of antiheart antibodies upon heart development. Same species as a
JANSSENS, P. A.; Ph.D. – Dept. of Zool., Austr. Natl. Univ., P. O. Box 4, CANBERRA, A.C.T. 2600, Australia
a Development of enzyme systems, specially those concerned in nitrogen metabolism. Xenopus laevis (Anura)
b Development of metabolic pathways, particularly gluconeogenesis. Macropus eugenii (Marsupialia)
JARJOUHY, L. – Dépt. d'Histoenzymol., Fac. Française de Méd. et de Pharmacie, B.P. 5076, BEIRUT, Lebanon
a Quantitative aspects of malabsorption of lactose. Homo sapiens (Primates)
JAVADNIA, Miss F.; B.Sc. – Dept. of Postgrad. Stud. in Anat. Sci., Jundi Shapur Univ., P.B. 1059, AHWAZ, Iran
a Microanatomy of the umbilical arteries in relation to their nutrition and luminal control. Homo sapiens (Primates) (with I. BHARGAVA)
JAVAHERI, Miss B.; B.Sc. – Dept. of Postgrad. Stud. in Anat. Sci., Jundi Shapur Univ., P.O. 1059, AHWAZ, Iran
a Age changes in the placenta. Homo sapiens (Primates) (with I. BHARGAVA)
JAWORSKI, A.; Ph.D. – Dept. of Bot., Univ. of Georgia, ATHENS, GA 30602, U.S.A.
a Molecular aspects of differentiation. Blastocladiella spec. (Phycomycetes)
JAYSHREE MENON, Mrs.; M.Sc. – Dept. of Zool., Fac. of Sci., M.S. Univ. of Baroda, BARODA 390002, India
a Endocrinology and tail regeneration. Hemidactylus flaviviridis (Lacertilia)
JENSH, R. P.; Ph.D., Assoc. Prof. – Deot. of Anat., Jefferson Med. Coll., 1020 Locust St., PHILADELPHIA, PA 19107, U.S.A.
a Teratogenic and growth-retarding effects of suspect agents. Rattus rattus (Rodentia)
b Effects of microwave irradiation on prenatal and postnatal development. Same species as a
c Postnatal behavioral modifications due to prenatal insults. Same species as a
JEON, K. W.; Ph.D., Assoc. Prof. – Dept. of Zool., Univ. of Tennessee, KNOXVILLE, TN 37916, U.S.A.
a Origin, ultrastructure, and differentiation of primordial germ cells. Gallus domesticus (Aves)
b Identification of primordial germ cell precursors, mode of migration, ultrastructural changes accompanying differentiation, and possible in vitro culture. Mus musculus (Rodentia)
JIT, I.; Ph.D., Prof. (Emer.) – Dept. of Anat., Postgrad. Inst. of Med. Educ. and Res., CHANDIGARH 160011, India
a Ages of ossification of various bones in children and adults. Homo sapiens (Primates)
b Development of islets of Langerhans. Same species as a
JOHNSON, E. M.; Ph.D., Prof. – Dept. of Anat., Jefferson Med. Coll., 1020 Locust St., PHILADELPHIA, PA 19107, U.S.A.
a Mesenchymal-epithelial interaction during teratogenesis. Rattus spec. (Rodentia)
b Analysis of amniotic cells to predict non-genetic malformations. Rattus spec. (Rodentia), Homo sapiens (Primates)
JOHNSON, K. E.; Ph.D. – Dept. of Anat., Duke Univ. Med. Ctr., DURHAM, NC 27710, U.S.A.
a Extracellular matrix synthesis in gastrulas. Rana pipiens and hybrids, Xenopus laevis (Anura)
b Changes in cell motility and gastrulation. Same species as a, and Xenopus mulleri (Anura)
JOLLIE, M. T.; Ph.D., Prof. – Dept. of Biol. Sci., Northern Illinois Univ., DeKALB, IL 60115, U.S.A.
a Development of the bony systems of the head. Amia spec., Lepisosteus spec. (Holostei), Acipenser spec. (Chondrostei), Squalus spec. (Elasmobranchii and other Vertebrata)
JONEJA, M. G.; Ph.D., Assoc. Prof. – Dept. of Anat., Queen's Univ., KINGSTON, Ont. K7L 3N6, Canada
a Teratogenic effects of delta-9-tetrahydrocannabinol (delta-9-THC) (dose levels of 3.0 to 400 mg/kg by iv, sc, and po routes); cytogenetic aberrations in bone marrow cells. Mus musculus, Mesocricetus auratus (Rodentia)
b Teratogenic effects of various lathyrogenic compounds; ultrastructural studies on the effects of beta-aminopropionitrile on ribs. Mesocricetus auratus (Rodentia)
JONES, Miss A. H.; M.S. – Dept. of Zool., Univ. of Brit. Columbia, VANCOUVER, B.C. V6T 1W5, Canada
a Characterization of nuclear acidic proteins in early stages through neurulation (two-dimensional gel electrophoresis). Xenopus laevis (Anura) (with O. R. REEVES)
JONES, R. F.; Ph.D., Prof. – Dept. of Biol. Sci., State Univ. of New York, STONY BROOK, NY 11794, U.S.A.
a Physiology and biochemistry of development and differentiation, including turnover processes during vegetative growth, asexual reproduction and gametogenesis. Chlamydomonas reinhardtii (Volvocales, Chlorophyceae)
JONES, W. R.; M.D., Ph.D., Prof. – Dept. of Obstet. and Gynecol., Ctr. for Res. in Reprod. Biol., Women's Hosp., ANN ARBOR, MI 48109, U.S.A.
a Protein antigens from the placenta. Homo sapiens (Primates)
b Testing for identity of placental antigens between species. (Primates)
JORQUERA, B.; M.V., Prof. – Inst. de Embriol., Univ. Austral de Chile, Casilla no. 567, VALDIVIA, Chile
a Process of morphophysiological adaptation in the development. Chilian species (Anura)

b Search for a technique for direct experimental study of limb morphogenesis. Rattus spec. (Rodentia)

JUDY, K. J.; Ph.D. – Zoecon Corp., 975 California Ave., PALO ALTO, CA 94304, U.S.A.

a Endocrine regulation of metamorphosis and postembryonic development (tissue- and cell-level differentiation in the digestive system). (Lepidoptera; Orthoptera)

KAJISHIMA, T.; D.Sc., Assoc. Prof. – Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa, NAGOYA 464, Japan

a Mechanisms of depigmentation and re-melanization in in vitro cultured embryonic retinal pigment cells. Gallus domesticus (Aves)

b Gene control mechanisms of melanophore depigmentation. Carassius auratus (Teleostei)

KALT, M. R.; Ph.D. – Dept. of Anat., Univ. of Connecticut Health Ctr., FARMINGTON, CT 06032, U.S.A.

a The kinetics of RNA and protein synthesis in the male germ cell line studied in purified cell populations prepared by gradient separation procedures. Xenopus laevis (Anura)

b Primary embryonic induction. Rana pipiens, Xenopus laevis (Anura)

KALTENBACH, Mrs. J. COUFFER; Ph.D., Prof. – Dept. of Biol. Sci., Clapp Lab., Mount Holyoke Coll., SOUTH HADLEY, MA 01075, U.S.A.

KALTER, H.; Ph.D., Assoc. Prof. – Children's Hosp. Res. Found., Div. of Teratol., Elland & Bethesda Aves., CINCINNATI, OH 45229, U.S.A.

KAMAKSHI, Miss K.; M.Sc. – Dept. of Anat., Jawaharlal Inst. of Postgrad. Med. Educ. and Res., PONDICHERRY 605006, India

a Morphometry of the fetal blood vessels of the placenta. Homo sapiens (Primates)

KAMAR, G. A. R.; Ph.D., Prof. – Dept. of Anim. Prod., Fac. of Agric., Cairo Univ., GIZA, Egypt

a Factors influencing reproduction and production as far as the endocrines and gonads are concerned. (Aves)

b Growth and factors affecting especially the endocrines. (Aves)

c Factors influencing production and reproduction as far as the environmental conditions are concerned. (Aves)

KAMBYSELLIS, M. P.; Ph.D., Assoc. Prof. – Dept. of Biol., New York Univ., Washington Square, NEW YORK, NY 10003, U.S.A.

a Hormonal regulation of spermatogenesis at the molecular level: effects of ecdysone, juvenile hormone and proteinaceous molecules on spermatocysts in vitro. Samia cynthia, Hyalophora cecropia, Manduca sexta (Lepidoptera)

b Effects of ecdysone on embryonic cells in culture. Drosophila melanogaster, Aedes taeniorhynchus (Diptera)

c Vitellogenesis: purification, synthesis, release and uptake; hormonal regulation. Drosophila melanogaster (Diptera)

d Genetic control of vitellogenesis. Same species as c

KAMEYAMA, Y.; M.D., D.Med.Sc., Prof. – Dept. of Developm. Pathol., Res. Inst. of Environm. Med., Nagoya Univ., Furo-cho, Chikusa-ku, NAGOYA, 464 Japan

a Mechanism responsible for malformations of the extremities in the embryo. Mus musculus, Rattus norvegicus (Rodentia)

b Morphogenesis of genetic microphthalmia. Mus musculus (Rodentia) (with K. HOSHINO and S. ODA)

c Effects of low-dose x-irradiation upon the developing brain. Same species as b (with K. HOSHINO and Y. HAYASHI)

d Influences of intrauterine environment on the manifestation of genetic malformations. Same species as b (with K. HOSHINO and S. ODA)

KANATANI, H.; D.Sc., Assoc. Prof. – Lab. of Physiol., Ocean Res. Inst., Univ. of Tokyo, Minamidai, Nakano-ku, TOKYO, 164 Japan

a Mechanism of spawning. Asterias amurensis, Asterina pectinifera (Asteroidea)

b Mode of action of l-methyladenine on oocyte maturation. (Asteroidea)

c Mechanism of oocyte maturation. Same species as a

KANE, R. E.; Ph.D., Prof. – Kewalo Lab., Pacif. Biomed. Res. Ctr., Univ. of Hawaii, 41 Ahui St., HONOLULU, HI 96813, U.S.A.

a Role of cortical granules in formation of hyaline and fertilization membrane. (Echinodermata)

b Mechanism of cell division, studied by means of the isolated mitotic apparatus. (Echinodermata)

KANKEL, D. R.; Ph.D. – Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, CT 06520, U.S.A.

a Clonal analysis and general embryology of the nervous system; use of genetic mosaics in an analysis of neural wiring specificity. Drosophila melanogaster (Diptera)

KANKI, T. – Embryol. Sect., Dept. of Biol., Tokyo Metropolitan Univ., 2–1–1, Fukazawa, Setagaya-ku, TOKYO, 158 Japan

a RNA synthesis during early cleavage. Hemicentrotus pulcherrimus (Echinoidea)

b RNA and protein syntheses during development of isolated micromeres. Same species as a

KANOH, Y.; D.Sc., Prof. – Akkeshi Marine Biol. Stat., Hokkaido Univ., AKKESHI, Hokkaido, Japan

KAO, L.; M.D., Ph.D. – Dept. of Neurol., Johns Hopkins Univ. Hosp., 601 N. Broadway, BALTIMORE, MD 21205, U.S.A.

a Development of skeletal muscle and nerve-muscle junctions in tissue culture. Gallus domesticus (Aves), Rattus rattus (Rodentia)

b Susceptibility of developing skeletal muscle to infection by coxsackievirus. Rattus rattus (Rodentia)

KAPLAN, S.; Ph.D., Assoc. Prof. – Dept. of Anat., Med. Coll. of Wisconsin, 561 N. 15th St., MILWAUKEE, WI 53233, U.S.A.

a Mechanisms underlying congenital malformations; bio-energetics of development and the influence of teratogens thereon. Gallus domesticus (Aves)
b Normal and abnormal physiological development of the heart; factors initiating the first heartbeats. Same species as a
c Physiological causes of caudal dysplasia syndrome. Gallus domesticus (Aves), Mesocricetus auratus (Rodentia), Homo sapiens (Primates)

KAPUR, S., P.; Ph.D. – Dept. of Anat., Georgetown Univ., 3900 Reservoir Rd., WASHINGTON, DC 20007, U.S.A.

KARASAKI, S.; Ph.D., Prof. – Res. Labs., Montreal Canc. Inst., Notre-Dame Hosp., 1560 Sherbrooke E., MONTREAL 133, Que., Canada
also: Dept. of Anat., Univ. of Montreal, MONTREAL, Que., Canada
a Ultrastructure of cytodifferentiation in neoplastic development. Rattus rattus (Rodentia), Homo sapiens (Primates)
b Modulation of growth and cytodifferentiation of cells of liver origin in vitro. Rattus rattus (Rodentia)
c Cell surface-to-nuclear communication in carcinogenic processes. Same species as b

KARFUNKEL, P.; Ph.D. – Dept. of Biol., Amherst Coll., AMHERST, MA 01002, U.S.A.
a Factors affecting cell migration on a cellular substratum; aggregate outgrowth over a confluent cell sheet. Gallus domesticus (Aves)
b Ultrastructure of cell migration in vivo and over a cellular substratum in vitro. Rana pipiens (Anura), Gallus domesticus (Aves)

KARP, G.; Ph.D. – Dept. of Zool., Univ. of Florida, GAINESVILLE, FL 32611, U.S.A.

KASINSKY, H. E.; Ph.D. – Dept. of Zool., Univ. of Brit. Columbia, VANCOUVER, B.C. V6T 1W5, Canada
a Histone synthesis in different regions of the early embryo. Xenopus laevis (Anura)
b On the diversity of sperm histones. (Vertebrata, except Teleostei)

KASPI (VISHNIVETSKI), Mrs. Th.; M.Sc. – Dept. of Embryol. and Teratol., Ch.Sheba Med. Ctr., Tel-Aviv Univ., TEL-AVIV, Israel
a Functional characteristics of placental syncytium. Homo sapiens (Primates) (with L. A. NEBEL)

KATAGIRI, Ch.; D.Sc. – Zool. Inst., Fac. of Sci., Hokkaido Univ., N.10, W.8, SAPPORO, 060 Japan
a Sperm-egg interactions in fertilization. Rana spec., Bufo spec. (Anura)
b Characterization and development of hatching enzyme. Same species as a
c Ontogeny of immune system. Rana spec., Xenopus spec. (Anura)

KATIRA, Mrs. V.; M.S. – Dept. of Anat., G.S.V.M. Med. Coll., KANPUR 208002, India

KATO, K.-I.; Ph.D. – Dept. of Biol., Osaka Kyôiku Univ., Tennoji-ku, OSAKA, 543 Japan
a Histochemical properties of developing embryos. Triturus pyrrhogaster (Urodela), Xenopus laevis (Anura)
b Strobilation. Aurelia aurita (Scyphozoa)
c Growth and medusa bud formation in a marine form. Cladonema spec. (Hydrozoa)

KATO, M.; B.Sc. – Dept. of Anat., Tokyo Med. and Dent. Univ., 1–5–45, Yushima, Bunkyo-ku, TOKYO, 113 Japan
a The development and arrangement of collagen fibers. Rana japonica, Bufo vulgaris (Anura), Hynobius tokyoensis, Triturus pyrrhogaster (Urodela)
b Hetero- and xenoplastic transplantation of tail. Rana japonica, Bufo vulgaris, Rhacophorus schlegelii (Anura)

KATOH, A. K.; Ph.D. – Div. of Nucl. Pathol. and Oncol., Mercy Hosp., 1400 Locust St., PITTSBURGH, PA 15219, U.S.A.
a Differentiation of the embryonic lens in vitro. Gallus domesticus (Aves)

KATSURA, S.; M.D. – Inst. for Biol. and Exp. Med., Tokushima Univ., Seto-cho, NARUTO-City, Japan
a Changes in the cortical granules. Hemicentrotus pulcherrimus (Echinoidea)
b Mechanisms of fertilization. Same species as a
c Mechanisms of pole differentiation in larvae. Hemicentrotus pulcherrimus, Temnopleurus toreumaticus (Echinoidea)
d Biogenesis of cell organelles during early development. Same species as c

KAUFFMAN, Miss S.; M.D., Prof. – Dept. of Pathol., Downstate Med. Center, State Univ. of New York, 450 Clarkson Ave., NEW YORK, Brooklyn, N.Y. 11203, U.S.A.

KAUFMANN, B. P. †; Ph.D., Prof. (Emer.) – Dept. of Zool., Univ. of Michigan, ANN ARBOR, MI 48109, U.S.A.

KAUSHAGEN, C. J.; – Dept. of Embryol., Carnegie Inst. of Wash., 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.

KAWAKAMI, I.; D.Sc., Prof. – Dept. of Biol., Fac. of Sci., Kagoshima Univ., Korimoto, KAGOSHIMA, 890 Japan
a Inductive capacities of intercellular matrix of heterogeneous tissues. Triturus pyrrhogaster (Urodela)
b Regional capacity of prechordal plate to induce cephalic sensory organs. Same species as a

KAWAMURA, T.; D.Sc., Prof. (Emer.) – Lab. for Amph. Biol., Fac. of Sci., Hiroshima Univ., Higashisenda-cho, HIROSHIMA, Japan
a Hybridization among European and Far Eastern forms. (Ranidae, Anura)
b Morphological and sexual abnormalities in the offspring of animals derived from irradiated eggs or sperm. Rana nigromaculata (Anura)

KEDES, L. H.; Dr. – Dept. of Med., Stanford Med. Sch., Vet. Adm. Hosp., 3801 Miranda Ave., PALO ALTO, CA 94304, U.S.A.

KEEFE, J. R.; Ph.D. – Dept. of Anat., Univ. of Louisville, MDR Bldg. Rm 436, P. O. Box 1055, LOUISVILLE, KY 40201, U.S.A.

KEINO, H. – Dept. of Perinatol., Inst. of Developm. Res., Aichi Pref. Colony, Kamiya-cho, KASUGAI, Aichi 480–03, Japan

a Teratogenesis of exencephaly induced by cadmium. Mus musculus (Rodentia)

KELLER, R. E.; Ph.D. – Dept. of Biol., Yale Univ., Kline Biol. Tower, NEW HAVEN, CT 06520, U.S.A.

a Cell movement in intact and dissected gastrulae and in cultured gastrula cells (time-lapse microcinematography, light and electron microscopy). Xenopus laevis (Anura)

KELLEY, R. O.; Ph.D., Assoc. Prof. – Dept. of Anat., Univ. of New Mexico, 915 Stanford Dr. N.E., ALBUQUERQUE, NM 87131, U.S.A.

a Electron microscopy of induction systems. Xenopus laevis (Anura)
b Electron microscopy of limb morphogenesis. (Mammalia)
c Growth and regulation of limb mesenchyme. Homo sapiens (Primates)
d Relationships of the cell surface with cell behavior in vitro. Same species as c

KEMP, N. E.; Ph.D., Prof. – Div. of Biol. Sci., Univ. of Michigan, ANN ARBOR, MI 48109, U.S.A.

a Electron microscopy of metamorphic changes in the skeleton. Rana pipiens (Anura)
b Fine structure of fin rays in regenerating tailfins. Tilapia mossambica, Carassius auratus (Teleostei)
c Differentiation of mineralized tissues. (Elasmobranchii; Teleostei; Anura)
d Polymerization of collagen fibrils in connective tissues. (Elasmobranchii; Teleostei; Anura; Aves; Mammalia)

KENNEDY, J. F.; M.D. – Dept. of Reprod. Med., Univ. of California, LA JOLLA, CA 92037, U.S.A.

a Culture requirements and morphology of egg maturation, fertilization, and cleavage in vitro. Homo sapiens (Primates)
b Metabolism and steroidogenesis in ovary perfused in vitro. Same species as a

KERR, Miss M. S.; Ph.D. – Dept. of Biol., Syracuse Univ., 130 College Place, SYRACUSE, NY 13210, U.S.A.

a Biochemistry of lipovitellins in oocytes and hemolymph. Callinectes sapidus (Decapoda, Crustacea)
b Maturation of hemocytes and their biosynthetic capacities. (Decapoda, Crustacea)
c Hemocyanin synthesis and structure (characterization of complex hemocyanin proteins by isoelectric focusing. Same species as b

KERR, N. S.; Ph.D., Assoc. Prof. – Dept. of Zool., Univ. of Minnesota, ST. PAUL, MN 55101, U.S.A.

a Developmental biology. Didymium nigripes (Eumycetozoina)

KERR, W. E.; Ph.D., Prof. – Dept. de Genet., Fac. de Med., Univ. de São Paulo, C.P. 301, 14100 RIBEIRÃO PRETO, S.P., Brazil

KERSE (BÜYÜKÖZER), Mrs. I.; Dr., Prof. – Inst. of Histol. and Embryol., Med. Fac., Hacettepe Univ., ANKARA, Turkey

KESSEL, R. G.; Ph.D., Prof. – Dept. of Zool., Coll. of Lib. Arts, Univ. of Iowa, IOWA-City, IA 52242, U.S.A.

a Analysis of variations in cell structure and function, especially developmental phenomena (gametogenesis) (electron microscopy, cytochemistry, radioautography, biochemistry, hydrostatic pressure). Various organisms
b Scanning electron microscopy of early embryonic development. Rana pipiens (Anura)
c Scanning electron microscopy of tissues and organs. (Mammalia)
d Structure, function, and biogenesis of annulate lamellae and nuclear pores. Various organisms

KEY, J. L.; Ph.D., Prof. – Dept. of Bot., Univ. of Georgia, ATHENS, GA 30602, U.S.A.

a Molecular studies on auxin regulation of RNA synthesis. Glycine max, Daucus carota, Zea mays, Hordeum vulgare, Pisum sativum (Angiospermae)

KEYNAN, A.; Dr. – Inst. of Life Sci., Hebrew Univ., JERUSALEM, Israel

a Differentiation of spores into vegetative cells. Bacillus cereus (Bacteria)

KHALIL, S. H.; Ph.D. – Dept. of Zool., Fac. of Sci., Alexandria Univ., Moharram Bey, ALEXANDRIA, Egypt

a Development of the urogenital system. Bufo regularis (Anura) (with M. I. MICHAEL and S. N. SEDRA)
b Development of olfactory organs. Same species as a
c Retino-diencephalic and retino-tectal projections. Same species as a

KHAN, M. S.; M.Sc. – Dept. of Zool., Talim-Ul-Islam Coll., RABWAH, Distr. Jhangh, Pakistan

a Normal table: larval and post-larval stages. Rana tigerina (Anura)
b A checklist of larvae of Pakistan, with a key. (Amphibia)

KHAN, M. Z.; Ph.D. – Dept. of Zool., Univ. of Poona, Ganeshkind, POONA 411007, India

KHARE, M. K.; D.Phil. – School of Life Sci., North Eastern Hill Univ., SHILLONG 793003, India

KIDDER, G. M.; Ph.D. – Dept. of Zool., Univ. of W. Ontario, LONDON, Ont. N6A 5B7, Canada

a Synthesis and localization of mRNA in early development, using poly(A) as mRNA marker; poly(A) metabolism in embryos. Nassarius obsoletus (Gastropoda), Mytilus edulis (Lamellibranchia)
b The ribosomal RNA cistrons in gametes: localization, amplification, multiplicity, association with DNA satellites; nucleolus formation and ribosomal gene expression in embryos. Mulinia lateralis, Mytilus edulis, Spisula solidissima, Mercenaria mercenaria (Lamellibranchia), Nassarius obsoletus (Gastropoda)
c Reproductive cycle in artificial sea water; induction of gonad ripening. Mytilus edulis (Lamellibranchia)

KIDO, T.; D.Sc., Prof. – Biol. Inst., Kanazawa Med. Univ., UCHINADA-machi, Ishikawa-ken, 920–02 Japan
a Analysis of mechanism of pharynx formation. Dugesia japonica (Turbellaria)
b Reaggregation of dissociated cells. Callyspongia elongata (Porifera)
c Cytological properties of neoblasts. Same species as a
d Cytological properties of interstitial cells. Hydra vulgaris (Hydrozoa)

KIEFER, B. I.; Ph.D., Prof. – Dept. of Biol., Wesleyan Univ., MIDDLETOWN, CT 06457, U.S.A.
a Genetic control of differentiation and development of male germ cells (electron microscopy, electrophoresis, autoradiography, density gradient centrifugation). Drosophila melanogaster (Diptera)
b Structure and function of the mitotic apparatus as compared to other motile systems (electron microscopy, density gradient centrifugation). Strongylocentrotus purpuratus (Echinoidea)
c Regulation of ribosomal RNA and ribosomal protein synthesis during development (density gradient centrifugation, electrophoresis, autoradiography). Same species as a

KIM, I. C.; Ph.D. – Dept. of Obstet. & Gynecol., Ctr. for Res. in Reprod. Biol., K 2007 Women's Hosp., ANN ARBOR, MI 48109, U.S.A.
a Isolation and characterization of placenta specific antigens. Homo sapiens (Primates)
b Preparation of antiserum against placenta specific proteins and their immunology. Same species as a

KIMMEL, Mrs. C. A.; Ph.D. – Natl. Inst. of Environm. Health Sci., N.I.H., P. O. Box 12233, RESEARCH TRIANGLE PARK, NC 27709, U.S.A.
a The teratology of heavy metals in combination with chelating agents. Rattus norvegicus (Rodentia)
b The teratogenic and behavioral effects of chronic low-level lead including administration during development. Rattus norvegicus, Mus musculus (Rodentia)
c Development of a behavioral toxicology program within the institute and testing of environmental agents for behavioral effects at levels below those causing toxicity. Mus musculus (Rodentia)

KIMMEL, C. B.; Ph.D. – Dept. of Biol., Univ. of Oregon, EUGENE, OR 97403, U.S.A.
a Patterning and neurospecification in the early nervous system; development of Mauthner's cell and its synaptic connections. Brachydanio rerio (Teleostei), Ambystoma mexicanum (Urodela)

KIMMEL, D. L.; Ph.D., Prof. (Emer.) – Dept. of Anat., Med. Ctr., West Virginia Univ., MORGANTOWN, WV 26506, U.S.A.
a Synaptogenesis of the Mauthner cell. Ambystoma mexicanum (Urodela)
b Afferent systems. Trichosurus spec. (Marsupialia)

KIMMEL, D. L., Jr.; M.D., Ph.D. – Dept. of Biol., Davidson Coll., DAVIDSON, NC 28036, U.S.A.
a Time and tissue specificity of tryptophan oxygenase and formylase appearance during larval development. Drosophila melanogaster (Diptera)
b Factors regulating kynurenine deposition in larval fatbody granules. Same species as a
c Development of neural centers regulating web building behavior. Nephila clavipes (Araneida)

KIMURA, I.; D.Sc. – Dept. of Biophys. and Biochem., Univ. of Tokyo, 7–3–1 Hongo, Bunkyo-ku, TOKYO, 113 Japan
a Nucleic acid metabolism during embryogenesis. Hemicentrotus pulcherrimus, Anthocidaris crassispina, Pseudocentrotus depressus (Echinoidea)

KINARIWALA, Miss R. V.; M.Sc. – Dept. of Zool., Fac. of Sci., M.S. Univ. of Baroda, BARODA 390002, India
a Physiological response of certain organs in relation to tail regeneration. Mabuya carinata (Lacertilia)

KING, Mrs. D. Wei; Ph.D., Prof. – Dept of Zool., Natl. Taiwan Univ., TAIPEI 107, Taiwan, Republ. of China
a Congenital malformations due to maternal vitamin E deficiency: 1. morphology and histochemistry; 2. effects of hormones (progesteron, estrone), gamma-tocopherol, antioxidants, and different diets; 3. tissue tocopherol levels. Rattus norvegicus (Rodentia)
b Teratogenic effects of mitomycin, antihistaminic drugs, and monosodium glutamate. Gallus domesticus (Aves)
c Effect of lead acetate, mercury, copper sulphate and cadmium acetate on embryogenesis. Same species as b

KING, R. C.; Ph.D., Prof. – Dept. of Biol. Sci., Northwestern Univ., Hogan Hall, EVANSTON, IL 60201, U.S.A.
a Genetic control of oogenesis. Drosophila melanogaster (Diptera)

KINOSHITA, S.; Ph.D., Assoc. Prof. – Zool. Inst., Univ. of Tokyo, Hongo 7–3–1, Bunkyo-ku, TOKYO, 113 Japan
a Nucleo-cytoplasmic interactions and regulation of embryonic differentiation. Clypeaster japonicus (Echinoidea)
b Mucopolysaccharide-protein complex in chromatin, with special reference to gene activation. Rattus norvegicus (Rodentia)

KIRCHEN, R. V.; M.S. – Dept. of Developm. Biol., Carolina Biol. Supply Co., 2800 York Rd., BURLINGTON, NC 27215, U.S.A.
a Mitotic activity in early development. Oryzias latipes (Teleostei)

KIRK, D. L.; Ph.D., Assoc. Prof. – Dept. of Biol., Washington Univ., Skinner and Lindell Ave., ST. LOUIS, MO 63130, U.S.A.

KISCHER, C. WARD; Ph.D., Assoc. Prof. – Dept. of Anat., Med. Branch, Univ. of Texas, GALVESTON, TX 77550, U.S.A.

a Etiology and ultrastructure of the hypertrophic scar. Homo sapiens (Primates)
b Biochemical ultrastructural studies on organogenesis
c Ultrastructural and biochemical analyses of development of skin derivatives. Gallus domesticus (Aves), Mus musculus (Rodentia)
d Effects of prostaglandins on developing skin and skin derivatives. Same species as c

KISHIDA, Y.; D.Sc. – Biol. Inst., Fac. of Sci., Univ. of Kanazawa, Marunouchi-1, KANAZAWA, Japan
a Depigmentation of eye after treatment with thiocarbamide and its derivatives. Dugesia japonica (Turbellaria)
b Mechanisms of eye formation during regeneration. Same species as a
c Reaggregation of dissociated cells. Callyspongia elongata (Porifera)
d Ultrastructure of neoblast. Same species as a

KIŞNIŞÇI, H. A. – Inst. of Histol. and Embryol., Med. Fac., Hacettepe Univ., ANKARA, Turkey

KLEIN, A. O.; Ph.D., Assoc. Prof. – Biol. Dept., Brandeis Univ., WALTHAM, MA 02154, U.S.A.

KLEIN, N. W.; Ph.D., Prof. – Dept. of Anim. Genet., Storrs Agric. Exper. Station, Univ. of Connecticut, STORRS, CT 06268, U.S.A.
a Protein metabolism and its relationship to growth and differentiation in the explanted embryo. Gallus spec. (Aves)
b Mechanisms of teratogenic specificity in the explanted embryo. Same species as a
c Growth regulation in the early embryo (culture of embryos on a growth limiting medium; synthesis and break-down of macromolecules in specific regions of the embryo). Same species as a
d The importance of serum protein synthesis by the yolk sac in relation to development, nutrition, and developmental abnormalities in early embryos. Same species as a

KLEINSMITH, L. J.; Ph.D., Prof. – Div. of Biol. Sci., Univ. of Michigan, ANN ARBOR, MI 48109, U.S.A.
a Role of nuclear proteins in the regulation of gene expression. (Mammalia)

KLEISS, Miss Ch.; Lic. Biol. – Cat. de Embriol., Fac. de Med., Univ. de Los Andes, MÉRIDA, Venezuela
a Development of vascular patterns in the papillae of the tongue. Homo sapiens (Primates)
b Development of muscle-spindles in the tongue. Same species as a

KLEISS, E.; Dr.Med., Prof. – Cat. de Embriol., Fac. de Med., Univ. de Los Andes, MÉRIDA, Venezuela – personal address: Apartado 38, MÉRIDA, Venezuela
a Teratogenesis of developmental failure (especially of the limbs) and excess (digits, twins, double monsters, etc.) in relation with teratological factors and the corresponding susceptibility. Homo sapiens (Primates)
b History of embryology and teratology
c Embryological and teratological nomenclature. Domestic animals, Homo sapiens (Mammalia)
d Classification of anomalies and malformations. Same species as c
e Development of the vascular supply to the tonsils and salivary glands (injected specimens). Homo sapiens (Primates)
f Histo- and toxoplasmosis as teratogenic factors. Same species as e (with L. DURAN de LOPEZ and members of the Dept. of Pathol.)

KNOX, W. E.; M.D. – Dept of Biochem., Canc. Res. Inst., New England Deaconess Hosp., 185 Pilgrim Rd., BOSTON, MA 02215, U.S.A.
a Identification of isoenzymic variants present in embryonic tissues. Rattus spec. (Rodentia)

KOBAYASHI, H.; M.Sc. – Lab. of Biol., Gifu Coll. of Dent., 1851 Takano, Hozumi-cho, Motosu-gun, GIFU-ken, Japan
a Immunological study of phosvitin. Coturnix c. japonica (Aves)

KOBAYASHI, K.; M.Sc. – Biol. Lab., Chiba Univ., Yayoi-cho 1–33, CHIBA, 280 Japan
a Radiation effects on epidermal regeneration (histology). Mus musculus (Rodentia)
b Blood cell formation mechanism (immunohistochemistry). Xenopus laevis (Anura)

KOBAYASHI, N.; Ph.D., Prof. – Biol. Lab., Doshisha Univ., Karasuma Imadegawa, Kamikyo-ku, KYOTO, Japan
a Marine pollution bioassay using eggs. (Echinoidea)
b Fresh water pollution bioassay using eggs. Radix spec. (Gastropoda)

KOCHERT, G.; Ph.D., Assoc. Prof. – Dept. of Bot., Univ. of Georgia, ATHENS, GA 30602, U.S.A.
a Cell differentiation. Volvox spec. (Chlorophyceae)

KOCHHAR, D. M.; Ph.D., Prof. – Dept. of Anat., Jefferson Med. Coll., 1020 Locust St., PHILADELPHIA, PA 19107, U.S.A.
a Mechanism underlying abnormal morphogenesis of limbs and formation of cleft palate

KOEHLER, L. D.; Ph.D., Prof. – Dept. of Biol., Centr. Michigan Univ., Mt. PLEASANT, MI 48859, U.S.A.
a Comparative study of ultrastructure of sperm and spermiogenesis. (Decapoda, Crustacea)
b Ultrastructural aspects of spermatogenesis. Esox vermiculatus (Teleostei)
c Ultrastructure of spermiogenesis. (Aves)

KOGA, K.; Ph.D. – Agric. Chem. Inst., Kyushu Univ., FUKUOKA, 812 Japan
a Transcriptional or translational control of egg-shell protein synthesis in the female pupa, especially ribosomes and their factors. Bombyx mori (Lepidoptera)

KOJIMA, M. K.; D.Sc. – Marine Biol. Stat., Nagoya Univ., Sugashima, TOBA, Mie-ken, 517 Japan
a Physiology of egg cleavage. Hemicentrotus pulcherrimus, Pseudocentrotus depressus (Echinoidea)

KOLLAR, E. J.; Ph.D., Prof. – Dept. of Oral Biol., Sch. of Dent. Med., Univ. of Connecticut Health Center, FARMINGTON, CT 06032, U.S.A.

a Differentiation of skin derivatives (teeth, vibrissae, feathers); combinations of epithelium and mesoderm roles of these tissues, inductive sequence, temporal and spatial stability and plasticity of the integument during early stages. Gallus domesticus (Aves), Mus musculus (Rodentia)
b Suppression and stimulation of neural crest and integumental differentiation by beta-2-thienylalanine. Same species as a
c Development of Meckel's cartilage. Mus musculus (Rodentia)
d Long-term culture of dental papillae cells. Samespecies as c
e Tissue-collagen interactions during epithelial differentiation (specificity of collagen as a mediator of developmental information). Same species as a

KOLLROS, J. J.; Ph.D., Prof. – Dept. of Zool., Univ. of Iowa, IOWA-CITY, IA 52242, U.S.A.
a Influence of thyroid hormones upon limb regeneration in tadpoles. Bufo americanus, Pseudacris nigrita, Rana pipiens, R. clamitans (Anura)
b Tissue responses and control of sequence in metamorphosis. Rana pipiens, R. catesbeiana, Pseudacris nigrita, Ambystoma laterale (Amphibia)
c Development of spinal and cerebral centers. Rana pipiens, R. catesbeiana, Pseudacris nigrita, Bufo americanus (Anura)
d Delineation of skin territories of different developmental capacities, especially as indicated by gland development. Rana pipiens and other spp. (Anura)
e Beak development and loss in tadpoles. Rana pipiens, R. clamitans, Pseudacris nigrita (Anura)

KOMAMINE, A.; D.Sc., Assoc. Prof. – Dept. of Bot., Fac. of Sci., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan
a Biochemistry and physiology of embryogenesis in suspension culture cells. Daucus carota (Umbelliferae)
b Biochemical mechanism of callus initiation (dedifferentiation) in tissue culture. Same species as a
c Xylem differentiation in tissue culture. Same species as a
d Cell wall regeneration in protoplast. Vinca rosea (Apocynaceae)
e Energy metabolism in synchronized suspension culture. Same species as d

KONG, Yun-Cheung; D.Sc. – Dept. of Biochem., Chinese Univ. of Hong Kong, Univ. Sci. Ctr., SHATIN, N.T., Hong Kong
a Effect of Chinese medicinal plants on reproduction. (Mammalia)
b Normal development. Paramesotriton hongkongensis (Urodela)

KONIGSBERG, I. R.; Ph.D., Prof. – Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTESVILLE, VA 22903, U.S.A.

KONISHI, T.; D.Sc. – Kanebo Inst. for Canc. Res., Kanebo Hosp., Misaki-cho 1, Hyogo-ku, KOBE, Japan

KORNGUTH, S. E.; Ph.D., Prof. – Depts. of Neurol. and Physiol. Chem., Coll. of Med., Univ. of Wisconsin, MADISON, WI 53706, U.S.A.
a Proteins of the synaptic complex and development of synaptic contacts. Sus domesticus (Artiodactyla), Homo sapiens (Primates)
b Development of fetal cerebellum (electron microscopy, Golgi staining). Macaca mulatta (Primates)

KOSHIDA, Y.; D.Sc., Prof. – Dept. of Biol., Coll. of Gen. Educ., Osaka Univ., Toyonaka, OSAKA, 560 Japan
a Cell kinetics of developing digestive organs. Rhacophorus spec., Xenopus spec., Rana spec. (Anura)
b Development of cartilage. (Polychaeta; Gastropoda; Cephalopoda)

KOSIN, I. L.; Ph.D., Prof. – Lab. of Developm. Biol., Dept. of Anim. Sci., Coll. of Agric., Washington State Univ., PULLMAN, WA 99163, U.S.A.

KOTANI, M.; D.Sc., Assoc. Prof. – Lab. of Developm. Biol., Dept. of Biol., Osaka City Univ., 459 Sugimoto-cho, Sumiyoshi-ku, OSAKA, 558 Japan
a Nature of germinal cytoplasm. Xenopus laevis (Anura)
b Ultrastructural changes during formation of primordial germ cells. Triturus pyrrhogaster (Urodela)

KOYAMA, T.; M.D., Ph.D. – Dept. of Anat., Tokyo Med. and Dent. Univ., 1–5–45, Yushima, Bunkyo-ku, TOKYO, 113 Japan
a Tissue transplantation. Rana japonica, Rhacophorus schlegelii, Xenopus laevis (Anura)

KRAUSE, W. J.; Ph.D. – Dept. of Anat., Coll. of Med., Univ. of Missouri, COLUMBIA, MO 65201, U.S.A.
a Postnatal development of the gastrointestinal tract and associated glands, and of the urinary system. Didelphis virginiana (Marsupialia)

KREIS, C. G.; M.Sc. – Dept. of Zool., Univ. of Brit. Columbia, VANCOUVER, B.C. V6T 1W5, Canada
a RNA metabolism in early development, isolation of specific mRNAs and translation in cell-free system. Xenopus laevis (Anura)

KREJSA, R. J.; Ph.D., Assoc. Prof. – Biol. Sci. Dept., Calif. Polytechnic State Univ., SAN LUIS OBISPO, CA 93401, U.S.A.
a Role of the epidermis in scale and fin-ray development. (Teleostei)
b Comparative aspects of integument morphogenesis. (Vertebrata)
c Shedding of skin and skin derivatives. Congiopodus spec. (Teleostei)

KRETCHMER, N.; Ph.D., M.D., Prof. – Dept. of Pediat., Stanford Univ., 300 Pasteur Drive, STANFORD, CA 94305, U.S.A.

KRIDER, H. M.; Ph.D. – Inst. of Cell. Biol., Univ. of Connecticut, U–125, STORRS, CT 06268, U.S.A.

KUBOTA, H. Y.; M.Sc. – Lab. of Developm. Biol., Dept. of Zool., Kyoto Univ., Kitashirakawa-Oiwake-cho, Sakyo-ku, KYOTO, 606 Japan
a Behaviour of isolated cells from the gastrula. Cynops pyrrhogaster (Urodela)

KUBOTA, T.; D.Sc., Prof. – Biol. Inst., Lib. Arts Coll., Kagoshima Univ., Kamoike-cho, KAGOSHIMA, 890 Japan

KUEHN, G. D.; Ph.D., Assoc. Prof. – Dept. of Chem., New Mexico State Univ., Box 3C, LAS CRUCES, NM 88003, U.S.A.
a Effect of polyamines (putrescine, spermidine, and spermine) on phenol soluble nuclear phosphoprotein phosphorylation; correlation with inhibition of a nuclear localized adenylate cyclase. Physarum polycephalum (Eumycetozoa)
b Regulation of enzyme activity levels during differentiation (spherulation); especially mRNA synthesis that may coincide with expression of these enzyme activities. Same species as a

KULANGARA, A. C.; Ph.D., Prof. – Dept. of Anat., Med. Coll. of Pennsylv., 3300 Henry Ave., PHILADELPHIA, PA 19129, U.S.A.
a Passage of homologous and heterologous proteins from the mother into the early conceptus. Oryctolagus spp. (Lagomorpha)
b Determining uterine fluid volume by rinsing with a protein tracer solution and analysis of the proteins (acrylamide gel electrophoresis; immunology) in nonpregnant and 3–6 days pregnant animals, in order to characterize onset of pregnancy. Same species as a
c Measurement of uterine fluid volume and protein concentration during the menstrual cycle and in women using oral contraceptives and intrauterine devices. Homo sapiens (Primates)
d Selection among proteins by the blastocyst. Same species as a

KULKA, R. G.; Dr. – Dept. of Biol. Chem., Hebrew Univ., JERUSALEM, Israel
a Regulation of specific gene expression during the differentiation of the exocrine pancreas; role of corticosteroid hormones in the regulation of digestive enzyme and zymogen synthesis. Gallus spec. (Aves)
b Gene expression studied by ultramicroinjection (Animalia)

KUMAR, K.; Ph.D. – Dept. of Zool., Univ. of Gorakhpur, GORAKHPUR 273001, India
a Differentiation capacities of the labial disc. Drosophila melanogaster (Diptera)
b Pattern formation in the imaginal disc. (Insecta)

KUMARAN, A. KRISHNA; Ph.D., Prof. – Dept. of Biol., Marquette Univ., 530 North 15th St., MILWAUKEE, WI 53233, U.S.A.
a Nucleic acid metabolism during embryonic and postembryonic development (autoradiography and surgical techniques). Tenebrio spec. (Coleoptera), Galleria spec. (Lepidoptera), Drosophila spec. (Diptera)

KURIHARA, M. – Inst. of Appl. Entomol., Fac. of Agric., Iwata Univ., Ueda 3–18–8, MORIOKA, 020 Japan
a Histology and histochemistry of oogenesis. (Insecta)

KURIYAMA, K.; M.D., Ph.D., Prof. – Dept. of Pharmacol., Kyoto Pref. Univ., Kawaramachi-Hirokoji, Kamikyo-ku, KYOTO, 602 Japan
a Developmental changes of amino acid metabolism in brain. Mus musculus, Rattus spec. (Rodentia)
b Effect of addictive drugs on the metabolism of developing brain. Same species as a
c Developmental changes of cyclic-AMP metabolism in brain. Same species as a

KURIYAMA, R.; D.Sc. – Dept. of Biophys. and Biochem., Univ. of Tokyo, 7–3–1, Hongo, Bunkyo-ku, TOKYO, 113 Japan
a Polymerization of mitotic apparatus tubulin from eggs. Anthrocidaris crassispina, Pseudocentrotus depressus (Echinoidea)

KURODA, Y.; D.Sc. – Dept. of Morphol. Genet., Natl. Inst. of Genet., Yata 1–111, MISIMA, Sizuoka-ken, 411 Japan
a Gene expression in imaginal disc cells in organ and cell culture. Drosophila melanogaster (Diptera)
b Single cell cultivation of embryonic cells carrying some genetic markers. Same species as a
c Studies on histoformative cell aggregation from dissociated embryonic cells. Gallus domesticus (Aves), Mus musculus (Rodentia)
d Gene expression and mutagenesis in diploid embryonic cells in culture. Homo sapiens (Primates)

LACALLI, T. C.; Ph.D. – Dept. of Chem., Univ. of Brit. Columbia, 2075 Westbrook Place, VANCOUVER, B.C. V6T 1W5, Canada
a Morphogenesis: theories concerning the development of regularly ordered structural features on the cell walls of single cells. Micrasterias spp. (Desmidiales)
b Differentiation and morphogenesis of the larval nervous system. Phyllodoce mucosa, Spirobranchus polycerus, Abarenicola pacifica (Polychaeta), Crassostrea gigas (Lamellibranchia)

LAI-FOOK, Miss J. E. I.; Ph.D. – Ramsay Wright Zool. Labs., Dept of Zool., Univ. of Toronto, 25 Harbord St., TORONTO, Ont. M5S 1A1, Canada

LAKSHMANAN, K. K.; Ph.D., Prof. – Dept. of Bot., Pachaiyappa's Coll., MADRAS 600030, India
a Descriptive and experimental embryology. Cyclamen spec., Rhizophora spec., Gibba spec., Crotolaria verrucosa, C. juncea, Canna indica (Angiospermae)
b Embryogenesis. Luzula spec. (Juncaceae)
c Irregular embryogenesis and its possible correlation with embryo differentiation in tissue culture. Corydalis spec. (Fumariaceae)
d Developmental morphology. Rhizophora spec. (Rhizophoraceae), Aegiceras spec. (Myrsinaceae)
e Morphogenesis in vitro. Furcraea gigantea (Angiospermae)

LAKSHMANAN, S.; M.Sc. – Dept. of Anat., Jawaharlal Inst. of Postgrad. Med. Educ. and Res., PONDICHERRY-605006, India

a Effect of vascular occlusion on seminiferous epithelium cycle in the testis. Mus musculus (Rodentia)
b A study of meiotic chromosomes in altered blood supply to testis. Same species as a

LALA, P. K.; M.D., Ph.D., Assoc. Prof. – Dept. of Anat., McGill Univ., P. O. Box 6070, Station A, MONTREAL, Que. H3C 3G1, Canada
No work on developmental biology in progress

LAMANO, Miss T. L.; B.Sc. – Dept. of Morphol., Univ. de São Paulo, P.O.B. 301, 14.100 RIBEIRÃO PRÊTO, S.P., Brazil
a Spermatogenesis under hypervitaminosis A treatment after lactation; possibilities of testis recovery. Rattus spec. (Rodentia)

LAMPRECHT, DeV. B.; M.Sc. – Exp. Embryol. Res. Unit of the M.R.C., Dept. of Anat., Univ. of the Orange Free State, P. O. Box 339, BLOEMFONTEIN 9300, S. Africa
a Experimental vertebral development. Gallus domesticus (Aves)
b Experimental craniochisis. Same pecies as a

LANDESMAN, R.; Ph.D. – Dept. of Zool., Univ. of Vermont, BURLINGTON, VT 05401, U.S.A.
a Role of ribosomal and nuclear proteins in differentiation. Xenopus laevis (Anura)
b Neural-mesodermal interaction during primary embryonic induction

LANDMESSER, Miss L. T.; Ph.D. – Dept. of Biol., Yale Univ., NEW HAVEN, CT 06520, U.S.A.
a Cellular mechanisms of neuronal cell death in the ciliary ganglion; possible competitive interactions for peripheral synaptic sites. Gallus gallus (Aves)
b Patterns of innervation of muscle in developing limb. Same species as a
c Sequence of synaptogenesis in the developing spinal cord. Same species as a
d Specificity of early reflexes assessed electrophysiologically. Same species as a

LANG, A.; Ph.D., Prof. –MSU/ERDA Plant Res. Lab., Michigan State Univ., EAST LANSING, MI 48824, U.S.A.
a Hormone physiology. (Plantae)
b Physiology of flowering. Hyoscyamus niger (Solanaceae) and other spp.

LANGMAN, J.; M.D., Ph.D., Prof. – Dept. of Anat., Univ. of Virginia, Jordan Med. Bldg., 1300 Jefferson Park Ave., CHARLOTTESVILLE, VA. 22901, U.S.A.
a Brain development under normal and abnormal conditions. Gallus domesticus (Aves), (Rodentia)

LASEK, R. J.; Ph.D., Assoc. Prof. – Dept. of Anat., Sch. of Med., Case Western Reserve Univ., CLEVELAND, OH 44106, U.S.A.
a Proteins associated with growth and development of the axon. Rattus spec. (Rodentia)

LASH, J. W.; Prof. – Dept. of Anat., Sch. of Med., Univ. of Pennsylvania, PHILADELPHIA, PA 19174, U.S.A.
a Tissue interactions in developmental biology

LATSHAW, W. K.; Ph.D., Assoc. Prof. – Dept. of Vet. Anat., Western Coll. of Vet. Med., Univ. of Saskatchewan, SASKATOON, Sask. S7N 0W0, Canada

LAUFER, H.; Ph.D., Prof. – Biol. Sci. Group, Sect. of Developm. Biol., Univ. of Connecticut, Life Sciences Bldg. U-42, STORRS, CT 06268, U.S.A.
a Effects of hormones on gene action as revealed by puffing of polytenic chromosomes. Chironomus spec. (Diptera)
b Regulation of metamorphosis by hormones. (Insecta)
c Regulation of yolk proteins, enzymes, salivary gland secretion proteins, and hemoglobins during metamorphosis. (Crustacea; Insecta)
d Hemoglobin synthesis (cytological hybridization). Same species as a

LaVAIL, Mrs. J. H.; Ph.D., Assoc. Prof. – Dept. of Anat., Univ. of Calif., SAN FRANCISCO CA 94143, U.S.A.
a The retrograde movement of proteins in neurons of the visual system. Gallus domesticus (Aves)
b The effect of genetically determined pigmentation on the projections of retinal ganglion cells. Mus musculus (Rodentia)

LAVARACK, J. O.; Ph.D. – School of Anat., Univ. of Melbourne, PARKVILLE, Vict. 3052, Australia
a Histochemistry of cell interactions in the development of primary tissues. Gallus gallus (Aves)
b Locomotion of embryonic cells in culture. Same species as a

LaVELLE, A.; Ph.D., Prof. – Dept. of Anat., Univ. of Illinois, P. O. Box 6998, CHICAGO, IL 60680, U.S.A.
a Developmental cytology of the neuron, normally and after experimental alterations (axotomy, drug treatment, antibrain serum); changes in the nucleolar apparatus and in Nissl substance. Mesocricetus auratus (Rodentia)
b Proteins and antigenic changes in brain and nuclear areas of brain (gel-diffusion and micro-gel-diffusion). Same species as a

LAWRENCE, I. E., Jr.; Ph.D., Assoc. Prof. – Dept. of Anat., East Carolina Univ., Box 2701, GREENVILLE, NC 27834, U.S.A.

LAYTON, W. M.; M.D., Prof. – Dept. of Anat./Cytol., Dartmouth Med. School, HANOVER, NH 03755, U.S.A.
a Teratogenic mechanisms of carbonic anhydrase inhibitors. Mus musculus, Rattus norvegicus, Mesocricetus auratus (Rodentia)
b Asymmetry of developmental patterns. Mus musculus (Rodentia)
c Genetic determination of situs inversus viscerum

LEACH, C. M.; Ph.D., Prof. – Dept. of Bot. and Plant Pathol., Oregon State Univ., CORVALLIS, OR 97331, U.S.A.
a Light induction of reproduction in phytopathogenic species. (Fungi)
b Interaction of light and temperature on the induction of reproduction and spore discharge. (Fungi)

LEBLOND, C. P.; M.D., Ph.D., Prof. – Dept. of Anat., McGill Univ., P. O. Box 6070, Station A, MONTREAL, Que. H3C 3G1, Canada
No work on developmental biology in progress

LEE, H. H.; Ph.D., Prof. – Biol. Dept., Univ. of Toledo, 2801 W. Bancroft St., TOLEDO, OH 43606, U.S.A.
a Characterization of cell surface substances responsible for morphogenesis (testicular cells in vitro). Gallus domesticus (Aves)
b Isolation of steroidogenic cells by sedimentation techniques. Same species as a
c Differentiation of oocyte membrane with respect to receptors for a maturation-inducing substance, 1-methyladenine. (Asteroidea; Echinoidea)
d Intermediate(s) in the cytosol fraction after hormonal stimulation responsible for fertilization and embryogenesis. (Asteroidea)
e Membrane reactions in oocyte maturation and in fertilization. (Echinoidea)

LEE, K. H.; M.D. – Dept. of Obstet. and Gynecol., Queen Mary Hosp., Univ. of Hong Kong, Hospital Rd., HONG KONG

LEESON, C. R.; M.D., Prof. – Dept. of Anat., Coll. of Med., Univ. of Missouri, COLUMBIA, MO 65201, U.S.A.
a Postnatal development of the gastrointestinal tract and associated glands, and of the male reproductive tract. Didelphis virginiana (Marsupialia)

LEGNAME, A. H.; Dr.Biochem., Prof. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina
a Glycolysis and tricarboxylic acid cycle during early development: regulatory mechanisms. Bufo arenarum (Anura)
b Oocyte maturation: energetic metabolism as an expression of cytoplasmic maturation. Same species as a

LEGNAME, C. R. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina
a Nuclear transplantation (early stages until neurulation): 1. haploid and diploid nuclei; 2. electrophoretic analysis of proteins. Bufo arenarum (Anura)

LEHMAN, H. E.; Ph.D. – Dept. of Zool., Univ. of N. Carolina, CHAPEL HILL, NC 27514, U.S.A.

LEIGHTON, J.; M.D., Prof. – Dept. of Pathol., Med. Coll. of Pennsylvania, 3300 Henry Ave., PHILADELPHIA, PA. 19129, U.S.A.
a Neoplasia of urothelium. Homo sapiens (Primates)

LENHOFF, H. M.; Ph.D., Prof. – Dept. of Developm. and Cell Biol., Univ. of California, IRVINE, CA 92717, U.S.A.
a Chemistry, biosynthesis, and topography of mesoglea. Hydra littoralis, H. pseudoligactis (Hydrozoa)
b Movement and differentiation of interstitial cell. Hydra littoralis (Hydrozoa)
c Development of mutants. Hydra viridis (Hydrozoa)
d Control of pedal laceration. Undescribed spec. (Anthozoa)

LENSKY, Y.; Ph.D., Assoc. Prof. – Bee Res. Lab., Dept. of Entomol., Fac. of Agric., Hebrew Univ., P. O. Box 12, REHOVOT 76 100, Israel

LEOPOLD, R. A.; Ph.D. – USDA Metab. & Radiat. Research Lab., State Univ. Station, FARGO, ND 58103, U.S.A.

LESH-LAURIE, Mrs. G. E.; Ph.D. – Dept. of Biol., Case Western Reserve Univ., CLEVELAND, Ohio 44106, U.S.A.
a Purification of neurotrophic substance(s) involved in interstitial cell differentiation. Hydra spec., Podocoryne spec., Hydractinia spec., Pennaria spec., Aurelia spec. (Hydrozoa)
b Control of differentiated state of interstitial cells. Same species as a
c Role of mesoglea in morphogenesis. Same species as a

LESSEPS, R. J. (S. J.); Ph.D., Assoc. Prof. – Dept. of Biol. Sci., Loyola Univ., NEW ORLEANS, LA 70118, U.S.A.
a Ultrastructure of cell surface (embryonic liver, heart, neural retina, limb bud). Gallus domesticus (Aves)
b Sorting-out experiments to test hypotheses concerning morphogenetic movements (embryonic heart, neural retina, pigmented retina). Same species as a
c Cell movements in early development. Nothobranchius neumanni (Cyprinodontidae, Teleostei)

LEV, R.; M.D., Assoc. Prof. – Dept. of Pathol., New York Med. Coll., Basic Sci. Bldg., VALHALLA, NY 10595, U.S.A.
a Ability of fetus to absorb and utilize proteins (including antibodies), antibiotics and nutrients injected into amniotic sac. Macaca mulatta (Primates), (Rodentia)
b Induction of fetal intestinal lactase by intra-amniotic injection of lactose. Rattus spec. (Rodentia), Macaca mulatta (Primates)

LEVENSON, G. E.; Ph.D., D.D.S., Assoc. Prof. – Dept. of Histol., Embryol. and Genet., Sch. of Dent. Med., Univ. of Pennsylvania, 4001 Spruce St., PHILADELPHIA, PA 19174, U.S.A.
a Comparison of three types of embryonic cartilage when grown as monolayer cultures. Gallus domesticus (Aves)
b Effect of ascorbic acid in medium on growth and differentiation of embryonic cartilage in monolayer culture. Same species as a
c Effects of ascorbic acid on growth, differentiation and matrix (collagen) synthesis in tooth germs in vitro. Mus musculus (Rodentia)

LEVI-MONTALCINI, Miss R.; M.D., Prof. – Dept. of Biol., Washington Univ., Skinker and Lindell Ave., ST. LOUIS, MO 63130, U.S.A.

LEWIS, C. A.; Ph.D. – Natl. Inst. of Dent. Res., Natl. Inst. of Health, Bldg. 30, Rm 434, BETHESDA, MD 20014, U.S.A.

a Secondary palatal shelf elevation and fusion, using a new culture apparatus with high oxygen tensions (time-lapse filming; drug inhibition of elevation). Mus musculus (Rodentia)
b Effect of excess vitamin A upon prechondrogenic and chondrogenic limb bud cells in culture (electron microscopy, enzyme cytochemistry). Same species as a

LEWIS, Mrs. S. E.; Ph.D. – Dept. of Genet., Albert Einstein Coll. of Med., 1300 Morris Park Ave., NEW YORK, Bronx NY 10461, U.S.A.
a Developmental genetics, reproductive physiology. Mus musculus (Rodentia)

LHOTKA, J. F., Jr.; M.D., Ph.D., Prof. – Dept. of Anat. Sci., Univ. of Oklahoma Health Sci. Ctr., P. O. Box 26901, OKLAHOMA-City, OK 73190, U.S.A.
a Localization of calcium and iron in the developing embryo. Gallus domesticus (Aves), Sus scrofa (Artiodactyla), Homo sapiens (Primates)
b Histochemical localizations of polysaccharides in embryo and early fetus, with emphasis on vascular system. Homo sapiens (Primates)
c Coat colour and neoplastic degeneration in advanced aging. Mus musculus (Rodentia)

LIANG, H. M.; Ph.D., Prof. – Dept. of Biomorphics, Natl. Defense Med. Ctr., P. O. Box 7432, TAIPEI 107, Taiwan, Rep. of China
a Experimental sex differentiation. (Anura)

LILIEN, J. E.; Ph.D. – Dept. of Zool., Univ. of Wisconsin, 1117 W. Johnson St., MADISON, WI 53706, U.S.A.

LIN, C. C.; Ph.D., Assoc. Prof. – Div. of Pediat. and Med. Biochem., Health Sci. Centre, Univ. of Calgary, CALGARY, Alta. T2N 1N4, Canada

LINDSAY, D. T.; Ph.D., Assoc. Prof. – Dept. of Zool., Univ. of Georgia, ATHENS, GA 30602, U.S.A.
a Cell-specific patterns of mitosis in the embryo. Strongylocentrotus purpuratus (Echinoidea)

LINDSLEY, D. L.; Ph.D., Prof. – Dept. of Biol., B-022, Univ. of Calif. San Diego, LA JOLLA, CA 92093, U.S.A.
a Genetic control of gametogenesis. Drosophila melanogaster (Diptera)

LINTERN-MOORE, Mrs. S. M.; Ph.D. – Macquarie Univ., School of Biol. Sci., NORTH RYDE, N.S.W. 2113, Australia

LIPTON, B. H.; Ph.D. – Dept. of Anat., Med. Sch., Univ. of Wisconsin, MADISON, WI 53706, U.S.A.
a Pattern development in embryos: morphogenetic mechanisms responsible for axial structure formation. (Amphibia; Aves)
b Fine-structural analysis of myogenesis in vitro: cell fusion, cell substrate adhesion, basal lamina formation and satellite cell development. Gallus domesticus, Coturnix c. japonica (Aves), Mus musculus (Rodentia), Homo sapiens (Primates)

LIVERSAGE, R. A.; Ph.D., Prof. – Ramsay Wright Zool. Labs., Dept. of Zool., Univ. of Toronto, 25 Harbord St., TORONTO, M5S 1A1, Ont., Canada
a In vivo and in vitro studies on the influence of nerves and endocrines in regeneration. (Amphibia; Teleostei)

LOBO, J. F.; Ph.D. – Cell Res. Lab., Dept. of Zool., N. Wadia Coll., POONA-1, India

LOCKE, M.; Ph.D., Prof. – Dept. of Zool., Univ. of W. Ontario, LONDON, Ont. N6A 5B7, Canada
a Developmental physiology and cell biology. Calpodes ethlius (Lepidoptera)
b Nucleolus during epidermal cell development; a new bismuth staining procedure for light and electron microscopy allows the selective visualization of certain nucleoproteins

LOEWENTHAL, Miss L. A.; Ph.D., Assoc. Prof. – Div. of Biol. Sci., Univ. of Michigan, ANN ARBOR, MI 48109, U.S.A.
a Effects of teratogens on limb development. Gallus domesticus (Aves)

LONG, S. Y.; Ph.D. – Dept. of Anat., Med. Coll. of Wisconsin, 561 N. 15th St., MILWAUKEE, WI 53233, U.S.A.
a Cleft palate and limb malformations as a model for genetic-teratogenetic interactions. Mus musculus (Rodentia)

LONGENECKER, B. M.; Ph.D. – Dept. of Immunol., Fac. of Med., Univ. of Alberta, EDMONTON, Alta., Canada

LONGO, F. J.; Ph.D., Assoc. Prof. – Dept. of Anat., Ctr. for Health Sci., Univ. of Tennessee, 800 Madison Ave., MEMPHIS, TN 38163, U.S.A.

LOOMIS, W. F., Jr.; Ph.D. – Dept. of Biol., B-022, Univ. of Calif. San Diego, LA JOLLA, CA 92093, U.S.A.
a A biochemical and genetic investigation of the mechanisms of development. Dictyostelium discoideum (Acrasiales)

LOPES, R. A.; D.D.S., Sc.D. – Dept. de Patol., Fac. de Farm. e Odontol. de Ribeirão Preto, 14100 RIBEIRÃO PRETO, S.P., Brazil
a Alcoholism during pregnancy (histochemistry and allometry). Rattus rattus (Rodentia)

LOUGHTON, B. G.; Ph.D., Assoc. Prof. – Biol. Dept., York Univ., DOWNSVIEW, Ont. M3J 1P3, Canada
a Role of larval haemolymph proteins: 1. control of protein metabolism; 2. contribution to adult cuticle. Locusta migratoria (Orthoptera)
b Protein and amino acid metabolism of the embryo; degradation of yolk protein and fate of the released amino acids; vitellophage metabolism. Same species as a

LOUW, Miss J.; B.Sc. (Hons.) – Exp. Embryol. Res. Unit of the M.R.C., Dept. of Anat., Univ. of the Orange Free State, P. O. Box 339, BLOEMFONTEIN 9300, S. Africa
a Neural effects of removal of epiphyseal anlage. Gallus domesticus (Aves)

LOVE, D.; Ph.D. – Dept. of Anat., Developm. Biol. Center, Case Western Reserve Univ., 2119 Abington Rd., CLEVELAND, OH 44106, U.S.A.
a Chemistry of developing muscle. Gallus domesticus (Aves)

b Endocrine regulation of the rates of turnover of contractile proteins, particularly the subunits of myosin, during embryonic muscle development. Same species as a

LOVETT, J. S.; Ph.D., Prof. – Dept. of Biol. Sci., Purdue Univ., WEST LAFAYETTE, IN 47907, U.S.A.

a Regulation of RNA and protein synthesis and its role in differentiation; messenger RNA storage in zoospores and its function during zoospore germination; regulation of protein synthesis in zoospores. Blastocladiella emersonii (Phycomycetes)

b Function of microtubules in rhizoid initiation and development during zoospore germination. Same species as a

c Cell wall composition and the regulation of discharge papilla formation during differentiation. Same species as a

LOY, J. B.; Ph.D., Assoc. Prof. – Plant Sci. Dept., Univ. of New Hampshire, Nesmith Hall, DURHAM, NH 03824, U.S.A.

a Genetics and physiology of sex differentiation. Cucumis melo (Cucurbitaceae)

b Genetics and physiology of dwarfism. Citrullus lanatus (Cucurbitaceae)

c Hormonal regulation of fruit set, especially use of an ethylene inhibitor to suppress abscission and increase fruit set on emasculated and hand pollinated flowers. Same species as a

LU, M.-H.; Ph.D. – Natl. Inst. for Environm. Health Sci., N.I.H., P. O. Box 12233, RESEARCH TRIANGLE PARK, NC 27709, U.S.A.

a Effect of neonatal thyroidectomy (1–28 days) on subsequent development and reproduction (radio-immuno-assay of thyroid hormones). Rattus norvegicus (Rodentia)

b Teratogenicity of ethylenethiourea and thyroid function. Same species as a

c Environmental pollutants (ethylenethiourea) affecting preimplantation embryonic development (embryo culture). Rattus norvegicus, Mus musculus (Rodentia)

LUCAS, J. S.; Ph.D. – Zool. Dept., James Cook Univ. of N. Queensland, Post Office, JAMES COOK UNIVERSITY, Qld. 4811, Australia

a Development of hybrids. Acanthaster planci, A. brevispinus (Asteroidea)

LUCKETT, W. P.; Ph.D. – Dept. of Anat., Creighton Univ., 2500 California St., OMAHA, NE 68178, U.S.A.

a Comparative development and evolution of fetal membranes and placenta. (Primates; Insectivora; Rodentia; Chiroptera; Dermoptera)

b Embryology. Tachyglossus spec., Ornithorhynchus spec. (Monotremata)

LYERLA, T. A.; Ph.D. – Biol. Dept., Clark Univ., WORCESTER, MA 01610, U.S.A.

a Lysosomal enzymes and their role in cement gland regression. Xenopus laevis (Anura)

b Lactate dehydrogenase isozymes: genetics, tissue specificities and activation during embryogenesis. Same species as a

LYKE, E. B.; Ph.D., Prof. – Dept. of Biol. Sci., Calif. State Univ., HAYWARD, CA 94542, U.S.A.

a Gametogenesis and fertilization, especially pro-acrosomal vesicle formation and role in fertilization. Polyorchis penicillatus (Hydrozoa)

b Gametogenesis, fertilization, and early development in solitary and colonial species. Metridium spec., Anthopleura spec., Epiactis spec., Clavularia spec. (Actinozoa)

LYMAN, H.; Ph.D., Assoc. Prof. – Dept. of Biol. Sci., State Univ. of New York, STONY BROOK, NY 11794, U.S.A.

a Control mechanisms of chloroplast development and replication. Euglena gracilis (Euglenophyceae)

LYNE, A. G.; Ph.D. – Div. of Wildlife Res., address: Div. of Anim. Product., CSIRO, P. O. Box 239, BLACKTOWN, NSW 2148, Australia

a Embryology. Perameles nasuta, Isoodon macrourus (Marsupialia)

LYSER (SHOUBY), Mrs. K. M.; Ph.D., Prof. – Dept. of Biol. Sci., Hunter Coll., 695 Park Ave., Box 1030, NEW YORK, NY 10021, U.S.A.

a Early differentiation of spinal and sympathetic ganglia (organotypic culture, electron microscopy). Gallus domesticus (Aves)

b Progressive differentiation of neuroblastoma in organotypic culture. Homo sapiens (Primates)

MACARAK, E. J.; Ph.D. – Dept. of Histol., Embryol. and Genet., Sch. of Dent. Med., Univ. of Pennsylvania, 4001 Spruce St., PHILADELPHIA, PA 19174, U.S.A.

a Cellular interactions and stability of the differentiated state of vascular endothelium (tissue culture of umbilical cord vein endothelium). Homo sapiens (Primates)

b Biosynthesis of collagen by vascular endothelium and by smooth muscle cells

MacCABE, J. A.; Ph.D. – Dept. of Zool., Univ. of Tennessee, KNOXVILLE, TN 37916, U.S.A.

McCAFFERTY, R. E.; Ph.D., Prof. – Dept. of Anat., Med. Center, West Virginia Univ., MORGANTOWN, WV 26506, U.S.A.

a Histochemistry and ultrastructure of the Harderian gland at pre- and postnatal stages. Rattus rattus (Rodentia), Sus scrofa (Artiodactyla)

b Histochemistry of the lacrimal gland from early development through patient demise; normal and abnormal. Homo sapiens (Primates)

McCALLION, D. J.; Ph.D., Prof. – Dept. of Anat., McMaster Univ., Rm. 1–R–1, 1200 Main St. West, HAMILTON, Ont. L8S 4J9, Canada

McCARTHY, J. – Biol. Div., Oak Ridge Natl. Lab., P. O. Box Y, OAK RIDGE, TN 37830, U.S.A.

a Interacting controls of regeneration and molting. Gecarcinus lateralis (Decapoda, Crustacea) (with D. M. SKINNER and C. A. HOLLAND)

McCLAY, D. R.; Ph.D. – Dept. of Zool., Duke Univ., DURHAM, NC 27706, U.S.A.

a Molecular nature of cell-cell interactions in neural retina and the accompanying specificities that occur during development (quantitative techniques; immunology). Gallus domesticus (Aves)

b Timing and nature of specificity changes in adhesion that occur beginning at gastrulation. Lytechinus variegatus, Tripneustes esculentus and hybrids (Echinoidea)

McDANIEL, C. N.; Ph.D. – Dept. of Biol., Sch. of Sci., Rensselaer Polytechn. Inst., TROY, NY 12181, U.S.A.

a Regulation of conversion from indeterminate to determinate development. Nicotiana spec. (Solanaceae)

b Selection, characterization, and regeneration of amino acid auxotrophic mutants via cell culture methods. Nicotiana sylvestris (Solanaceae)

McDEVITT, D. S.; Ph.D., Assoc. Prof. – Dept. of Anim. Biol., Sch. of Vet. Med., Univ. of Pennsylvania, 3800 Spruce St., PHILADELPHIA, PA 19174, U.S.A.

a The soluble lens proteins (crystallins) in lens differentiation, as studied by column chromatography, electrophoresis, and immunofluorescence. Rana pipiens (Anura)

b Ontogeny and localization of gamma-crystallins (immunofluorescence). (Anura; Urodela; Aves) (with S. K. BRAHMA, Utrecht, Netherlands, and R. CLAYTON, Edinburgh, U.K.)

c Protein structure studies of crystallins (Amphibia; Aves) (with L. CROFT, Salford, U.K.)

MacDONALD, Mrs. E. L.; Ph.D. – Dept. of Biol., Wilson Coll., CHAMBERSBURG, PA 17201, U.S.A.

McGARRY, M. P.; Ph.D. – Dept. of Biol. Resources, Roswell Park Mem. Inst., 666 Elm St., BUFFALO, NY 14263, U.S.A.

a Humoral control of eosinophil granulocyte regeneration and proliferation in vivo and in vitro, by using eosinophil-specific cell response to secondary challenge with antigen. Mus musculus (Rodentia)

b Influence of Friend virus infection on developmental interrelationship between stem-precursor cells and the inductive stroma of hemopoietic tissues; determination of target cell(s). Same species as a

McGEADY, T. A.; Prof. – Dept. of Anat., N.Y. State Coll. of Vet. Med., Cornell Univ., ITHACA, NY 14853, U.S.A.

– Dept. of Vet. Anat., Univ. Coll., DUBLIN, Ireland

a Development of the urogenital system. Bos taurus (Artiodactyla)

MACINTYRE, M. N.; Ph.D., Prof. – Dept. of Anat., Developm. Biol. Ctr., Case Western Reserve Univ., 2119 Abington Rd, CLEVELAND, OH 44106, U.S.A.

a Cytogenetics of embryonic maldevelopment and reproductive failure. Homo sapiens (Primates)

b Morphology, biochemistry, and behaviour of fetal cells from amniotic fluid. Same species as a

McKINNELL, R. G.; Ph.D., Prof. – Dept. of Zool., Univ. of Minnesota, ST. PAUL, MN 55101, U.S.A.

a Nuclear transfer of in vitro cultured and cytologically identified renal carcinoma. Rana pipiens (Anura) (with J. ZAMBERNARD and D. J. PICCIANO)

b Cytogenetics of developmental variants induced by mutagenic substances. Same species as a (with D. J. PICCIANO)

MACKLIN, M. R.; Ph.D., Assoc. Prof. – Dept. of Biomed. Engin., Case Western Reserve Univ., CLEVELAND, OH 44106, U.S.A.

a Fetal electrocardiology. Homo sapiens (Primates)

b The effects of the inorganic ionic environment, both extra-cellular and intra-cellular, on cell differentiation. Hydra spec. (Hydrozoa)

c Onset of electrical activity in embryos. Xenopus laevis (Anura)

McKNIGHT, S. – Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTESVILLE, VA 22901, U.S.A.

a Ultrastructure of patterns of RNA synthesis during early embryogenesis and the interaction of transcription and DNA replication processes. Drosophila melanogaster (Diptera) (with O. L. MILLER)

b Ultrastructure of active silk fibroin genes and visualization of nascent silk fibroin molecules in the posterior silk gland. Bombyx mori (Lepidoptera) (with O. L. MILLER)

McNUTT, C. W.; Ph.D., Prof. – Dept. of Anat., Health Sci. Center, Univ. of Texas, 7703 Floyd Curl Drive, SAN ANTONIO, TX 78284, U.S.A.

a Developmental genetics of a tail-labyrinthine mutant (pr). Mus musculus (Rodentia)

b Development and pathological progression of a new neuromuscular mutant. Same species as a

McWHINNIE, Miss D. J.; Ph.D., Assoc. Prof. – Dept. of Biol. Sci., De Paul Univ., 1036, W. Belden Ave., CHICAGO, IL 60614, U.S.A.

a Biochemistry of embryonic bone with particular reference to metabolic pathways, enzyme systems, and hormone effects, especially parathyroid hormone and calcitonin. Gallus domesticus (Aves), Rana pipiens (Anura)

MADERSON, P. F. A.; Ph.D., Assoc. Prof. – Dept. of Biol., Brooklyn Coll., Bedford Ave. & Ave. H, NEW YORK, Brooklyn, NY 11210, U.S.A.

a Influence of environmental factors and hormones on epidermal turnover, in vitro and in vivo. Iguana iguana, Anolis carolinensis, Dipsosaurus dorsalis, Gekko gecko, Coleonyx variegatus (Lacertilia), Elaphe obsoleta (Ophidia)

b Wound healing. Same species as a

c Tail regeneration with reference to epidermal replacement. Iguana iguana, Anolis carolinensis, Dipsosaurus dorsalis, Gekko gecko, Coleonyx variegatus (Lacertilia)

d Descriptive and experimental studies of middle ear development. (Amniota)

MADHAVAN, K.; Ph.D. – Center for Pathobiol., Univ. of California, IRVINE, CA 92664, U.S.A.

a Effects of hormones and analogues on development (biochemistry, cytology). Drosophila melanogaster and other spp. (Insecta and other Arthropoda)

b Effects of juvenile hormone and ecdysones on molting and reproduction. Armadillidium vulgare (Isopoda, Crustacea)

c Effects of regeneration on molting. Same species as a

MADHAVAN, Mrs. M. M.; Ph.D. – Center for Pathobiol., Univ. of California, IRVINE, CA 92664, U.S.A.
MAEDA (KIBATA), Mrs. M.; B.Sc. – Dept. of Biol., Coll. of Gen. Educ., Osaka Univ., Toyonaka, OSAKA, 560 Japan
a The role of Ca++ and Mg++ in the chemotactic response to cAMP of amoebae. Dictyostelium discoideum (Acrasiales)
MAHOWALD, A. P.; Ph.D., Prof. – Dept. of Zool., Indiana Univ., Jordan Hall 224, BLOOMINGTON, IN 47401, U.S.A.
MAIBENCO, Miss H. C.; Ph.D., Prof. – Rush Med. Coll., Rm. 1405 Jelke Bldg., 1725 W. Harrison St., CHICAGO, IL 60612, U.S.A.
MAKINO, S.; D.Sc., Prof. (Emer.) – Chromos. Res. Unit, Hokkaido Univ., N.10, W.8, SAPPORO, 060 Japan
a Chromosome aberrations in patients with congenital disorders, with special regard to the relationship between karyological features and disease states. Homo sapiens (Primates)
b Chromosome studies in spontaneous and induced abortions. Same species as a
MAKINODAN, T. – Lab. of Cell. and Comp. Physiol., Gerontol. Res. Ctr., N.I.A., Natl Inst. of Health, Baltimore City Hosp., BALTIMORE, MD 21224, U.S.A.
a Growth and senescence of the thymus
MALACINSKI, G. M.; Ph.D., Prof. – Dept. of Zool., Indiana Univ., BLOOMINGTON, IN 47401, U.S.A.
a Isolation of cytoplasmic components which direct nuclear activity. Ambystoma mexicanum (Urodela), Rana pipiens (Anura)
b Developmental genetics and biochemistry of the egg cytoplasm. Ambystoma mexicanum (Urodela), Xenopus laevis (Anura)
MALLERY, C. H.; Ph.D. – Dept. of Biol., Univ. of Miami, CORAL GABLES, FL 33156, U.S.A.
a Synthesis of DNA, RNA and protein during root cell formation. Allium cepa (Liliaceae)
b Ion transport in developing root cells. Same species as a
MANASEK, F. J.; D.M.D., Assoc. Prof. – Dept. of Anat., Div. of Biol. Sci., Univ. of Chicago, 1025 East 57th St., CHICAGO, IL 60637, U.S.A.
MANES, M. E.; Biol. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina
a Determination of bilateral symmetry: 1. descriptive and experimental analysis: 2. role of the spermatozoon. Bufo arenarum (Anura)
MANIATIS, G. M.; M.D., Ph.D. – Dept. of Human Genet. and Developm., Coll. of Phys. and Surg., Columbia Univ., 630 W. 168th St., NEW YORK, NY 10032, U.S.A.
a Developmental genetics of erythropoiesis using normal and transformed erythroid cells. Mus musculus (Rodentia)
MANION, P. J.; M.A. – U.S. Fish and Wildlife Serv., U.S. Dept. of the Interior, 446 E. Crescent St., P. O. Box 758, MARQUETTE, MI 49855, U.S.A.
a Internal metamorphosis of landlocked animals (anatomy and histology of 16 organ systems). Petromyzon marinus (Cyclostomata)
b Morphological development of the integument. Same species as a
c Morphological abnormalities among adults, especially of teeth. Same species as a
MANN, P. M.; M.Sc. – Dept. of Biomed. Sci., Ontario Vet. Coll., Univ. of Guelph, GUELPH, Ont. N1G 2W2, Canada
a Embryonic and prenatal developmental anatomy, including the development of the placental membranes. Blarina brevicauda and other spp. (Soricidae, Insectivora), Myotis lucifugus and other spp. (Chiroptera, especially Microchiroptera)
MANNER, H. W.; Ph.D., Prof. – Dept. of Biol., Loyola Univ., 6525 N. Sheridan Rd., CHICAGO, IL 60626, U.S.A.
a The developmental effect of linear alkyl sulfonate on embryos. (Teleostei), Mus musculus (Rodentia)
b Neurological effects of surfactants. Same species as a
MANNING, F.; M.D. – Dept. of Obstet. & Gynecol., Univ. of S. Calif., Women's Hosp., Rm 5K5, 1240 N. Mission Road, LOS ANGELES, CA 90033, U.S.A.
a Fetal cardiovascular physiology, particularly responses to stress. Macaca mulatta (Primates)
b Fetal breathing movements, control and factors. Same species as a
c Physiology of the uteroplacental and umbilical circulations. Same species as a
MANNING, R. F.; M.A. – Dept. of Cell Biol., Roche Inst. of Molec. Biol., NUTLEY, NJ 07110, U.S.A.
a Silk gland development and differentiation, especially silk fibroin synthesis in vitro, fibroin message synthesis and isolation of the fibroin gene. Bombyx mori (Lepidoptera) (with L. P. GAGE and D. R. SAMOLS)
MANO, Y.; M.D., Prof. – Dept. of Physiol. Chem. and Nutr., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan
MARAMOROSCH, K.; Dr. – Boyce Thompson Inst. of Plant Res., 1086 N. Broadway, YONKERS, NY 10701, U.S.A.
MARCHOK, Miss A.; Ph.D. – Biol. Div., Oak Ridge Natl. Lab., OAK RIDGE, TN 37830, U.S.A.
a Regulation of normal and abnormal differentiation of respiratory epithelium in organ and cell cultures; identification of factors controlling proliferation, cell turnover, and synthesis of specific cell products; Rattus norvegicus (Rodentia)
MARCUS, Z. H.; Ph.D. – Dept. of Embryol. and Teratol., Ch. Sheba Med. Ctr., Tel-Aviv Univ., TEL-AVIV, Israel
a Delayed hypersensitivity to sperm antigens. (Rodentia)

MARGOLIS, G.; M.D., Prof. – Dept. of Pathol., Dartmouth Med. Sch., HANOVER, NH 03755, U.S.A.

MARIANO, Miss M. I. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina

a Nuclear transplantation (early stages until neurulation): 1. haploid and diploid nuclei; 2. ultrastructure of haploid embryos. Bufo arenarum (Anura)

b Vitelline envelope: ultrastructural changes involved in fertilization. Same species as a

MARIN-PADILLA, M.; M.D. – Dept. of Pathol., Dartmouth Med. Sch., HANOVER, NH 03755, U.S.A.

MARK, R. F.; Doct. III, Prof. – Dept. of Behav. Biol., Austr. Natl. Univ., CANBERRA, A.C.T. 2600, Australia

a Regenerating motor nerves and reinnervating muscle (descriptive, histochemical, experimental, and electrophysiological). Astronotus ocellatus (Cichlidae), Carassius carassius (Cyprinidae, Teleostei), Ambystoma spec. (Urodela)

MARKERT, C. L.; Ph.D., Prof. – Dept. of Biol., Osborn Mem. Lab., Yale Univ., NEW HAVEN, CT 06520, U.S.A.

a Gamete maturation, fertilization, and early development. Mus musculus (Rodentia)

b Ontogeny of isozymic patterns. Mus musculus (Rodentia), Various spp. (Pisces)

c Developmental genetics. Various spp. (Pisces)

d Nuclear transplantation. Same species as a

e Developmental genetics studied in allophenic or mosaic combinations. Same species as a

MARKS, P. A.; Prof. – Dept. of Human Genet. and Developm., Coll. of Phys. and Surg., Columbia Univ., 630 W. 168th St., NEW YORK, NY 10032, U.S.A.

a Differentiation in normal and transformed erythropoietic cells; regulation of erythropoiesis. Mus musculus (Rodentia), Homo sapiens (Primates)

MARKWALD, R. R.; Ph.D. – Dept. of Anat., Texas Techn. Univ., LUBBOCK, TX 79409, U.S.A.

a Teratogenic influences of a variety of known teratogens upon heart development. Rattus norvegicus (Rodentia)

b Matrix-mediated genetic expression in cardiogenesis. Same species as a

MARTIN, A. H.; Ph.D. – Dept. of Anat., Health Sci. Ctr., Univ. of W. Ontario, LONDON, Ont. N6A 5C1, Canada

a Development, morphology, and histology of the central nervous system (light microscopy). Gallus domesticus (Aves), Mus musculus (Rodentia)

b Teratogenic effect of various techniques and agents on the developing embryo. Same species as a

MARTIN, Ch.B., Jr.; M.D., Prof. – Dept. of Obstet. and Gynecol., Univ. of S. Calif., Women's Hosp. 5K-22, 1240 N. Mission Rd., LOS ANGELES, CA 90033, U.S.A.

a Fetal cardiovascular physiology, particularly responses to stress. Macaca mulatta (Primates)

b Fetal breathing movements, control and factors. Same species as a

c Physiology of the uteroplacental and umbilical circulations. Same species as a

MARTIN, Mrs. G. R.; Ph.D. – Dept. of Pediat., Univ. of California, SAN FRANCISCO, CA 94143, U.S.A.

MASCARENHAS, J. P.; Ph.D., Prof. – Dept. of Biol. Sci., State Univ. of New York, 1400 Washington Ave., ALBANY, NY 12222, U.S.A.

a Developmental biochemistry of pollen. Tradescantia paludosa (Commelinaceae)

MASLOW, D. E.; Ph.D. – Dept. of Exp. Pathol., Roswell Park Mem. Inst., 666 Elm St., BUFFALO, N. Y. 14203, U.S.A.

a The adhesion of cells to different cellular and non-cellular substrates. Mus spec. (Rodentia), Homo sapiens (Primates)

b Specificity of interactions during aggregation of developing and tumor tissues and cells. (Aves), Mus spec. (Rodentia), Homo sapiens (Primates)

c Role of cell movement in aggregation; experimental and model systems. (Aves)

MASSOVER, W. H.; M.D., Ph.D. – Div. of Biol. and Med. Sci., Brown Univ., PROVIDENCE R.I. 02912, U.S.A.

a Subcellular differentiation of the oocyte (including experimental manipulation). (Amphibia)

b Form and function of normal and neoplastic ferritins. Mus musculus (Rodentia)

MASTERS, E. M.; Ph.D., Assoc. Prof. – Dept. of Anat., Jefferson Med. Coll., 1020 Locust St., PHILADELPHIA, PA 19107, U.S.A.

a Maturation of alveolar cells, production of surfactant, morphology and secretion in organ and cell culture, in normal and teratogen-induced abnormal lung. Rattus norvegicus (Rodentia)

MASUI, Y.; Ph.D., Assoc. Prof. – Ramsay Wright Zool. Labs., Dept. of Zool., Univ. of Toronto, 25 Harbord St., TORONTO, Ont. M5S 1A1, Canada

a Cytoplasmic control of nuclear activity in oocyte meiosis and early development. Rana pipiens, Xenopus laevis (Anura), Triturus viridescens (Urodela)

b Repair DNA synthesis in ovarian oocytes. Mus musculus (Rodentia)

c Chromosome condensation and decondensation during egg maturation and activation. Rana pipiens, Xenopus laevis (Anura), Mus musculus (Rodentia)

MATHUR, J. K.; Ph.D. – Dept. of Zool., S.G.R.R. (P.G.) Coll., DEHRADUN 248001, India

a Limb teratology. Calotes versicolor (Lacertilia)

b Morphology, histochemistry, and cell death in developing limbs. Agama himalayensis (Lacertilia)

c Patterns of cell death in developing limbs. Columba livia (Aves)

MATSUMOTO, H.; Ph.D. – Dept. of Agric. Chem., Kyoto Univ., KYOTO, 606 Japan

a Role of chromosomal proteins, especially non-histone proteins, in cotyledon development. Pisum sativum (Papilionaceae)

b Inhibitory mechanism of aluminium for root elongation. Same species as a

MATSUYAMA, H.; M.D. – Tokyo Metropolitan Inst. for Neurosciences, 2–6, Musashidai, Fuchuchi, TOKYO, 183 Japan
a Pathology of congenital anomalies in central nervous system, especially pachygyria, micropolygyria and cerebellar hypoplasia, granular cell type.
b Origin of microglia (culture in vitro, enzyme histochemistry, immunology)
MATTINGLY, Miss E.; Ph.D. – Dept. of Zool., Univ. of Georgia, ATHENS, GA 30602, U.S.A.
MAUE-DICKSON, Mrs. W.; Ph.D. – Dept. of Pediat., Mailman Ctr. for Child Developm., Univ. of Miami, P. O. Box 520006, Biscayne Annex, MIAMI, FL 33137, U.S.A.
a Normal embryology and developmental morphology of the head and neck; specific interest in anatomical bases of craniofacial anomalies such as cleft palate. Homo sapiens (Primates) (with D. R. DICKSON)
MAURER, R. R.; Ph.D. – Natl. Inst. for Environm. Health, N.I.H., P. O. Box 12233, RESEARCH TRIANGLE PARK, N.C. 27709, U.S.A.
a Significance of uterine proteins to embryonic development. Oryctolagus cuniculus (Lagomorpha)
b The male influence on the development of the early embryo (2 cell-blastocyst). Same species as a
c Environmental factors affecting embryonic development (pre- and postimplantation stages). Oryctolagus cuniculus (Lagomorpha), Mus musculus (Rodentia)
d Low temperature (−196°C) preservation of embryos. Same species as c
MAYER, T. C.; Ph.D., Prof. – Dept. of Biol., Fac. of Lib. Arts and Sci., Rider College, TRENTON, NJ 08602, U.S.A.
a Developmental genetics of white-spotting patterns. Mus musculus (Rodentia)
MAYHEW, E. G.; Ph.D. – Dept. of Exp. Pathol., Roswell Park Mem. Inst., 666 Elm St., BUFFALO, NY 14203, U.S.A.
a Mechanism of histiotypic sorting of heterospecific embryo cells; the effects of tumour cells on sorting patterns. Gallus domesticus (Aves), Mus musculus (Rodentia)
MAZURKIEWICZ, M.; Ph.D. – Dept. of Biol. Sci., Univ. of Maine at Portland-Gorham, 96 Falmouth St., PORTLAND, ME 04103, U.S.A.
a Larval development and reproduction. Hydrobia totteni, H. salsa (Gastropoda)
b Larval development. Macoma balthica (Lamellibranchia)
c Larval development. Echinarachnius parma (Echinoidea)
MELTON, Ch. G., Jr.; Ph.D. – Dept. of Biochem., Univ. of W. Australia, NEDLANDS, W. Austr. 6009, Australia
MENCZER, J. – Dept. of Embryol. and Teratol., Ch. Sheba Med. Ctr., Tel-Aviv Univ., TEL-AVIV, Israel
a Antigenicity of normal and pathological trophoblast. (Rodentia), Homo sapiens (Primates) (with L. A. NEBEL and V. TODER)
MENGE, A. C.; Ph.D., Assoc. Prof. – Dept. of Obstet. and Gynecol., Ctr. for Res. in Reprod. Biol., 4003 Women's Hosp., ANN ARBOR, MI 48109, U.S.A.
a Effects of immune reactions against spermatozoa on the development of embryos. Oryctolagus cuniculus (Lagomorpha)
MERCHANT-LARIOS, H.; D.Sc., Assoc. Prof. – Inst. de Invest. Bioméd., U.N.A.M., A.P. 70228, MEXICO 20, D.F., México
a Culture, cytochemistry and ultrastructure of primordial germ cells; mechanisms of action of some drugs. Mus musculus, Rattus spec. (Rodentia)
b Ovarian morphogenesis and cytodifferentiation; interaction between germ and somatic cells; ultrastructure and gonadotropin receptors.
METZ, C. B.; Ph.D. – Inst. of Molec. and Cell Evolut., Univ. of Miami, 521 Anastasia Ave., CORAL GABLES, FL 33134, U.S.A.
MEYER, D. B.; Ph.D. – Dept. of Anat., Wayne State Univ., 540 E. Canfield, DETROIT, MI 48201, U.S.A.
a Morphogenesis and developmental histochemistry of embryonic eye. Gallus domesticus (Aves), Macaca mulatta (Primates), (Insectivora, Mammalia)
b Prenatal ossification of the skeleton. Homo sapiens (Primates)
c Electron microscopy of retinal development. Gallus domesticus, Coturnix c. japonica (Aves)
MEYER, R. L.; Ph.D. – Div. of Biol., Calif. Inst. of Technol., PASADENA, CA 91125, U.S.A.
a Development and regeneration of ordered neuronal connections, particularly in the retinotectal system. Carassius auratus (Teleostei), Hyla regilla (Anura)
MEYERHOF, P. G.; M.Sc. – Dept. of Zool., Univ. of Toronto, 25 Harbord St., TORONTO, Ont. M5S 1A1, Canada
a Mechanism of action and cell cycle regulation by "cytostatic factor" – a cytoplasmic molecule found in mature oocytes, which is capable of inducing chromosome condensation and cleavage arrest in embryonic tissues. Rana pipiens, Xenopus laevis (Anura)
MEZEI (TEICHMANN), Mrs. C.; Ph.D. – Biochem. Dept., Med. Sch., Dalhousie Univ., Sir Charles Tupper Bldg., HALIFAX, N.S. B3H 4H7, Canada
a Control of myelinogenesis. Gallus domesticus (Aves)
b Role of pineal gland in embryonic brain development
c Biochemistry of histamine in peripheral and central nervous system. Gallus domesticus (Aves), Cavia porcellus (Rodentia)
MEZGER-FREED, Mrs. L.; Ph.D. – Inst. for Cancer Res., 7701 Burholme Ave., PHILADELPHIA, PA 19111, U.S.A.
a Genetics of haploid embryo cell lines. Rana pipiens (Anura)
b Development of phenotypic variants in cell culture (thymidine kinase deficiency). Same species as a
c Effect of mutagens on haploid cell cultures. Same species as a

MICELI, Mrs. D. C.; Biochem. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina
a Fatty acid biosynthesis during early development: enzyme regulation. Bufo arenarum (Anura)
b Influence of oviductal secretions on vitelline membrane properties and its involvement in fertilization. Same species as a
MICHAEL, M. I.; Ph.D., Prof. – Dept. of Zool., Alexandria Univ., Moharram Bey, ALEXANDRIA, Egypt
a Experiments on the development of the cephalic ganglia and other derivatives of the head neural crest. Ambystoma mexicanum (Urodela)
b Development of the urogenital system. Bufo regularis (Anura) (with S. N. SEDRA and S. H. KHALIL)
c Experiments on determination of the proximo-distal axis of the developing hind limb. Same species as b
d Effect of some vitamins on limb regeneration. Same species as b
MICHAELI, Y.; D.M.D. – Dept. of Anat. and Embryol., Hebrew Univ. – Hadassah Med. School, P. O. Box 1172, JERUSALEM 91000, Israel
a Relation between different rates of eruption and the behaviour of the odontogenic epithelial cells. Rattus spec. (Rodentia)
b Effect of inferior alveolar nerve resection on odontogenesis of the continuously growing incisor (trophic effect). Same species as a
MICHAELSON, M.; B.S. – Biol. Sci. Group, Univ. of Connecticut, Box U-42, STORRS, CT 06268, U.S.A.
a Hemoglobin synthesis during larval development. Chironomus spec. (Diptera)
MIKAMI, Y.; Ph.D., M.D., Prof. – Dept. of Anat., Mie Pref. Univ., 2–174, Edobashi, TSU, Japan
MIKI-NOUMURA, Mrs. T.; Ph.D. – Dept. of Biol., Ochanomizu Univ., Otsuka, Bunkyo-ku, TOKYO, 112 Japan
a The mitotic apparatus protein of the egg. Hemicentrotus pulcherrimus, Pseudocentrotus depressus, Anthocidaris crassispina (Echinoidea)
b Cleavage. Same species as a
c An actin-like egg protein. Same species as a and Temnopleurus toreumaticus (Echinoidea)
d Tubulin of sperm tail. Same species as a
e Embryology and post-hatching development. Ciona spec., Halocynthia spec. (Ascidiacea)
MILKMAN, R. D.; Ph.D., Prof. – Dept. of Zool., Univ. of Iowa, IOWA-City, IA 52242, U.S.A.
a Developmental biology, classical and physiological genetics. Botryllus schlosseri (Ascidiacea)
b Developmental biology, genetics. Drosophila melanogaster and other spp. (Diptera)
MILLER, J. H.; Ph.D., Prof. – Dept. of Biol., Syracuse Univ., 130 College Place, SYRACUSE, NY 13210, U.S.A.
a Symmetry of cell division and rhizoid differentiation in gametophytes. Onoclea sensibilis (Filices)
MILLER, O. L., Jr.; Ph.D. – Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTESVILLE, VA 22901, U.S.A.
a Ultrastructure of patterns of RNA synthesis during early embryogenesis and the interaction of transcription and DNA replication processes. Drosophila melanogaster (Diptera) (with S. McKNIGHT)
b Ultrastructure of active silk fibroin genes and visualization of nascent silk fibroin molecules in the posterior silk gland. Bombyx mori (Lepidoptera) (with S. McKNIGHT and N. SULLIVAN)
MILLER, R. K.; Ph.D. – Dept. of Obstet.-Gynecol., Sch. of Med. and Dent., Univ. of Rochester, ROCHESTER, NY 14642, U.S.A.
a In vitro analysis of nutrient and xenobiotic transfer (amino acids, creatine, sugars, cholecystographic agents, diethylstilbestrol) in placentae, correlated with in vivo observations and fetal distributions. Rattus norvegicus (Rodentia), Homo sapiens (Primates)
MILLER-PRICE, Mrs. S. A.; Ph.D. – Div. of Sci., Kirkland Coll., CLINTON, NY 13323, U.S.A.
a Morphogenesis during early stages of organogenesis, specifically changes in rates of proliferation within emerging populations of specific cell types; drug effects (hydroxyurea) on morphogenesis and rates of cell proliferation (embryo culture, radioautography, scanning and transmission electron microscopy). Gallus domesticus (Aves), Mus musculus (Rodentia)
b Surface changes occuring during differentiation of embryonic erythrocytes (scanning and transmission electron microscopy combined with application of surface ligands). Same species as a
MILLER, W. A.; D.D.S., Assoc. Prof. – Dept. of Oral Biol., Sch. of Dent., State Univ. of New York at Buffalo, 4510 Main St., BUFFALO, N.Y. 14226, U.S.A.
MILLINGTON, W. F.; Ph.D., Prof. – Dept. of Biol., Marquette Univ., 530 North 15th St., MILWAUKEE, WI 53233, U.S.A.
a Development at the shoot apex, and regulation of form in the leaf and shoot. (Angiospermae)
b Regulation of zoospore release and colony formation; factors regulating cell shape. Pediastrum spec. (Chlorophyceae)
c Emergence of pattern in cell differentiation in leaves. Same species as a
MINATO, K.; M.Sc. – Dept. of Morphol. Genet., Natl. Inst. of Genet., Yata 1–111, MISIMA, Sizuoka-ken, 411 Japan
a The relationship between cell growth cycle and molting cycle in he epidermis. Philosamia cynthia ricini (Lepidoptera)
b Studies on growth-stimulating factors in the cultivation of cells. Homo sapiens (Primates)
MINOR, R. R.; V.M.D., Ph.D. – Dept. of Anat., Univ. of Pennsylvania, Clin. Res. Ctr., Philad. Gen. Hosp., PHILADELPHIA, PA 19104, U.S.A.
a Microscopic, biochemical, and immunochemical studies of mesodermal differentiation in organ culture of embryonic somites and lung buds. Gallus domesticus (Aves)

b Microscopic, autoradiographic, biochemical, and immunochemical studies of basement membrane synthesis, accumulation and turnover in organ cultures of the parietal yolk sacs. Rattus spec. (Rodentia)

MINTZ, Miss B.; Ph.D. – Inst. for Canc. Res., 7701 Burholme Ave., PHILADELPHIA, PA 19111, U.S.A.

a Gene control of differentiation in allophenic animals with two genotypic populations of cells. Mus musculus (Rodentia)

b Differentiation of mutagenized totipotent teratocarcinoma cells. Same species as a

MISHRA, N. C.; Ph.D., Assoc. Prof. – Dept. of Biol., Univ. of S. Carolina, COLUMBIA, SC 29208, U.S.A.

MISRA, R.; M.S. – Dept. of Obstet. and Gynecol., M.L.N. Med. Coll., Allahabad Univ., ALLAHABAD 1, India

MITRA, S. C.; M.Sc. (Hons.) – Dept. of Anat., Jawaharlal Inst. of Postgrad. Med. Educ. and Res., PONDICHERRY-605006, India

a Congenital anomalies. Homo sapiens (Primates)

MITTENTHAL, J. E.; Ph.D. – Dept. of Biol. Sci., Purdue Univ., WEST LAFAYETTE, IN 47907, U.S.A.

a Developmental neurobiology of giant interneuron-fast flexor motoneuron system in the abdomen. Procambarus clarkii (Decapoda, Crustacea)

b Effects of regeneration and transplantation of thoracic appendages on synaptic connectivity and morphology of motoneurons innervating their muscles. Same species as a

c Effects of regeneration and transplantation of portions of ventral nerve cord on synaptic connectivity and morphology of neurons in the cord. Lumbricus terrestris (Oligochaeta)

MIYA, K.; D.Sc., Prof. – Inst. of Appl. Entomol., Fac. of Agric., Iwata Univ., Ueda 3–18–8, MORIOKA, 020 Japan

a Electron microscopy of oogenesis and embryogenesis. Bombyx mori (Lepidoptera)

b Analysis of early embryonic development. Same species as a

MIYAHARA, Y. – Dept. of Plant Pathol. and Entomol., Kyûshû Natl. Agric. Exp. Station, Nishi 496, Izumi, CHIKUGO-shi, Fukuoka-ken, 833 Japan

MIYAKE, K.; M.D. – Dept. of Obstet. & Gynecol., Univ. of S. Calif., Women's Hosp., Rm 5K22, 1240 N. Mission Rd., LOS ANGELES, CA 90033, U.S.A.

a Fetal cardiovascular physiology, particularly responses to stress. Macaca mulatta (Primates)

b Fetal breathing movements, control and factors. Same species as a

MIYAKE, Y-I.; M.Sc. – Dept. of Vet. Obstet., Fac. of Vet. Med., Hokkaido Univ., N18, W9, SAPPORO, 060 Japan

a Cytogenetic investigations on chromosomal abnormalities (quinacrine mustard staining). Sus scrofa, Bos taurus (Artiodactyla)

MIZELL, M.; Ph.D., Prof. – Dept. of Biol., Tulane Univ., NEW ORLEANS, LA 70118, U.S.A.

a Induced limb regeneration. Didelphis virginiana (Marsupialia)

b Effects of regenerating appendages on Lucké tumor (renal adenocarcinoma): tumor differentiation. Rana pipiens (Anura)

c Infectious nucleic acids (Herpes type virus associated with Lucké tumor) as differentiating agents. Same species as b

MIZUNO, Takeo; Ph.D., Prof. – Zool. Inst., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan

a Tissue interactions in organogenesis of digestive tract. Gallus domesticus (Aves)

b Tissue interactions in differentiation of prostatic buds in vitro. Rattus norvegicus (Rodentia)

MOAV, B.; Ph.D. – Dept. of Zool., Tel-Aviv Univ., Ramat-Aviv, TEL-AVIV, Israel

MOBBS, I. G.; Ph.D. – Dept. of Anat., Fac. of Med., Dalhousie Univ., HALIFAX, N.S. B3H 4J1, Canada

a Ultrastructure of extraembryonic membranes, particularly of transport across the yolk sac throughout development and across the serosa during early development. Gallus domesticus (Aves)

MOCHIDA, O.; Dr.Agr. – Internat. Rice Res. Inst., c/o CRIA, Sukamandi Branch, SUBANG, W. Java, Indonesia

a Morphology and physiology of oogenesis. Nilaparvata lugens (Delphacidae, Homoptera)

b Biology of a rice pest. Scotinophara coarctata (Pentatomidae, Hemiptera)

MOHLER, J. D.; Ph.D., Prof. – Dept. of Zool., Univ. of Iowa, IOWA-City, IA 52242, U.S.A.

a The induction, identification, and characterization of female-sterile mutants, especially those affecting internal milieu of the egg, as material for the study of oogenesis. Drosophila melanogaster (Diptera)

MOLINARO, E.; M.V. – Inst. de Embriol., Univ. Austral de Chile, Casilla no. 567, VALDIVIA, Chile

a Process of morphophysiological adaptation in development. Chilian species (Anura)

b Teratogenic action of antagonistic substances in embryo development in ovo. Gallus domesticus (Aves)

MOMENT, G. B.; Ph.D., Prof. (Emer.) – Dept. of Biol. Sci., Goucher Coll., BALTIMORE, MD 21204, U.S.A.

a Culture of cells taken from regions of differing growth (regenerative) capabilities, and characterization of proteins extracted from these regions. Eisenia foetida (Oligochaeta)

MONDER, C.; Ph.D. – Res. Inst., Hosp. for Joint Dis., 1919 Madison Ave., NEW YORK, NY 10035, U.S.A.

a Induction of enzyme formation by steroids in fetal liver in organ culture. Rattus norvegicus (Rodentia)

MONIE, I. W.; M.D., Prof. – Dept. of Anat., Sch. of Med., Univ. of Calif., SAN FRANCISCO, CA 94143, U.S.A.
MONTIEGEL, Miss E. C.; M.S., Assoc. Prof. – Dept. of Biol., West Virginia Univ., Brooks Hall, MORGANTOWN, WV 26506, U.S.A.
a Teratological effect of chemicals (and vibration) on development. Gallus gallus (Aves)
MOOG, Miss F.; Ph.D., Prof. – Dept. of Biol., Washington Univ., Skinker and Lindell Ave., ST. LOUIS, MO 63130, U.S.A.
MOORE, G. P. M.; Ph.D. – Dept. of Zool., Austr. Natl. Univ., P. O. Box 4, CANBERRA, A.C.T. 2600, Australia
a Genetic activity of blastocyst cells during delayed implantation and embryonic diapause. Macropus eugenii (Marsupialia), Mus musculus (Rodentia)
b Ovarian development in the thymusless mutant nude. Mus musculus (Rodentia)
c Transcriptional changes in the genome of the oocyte. Same species as b
MOORE, K. L.; Ph.D., Prof. – Dept. of Anat., Univ. of Toronto, TORONTO, Ont., Canada
MORAN, D. J.; Ph.D. – Dept. of Biol., State Univ. of New York, NEW PALTZ, NY 12561, U.S.A.
a Activation of microfilaments during gastrulation by papaverine and ionophore A23187, Ambystoma maculatum, A. mexicanum (Urodela)
MÔRI, T.; M.Agr. – Zool. Lab., Fac. of Agric., Kyûshû Univ., FUKUOKA, Japan
a Electron microscopic analysis of the mechanism of fertilization. Pipistrellus abramus, Miniopterus schreibersi (Chiroptera)
MORRILL, G. A.; Ph.D., Assoc. Prof. – Dept. of Physiol., A. Einstein Coll. of Med., Yeshiva Univ., 1300 Morris Park Ave., NEW YORK, Bronx, NY 10461, U.S.A.
MORRILL, J. B.; Ph.D., Prof. – Div. of Nat. Sci., New Coll. of the Univ. of S. Florida, 5700 N. Tamiami Trail, SARASOTA, FL 33580, U.S.A.
a Chemical differentiation of eggs. Lymnaea spec. (Gastropoda)
b Analyses of ooplasmic segregation. (Gastropoda)
MORRIS, J. E.; Ph.D., Assoc. Prof. – Dept. of Zool., Oregon State Univ., CORVALLIS, OR 97331, U.S.A.
a Mechanisms of cell association in histogenesis of the neural retina (role of glycosaminoglycans). Gallus domesticus (Aves)
b Cell interactions during implantation of the blastocyst in vitro. Mus musculus (Rodentia)
MORRIS, Miss V. B.; Ph.D. – Sch. of Biol. Sci., Univ. of Sydney, Zool. Bldg., SYDNEY, N.S.W. 2006, Australia
a Distribution pattern of newly formed cells in the developing retina. Gallus domesticus (Aves)
MORROW, J. F.; Ph.D. – Dept. of Embryol., Carnegie Inst. of Wash., 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.
MOSCONA, A. A.; Ph.D., Prof. – Depts. of Biol. and Pathol., Univ. of Chicago, 1101 E. 57th St., CHICAGO, IL 60637, U.S.A.
MOSCONA, Mrs. M. H. – Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, 1101 E. 57th St., CHICAGO, IL 60637, U.S.A.
MOSSMAN, H. W.; Ph.D., Prof. (Emer.) – 2902 Columbia Rd., MADISON, WI 53705, U.S.A.
a Comparative morphology of the fetal membranes and reproductive tracts. (Mammalia)
MOTOMURA, I.; D.Sc., Prof. (Emer.) – Lab. of Embryol., Inst. of Biol., Tôhoku Univ., SENDAI, Japan
MOTTET, N. K.; M.D., Prof. – Dept. of Pathol., Univ. of Washington Med. School, C 517, Univ. Hosp., SEATTLE, WA 98195, U.S.A.
a The mechanism regulating ontogenetic metaplasia in the esophagus. Gallus domesticus (Aves), Homo sapiens (Primates)
b Ultrastructural features of necrosis as an ontogenetic process. Same species as a
c Methyl mercury teratogenesis. Mus musculus (Rodentia), Macaca mulatta (Primates)
MOUSTAFA, Mrs. L. A.; Ph.D. – Natl. Inst. for Environm. Health Sci., Environm. Toxicol. Branch, N.I.H., P. O. Box 12233, RESEARCH TRIANGLE PARK, N.C. 27709, U.S.A.
a The fate of single cells transplanted into preimplantation embryos (intra- and interspecies). Mus musculus (Rodentia), Oryctolagus cuniculus (Lagomorpha)
b Effect of direct application of test agent(s) to embryos on DNA repair, subsequent viability and development (micromanipulation, embryo culture and intrauterine administration; pre- and postimplantation stages). Same species as a
c The possible role of and/or the interaction between genetic and environmental factors, related to neoplastic transformation of cells. Mus musculus (Rodentia)
d Development of an in vitro system using early embryos to detect potential carcinogens. Same species as a
MOYER, F.; Ph.D., Prof. – Biol. Dept., Univ. of Missouri-St. Louis, 8001 Natural Bridge Rd., ST. LOUIS, MO 63121, U.S.A.
MUFTI, S. A.; Ph.D. – Zool. Dept., Panjab Univ., LAHORE, Pakistan
a Epimorphic regeneration of appendages. (Vertebrates)
b Muscle transplantation and regeneration. (Mammalia)
MUKAI, H.; D.Sc. – Dept. of Biol., Fac. of Educ., Gunma Univ., MAEBASHI, 371 Japan
a Reproductive organs. Botryllus spec., Botrylloides spec. (Ascidiacea)
b Formation of colonial vascular system. Botryllus spec., Botrylloides spec., Symplegma spec. (Ascidiacea)
c Regeneration. Barentsia discreta (Entoprocta)
d Effect of chemicals on statoblast germination. Pectinatella gelatinosa (Ectoprocta)
MULHERKAR, Mrs. L.; Ph.D., Prof. – Dept. of Zool., Univ. of Poona, Ganeshkind, POONA 411007, India

a Morphogenesis of skin in the embryo. Calotes versicolor (Lacertilia)
b Effects of irradiation on embryos with particular reference to the formation of scales. Same species as a
c Effects of hydrazine, urethane, and actinomycin D on embryos. Gallus spec. (Aves)
d Effects of cytochalasin H on morphogenesis of the embryo. Microhyla ornata (Anura), Gallus spec. (Aves)
e Effects of cytochalasin H on cleavage. Lymnaea acuminata (Gastropoda)

MUN, A. M.; Ph.D., Prof. – Dept. of Zool., Univ. of Maine, Murray Hall, ORONO, Me. 04473, U.S.A.
a Induction of immunological tolerance by intraecoelomic grafts in the 4-day embryo. Gallus gallus (Aves)
b Growth stimulation of embryonic spleen graft by adult spleen across a filter membrane. Same species as a
c Embryo morphogenesis in unfertilized eggs. Meleagris gallopavo (Aves)
d Effects of glycoalkaloids from blighted potatoes on the development of the early embryo. Same species as a

MURAKAMI, U.; M.D., D.Med. – Inst. of Developm. Res., Aichi Pref. Colony, Kamiya-cho, KASUGAI, Aichi 480–03, Japan
a Effects of x-irradiation upon developing embryos, especially on the central nervous system. Mus musculus, Rattus norvegicus (Rodentia) (with R. SHOJI)
b Teratogenicity of mutagenic substances. Mus musculus (Rodentia) (with M. INOUYE)

MURAMATSU, S.; D.Sc. – Lab. of Genet. Disorders, Dept. of Breeding and Genet., Natl. Inst. of Anim. Industry, 959, Aobacho, CHIBA, 280 Japan
a Effects of radiation and chemicals on reproductive organs (cytogenetics, histology). Gallus domesticus (Aves), Mus musculus (Rodentia), Macaca fascicularis (Primates)
b Teratogenesis by radiation and chemicals (including developmental genetics). Gallus domesticus (Aves), Mus musculus (Rodentia)

MURATA, F.; M.D., Ph.D. – Dept. of Anat., Shinshu Univ., Asahi 3–1–1, MATSUMOTO, 390 Japan
a Electron microscopy of hematopoiesis in embryonic and newborn animals. Oryctolagus cuniculus (Lagomorpha), Cavia porcellus, Rattus spec., Mus musculus (Rodentia)

MURATA, Y.; M.D. – Dept. of Obstet. and Gynecol., Univ. of S. Calif., Women's Hosp. 5K-22, 1240 N. Mission Rd., LOS ANGELES, CA 90033, U.S.A.
a Fetal cardiovascular physiology, particularly responses to stress. Macaca mulatta (Primates)
b Fetal breathing movements, control and factors. Same species as a

MURISON, G. L.; Ph.D. – Dept. of Biol. Sci., Florida Internat. Univ., MIAMI, FL 33199, U.S.A.
a Synthesis and accumulation of specific proteins at different stages of liver cell differentiation in primary cell cultures (biochemistry, immunochemistry). Gallus domesticus (Aves), Rattus spec. (Rodentia)
b Use of primary cell cultures and cell lines to develop bioassays for the detection of compounds that are cytotoxic, mutagenic, and possibly carcinogenic

MURRAY, Ms. M. R.; Dr. – Natl. Inst. of Neurol. Dis. and Stroke, N.I.H., Bldg. 36, 4B-12, BETHESDA, Md. 20014, U.S.A.
a Development of sympathetic nervous system in vitro, especially biosynthesis of monoamine neurotransmitters; development and functions of sympathetic interneurons. Gallus domesticus (Aves), Mus musculus, Rattus spec. (Rodentia)

NABER, E. C.; Ph.D., Prof. – Dept. of Poultry Sci., Coll. of Agric., Ohio State Univ., 674 West Lane Ave., COLUMBUS, OH 43210, U.S.A.

NACE, G. W.; Ph.D., Prof. – Div. of Biol. Sci. and Amph. Facility, Ctr. for Human Growth and Developm., Univ. of Michigan, ANN ARBOR, MI 48109, U.S.A.
a Development and maintenance of defined strains. Rana 5 spp., Bufo 3 spp. (Anura), several spp. (Urodela)
b Transfer of macromolecules from maternal organism to egg. Rana spec. (Anura)
c Etiology of neoplasia in larva and adult. Same species as b
d Role of specific macromolecules in fertilization. Same species as b
e Problems in developmental and population genetics. (Amphibia)

NAGANO, H.; M.D. – Dept. of Biochem., Nippon Med. School, Sendagi, Bunkyo-ku, TOKYO, 113 Japan

NAGATA, T.; M.D., Ph.D., Prof. – Dept. of Anat., Shinshu Univ., Asahi 3–1–1, MATSUMOTO, 390 Japan
a DNA, RNA and protein synthesis of kidney and liver cells from embryos and newborns in vitro (electron microscopic radioautography). Mus musculus, Rattus spec. (Rodentia), Homo sapiens (Primates)

NAIR, K. K.; Ph.D., Prof. – Dept. of Biol. Sci., Simon Fraser Univ., BURNABY, B.C. V5A 1S6, Canada
a Fine structure of ribosomal RNA cistrons in the salivary gland nucleoli. Drosophila hydei (Diptera)
b Quantitative analysis of neurosecretory activity (microspectrophotometry, electron microscopy). Oncopeltus fasciatus (Heteroptera)

NAITHANI, Miss G.; M.Sc. – Dept. of Biochem., Fac. of Sci., Allahabad Univ., ALLAHABAD 211002, India
a Effect of photoperiod on some enzymes (lipase, phosphorylase, phosphatases, transaminases) and metabolites (total carbohydrates, glycogen, lipids, lipid protein) in the fat body during diapause. Antheraea mylitta (Lepidoptera)

NAKAGAWA, M.; M.D. – Bone Res. Lab., Univ. of Calif., 1000 Veteran Ave., Rm. A3-34, LOS ANGELES, CA 90024, U.S.A.

a Bone morphogenesis in tissue culture

NAKAMOTO, T.; D.D.S. – Dept. of Nutr. and Food Sci., Massachusetts Inst. of Technol., Rm E18-577, CAMBRIDGE, MA 02138, U.S.A.

a Growth and development of bone in fetus and neonate. Rattus spec. (Rodentia)

b The effect of malnutrition on bone development in fetus and neonate. Same species as a

NAKAMURA, H.; B.Sc. – 2nd Dept. of Anat., Kyoto Pref. Univ. of Med., Kawaramachi-Hirokoji, Kamikyo-ku, KYOTO, 602 Japan

a Development of limb bud. Mus musculus (Rodentia)

b Pathogenesis of limb mutant mem/mem. Same species as a

c Neuro-muscular junction. Same species as a

NAKAMURA, I.; M.D., Prof. – Dept. of Anat., Nippon Med. School, Sendagi 1–1–5, Bunkyo-ku, TOKYO, 113 Japan

a The forming process of the secondary retroperitoneal organs. Homo sapiens (Primates)

NAKAMURA, K.; M.D., Dr.Med.Sci., Prof. – Dept. of Anat., Shimane Med. Coll., IZUMO, 693 Japan

NAKAMURA, O.; D.Sc., Prof. (Emer.) – Dept. of Biol., Osaka Kyôiku Univ., Tennoji-ku, OSAKA, 543 Japan

a Causality in epigenetic formation of organizer. (Amphibia)

b Fate map and formative movements. (Amphibia)

NAKANE, K.; B.Sc. – Dept. of Developm. Pathol., Res. Inst. of Environm. Med., Nagoya Univ., Furo-cho, Chikusa-ku, NAGOYA, 464 Japan

a Morphogenesis of genetic microphthalmia. Mus musculus (Rodentia)

b Developmental genetics of genetic ataxia. Same species as a

NAKANO, E.; D.Sc., Prof. – Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa, NAGOYA 464, Japan

a Metabolic background of initiation of development. Hemicentrotus pulcherrimus, Anthocidaris crassispina (Echinoidea)

b Gene action in early development. Same species as a

NAKATA, N.; M.D. – Bone Res. Lab., Univ. of Calif., 1000 Veteran Ave., Rm. A3-34, LOS ANGELES, CA 90024, U.S.A.

a Bone morphogenesis. (Mammalia)

b Calcification and ossification. (Mammalia)

NAKATSUJII, N.; M.Sc. – Dept. of Zool., Fac. of Sci., Univ. of Kyoto, Sakyo-ku, KYOTO 606, Japan

a Mechanism of gastrulation. Xenopus laevis and other spp. (Amphibia)

NAKAUCHI, M.; Dr., Prof. – Dept. of Biol., Kochi Univ., Asakura, KOCHI, 780 Japan

a Behavior of buds after budding. Aplidium multiplicatum (Ascidiacea)

b Comparative study of asexual reproduction. (Polyclinidae, Ascidiacea)

NAKAZAWA, T.; Ph.D. – Div. of Biol., Natl. Inst. of Radiol. Sci., 9–1, 4-chome, Anagawa, CHIBA, 280 Japan

a Effect of ionizing radiations on the biochemical mechanism of embryonic development. Artemia salina (Anostraca, Crustacea)

b Changes in nucleic acids and some other phosphorus fractions of tissues during late embryonic and early postnatal development. Rattus norvegicus (Rodentia)

c CA^{++} uptake, H^{+} ejection and respiration in eggs on fertilization. Anthocidaris crassispina, Pseudocentrotus depressus (Echinoidea)

d Development of the energy transfer system in liver mitochondria from the fetal stage. Rattus spec. (Rodentia)

e X-irradiation-induced damage in the microsomal drug-metabolizing enzyme system of developing liver. Same species as b

NANJUNDIAH, V.; Ph.D. – Ctr. for Theoret. Studies, Indian Inst. of Sci., BANGALORE 562002, India

NANNEY, D. L.; Ph.D., Prof. – Dept. of Genet. and Developm., Univ. of Illinois, 515 Morrill Hall, URBANA, IL 61801, U.S.A.

a Genetic and developmental studies on cortical variations. Tetrahymena pyriformis (Ciliata)

b Regulation of gene action in clonal cultures. Same species as a

NARAYANAN, C. H.; Ph.D., Assoc. Prof. – Dept. of Anat., Louisiana State Univ., 1542 Tulane Ave., NEW ORLEANS, LA 70112, U.S.A.

a Origin and migration of neural crest precursors of the ciliary ganglion (interspecific grafting). Coturnix coturnix, Gallus domesticus (Aves)

b Comparative studies on ontogenetic patterns of (choline) acetyltransferase in embryonic ciliary ganglia. Anas platyrhynchos, Coturnix coturnix, Gallus domesticus (Aves)

c Ultrastructural investigation of synaptogenesis in the ciliary ganglion. Same species as b

d Origin, ultrastructural changes, and factors involved in the functional maturation of the mesencephalic nucleus of the trigeminal nerve. Anas platyrhynchos, Coturnix c. japonica (Aves)

e Cell loss in the normal development of ciliary ganglion correlated with changes in the innervation of iris muscles (ultrastructure). Gallus domesticus (Aves)

NARAYANASWAMY, S.; Ph.D. – Bio-Org. Div., Plant Morphogen. Sect., Bhabha Atom. Res. Ctr., Trombay, BOMBAY 400085, India

a Experimental morphogenesis of embryos and plantlets in organ, tissue and free cell cultures. Many spp. (Angiospermae)

b Development of pollen plantlets (haploids) in tissue culture. Same species as a

c Protoplast culture: cell hybridization. Same species as a

d Dynamics of apical meristem culture. Same species as a

e Hormonal control of shoot buds and plantlets in callus tissues. Same species as a

f Suspension cultures of free cells. Same species as a

g Radiobiological studies on tissue cultures. Same species as a
h Micropropagation: large-scale clonal multiplication through shootlet induction in suspension cultures of free cells or cell groups. Ananas sativus (Bromeliaceae)
i Propagation: plantlet regeneration in callus cultures. Tectona grandis (Verbenaceae), Dalbergia sissoo (Papilionaceae)

NATSUKARI, Y. – Dept. of Maricult., Fac. of Fish., Nagasaki Univ., 1–14 Bunkyo-machi, NAGASAKI, 852 Japan
a Embryonic development and early life history. (Loliginidae, Cephalopoda)

NAVAGIRI, Mrs. S. S.; M.S. – Dept. of Anat., Med. Coll., NAGPUR-3, M.S., India
a Effect of hypertrophic cartilage on perichondral ossification. Gallus domesticus (Aves)
b Histological, histochemical, and experimental study of the perichondrium of ossifying and non-ossifying cartilages. Same species as a
c Histogenesis of tibia. Rana tigrina (Anura), Hemidactylus spec. (Lacertilia), Gallus domesticus (Aves)

NEBEL, L. A.; M.D., Prof. – Dept. of Embryol. and Teratol., Ch. Sheba Med. Ctr., Tel-Aviv Univ., TEL-AVIV, Israel
a Studies on immune factors in fertilization, implantation, and placentation. (Rodentia), Homo sapiens (Primates)
b Effects of immuno-suppressive substances on implantation and embryonic differentiation. (Rodentia)
c Physio-pathology of cervical mucus in reproductive failure. Homo sapiens (Primates) (with J. EICHENBRENNER and D. M. SERR)
d Morpho-functional characteristics of the early polar trophoblast during implantation. (Rodentia) (with A. FEIN)
e Antigenicity of normal and pathological trophoblast. (Rodentia), Homo sapiens (Primates) (with V. TODER and J. MENCZER)

NELSON, L.; Ph.D. – Dept. of Physiol., Med. Coll. of Ohio, P. O. Box 6190, TOLEDO, OH 43614, U.S.A.

NEMER, M. – Inst. for Canc. Res., 7701 Burholme Ave., PHILADELPHIA, PA 19111, U.S.A.
a DNA transcription and translation of RNA in early stage embryos. Strongylocentrotus purpuratus, Lytechinus pictus (Echinoidea)

NENTWIG, Miss M. R.; Ph.D. – Cleveland State Univ., CLEVELAND, OH 44107, U.S.A.

NESBITT, Ms. M. N.; Ph.D. – Dept. of Biol., B-022, Univ. of California San Diego, LA JOLLA, CA 92093, U.S.A.
a Role of failure of X-chromosome-inactivation in death of parthenogenones. Mus musculus (Rodentia)
b Developmental effects of specific chromosomal aberrations. Same species as a

NEWBURGH, R. W.; Ph.D., Prof. – Dept. of Biochem. and Biophys., Fac. of Sci., Oregon State Univ., CORVALLIS, OR 97331, U.S.A.
a Chemical and biochemical changes during development. (Insecta)

NEWCOMB, W.; Ph.D. – Dept. of Bot. and Genet., Univ. of Guelph, GUELPH, Ont. N1G 2W1, Canada
a Fine structure of embryogenesis with special reference to the suspensor. (Spermatophyta)
b Fine structure of endosperm development, especially coenocytic to cellular transition. (Spermatophyta)
c Fine structure, morphogenesis and physiology of nitrogen-fixing root nodules. (Leguminosae and other Spermatophyta)
d Morphogenesis and fine structure of insect-caused galls. (Spermatophyta)

NEWMAN, S. A.; Ph.D. – Dept. of Biol. Sci., State Univ. of New York, ALBANY, NY 12222, U.S.A.
a Role of changes in chromatin proteins in the reprogramming for differentiation of the precartilage mesenchyme in the limb bud (polyacrylamide gel electrophoresis, chromatin fractionation by enzymes, DNA-RNA hybridization). Gallus domesticus (Aves)
b Role of cell-to-cell interactions in the spatial patterning of skeletal elements in the limb bud (tissue culture, transmission electron microscopy, gel electrophoresis). Same species as a

NIAZI, I. A.; Ph.D. – Dept. of Zool., Univ. of Rajasthan, JAIPUR 302004, India

NISHIMURA, H.; M.D., Prof. (Emer.) – Dept. of Developm. Physiol., Centr. Inst. for Exp. Anim., 1430 Nogawa, Takatsu, KAWASAKI, 211 Japan

NISHIOKA, Miss M.; D.Sc., Prof. – Lab. for Amph. Biol., Fac. of Sci., Hiroshima Univ., Higashisendacho, HIROSHIMA, Japan
a Hybridization among European and Far Eastern forms. (Ranidae; Discoglossidae, Anura)
b Morphological and sexual abnormalities in the offspring of animals derived from irradiated eggs or sperm. Rana nigromaculata, R. japonica, Bombina orientalis (Anura)
c Color mutants detected by diploid gynogenesis from wild animals or those derived from irradiated gametes. Rana nigromaculata, R. brevipoda, Hyla arborea japonica (Anura)

NIU, M. C.; Ph.D., Prof. – Dept. of Biol., Temple Univ., Broad & Berks St., PHILADELPHIA, PA 19122, U.S.A.

NODA, Y. D.; Ph.D., Assoc. Prof. – Biol. Inst., Ehime Univ., Bunkyo-cho MATSUYAMA, 790 Japan
a Ultrastructural changes during fertilization in vitro. Mesocricetus auratus, Mus musculus, Rattus spec. (Rodentia)
b Fertilization. Nereis spec. (Polychaeta), Urechis spec. (Echiuroidea; Echinoidea)

NOGAMI, H.; M.D. – Dept. of Embryol., Inst. for Developm. Res., Aichi Pref. Colony, Kamiya-cho, KASUGAI, Aichi 480–03 Japan
a Induction, origin, and development of bone and cartilage cells (implantation, explantation). Rattus spec., Mus musculus (Rodentia)

b Teratogenesis of skeletal system. Same species as a

NONAMI, Y.; Dr.Agric., Prof. – Dept. of Biochem. and Technol. of Anim. Products, Univ. of Niigata, Igarashi, NIIGATA, 950–21 Japan

a Disc gel electrophoresis of proteins in albumen of incubated eggs. Gallus domesticus (Aves)

b LDF of the yolk of incubated eggs. Same species as a

NORMAN, C. †; Ph.D., Prof. – West Virginia Univ., MORGANTOWN, WV 26506, U.S.A.

NORSTOG, K. J.; Ph.D., Prof. – Dept. of Biol. Sci., Northern Illinois Univ., DeKALB, IL 60115, U.S.A.

a Development of cultured tissues. Cycadales and other spp. (Gymnospermae), cereals and other spp. (Angiospermae)

b Embryology (tissue culture and electron microscopy). Hordeum vulgare (Gramineae)

NOTO, T.; D.Sc. – Embryol. Lab., Dept. of Anat., Kagoshima Univ., 7–82, Shiroyama-cho, KAGOSHIMA, Japan

NOUMURA, T.; D.Sc. – Dept. of Biol., Tokyo Metropolitan Inst. of Gerontol., 35–2 Sakaecho, Itabashi-ku, TOKYO, 173 Japan

a Mechanism of Müllerian inhibition. Gallus spec., Anas spec., Coturnix spec. (Aves)

b Development and involution of the bursa of Fabricius: mechanism of androgen action. Same species as a

c Sexual differentiation of syrinx: function of cultured cells and hormonal regulation. Anas spec. (Aves)

NOVAES, P. M. – Dept. of Gen. Biol., Inst. of Biol. Sci., Fed. Univ. of Minas Gerais, Rua Carangola 288 – 4°andar, C.P. 253, BELO HORIZONTE, M.G., Brazil

a Alteration of spermatogenesis following interspecific hybridization or ionizing radiations. (Triatominae, Hemiptera)

NOZUE, T.; M.D., Assoc. Prof. – Dept. of Anat., Tokyo Med. and Dent. Univ., 1-chome, Yushima, Bunkyo-ku, TOKYO, 113 Japan

a Differentiation of neural crest cells and oncogenesis. Mus musculus (Rodentia)

b Cell biology of neural crest cells. Same species as a

NUMAKUNAI, T.; Dr. – Marine Biol. Stat., Tohoku Univ., Asamushi, AOMORI-City, 039–34 Japan

a Tail resorption in metamorphosis. Haloeynthia roretzi (Ascidiacea)

b Gamete release, especially spawning time. Same species as a

NUMANOI, H.; Ph.D., Prof. – Biol. Lab., Sch. of Educ., Waseda Univ., Tozuka, Shinjuku, TOKYO, Japan

NUTE, P. E.; Ph.D. – Dept. of Anthropol., Univ. of Washington, SEATTLE, WA 98195, U.S.A.

a Structural and functional analyses of fetal and adult hemoglobins, especially during period of gamma-beta "switch". Macaca nemestrina, Papio cynocephalus (Primates)

OAKLEY, G. P., Jr.; M.D. – Cancer and Birth Defects Div., Bur. of Epidemiol., Center for Dis. Control, ATLANTA, GA 30333, U.S.A.

a Blastocyst chromosomes with regard to delayed fertilization. Rattus spec. (Rodentia)

b Epidemiology of birth defects in spontaneous abortions and newborns. Homo sapiens (Primates)

OBERLANDER, H.; Ph.D. – Insect Attract., Behav. and Basic Biol. Res. Lab., Agric. Res. Serv., U.S.D.A., 1700 S.W. 23rd Drive, P. O. Box 14565, GAINESVILLE, FL 32604, U.S.A.

a Cellular aspects of the hormonal control of metamorphosis. Galleria mellonella, Plodia interpunctella (Lepidoptera)

b Developmental behavior of imaginal discs in vivo and in vitro. Same species as a

ODA, S.; D.Sc., Prof. – Biol. Lab., Rikkyo (St. Paul's) Univ., 3 Nishi-Ikebukuro, Toshima-ku, TOKYO, 171 Japan

a Statoblast germination. Lophopodella carteri, Pectinatella magnifica (Phylactolaemata, Ectoprocta)

ODA, S.; M.Agric. – Dept. of Developm. Pathol., Res. Inst. of Environm. Med., Nagoya Univ., Furo-cho, Chikusa-ku, NAGOYA, 464 Japan

a Morphogenesis of genetic microphthalmia. Mus musculus (Rodentia)

b Developmental genetics of genetic ataxia. Same species as a

c Influences of intrauterine environment on the manifestation of genetic malformations. Same species as a (with Y. KAMEYAMA)

O'DAY, D. H.; Ph.D. – Erindale Coll., Univ. of Toronto, MISSISSAUGA, Ont. L5L 1C6, Canada

a Characterization of specific extracellular enzyme accumulation, and number and amounts of newly synthesized proteins excreted during cyst germination. Polysphondylium pallidum (Acrasiales)

b Purification and characterization of sexual hormones. Dictyostelium discoideum (Acrasiales)

ODUTOLA, A. B.; Dr. – Dept. of Anat., Fac. of Med., Univ. of Ibadan, IBADAN, Nigeria

O'FARRELL, A. F.; A.R.C.S., Prof. – Dept. of Zool., Sch. of Biol. Sci., Univ. of New England, ARMIDALE, N.S.W. 2351, Australia

OHATA, Mrs. A. – Biol. Lab., Kansai Med. School, HIRAKATA, 573 Japan

a Enzymatic analysis of dedifferentiation. Dictyostelium discoideum (Acrasiales)

OHI, S.; Ph.D. – Dept. of Embryol., Carnegie Inst. of Washington, 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.

OHNISHI, E.; D.Sc., Prof. – Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa, NAGOYA 464, Japan

a Action of hormones, especially ecdysones, on development. Bombyx mori (Lepidoptera)

OHNO, S.; Ph.D., D. Sc. – Dept. of Biol., City of Hope Med. Center, 1500 E. Duarte Rd., DUARTE, CA 91010, U.S.A.

OHSAKI, K. – Biol. Inst., Coll. of Lib. Arts, Univ. of Kanazawa, 1–1 Marunouchi, KANAZAWA, Japan

a Regeneration. Hydra spec. (Hydroidea)

OJIMA, Y.; D.Sc., Prof. – Dept. of Biol., Kwansei Gakuin Univ., Uegahara, NISHINOMIYA, 662 Japan
OKA, H.; Ph.D., Prof. (Emer.) – Inst. of Zool., Tokyo Kyôiku Univ., Otsuka 3–29–1, Bunkyo-ku, TOKYO, 112 Japan
OKADA, M.; Ph.D. – Inst. of Zool., Tokyo Kyôiku Univ., Otsuka 3–29–1, Bunkyo-ku, TOKYO, 112 Japan
OKADA, T. S.; D.Sc., Prof. – Lab. of Cell Sci., Inst. of Biophys. and Molec. Biol., Univ. of Kyoto, Kitashirakawa, Sakyo-ku, KYOTO, 606 Japan
a Factors affecting cell aggregation and cell contact. Gallus gallus (Aves) (with M. TAKEICHI and K. YASUDA)
b Stability in the differentiation of cells from eye tissues in clonal cell culture. Gallus gallus (Aves), Mus bactrianus (Rodentia) (with G. EGUCHI and M. TAKEICHI)
OKADA, Y. K.; Dr., Prof. (Emer.) – Div. of Zool., Natl. Science Museum, Ueno Park, Daito-ku, TOKYO, Japan
OKAMOTO, M. – Lab. of Cell Sci., Inst. of Biophys. and Molec. Biol., Univ. of Kyoto, Kitashirakawa, Sakyo-ku, KYOTO, 606 Japan
a Ultrastructure of cell surfaces of early embryos. Xenopus laevis (Anura), Triturus pyrrhogaster (Urodela)
OKAZAKI, Miss K.; D.Sc. – Embryol. Sect., Biol. Dept., Tokyo Metropolitan Univ., 2–1–1, Fukazawa, Setagaya-ku, TOKYO, 158 Japan
a Mechanism of spicule formation. (Echinoidea)
OKAZAKI, T.; D.Med.Sci. – Dept. of Biochem., Nippon Med. Sch., Sendagi, Bunkyo-ku, TOKYO, 113 Japan
OLIPHANT, E. E.; Ph.D. – Dept. of Obstet. and Gynecol., Div. of Reprod. Biol., School of Med., Univ. of Virginia, Box 179, CHARLOTTESVILLE, Va. 22903, U.S.A.
a Role of seminal plasma components in sperm capacitation. Oryctolagus cuniculus (Lagomorpha), Mus musculus (Rodentia)
b Molecular mechanism of induction of the sperm acrosome reaction. Same species as a
c Effect of the oviduct on embryo development. Mus musculus (Rodentia)
ONITAKE, K.; D.Sc. – Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa, NAGOYA 464, Japan
a Immunology of primary induction. Cynops pyrrhogaster (Urodela)
ONOZATO, H.; Ph.D. – Lab. of Embryol. and Genet., Fac. of Fish., Hokkaido Univ., HAKODATE, Japan
a Electron microscopy of organogenesis. (Salmonidae; Gobiidae; Cyprinidae, Teleostei)
b Developmental immunology. (Cyprinidae; Salmonidae, Teleostei)
ONUMA, H.; Ph.D. – Sch. of Anim. Sci., Kitasato Univ., TOWASA-shi, Aomori, 034 Japan
OOË, T.; M.D., Ph.D., Prof. – Dept. of Anat., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan
a Development of floor of pulp chamber (vital staining with lead). Mus musculus (Rodentia)
b Developmental relationships of molar tooth germs. Canis familiaris (Carnivora)
OOHIRA, A.; Ph.D. – Dept. of Embryol., Inst. of Developm. Res., Aichi Pref. Colony, Kamiya-cho, KASUGAI, Aichi 480–03, Japan
a Biochemistry of bone and cartilage. Rattus spec. (Rodentia)
b Teratogenesis of skeletal system. Same species as a
OOISHI, Miss S.; D.Sc. – Fac. of Fish., Mie Univ., Edobashi, TSU, Mie, 514 Japan
OPPENHEIM, R.; Ph.D. – Neuroembryol. Lab., North Carolina Dept. of Mental Health, Dorothea Dix Hosp., Box 7532, RALEIGH, NC 27611, U.S.A.
a Neural and behavioural aspects of embryonic development (behavioural observations, microsurgery). Gallus gallus, Anas platyrhynchos, Columba livia (Aves)
b Early embryonic transplantation of brain and sense organs between species. Gallus gallus, Anas platyrhynchos, Coturnix coturnix (Aves)
c Analysis of synaptogenesis in embryonic brain and spinal cord. Gallus gallus (Aves)
d Morphological analysis of neuronal cell death in the embryonic spinal cord. Same species as c
OPPENHEIMER, S. B.; Ph.D., Assoc. Prof. – Dept. of Biol., Calif. State Univ., 18111 Nordhoff St., NORTHRIDGE, CA 91324, U.S.A.
a Molecular basis of intercellular adhesion in normal and malignant cells (adhesive factors, cell surface sugars, plant lectins). (Echinoidea), Gallus domesticus (Aves), Mus musculus (Rodentia)
b Role of cell surface carbohydrates in differentiation, ageing, malignancy and cell interactions. Same species as a
O'RAHILLY, R.; M.D., Prof. – Carnegie Labs. of Embryol., Univ of Calif., DAVIS, CA 95616, U.S.A.
a Early development (stages 10 to 23). Homo sapiens (Primates)
b Prenatal development of central nervous system. Same species as a
O'RAND, M. G.; Ph.D. – Inst. for Molec. and Cell. Evol., Univ. of Miami, 521 Anastasia Ave., CORAL GABLES, FL 33134, U.S.A.
a Membrane glycoproteins which are sperm-specific antigens; their role in fertilization. Oryctolagus cuniculus (Lagomorpha)
b Sperm-specific antigens and their role in capacitation-like interaction during internal fertilization. Campanularia flexuosa (Hydrozoa)
ORCE REMIS, A. M.; M.D. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMAN, Argentina
a Sperm maturation: epididymal activity. Rattus norvegicus, Cavia porcellus (Rodentia)
ORNOY, A.; M.D. – Dept. of Anat. and Embryol., Hebrew Univ. – Hadassah Med. School, P. O. Box 1172, JERUSALEM 91000, Israel

a Spontaneous and induced abortions: congenital anomalies, chromosomal aberrations and placental pathology (incl. ultrastructure). Homo sapiens (Primates)
b Transplacental effects of thyrocalcitonin, estrogens, corticosteroids and parathyroid hormone on fetal osteogenesis and calcium metabolism. Mus musculus, Rattus spec. (Rodentia)
c Scanning and transmission electron microscopy of the initial stages of calcification and ossification in normal fetuses and in congenital bone dysplasias. Same species as a
d The significance of ultrastructural (TEM and SEM) studies in prenatal and postnatal detection of inherited metabolic disorders. Same species as a

ORSINI, Mrs. M. W. G.; Ph.D., Prof. – Dept. of Anat., Bardeen Med. Labs., Univ. of Wisconsin, MADISON, WI 53706, U.S.A.
a Fetal membranes, giant cells, and pregnancy changes in uterine vessels. Mesocricetus auratus (Rodentia)
b Factors controlling implantation and loss of zona pellucida. Mesocricetus auratus, Rattus norvegicus, Mus musculus, Cavia porcellus (Rodentia), Mustela putorius, M. vison (Carnivora)
c Decidualization during pregnancy and pseudopregnancy. Same species as b
d Factors controlling life of corpora lutea. Same species as a
e Immunological aspects of decidualization. Same species as a

ORTIZ, Miss E.; Dr. – Dept. of Biol., Univ. of Puerto Rico, RIO PIEDRAS, Puerto Rico 00931

OSHIMA, K.; Assoc. Prof. – Dept. of Physiol., Primate Res. Inst., Kyoto Univ., INUYAMA, Aichi, 484 Japan
a Endocrine organs, particularly gonadal system during fetal development. Macaca fuscata (Primates)
b Effect of uterine and oviductal contraction on fertilization and implantation. Same species as a

OVERMAN, D. O.; Ph.D., Assoc. Prof. – Dept. of Anat., Med. Ctr., West Virginia Univ., MORGANTOWN, WV 26506, U.S.A.
a Chondrogenesis and brain-face relationships during genesis of cleft palate; protection against cleft palate. Mus musculus, Rattus norvegicus (Rodentia)
b Ascorbate protection against induced skeletal malformations. Gallus domesticus (Aves), Rattus norvegicus (Rodentia)

OVERTON, Mrs. J. H.; Ph.D., Prof. – Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, 1101 E. 57th St., CHICAGO, IL 60637, U.S.A.

OZAKI, H.; Ph.D., Assoc. Prof. – Dept. of Zool., Michigan State Univ., EAST LANSING, MI 48824, U.S.A.
a Appearance of the acetylcholinesterase activity in post-gastrulation embryos; is it due to de novo synthesis or precursor activation? Strongylocentrotus purpuratus (Echinoidea)
b Are the micromeres of the 16-cell stage embryos already determined to differentiate acetylcholinesterase? Dendraster excentricus (Echinoidea)
c Ontogeny of acetylcholine receptors. Same species as a
d Chromatin protein structure and biochemistry of sperm and eggs, and their transformation at fertilization. Strongylocentrotus purpuratus, Lytechinus pictus, Dendraster excentricus (Echinoidea)

OZATO, K.; Ph.D. – Dept. of Embryol., Carnegie Inst. of Wash., 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.

PACKARD, D. S., Jr.; Ph.D. – Dept. of Anat., Upstate Med. Ctr., State Univ. of New York, 766 Irving Ave., SYRACUSE, NY 13210, U.S.A.
a Determination and segmentation of somitic mesoderm. Gallus domesticus (Aves)
b Cellular site of action of nucleotide analog teratogens (bromodeoxyuridine, iododeoxyuridine). Same species as a

PADYKULA, Miss H. A.; Ph.D., Prof. – Lab. of Cell Biol., Dept. of Biol. Sci., Wellesley Coll., WELLESLEY, MA 02181, U.S.A.

PAGANO, R. E.; Ph.D. – Dept. of Embryol., Carnegie Inst. of Wash., 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.

PAI, S.; Dr.rer.nat. – Lab. of Developm. Physiol., Inst. of Exp. Biol., Acad. Sinica, 320 Yo Yang Rd., SHANGHAI, People's Rep. of China

PALL, M. L.; Ph.D. – Program in Genet., Wash. State Univ., PULLMAN, WA 99163, U.S.A.

PALLIE, W.; Ph.D., Prof. – Dept. of Anat., Fac. of Health Sci., McMaster Univ., HAMILTON, Ont. L8S 4J9, Canada
a Development of temporal lobe asymmetry. Papio spec., Homo sapiens (Primates)

PANDEY, K. N.; M.Sc. – Dept. of Biochem., Fac. of Sci., Univ. of Allahabad, ALLAHABAD 211002, India
a Some enzymes (phosphatases, transaminases, trehalase and proteolytic) and metabolites (proteins, amino acids, nucleic acids and carbohydrates) in the fat body during larval-pupal development and spinning period. Antheraea mylitta (Lepidoptera)

PANDIT, R. V.; Ph.D. – Veterinary Coll., Seminary Hills, NAGPUR 440006, India

PANT (AIYAR), Mrs. R.; Ph.D. – Dept. of Biochem., Fac. of Sci., Allahabad Univ., ALLAHABAD 211002, India
a Lipid metabolism. Silk worms (Lepidoptera)
b Free amino acids, transaminases, nucleoproteins, proteins, and proteolytic enzymes in the silk gland during development. Antheraea mylitta (Lepidoptera) (with S. D. SINGH)
c Effect of photoperiod during development on several enzymes and metabolites. Same species as b (with many coworkers)
d Variation studies in several enzymes and metabolites during development from embryo through adult. Philosamia ricini, Attacus alata, Antheraea mylitta (Lepidoptera) (with many coworkers)
e Development of silk glands during fifth instar. Same species as d

PAPACONSTANTINOU, J.; Ph.D. – Biol. Div., Oak Ridge Natl. Lab., P. O. Box Y, OAK RIDGE, TN 37830, U.S.A.
a Regulation of gene expression, especially tissue specific protein synthesis (albumin, alpha-fetoprotein, hemoglobin) in tissue and organ culture. Mouse hepatoma, Friend leukemia
PAPPANO, A. J.; Ph.D., Assoc. Prof. – Dept. of Pharmacol., Health Ctr., Univ. of Connecticut, FARMINGTON, CT 06032, U.S.A.
a Morphological development of autonomic heart innervation (fluorescent histochemical method of Falck for identification of adrenergic nerves); ultrastructure of cholinergic and adrenergic innervation of the sinoatrial pacemaker (transmission electron microscopy); functional development of autonomic neuroeffector transmission (electrophysiologic and pharmacologic methods). Gallus domesticus (Aves)
b Change in ion current responsible for excitation in the embryonic heart electrophysiology (inhibitors of ion current flow). Same species as a
PARK, K. E.; D.Agr. – Dept. of Sericult., Coll. of Agric., Seoul Natl. Univ., SUWON, South Korea
a Diapause substance analysis by means of tissue culture. Bombyx mori (Lepidoptera)
PARKENING, T. A.; Ph.D. – Dept. of Anat., Med. Branch, Univ. of Texas, GALVESTON, TX 77550, U.S.A.
a Unfertilized eggs are frozen to −75°C and liquid nitrogen temperatures; upon thawing they are fertilized in vitro, cultured to the blastocyst stage and then transferred into recipient females. Oryctolagus cuniculus (Lagomorpha), Canis familiaris (Carnivora), Bos taurus (Artiodactyla), (Invertebrata)
b In vitro fertilization to determine if gametes of different strains interact with one another, and if the eggs are as readily fertilized as those of pure strain pairings. Mus musculus (Rodentia)
PARSHAD, V. R.; Dr. – Dept. of Zool., Punjab Agric. Univ., LUDHIANA, Punjab, India
a Morphology, histochemistry and biochemistry of oocyte growth and of embryology. (Acanthocephala) (with S. S. GURAYA)
PATEL, N. D.; M.Sc. – Dept. of Bot., Sardar Patel Univ., VALLABH VIDYANAGAR 388120, Gujarat, India
a Developmental morphology and histochemistry of fruits. Datura spp., Withania spp., Capsicum spp., Physalis spp., Solanum spp., Cestrum spp. and others (Solanaceae)
PEARCE, Th. L.; Ph.D., Assoc. Prof. – Dept. of Biol., John Carroll Univ., University Heights, CLEVELAND, OH 44118, U.S.A.
a Effects of inhibitors of mitosis (e.g. colcemid) and DNA synthesis (e.g. 5-bromodeoxyuridine) on the appearance of crystallins in the lens placode (immunofluorescence and peroxidase-labelled antibodies). Gallus domesticus (Aves)
PEDERNERA, E. A.; Dr.Med. – Dept. de Histol. y Embriol., Univ. Nac. de Rosario, Santa Fe 3100, ROSARIO, Argentina
PENER, M. P.; Ph.D., Prof. – Dept. of Entomol., Hebrew Univ., JERUSALEM, Israel
a Hormonal effects on oocyte development and egg-laying. Various spp. (Acrididae, Orthoptera)
PENMAN, S. – Dept. of Biol., Massachusetts Inst. of Technol., CAMBRIDGE, MA 02139, U.S.A.
PENNYPACKER, J. P.; Ph.D. – Natl. Inst. of Dent. Res., Bldg. 30, Rm. 414, Natl. Inst. of Health, BETHESDA, MD 20014, U.S.A.
a Vitamin A effects on limb bud cells undergoing chondrogenesis in vitro. Mus musculus (Rodentia)
b Cartilage abnormalities in mutants. Same species as a
PERKINS, D. L.; Ph.D. – Dept. of Zool., Univ. of Oklahoma, 730 Van Vliet Oval, NORMAN, OK 73069, U.S.A.
a The effects of high hydrostatic pressure on ameba-to-flagellate transformation. Naegleria gruberi (Rhizopoda)
b The effects of ionic ratios and osmotic concentrations on the ameba-to-flagellate transformation and the pseudomating reaction. Naegleria gruberi (Rhizopoda), Spirostomum ambiguum (Ciliata)
PERSAUD, T. V. N.; M.D., Ph.D., Prof. – Teratol. Res. Lab., Dept. of Anat., Univ. of Manitoba, 750 Bannatyne Ave., WINNIPEG, Man. R3E 0W3, Canada
a Teratological studies with prostaglandins and inhibitors of prostaglandin synthesis; involvement of prostaglandins in developmental processes. Gallus spec. (Aves), Mus musculus, Rattus spec. (Rodentia), Oryctolagus cuniculus (Lagomorpha)
b Fetal toxicity of metals,in particular aluminium. Mus musculus, Rattus spec. (Rodentia), Oryctolagus cuniculus (Lagomorpha)
c Ontogenetic pattern of enzymes in normal and abnormal development (histochemistry, biochemistry). Rattus norvegicus (Rodentia)
PETERS, A.; Ph.D., Prof. – Dept. of Anat., Boston Univ., 80 E. Concord St., BOSTON, MA 02118, U.S.A.
a Electron microscopy of the formation of myelin sheaths and development of neuroglial cells in the central nervous system. Rattus domesticus (Rodentia)
b Electron microscopy of the cerebral cortex. Same species as a
PETERS, J. J.; Ph.D., Prof. – Dept. of Biol., Xavier Univ., Victoria Parkway, CINCINNATI, OH 45207, U.S.A.
PETERSON, R. L.; Ph.D., Assoc. Prof. – Dept. of Bot. and Genet., Univ. of Guelph, GUELPH, Ont. N1G 2W1, Canada
a Ontogeny and factors controlling initiation and outgrowth of buds on roots. Hieracium florentinum (Compositae)
b Nutritional factors controlling the initiation of transfer cells adjacent to xylem and phloem at base of lateral roots. Same species as a

PEUSNER, Mrs. K. D.; Ph.D. – Dept. of Anat., Jefferson Med. Coll., 1020 Locust St., PHILADELPHIA, PA 19107, U.S.A.
a Ultrastructural changes preceding and during synaptic development of the axosomatic "spoon endings" in the tangential nucleus, a part of the lateral vestibular complex. Gallus gallus (Aves)
PHILLIPS, D. M.; Ph.D. – Biomed. Div., The Popul. Council, Rockefeller Univ., York Ave. and 66th St., NEW YORK, NY 10021, U.S.A.
a Ultrastructure of sperm development. (Invertebrata; Mammalia), Homo sapiens (Primates)
PHILLIPS, H. M.; Ph.D. – Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTESVILLE, VA 22903, U.S.A.
a Measurement of intercellular adhesiveness and analysis of morphogenetic movements in cohering populations of embryonic cells. Rana pipiens (Anura), Gallus domesticus (Aves)
PHILPOTT, G. W.; M.D. – Dept. of Surg., Washington Univ., 4960 Audubon Ave., ST. LOUIS, MO 63110, U.S.A.
PIATIGORSKY, J.; Ph.D. – Lab. of Molec. Genet., Natl. Inst. of Child Health and Human Developm., Natl. Inst. of Health, Bldg. 6, Rm 333, BETHESDA, MD 20014, U.S.A.
a Lens development: 1. protein synthesis; 2. the role of microtubules; 3. synthesis and metabolism of RNA. Gallus domesticus (Aves)
PICCIANO, D. J. – Dept. of Zool., Univ. of Minnesota, ST. PAUL, MN 55101, U.S.A.
a Nuclear transfer of in vitro cultured and cytologically identified renal carcinoma. Rana pipiens (Anura) (with R. G. McKINNELL and J. ZAMBERNARD)
b Cytogenetics of developmental variants induced by mutagenic substances. Same species as a (with R. G. McKINNELL)
PIDDINGTON, R. L.; Ph.D., Assoc. Prof. – Dept. of Histol. and Embryol., Sch. of Dent. Med., Univ. of Pennsylvania, PHILADELPHIA, PA 19174, U.S.A.
a Correlation of glutamyl transferase development with specific structural, biochemical, and physiological events during functional maturation of embryonic brain. Gallus domesticus (Aves)
PIENKOWSKI, M. M.; M.D., Ph.D., Assoc. Prof. – Dept. of Anat., Michigan State Univ., A519 East Fee Hall, EAST LANSING, MI 48824, U.S.A.
a Differentiation of early embryo utilizing developed technique of growing embryos in vitro up to organogenesis; effect of cAMP and steroid hormones; cell-cell interactions; cell surface determinants. Mus musculus (Rodentia)
PIERRO, L. J.; Ph.D., Prof. – Dept. of Anim. Genet., Storrs Agric. Exper. Station, Univ. of Connecticut, STORRS, CT 06268, U.S.A.
a Chemical teratogenesis. Gallus domesticus (Aves), Mus musculus (Rodentia)
b Eye development. Mus musculus (Rodentia)
c Developmental genetics. Same species as a
PIKÓ, L.; Ing.Agr., D.V.M. – Developm. Biol. Lab., Vet. Administr. Hosp., SEPULVEDA, CA 91343, U.S.A. also: Div. of Biol., Calif. Inst. of Technol., PASADENA, CA 91125, U.S.A.
PILAR, G. R.; M.D., Prof. – Regulatory Biol., Biol. Sci. Group, Univ. of Connecticut, STORRS, CT 06268, U.S.A.
a Formation and function of synapses, and cell death in ganglia. (Aves)
PILKINGTON, J. B.; Ph.D. – Dept. of Zool., Univ. of Otago, DUNEDIN, New Zealand
No work on developmental biology in progress
PIPA, R. L.; Ph.D., Prof. – Div. of Entomol., Univ. of California, BERKELEY, CA 94720, U.S.A.
a Endocrine influences on the differentiation of retina and optic lobes in vivo and in vitro. Galleria mellonella (Lepidoptera)
b Nature of endocrine interactions during metamorphosis. Same species as a, and Periplaneta americana (Blattodea)
PIPERBERG, J. B.; B.A. – Dept. of Biol., Univ. of Pennsylvania, 4001 Spruce St., PHILADELPHIA, PA 19174, U.S.A.
a Nuclear binding of cytoplasmic steroid receptor molecules in the retina. Gallus gallus (Aves)
PITOT, H. C.; M.D., Ph.D. – McArdle Lab. for Canc. Res., Univ. of Wisconsin, 450 N. Randall Ave., MADISON, WI 53706, U.S.A.
a RNA template stabilization in differentiation and neoplasia. (Eukaryotes)
POCCIA, D. L.; Ph.D. – Div. of Biol. Sci., State Univ. of New York, STONY BROOK, NY 11794, U.S.A.
a Interrelationships of female pronuclear chromosome cycle (turned on with NH3-buffers) and male pronuclear chromosome cycle (turned on by fertilization), and receptivity of these nuclei to mitotic signals. Strongylocentrotus purpuratus, Lytechinus pictus (Echinoidea)
b Factors present in centriole containing fractions from sea urchin inducing mitotic spindles and parthenogenesis in Xenopus. Lytechinus pictus (Echinoidea), Xenopus laevis (Anura)
POIRIER, G. R.; Ph.D. – Dept. of Biol., Univ. of Alabama, Univ. Stat., BIRMINGHAM, AL 35294, U.S.A.
a Demonstration of natural inhibitor(s) of acrosomal proteolytic enzymes associated with epididymal spermatozoa. Mus musculus (Rodentia)
b Morphology and histochemistry of gonadal development in three strains. Same species as a
POLLARD, D. R.; Ph.D. – Health Prot. Branch, Health and Welfare Canada, Rm 12A L.C.D.C., Tunney's Pasture, OTTAWA, Ont. K1A 0L2, Canada
a Expression of embryonic-lethal genotypes in the allophenic animal. Mus musculus (Rodentia)
b Effect in nucleic acid and protein inhibitors on cleavage stage embryos in vitro. Same species as a
POLLOCK, Ms. C. – M.Sc. – Dept. of Zool., Univ. of Brit. Columbia, VANCOUVER, B.C. V6T 1W5, Canada
a Food vacuole formation, membrane subunit cycling, developmental genetics. Paramecium aurelia (Ciliata)

PORTER, K. R.; Ph.D., Prof. – Dept. of Molec., Cell. and Developm. Biol., Univ. of Colorado, BOULDER, CO 80302, U.S.A.

POSTLETHWAIT, J. H.; Ph.D. – Dept. of Biol., Univ. of Oregon, EUGENE, OR 97403, U.S.A.

a Mechanism of action of homoeotic mutants. Drosophila melanogaster (Diptera)
b Heritability of sex determination. Same species as a
c Role of the cortex in early development. Same species as a
d Hormonal control of metamorphosis. Same species as a
e Hormonal and genetic control of oogenesis. Same species as a
f Hormonal regulation of acid phosphatase activity. Same species as a

POULSON, D. F.; Ph.D., Prof. – Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, CT 06520, U.S.A.

a Mid-gut: genesis and differentiation. Drosophila melanogaster (Diptera)
b Chromosomal control of differentiation. Same species as a
c Neurogenesis in normal and genetically deficient embryos. Same species as a
d Maternally inherited sex-ratio disturbances of development. Drosophila melanogaster, D. bifasciata, D. willistoni, D. nebulosa, D. equinoxialis, D. robusta, D. paulistorum (Diptera)
e Developmental genetics. Same species as a

POURANY, Mrs. A.; M.Sc. – Dept. of Anat., Jawaharlal Inst. of Postgrad. Med. Educ. and Res., PONDICHERRY-605006, India

a Histogenesis and morphometry of endocrine pancreas. Homo sapiens (Primates)

PRAHLAD, K. V.; Ph.D., Prof. – Dept. of Biol. Sci., Northern Illinois Univ., DeKALB, IL 60115, U.S.A.

a Biochemical and morphological effects of thyroid hormones on embryonic tissues. Xenopus laevis (Anura)
b Effect of pesticides on embryogenesis and initiation of endocrine function, especially in the thyroid gland. Xenopus laevis (Anura), Gallus domesticus (Aves)

PRASAD, M. R. N.; Ph.D., Prof. – Dept. of Zool., Univ. of Delhi, DELHI 110007, India

a Action mechanism of hormones on nucleic acid and protein synthesis in the blastocyst and uterus. Rattus spec., Mesocricetus auratus (Rodentia)

PRATT, R. M.; Ph.D. – Craniofac. Anomal. Sect., Lab. of Developm. Biol. and Anomalies, Natl. Inst. of Dent. Res., N.I.H., Bldg. 30, BETHESDA, MD 20014, U.S.A.

a Biochemical and morphological changes in the epithelium of the secondary palate at the time of programmed cell death. (Rodentia)
b Programmed cell changes in the secondary palate: lysosomal enzymes, DNA and RNA synthesis, acid mucopolysaccharide and glycoprotein synthesis, collagen synthesis and the role of cAMP. (Rodentia)
c Effects of agents producing cleft palate in vivo on growth, DNA, protein synthesis, etc. of palatal mesenchyme cells in vitro. (Rodentia)
d Growth, steroid and cyclic nucleotide binding proteins, susceptibility to glucocorticoids of palatal cells from strains with different response to cortisone. Mus musculus (Rodentia)
e Migration of cranial neural crest cells: nature and origin of extracellular matrix; biochemistry of crest cells cultured in vitro; biochemical factors that may control differentiation. (Rodentia)

PRAY, T. R.; Ph.D., Prof. – Dept. of Biol. Sci., Univ. of S. California, University Park, LOS ANGELES, CA 90007, U.S.A.

a Development of the gametophytes and juvenile stages of the sporophytes. (Cheilantheae, Pteridaceae, Filicinae)
b Development of the vein systems of leaves. Anemia spec., Marsilea spec., Cyrtomium spec., Acrostichum spec. and other spp. (Filicinae)
c Factors controlling planes of cytokinesis in early gametophyte development. Cheilanthes spp. (Pteridaceae, Filicinae)

PRICE, Miss D.; Prof. (Emer.) – Dept. of Biol., Div. of Biol. Sci., Univ. of Chicago, 1101 E. 57th St., CHICAGO, IL 60637, U.S.A.

PRITCHARD, E. T.; Ph.D., Prof. – Dept. of Oral Biol., Fac. of Dent., Univ. of Manitoba, WINNIPEG, Man. R3E 0W3, Canada

a Arylesterases and their relation to secretion in growing salivary gland. Rattus spec. (Rodentia)
b Relation of sulfolipid metabolism to age and secretory stimuli in salivary gland. Same species as a

PRZYBYLSKI, R. J.; Ph.D., Assoc. Prof. – Dept. of Anat., Developm. Biol. Ctr., Case Western Reserve Univ., 2119 Abington Rd., CLEVELAND, OH 44106, U.S.A.

a Cell surface proteins-glycoproteins during skeletal myogenesis in culture. Gallus spec. (Aves)
b Ontogeny of insulin binding and biological effects during skeletal myogenesis
c Mechanism of myoblast fusion and effects of heterokaryon formation
d Cardiac hypertrophy in embryos produced by hypothermia. Gallus spec. (Aves)
e Localization of myosin genes on the chromosome by in situ hybridization

PUGIN, E. – Inst. de Embriol., Univ. Austral de Chile, Casilla no. 567, VALDIVIA, Chile

a Process of morphophysiological adaptation in development. Chilian species (Anura)
b Search for a technique for direct experimental study of limb morphogenesis. Rattus spec. (Rodentia)

PURKO, J.; Ph.D., Assoc. Prof. – Dept. of Zool., Univ. of W. Ontario, LONDON, Ont. N6A 5B7, Canada

a Regulation and role of RNA and protein synthesis in early embryogenesis. (Teleostei)

QUATRANO, R. S.; Ph.D., Assoc. Prof. – Dept. of Bot. and Plant Pathol., Oregon State Univ., CORVALLIS, OR 97331, U.S.A.

a Control of storage protein synthesis during early embryogenesis. (Gramineae, Papilionaceae)

b Biochemistry and ultrastructure of polarity induction, cell wall formation and cellular differentiation in embryos. Fucus distichus, F. vesiculosus (Phaeophyceae)

QUEVEDO, W. C., Jr.; Ph.D., Prof. – Div. of Biol. and Med. Sci., Brown Univ., PROVIDENCE, R. I. 02912, U.S.A.

a Genetic regulation and developmental variations of multiple forms of tyrosinase in melanocytes. Mus musculus (Rodentia)

b Developmental variations in the isozymes of lactate dehydrogenase in the skin. Same species as a

c Genetic regulation of melanosome synthesis in melanocytes. Same species as a

QUINN, P.; Ph.D. – Dept. of Biol. Sci., Univ. of Newcastle, NEWCASTLE, N.S.W. 2308, Australia

a Oxygen effect on growth and differentiation in utero or preimplantation embryos. Mus musculus (Rodentia)

b Fertilizability and development (metabolic and morphological criteria) of ovarian oocytes matured in vitro. Mus musculus (Rodentia), Homo sapiens (Primates)

RADHAKRISHNAN, N.; M.Sc. – Dept. of Zool., Fac. of Sci., M.S. Univ. of Baroda, BARODA 390002, India

a Tail regeneration in the adult. Mabuya carinata (Lacertilia)

RADICE, G. P.; B.A. – Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, CT 06520, U.S.A.

a Mechanism of epithelial cell movements during wound closure. Xenopus laevis (Anura)

RAE, P. M. M.; Ph.D. – Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, CT 06520, U.S.A.

a DNA and protein components of constitutive heterochromatin; nucleic acid-protein interaction; constitutive heterochromatin in early embryogenesis; position-effect variegation. Drosophila melanogaster, D. virilis (Diptera), Mus musculus (Rodentia)

b Synthesis and distribution of unusual deoxyribonucleotides. Gyrodinium cohnii and other spp. (Dinophyceae)

RAFF, R. A.; Ph.D., Prof. – Dept. of Zool., Indiana Univ., Jordan Hall 224, BLOOMINGTON, IN 47401, U.S.A.

RAFFERTY, K. A., Jr.; Ph.D., Prof. – Dept. of Anat., Univ. of Illinois, P. O. Box 6998, CHICAGO, IL 60680, U.S.A.

a Longevity and preservation of differentiated function in cultured cells. (Primates and other Mammalia)

RAISMAN, J. S. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina

a Fertilization: 1. acrosome reaction; 2. oviductal factors; 3. vitelline coat. Bufo arenarum, Leptodactylus chaquensis (Anura)

RAMACHANDRAN, A. V.; M.Sc. – Dept. of Zool., Fac. of Sci., M.S. Univ. of Baroda, BARODA 390002, India

a Tail regeneration in the adult. Mabuya carinata (Lacertilia)

RAMIREZ, O. C.; M.D., Ph.D. – Dept. de Bioquim., Centro de Invest. y de Estudios Avanzados, Inst. Politécn. Nac., Apartado Postal 14–740, MEXICO 14, D.F., Mexico

RAMUS, J. S.; Ph.D., Assoc. Prof. – Dept. of Biol., Yale Univ., NEW HAVEN, CT 06520, U.S.A.

a Biogenesis of cell surface polysaccharides in a unicellular organism. Porphyridium aerugineum (Rhodophyceae)

RANGA RAO, K.; Ph.D., Assoc. Prof. – Gamma Coll., Fac. of Biol., Univ. of W. Florida, PENSACOLA, FL32504, U.S.A.

a The responses of chromatophores of zoea, megalopa and adult to purified chromatophorotropins. Uca pugilator (Decapoda, Crustacea)

b Control of pigmentation in regenerating appendages. Uca pugilator, Cambarellus shufeldti (Decapoda, Crustacea)

c Comparative study of the effects of various ecdysones on regeneration of appendages. Uca pugilator, U. minax, Clibanarius vittatus (Decapoda, Crustacea)

RAO, K. V.; Ph.D. – Dept. of Zool., Univ. of Delhi, DELHI 110007, India

a The role of sulfhydryl groups in primary organizer action studied by grafting and culturing in vitro pieces of early blastoderms. Gallus domesticus (Aves)

b Role of surface properties of blastoderm cells in morphogenetic movements; isoelectrofocusing of living cells to determine surface charge. Same species as a

c Nucleic acid synthesis in the early embryo. Planorbis exustus, Lymnaea stagnalis (Gastropoda)

RAPPAPORT, R., Jr.; Ph.D., Prof. – Dept. of Biol. Sci., Union Coll., SCHENECTADY, NY 12308, U.S.A.

a Experiments on the mechanisms of cell division. Echinarachnius parma, Strongylocentrotus purpuratus (Echinoidea)

RAPPORT, Ms. E. W.; Ph.D. – Ramsay Wright Zool. Labs., Dept. of Zool., Univ. of Toronto, 25 Harbord St., TORONTO, M5S 1A1, Ont., Canada

a Morphological abnormalities in the eversion of imaginal structures caused by feeding glucosamine or hydroxyproline: genetic, cellular, and biochemical differences in the responses of susceptible and non-susceptible strains. Drosophila melanogaster (Diptera)

RASCH (MYRBERG), Mrs. E. M.; Ph.D., Prof. – Dept. of Biol., Marquette Univ., 530 N. 15th St., MILWAUKEE, WI 53233, U.S.A.

a Atypical nucleoprotein synthesis during larval development. Sciara coprophila (Diptera)

b Cytochemistry of puffs in giant chromosomes. Same species as a

c Triploidy in a gynogenetic fish. Poecilia formosa (Teleostei)

RASWEILER, J. J., IV; Ph.D. – Dept. of Anat., Coll. of Phys. and Surg., Columbia Univ., 630 W. 168th St., NEW YORK, NY 10032, U.S.A.

a Comparative morphology of the early embryo and associated changes in the female reproductive tract, through the time of ovum implantation (light, transmission and scanning electron microscopy). Glossophaga soricina, Noctilio labialis, Carollia perspicillata, Desmodus rotundus, Peropteryx kappleri (Chiroptera)
b Maintenance and breeding in the laboratory. (Chiroptera)

RAUTENBACH, G. F.; Dr. – Exp. Embryol. Res. Unit of the M.R.C., Dept. of Anat., Univ. of the Orange Free State, P. O. Box 339, BLOEMFONTEIN 9300, S. Africa
a Urogenital development in the absence of the cloaca. Gallus domesticus (Aves)

RAWLES (SPURBECK), Mrs. M. E.; Ph.D. – 4000 N. Charles St., BALTIMORE, MD 21218, U.S.A.

RAY, A. K.; Dr. – Zool. Dept., Hooghly Mohsin Coll., CHUCHURA 712101, W. Bengal, India

REAMS, W. M., Jr.; Ph.D., Prof. – Dept. of Biol., Univ. of Richmond, RICHMOND, VA 23173, U.S.A.
a Effects of tissue environment on pigment cell morphogenesis. Gallus domesticus (Aves), Mus musculus (Rodentia)
b Factors affecting pigment behaviour in the skin. Same species as a
c The Langerhans cell: origin and differentiation. Mus musculus (Rodentia)

REDMAN, R. S.; Ph.D., Assoc. Prof. – Oral Pathol. Res. Lab., Vet. Adm. Hosp., Rm A 940, Bldg. 1, 1055 Clermont St., DENVER, CO 80220, U.S.A.
a Parotid gland: ductal development (light and electron microscopy); cell types involved in proliferation (electron microscopy, radioautography); effects of dietary and hormonal changes on developmental pace (biochemical assay of exocrine enzymes and protein, light microscopy). Rattus rattus (Rodentia)
b Minor salivary glands: initiation, ductal development, and acinar or alveolar differentiation; (light and electron microscopy, histochemistry). Same species as a
c Sublingual gland: prenatal development of ducts, acini and myoepithelium; perinatal maturation of these elements (light and electron microscopy, histochemistry of specimens from both in vitro and in vivo situations. Same species as a

REEDER, R. H.; Ph.D. – Dept. of Embryol., Carnegie Inst. of Wash., 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.

REESE, D. H.; Ph.D. – Lab. of Vision Res., Natl. Eye Inst., N.I.H., BETHESDA, MD 20014, U.S.A.

REEVES, O. R.; Ph.D. – Dept. of Zool., Univ. of Brit. Columbia, VANCOUVER, B.C. V6T 1W5, Canada
a Biochemical control mechanisms involved in the regulation of differential gene expression during early embryonic stages (specifically regulation of RNA synthesis). Xenopus laevis (Anura)
b The role of direct intercellular communication in development; possible importance in the regulation of gene activity (cell and embryo culture). Same species as a
c Structure and function of ribosomal cistrons. Same species as a
d Characterization of nuclear acidic proteins in early stages through neurulation (two-dimensional gel electrophoresis). Same species as a (with A. H. JONES)

RENFREE, Ms. M. B.; Ph.D. – Environm. and Life Sciences, Murdoch Univ., MURDOCH, W.A. 6153, Australia
a Developmental morphology. Macropus eugenii (Marsupialia)
b Developmental biochemistry of the embryo and fetal fluids. (Marsupialia)
c Control of delayed implantation including embryo metabolism and steroidogenesis in the blastocyst and placenta. Macropus eugenii, M. irma (Marsupialia)

RENNERT, O. M.; M.D., Prof. – Depts. of Pediat., Biochem., and Neurosci., Coll. of Med., Univ. of Florida, GAINESVILLE, FL 32610, U.S.A.
a Modification of isoaccepting species of transfer RNA isolated from embryos and adult liver and spleen (amino acyl-tRNA reaction, reverse phase chromatography). Mus musculus, Rattus norvegicus (Rodentia)
b Isoleucyl-tRNA formation as a controlling factor in the "turning-off of fetal hemoglobin" production. (Rodentia)
c Identification of species of isopentenyl-tRNA's during embryonic development. Same species as a
d Polyamines and their relationship to cellular proliferation. (Mammalia)

REPORTER, M. C.; Ph.D. – Charles F. Kettering Res. Labs., 150 E. South College St., YELLOW SPRINGS, OH 45387, U.S.A.

RESZELBACH, Miss R.; Ph.D. – Lab. of Molec. Genet., Natl. Inst. of Child Health and Hum. Developm., Natl. Inst. of Health, BETHESDA, Md 20014, U.S.A.
a Tubulin mRNA biosynthesis and regulation during embryonic development. Gallus domesticus (Aves)

REYER, R. W.; Ph.D., Prof. – Dept. of Anat., Med. Center, West Virginia Univ., MORGANTOWN, WV 26506, U.S.A.
a Causal mechanisms involved in lens regeneration from the dorsal iris and their relation to the processes of lens induction in the embryo. Notophthalmus viridescens (Urodela)
b DNA synthesis, cell division and cell migration during neural retina regeneration using thymidine-H3. Notophthalmus viridescens, Ambystoma maculatum (Urodela)
c Ultrastructural changes during lens regeneration from the dorsal iris with special emphasis on the relation of the basal lamina to the lens capsule. Same species as a

REYNAUD, G. R.; D.Sc. – Dept. of Biol., Temple Univ., PHILADELPHIA, PA 19122, U.S.A.

REYNOLDS, S. R. M.; Ph.D., D.Sc., Prof. (Emer. Univ. of Illinois) – 933 Olde Hickory Rd., LANCASTER, PA 17601, U.S.A.
a Compartmentalization of the uterine lymphatic system

REYNOLDS (KING), Mrs. W. A.; Ph.D., Prof.– Dept. of Anat., Univ. of Illinois, P. O. Box 6998, CHICAGO, IL 60680, U.S.A.

a Fetal and maternal calcium metabolism. Macaca mulatta, M. arctoides, M. irus, Homo sapiens (Primates)
b Toxicity of methylmercury for the fetus and neonate. Same species as a
c Fetal metabolism and composition in diabetic pregnancy. Same species as a
d Effect of aspartate and monosodium glutamate on fetus and neonate. Same species as a
e Differentiation of pituitary thyrotrophs. Rattus norvegicus (Rodentia)
f Isolation and culture of pancreatic beta cells. Same species as a

RICE, J. M.; Ph.D. – Exp. Pathol. Branch, Nat. Canc. Inst., N.I.H., Bldg 37, Rm 3A09, BETHESDA, MD 20014, U.S.A.
a Susceptibility of different organ systems to transplacental chemical carcinogens during late embryonal/early fetal development: modifying roles of metabolism, immune responses, and nucleic acid repair. Mus musculus, Rattus norvegicus (Rodentia), Erythrocebus patas (Primates)

RICHARDS, Mrs. C. M.; Ph.D. – Div. of Biol. Sci., Univ. of Michigan, ANN ARBOR, MI 48109, U.S.A.
a The production of inbred strains using gynogenetic techniques of two types: 1. combination of egg nucleus plus second polar body; 2. inhibition of the first cleavage of a haploid egg to produce completely homozygous diploids. Rana pipiens (Anura)
b Genetics of various mutants including albino, blue, melanoid, as well as mutants uncovered by gynogenesis. Same species as a
c Control of the sex of metamorphosed animals by the administration of estrogen or testosterone at appropriate larval stages. Same species as a
d Embryonic development, genetics, and regeneration. Hyperolius spec. (Anura)

RIFKIND, R. A.; M.D. – Dept. of Human Genet. and Developm., Coll. of Phys. and Surg., Columbia Univ., 630 West 168th St., New York, 10032, NY, U.S.A.
a Differentiation in virus-transformed hemopoietic cells; regulation of hemoglobin synthesis. Mus musculus (Rodentia)
b Cell surface properties of differentiating hemopoietic cells; normal and virus-transformed. Same species as a

RIKMENSPOEL, R.; Ph.D., Prof. – Dept. of Biol. Sci., State Univ. of New York, 1400 Washington Ave., ALBANY, NY 12222, U.S.A.
a Control mechanisms of sperm motility. Bos taurus (Artiodactyla), Arbacia spec. (Echinoidea)
b Contractile mechanisms in cilia. Opalina spec. (Zoomastigina), Paramecium spec. (Ciliata), Sabellaria spec., Phragmatopoma spec. (Polychaeta), Mytilus spec. (Lamellibranchia)

RITCHIE, Mrs. A.; Ph.D. – Dept. of Embryol., Carnegie Inst. of Wash., 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.

RIVERA, Miss E. M.; Ph.D., Prof. – Dept. of Zool., Michigan State Univ., EAST LANSING, MI 48824, U.S.A.
a Mammary gland development in organ culture; carcinogen-induced mammary hyperplasias and neoplasias. Rattus spec. (Rodentia)

RIZKI, T. M.; Ph.D., Prof. – Div. of Biol. Sci., Univ. of Michigan, ANN ARBOR, MI 48109, U.S.A.
a Mutant genes regulating the function and structure of fat cells in the functional differentiation of the fat body (fluorescence and electron microscopy). Drosophila melanogaster (Diptera)
b The effects of various nucleic acid analogs in relation to morphogenesis, esp. those substances which can serve as mutagens. Same species as a

ROBERTS, J. F.; Ph.D., Prof. – Dept. of Zool., North Carolina State Univ., Box 5577, RALEIGH, NC 27607, U.S.A.
a Marked changes in mitochondrial structure and function result from changes in mitochondrial gene expression; a cell-free system from E. coli is used to compare mitochondrial DNA-directed RNA and protein synthesis using mtDNAs isolated from the different life forms. Trypanosoma brucei (Zoomastigina)

ROBERTS, L. W.; Ph.D., Prof. – Dept. of Biol. Sci., Univ. of Idaho, MOSCOW, ID 83843, U.S.A.
a Pre-pattern phenomenon of localization of enzymatic activity prior to the formation of wound vessel member. Coleus blumei (Labiatae) (with S. BABA, Japan)
b Effect of environment on morphogenesis of vascular elements. Same species as a (with S. BABA, Japan)
c Developmental physiology of xylogenesis in pith parenchyma explants: differentiation patterns and hormonal requirements. Lactuca sativa (Compositae)

ROBERTSON, A. D. J.; B.A. – Dept. of Biophys. and Theoret. Biol., Univ. of Chicago, 1101 E. 57th St., CHICAGO, IL 60637, U.S.A.

ROBERTSON, G. G.; Ph.D., Prof. – Dept. of Anat., Ctr. for Health Sci., Univ. of Tennessee, 800 Madison Ave., MEMPHIS, TN 38163, U.S.A.

ROBERTSON, H. A.; Ph.D. – Dept. of Reprod. Physiol., Anim. Res. Inst., OTTAWA, Ont. K1A 0C6, Canada
a Comparative aspects of early embryo-uterine interaction leading to implantation. Ovis aries, Bos taurus, Sus scrofa (Artiodactyla)
b Endocrinology of the developing embryo. Gallus gallus (Aves)

ROBINSON, Miss H. L.; Ph.D. – Dept. of Biol. Sci., Dartmouth Coll., HANOVER, NH 03755, U.S.A.
a Biochemistry of metamorphosis, tail regression and lysosomal enzymes. Xenopus laevis (Anura)
b Mechanisms of thyroid hormone action. (Anura)

ROBINSON, J. C.; M.D., Ph.D. – Lab. of Biomed. Sci., Natl. Inst. of Child Health and Human Developm., Natl. Inst. of Health, Bldg. 6, Rm 408, BETHESDA, MD 20014, U.S.A.
a Pregnancy-associated enzymes in maternal blood plasma. Homo sapiens (Primates)
b Placental enzymes. Same species as a

ROBISON, O. W.; Ph.D., Prof. – Dept. of Anim. Sci., North Carolina State Univ., P. O. Box 5127, RALEIGH, NC 27607, U.S.A.
a Genetic and maternal effects on development of the neonate; cross-fostering, automatic sow and standard statistical analysis. Sus scrofa (Artiodactyla)
b Study of early embryonic development by embryo transfer; factors contributing to uterine capacity. Same species as a
ROBKIN, M.; Ph.D., Assoc. Prof. – Dept. of Nucl. Engin., Univ. of Washington, BF 10, SEATTLE, WA 98195, U.S.A.
ROCKSTEIN, M.; Ph.D., Prof. – Dept. of Physiol. and Biophys., Univ. of Miami, P. O. Box 520875, Biscayne Annex, MIAMI, FL 33152, U.S.A.
a Physiological basis of aging, growth and metamorphosis. Musca domestica (Diptera), Rattus rattus (Rodentia)
b Metachemogenesis – post emergence biochemical maturation. (Holometabola, Insecta)
c Hereditary vs. environmental factors in longevity (Diptera; Hymenoptera)
d Effects of x-irradiation on development, aging, and longevity. Musca domestica (Diptera)
e Actomyosin and creatine phosphokinase in maturing and senescent heart muscle. Rattus rattus (Rodentia)
RODRICK, G. E.; Ph.D. – Inst. for Pathobiol., Lehigh Univ., BETHLEHEM, PA 18015, U.S.A.
RÖLLER, H. R.; Dr.rer.nat., Prof. – Inst. of Developm. Biol., Texas A & M Univ., COLLEGE STATION, TX 77843, U.S.A.
a The juvenile hormone system: evolution and identity; biosynthesis in vivo and in vitro; control of growth and development. Lepisma saccharina, Thermobia domestica (Thysanura), Periplaneta americana, Nauphoeta cinerea, Blaberus discoidalis (Blattodea), Zootermopsis spec., Reticulitermes flavipes, Kalotermes snyderi (Isoptera), Leptinotarsa decemlineata, Tenebrio molitor (Coleoptera), Manduca sexta, Hyalophora cecropia, Achroia grisella, Aphomia gularis, Galleria mellonella (Lepidoptera), Sarcophaga bullata, Musca domestica (Diptera)
b Causal mechanism of pattern formation in the integument. Manduca sexta, Galleria mellonella (Lepidoptera), Sarcophaga bullata, Musca domestica (Diptera)
ROMANOFF, A. L.; Ph.D., Prof. (Emer.) – Lab. of Chem. Embryol., Cornell Univ., c/o 105 Rice Hall, ITHACA, N.Y. 14853, U.S.A.
a Chemical embryology. (Aves)
b Developmental pathology. (Aves)
RON, A.; Ph.D. – Dept. of Anat. and Embryol., Hebrew Univ. – Hadassah Med. Sch., P.O.B. 1172, JERUSALEM 91000, Israel
a RNA and protein synthesis during sexual reproduction. Tetrahymena pyriformis (Ciliata)
b Biochemical characterization of micro- and macronuclei. Loxodes striatus (Ciliata)
c Cord blood lymphocytes: 1. differential growth response in autologous and calf serum; 2. growth properties of neonatal and adult peripheral blood. Homo sapiens (Primates)
ROOS, T. B.; Ph.D., Prof. – Dept. of Biol. Sci., Dartmouth Coll., HANOVER, NH 03755, U.S.A.
a Biochemical and morphological differentiation of the adrenal cortex from the anlage to the functional state (12 to 16 days, stages 19–33) (electron microscopy, histochemistry, and organ culture). Rattus norvegicus (Rodentia)
b Development of pituitary control of endocrine function; organ culture studies of independent differentiation of mesonephric ridge components in order to determine their interactions and competence and their response to pituitary and neural control. Same species as a
c Influence of developing adrenal gland on renal and gonadal differentiation (electron microscopy, biochemistry, tissue and organ culture). Xenopus laevis (Anura), Rattus spec. (Rodentia)
ROSE, S. M.; Ph.D., Prof. – Lab. of Developm. Biol., Dept. of Anat., Tulane Univ., Riverside Res. Ctr., BELLE CHASSE, LA 70037, U.S.A.
ROSENBAUM, J. L.; Ph.D., Assoc. Prof. – Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, CT 06520, U.S.A.
a Biochemistry, synthesis, and assembly in vivo and in vitro of neurotubules and their role in the development of neurites and axons of cultured neuroblastoma cells. Mus musculus (Rodentia)
ROSS, L. M.; M.D., Ph.D. – Dept. of Anat., Michigan State Univ., A519 East Fee Hall, EAST LANSING, MI 48824, U.S.A.
a The role of the embryonic tongue in the process of closure of the secondary palate. Mus musculus (Rodentia)
b Effects of cleft palate-producing teratogens on embryonic tongue and cranial base development. Same species as a
c Scanning electron microscopic aspects of embryonic palate formation, normal and abnormal. Same species as a
ROSSOUW, R. J.; B.Med.Sc. (Hons.) – Exp. Embryol. Res. Unit of the M.R.C., Dept. of Anat., Univ. of the Orange Free State, P. O. Box 339, BLOEMFONTEIN 9300, S. Africa
a Development of facial dermal bones in the absence of underlying cartilage. Gallus domesticus (Aves)
ROTH, Th. F.; Ph.D. – Dept. of Biol. Sci., Univ. of Maryland, Baltimore County Campus, 5401 Wilkens Ave., BALTIMORE, MD 21228, U.S.A.
a Electron microscopy, physiology, and molecular aspects of the protein transport site on the plasma membrane in the oocyte. Culex pipiens, C. fatigans (Diptera), Gallus domesticus (Aves), Rattus norvegicus (Rodentia)
b Virus transmission from mother to oocyte: cell types, sequence and time in development (ferritin-antivirus conjugates, electron microscopy). Gallus domesticus (Aves)
ROTHMAN, F. G.; Ph.D., Prof. – Div. of Biol. and Med. Sci., Brown Univ., PROVIDENCE, R.I. 02912, U.S.A.

a Genetic and biochemical analysis of aggregation, differentiation, and morphogenesis. Dictyostelium discoideum (Acrasiales)

ROWLEY, D. A.; M.D., Prof. – Dept. of Pathol. Pediat., Univ. of Chicago, 1101 E. 57th St., CHICAGO, IL 60637, U.S.A.

RUBEN, L. N.; Ph.D., Prof. – Biol. Dept., Reed College, PORTLAND, OR 97202, U.S.A.

a Development and evolution of immune responses with special emphasis on cell cooperation (immunocytoadherence, hapten-carrier immunization, haemagglutination). Triturus viridescens (Urodela), Xenopus laevis, Rana pipiens (Anura)

RUDDLE, F. H.; Ph.D., Prof. – Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, CT 06520, U.S.A.

a Somatic cell genetics: analysis of the genetics and of epigenetic systems using a cell genetic approach. Mus musculus, Homo sapiens and others (Mammalia)

b Manipulation of the genetic constitution. (Mammalia)

RUDNICK, Miss D.; Ph.D. – Dept. of Biol., Albertus Magnus Coll., 700 Prospect St., NEW HAVEN, CT 06511, U.S.A.

No work on developmental biology in progress

RUDOLPH, A. M.; M.D., Prof. – Cardiovasc. Res. Inst., Univ. of Calif., 1403 HSE, SAN FRANCISCO, CA 94143, U.S.A.

a Physiology of fetal circulation: developmental changes; responses to stress; effects of pharmacologic agents. (Mammalia)

RUGH, R.; Ph.D., Prof. (Emer.) – Bur. of Radiol. Health, Div. of Biol. Effects, F.D.A., 5600 Fishers Lane, HFX-120, ROCKVILLE, MD 20852, U.S.A.

a Microwave radiation effects on the embryo and fetus. (Mammalia)

b Risk to the embryo and fetus of pelvic irradiation. Homo sapiens (Primates)

RUNNER, M. N.; Ph.D., Prof. – Inst. of Developm. Biol., Univ. of Colorado, BOULDER, CO 80302, U.S.A.

RUSCH, H. P.; M.D., Prof. – McArdle Lab. for Cancer Res., Univ. of Wisconsin, 450 N. Randall Ave., MADISON, WI 53706, U.S.A.

a Acidic nucleoproteins in the control of growth and differentiation. Physarum polycephalum (Eumycetozoina)

RUSSELL, Mrs. D. H.; Ph.D., Assoc. Prof. – Dept. of Pharmacol., Med. Center, Univ. of Arizona, TUCSON, AZ 85724, U.S.A.

SACHS, H. G.; Ph.D. – Dept. of Anat., Univ. of Illinois, P. O. Box 6998, CHICAGO, IL 60680, U.S.A.

a Development of the normal heart and a genetic cardiomyopathy (biochemistry) (calcium dynamics of the sarcoplasmic reticulum), quantitative electron microscopy, electrophysiology). Gallus domesticus (Aves) Mesocricetus auratus (Rodentia)

SACHS, L.; Prof. – Dept. of Genet., Weizmann Inst. of Sci., P. O. Box 26, REHOVOT, Israel

a Control of differentiation in normal and malignant blood cells and nerve cells

b Membrane changes in development

c Genetic control of parthenogenesis

SACHS, T.; Dr. – Dept. of Bot., The Hebrew Univ., JERUSALEM, Israel

SACK, W. O.; Ph.D., Dr.med.vet., Prof. – Dept. of Anat., N.Y. State Vet. Coll., Cornell Univ., ITHACA, NY 14850, U.S.A.

a Establishing a comprehensive embryological slide collection of domestic and laboratory animals. Canis familiaris, Felis catus, Bos taurus, Ovis aries, Rattus rattus, Mus musculus, Cavia porcellus (Mammalia) (with H. E. EVANS)

b Developmental morphology: nerve distribution. Equus caballus (Perissodactyla)

SADANA, G. L.; Ph.D. – Dept. of Zool., Punjab Agric. Univ., LUDHIANA, India

SAGAWA, Y.; Ph.D., Prof. – Harold L. Lyon Arboretum and Horticult. Dept., Univ. of Hawaii, HONOLULU, HI 96822, U.S.A.

a Developmental studies of ovule formation. (Orchidaceae)

b Developmental studies of apical meristem explants. (Orchidaceae and other tropical plants)

c Studies of in vivo growth of pollen tubes. Same species as a

SAITOH, M.; Ph.D. – Natl. Inst. of Anim. Industry, CHIBA-shi, 280 Japan

a Nutritional study to increase embryonic survival rate. Sus scrofa domesticus (Artiodactyla)

SAKAI, H.; Ph.D., Prof. – Dept. of Biophys. and Biochem., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan

a Polymerization of tubulin into microtubules. Hemicentrotus pulcherrimus (Echinoidea)

b Mitotic apparatus and tubulin. Same species as a

SALLACH, H. J.; Ph.D., Prof. – Dept. of Physiol. Chem., Univ. of Wisconsin, 1215 Linden Drive, MADISON, WI 53706, U.S.A.

SALLES, J. M. de; B.Sc. – Dept. of Gen. Biol., Inst. of Biol. Sci., Fed. Univ. of Minas Gerais, Rua Carangola 288 – 4° andar, C.P. 253, BELO HORIZONTE, M.G., Brazil

a Alteration of spermatogenesis following interspecific hybridization or ionizing radiations. (Triatominae, Hemiptera)

SALOMON, D. S.; Ph.D. – Lab. of Developm. Biol. and Craniofacial Anomalies, Natl. Inst. of Dent. Res., Natl. Inst. of Health, Bldg. 30, Rm 414, BETHESDA, MD 20014, U.S.A.

a Developmental biochemistry; hormonal control of differentiation (general). Mus musculus (Rodentia)

b Characterization of glucocorticoid receptors in embryonic tissues during development; role of glucocorticoids in the control of tissue-specific biochemical markers during development. Same species as a

c Etiology of glucocorticoid-induced clefting of the secondary palate; definition of the molecular mechanism(s) by which glucocorticoids function as teratogens during development; biologic

effects of glucocorticoids on the growth of embryonic facial mesenchyme cells in culture. Same species as a

SALOMÓN de LEGNAME, Mrs. H.; Dr.Biochem. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina

a Glycolysis and tricarboxylic acid cycle during early development: regulatory mechanisms. Bufo arenarum (Anura)

SAMOLS, D. R.; Ph.D. – Dept. of Cell Biol., Roche Inst. of Molec. Biol., NUTLEY, NJ 07110, U.S.A.

a Silk gland development and differentiation, especially silk fibroin synthesis in vitro, fibroin message synthesis and isolation of the fibroin gene. Bombyx mori (Lepidoptera) (with L. P. GAGE and R. F. MANNING)

b Characterization of the genome and analysis of DNA containing granules in giant pupal foot pad cells. Sarcophaga bullata (Diptera)

SANCHEZ RIERA, Mrs. A. N.; Biochem. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina

a Effect of hormones on proteins and nucleic acid synthesis in ovarian tissue and early development. Bufo arenarum (Anura)

SANCHEZ, Mrs. S. S.; Biochem. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMÁN, Argentina

a Effect of hormones on proteins and nucleic acid synthesis in ovarian tissue and early development. Bufo arenarum (Anura)

SANDERS, E. J.; Ph.D., Assoc. Prof. – Dept. of Physiol., Univ. of Alberta, EDMONTON, Alta. T6G 2E1, Canada

a Cell surface material and intercellular contacts during cleavage; morphology and physiology of intercellular coupling. Xenopus laevis (Anura)

b Intercellular relationships during pre-streak morphogenesis; correlation of cell surface and cell contact characteristics with behaviour of cells during reaggregation. Gallus domesticus (Aves)

SANDLER, Ms. N.; Ph.D. – Inst. of Life Sci., Hebrew Univ., JERUSALEM, Israel

a Resporulation of spores. Bacillus subtilis (Bacteria)

SANFORD, W. C.; Ph.D. – School of Biol. Sci., Oklahoma State Univ., STILLWATER, OK 74074, U.S.A.

a Effect of cadmium salts on development, and the resulting male sexual potential. Salmo gairdnerii (Teleostei)

b Chlorinated hydrocarbon effects on 36–48 hour heart trans-membrane action potentials. Gallus domesticus (Aves)

SAOTOME, Mrs. K. M.; M.Sc. – Embryol. Sect., Dept. of Biol., Tokyo Metropolitan Univ., 2–1–1, Fukazawa, Setagaya-ku, TOKYO, 158 Japan

a Sulfation of polysaccharides in the embryo. Pseudocentrotus depressus, Hemicentrotus pulcherrimus, Anthocidaris crassispina (Echinoidea)

SARVELLA, Miss P. A.; Ph.D. – Cell Cult. and Nitrogen Fixat. Lab., Plant Physiol. Inst., A.R.S., U.S.D.A., Bldg. 001, Rm 308, BARC-West, BELTSVILLE, MD 20705, U.S.A.

a Cytogenesis of parthenogenetic eggs and embryos: time of chromosome doubling and comparison of cell development with normal birds. Gallus domesticus, Meleagris gallopavo (Aves)

b Origin of plantlets obtained from young anthers of male-sterile plants in tissue culture, Secale cereale (Gramineae), Nicotiana tabacum (Solanaceae)

SASAKI, Miss F.; Dr. – Dept. of Biol., Sch. of Dent. Med., Tsurumi Univ., 2–1–3 Tsurumi, YOKOHAMA, 230 Japan

a Electron cytochemistry of tail muscle, especially during metamorphosis. Rana catesbeiana, Xenopus laevis (Anura)

SASAKI, M.; D.Sc., Prof. – Chromos. Res. Unit, Hokkaido Univ., N.10, W.8, SAPPORO, 060 Japan

a Chromosome studies in early embryogenesis, with special reference to induced and spontaneous abortions, maldevelopment, and sex ratio. Homo sapiens (Primates)

SASAKI, N.; D.Sc. – Embryol. Lab., Dept. of Biology, Kyûshû Univ., Hakozaki, FUKUOKA, 812 Japan

a Change of regional effect in primary induction with special reference to molecular structure of inducing agent. Triturus pyrrhogaster (Urodela), Gallus domesticus (Aves)

b Transformation of primarily activated ectoderm by RNA. Triturus pyrrhogaster (Urodela)

c Reactivity of ectoderm cells in primary induction. Same species as b

SATHANANTHAN, A. H.; Ph.D. – Dept. of Biol. Sci., Lincoln Inst., 625 Swanston St., CARLTON, Vict. 3053, Australia

a Morphology, cytochemistry, and ultrastructure of development from second maturation division (oviposition) to the post-gastrula stage. Arion ater rufus, Limax maximus (Gastropoda)

b Cell movements in morphogenesis. Same species as a

c Golgi and yolk formation. Same species as a

SATO, G. H.; Ph.D., Prof. – Dept. of Biol., C-016, Univ. of Calif. San Diego, LA JOLLA, CA 92093, U.S.A.

a Hormone dependent cell cultures. (Mammalia)

SATO, H. – Dept. of Perinatol., Inst. of Developm. Res., Aichi Pref. Colony, Kamiya-cho, KASUGAI, Aichi 480–03, Japan

a Toxic effects of bilirubin on developing brain. Rattus norvegicus (Rodentia)

SAUNDERS, J. W., Jr.; Ph.D., Prof. – Dept. of Biol. Sci., State Univ. of New York, 1400 Washington Ave., ALBANY, N.Y. 12222, U.S.A.

a The role of ectoderm in limb development. Gallus domesticus (Aves)

SAWADA, N.; D.Sc., Prof. – Biol. Inst., Ehime Univ., Bunkyo-cho, MATSUYAMA, 790 Japan
a Mitotic apparatus. (Echinodermata; Echiuroidea)
b Ultrastructural changes in oogenesis and spermatogenesis. Sipunculoidea; Echiuroidea; Gastropoda)
SAXENA, Miss R.; M.Sc. – Dept. of Zool., Univ. of Gorakhpur, GORAKHPUR 273001, India
SCADDING, S. R.; Ph.D. – Dept. of Zool., Univ. of Guelph, GUELPH, Ont. N1G 2W1, Canada
a Factors affecting and controlling limb regeneration, especially effects of 5-bromodeoxyuridine and 5-thio-D-glucose. (Amphibia)
b Regeneration of internal organs, especially testis. (Urodela)
c Structure and function of oral tentacles. Xenopus laevis (Anura)
SCANDALIOS, J. G.; Ph.D., Prof. – Dept. of Genet., North Carolina State Univ., Box 5487, RALEIGH, NC 27607, U.S.A.
a Differential gene expression at the molecular level. Zea mays (Gramineae), Drosophila melanogaster (Diptera), Homo sapiens (Primates)
b Regulatory mechanisms controlling the expression of enzyme loci during development of higher organisms; enzyme polymorphism. Same species as a
c Role of proteinaceous inhibitors in regulation of gene expression
SCHAEFFER, B. E.; Ph.D. – Dept. of Biol., New York Univ., 651 Brown Bldg., Washington Square, NEW YORK, NY 10003, U.S.A.
a Cell surface changes in relation to morphogenesis (with H. E. SCHAEFFER)
SCHAEFFER, Mrs. H. E.; Ph.D. – Dept. of Biol., New York Univ., 651 Brown Bldg., Washington Square, NEW YORK, NY 10003, U.S.A.
a Cell surface changes in relation to morphogenesis (with B. E. SCHAEFFER)
SCHEFFLER, I. E.; Ph.D. – Dept. of Biol., B-022, Univ. of California San Diego, LA JOLLA, CA 92093, U.S.A.
a Biochemical differentiation during the cell cycle in vitro. Cricetulus griseus (Rodentia)
b Conditionally lethal mutations in cells in culture. (Mammalia)
c Respiration-deficient cell mutants. (Mammalia)
SCHJEIDE, O. A.; Ph.D., Prof. – Dept. of Biol. Sci., Northern Illinois Univ., DeKALB, IL 60115, U.S.A.
a Biochemical, metabolic and ultrastructural parameters of cell growth and differentiation. (Plantae), Gallus domesticus (Aves)
b Roles of acid mucopolysaccharides in cell differentiation. (Animalia, Homo)
SCHLESINGER, A. B.; Ph.D., Prof. – Dept. of Biol., Creighton Univ., 2410 California St., OMAHA, NE 68131, U.S.A.
SCHMIDT, A. J.; Ph.D., Prof. – Dept. of Anat., Rush Med. Coll., 1725 W. Harrison St., CHICAGO, IL 60612, U.S.A.
a Hormonal influences on regenerating systems. Triturus viridescens (Urodela)
b The chemistry of regenerating systems. Same species as a
c Fine structure of cells and tissues of regenerating systems. Same species as a
d Histo- and cytochemistry of repairing cutaneous wounds. Mus musculus (Rodentia)
SCHMIDT, R. R.; Ph.D. – Dept. of Anat., Jefferson Med. Coll., 1020 Locust St., PHILADELPHIA, PA 19107, U.S.A.
a Biochemical alterations during chondrogenesis in fetuses obtained from mothers administered 9-methylpteroyl glutamic acid (folic acid antagonist): hydroxyproline studies; AMPS studies, electron microscopy. (Mammalia)
b In vitro culture of chondroblasts obtained from fetuses of teratogen treated mothers: collagen synthesis and release into matrix; AMPS production and release into matrix; isolation of matrix vesicles and biochemical characterization. Rattus spec. (Rodentia)
SCHNEIDER, G. P. II; Ph.D. – Dept. of Anat., Michigan State Univ., A519 East Fee Hall, EAST LANSING, MI 48824, U.S.A.
a Nature and effects on embryo of the binding of female sex steroids to embryos just before implantation. Mus musculus (Rodentia)
SCHNEIDERMAN, H. A.; Ph.D. – Ctr. for Pathobiol., Univ. of California, IRVINE, CA 92717, U.S.A.
a Mechanism of determination in embryos; analysis of pattern formation. Drosophila melanogaster (Diptera)
b Effects of juvenile hormones and ecdysones on organisms other than insects; mode of action of juvenile hormone. Hyalophora cecropia, Tenebrio molitor, Galleria mellonella (Insecta), Armadillidium vulgare (Isopoda, Crustacea)
c Temperature-sensitive cell lethals and mitotic arrest mutants. Same species as a
SCHOTTÉ, O. E.; Ph.D., Prof. (Emer.) – Dept. of Biol., Amherst Coll., AMHERST, MA 01002, U.S.A.
SCHREIBER, G.; Ph.D., Prof. (Emer.) – Dept. of Gen. Biol., Inst. of Biol. Sci., Fed. Univ. of Minas Gerais, Rua Carangola 288 – 4° andar, C.P. 253, BELO HORIZONTE, M.G., Brazil
a Alteration of spermatogenesis following interspecific hybridization or ionizing radiations. (Triatominae, Hemiptera)
SCHROEDER, P. C.; Ph.D., Assoc. Prof. – Dept. of Zool., Coll. of Sci. and Arts, Wash. State Univ., PULLMAN, WA 99163, U.S.A.
SCHROEDER, Th. E.; Dr. – Friday Harbor Labs., Univ. of Wash., FRIDAY HARBOR, WA 98250, U.S.A.
SCHRYVER, H. F.; Ph.D., D.V.M., Assoc. Prof. – Equine Res. Progr., Dept. of Large Anim. Med., N.Y. State Vet. Coll., Cornell Univ., ITHACA, NY 14850, U.S.A.
a Morphological and biochemical aspects of skeletal development. (Mammalia)
b Calcium metabolism in development. (Mammalia)

SCHUBIGER, G.; Ph.D. – Dept. of Zool., Univ. of Washington, SEATTLE, WA 98195, U.S.A.
SCHUBIGER (STAUB), Mrs. M.; Ph.D. – Dept. of Zool., Univ. of Wash., SEATTLE, WA 98195, U.S.A.
SCHUETZ, A. W.; Ph.D., Prof. – Dept. of Popul. Dynamics, Sch. of Hyg. and Publ. Health, Johns Hopkins Univ., 615 N. Wolfe St., BALTIMORE, MD 21205, U.S.A.
a Oocyte and follicular atresia: ion transport, cell membrane function (atomic absorption spectrophotometry). (Amphibia; Mammalia)
b Testis differentiation and spermatogenesis. (Mammalia)
c Oocyte growth and maturation. (Asteroidea; Amphibia; Mammalia)
d Membrane structure and function. (Asteroidea; Amphibia)
e Purine synthesis and secretion (Asteroidea)
f Control of meiosis during spermatogenesis (cell culture, hormone effects). Rattus spec. (Rodentia and other Mammalia)
g Regulation of oocyte yolk protein (vitellogenin) incorporation (cell culture, hormone effects). Rana pipiens (Anura)
h Ionic mechanisms in activation and fertilization (Asteroidea; Amphibia)
SCHULMAN, H. M.; Ph.D. – Lady Davis Inst. for Med. Res., Jewish Gen. Hosp., 3755 Chemin Cote St. Catherine Rd., MONTREAL, Que. H3T 1E2, Canada
No work on developmental biology in progress
SCHULTZ, G. A.; Ph.D. – Div. of Med. Biochem., Health Sci. Centre, Univ. of Calgary, CALGARY, Alta. T2N 1N4, Canada
a Control of gene expression in early development (emphasis on transcription and translation). (Mammalia)
SCHWALM, F. E.; Dr.phil.nat., Assoc. Prof. – Dept. of Biol. Sci., Illinois State Univ., NORMAL, IL 61761, U.S.A.
a Synthesis, storage and utilization of morphogenetic agents in oogenesis and early embryogenesis (electron microscopy, autoradiography) Coelopa frigida (Diptera)
b Isolation and characterization of nucleic acids during oogenesis and embryogenesis. Same species as a
c Fate and function of polar granules in the male gonads and during spermiogenesis. Same species as a
SCOTT, Mrs. J. N.; Ph.D. – Dept. of Anat., Wright State Univ., DAYTON, OH 45431, U.S.A.
a Normal and abnormal development of the Müllerian ducts in females and males. Mus musculus (Rodentia)
SCOTT, Mrs. M. Y. – Div. of Biol., Calif. Inst. of Technol., PASADENA, CA 91125, U.S.A.
a Functional plasticity of retinotectal connections following tectal lesions. Carassius auratus (Teleostei)
b Peripheral specification of cutaneous nerves following limb bud transplantation in tadpoles (TK IV-VI). Rana pipiens (Anura)
SCOTT, T. K.; Ph.D., Prof. – Dept. of Bot., Univ. of North Carolina, CHAPEL HILL, NC 27514, U.S.A.
a Relation between auxin transport and growth in seedlings as influenced by age and light. Pisum sativum (Papilionaceae), Zea mays (Gramineae)
b Apical dominance; characterization of the hormonal control exhibited by shoot apices in lateral bud suppression. Pisum sativum (Papilionaceae), Coleus blumei (Labiatae)
SEAGO, J. L.; Ph.D., Assoc. Prof. – Dept. of Biol., State Univ. of New York, OSWEGO, NY 13126, U.S.A.
a Regeneration of the root meristem and root cap. Glycine max (Papilionaceae)
b Effects of root meristem and root cap on early development of shoot apical meristem and leaf primordia (effects of demeristemizing and decapping roots). Same species as a
c Cortical ontogeny in roots. Zea mays and others (Angiospermae)
d Correlation between starch content, phloem structure, and pod development. Same species as a
SEARLS, R. L.; Ph.D., Assoc. Prof. – Dept. of Biol., Temple Univ., Broad & Berks St., PHILADELPHIA, PA 19122, U.S.A.
SEDRA, S. N.; Ph.D., Prof. - Dept. of Zool., Fac. of Sci., Alexandria Univ., Moharram Bey, ALEXANDRIA, Egypt
a Behaviour of egg laying. Rana fusca, Bufo regularis (Anura)
b Development of the urogenital system. Bufo regularis (Anura) (with M. I. MICHAEL and S. H. KHALIL)
SEECOF, R. L.; Ph.D. – Dept. of Biol., City of Hope Med. Center, 1500 E. Duarte Rd., DUARTE, CA 91010, U.S.A.
ŞEFTALIOĞLU, Miss A. – Inst. of Histol. and Embryol., Med. Fac., Hacettepe Univ., ANKARA, Turkey
SEGAL, D.; B.Sc. – Dept. of Genet., Hebrew Univ., JERUSALEM, Israel
a Genetic analysis of determinative events through morphogenesis, especially in homoeotic mutants. Drosophila melanogaster (Diptera)
SEGAL, S. J.; Ph.D. – Biomed. Div., The Popul. Counc., Rockefeller Univ., York Ave. and 66th St., NEW YORK, NY 10021, U.S.A.
a Immunologic analysis of pituitary gonadotrophin function: development and species specificity. (Vertebrata)
b Mechanism of hormone action. (Vertebrata)
c Action of blastotoxic chemical agents. (Vertebrata)
d Oogenesis in the constant-estrus female. Rattus norvegicus (Rodentia)
e Studies on RNA in implantation. Rattus norvegicus (Rodentia), (Primates)

SEIGER, M. B.; Ph.D., Assoc. Prof. – Dept. of Biol. Sci., Coll. of Sci. and Engin., Wright State Univ., Col. Glenn Highway, DAYTON, OH 45431, U.S.A.
a The genetics and development of color and color pattern in the white and blue morphs. Chen caerulescens (Aves)
b Ontogeny of behavior. Chen caerulescens (Aves), Drosophila pseudoobscura, D. persimilis, D. miranda, D. locwi, D. frolovae (Diptera)

SEKELES, E.; M.V.M. – Dept. of Anat. and Embryol., Hebrew Univ. – Hadassah Med. School, P.O.B. 1172, JERUSALEM 91000, Israel
a Microscopical and ultrastructural study of the placenta and membranes in spontaneous abortions with chromosomal anomalies. Homo sapiens (Primates)
b Electron microscopic and autoradiographic study of the initial stage of ossification of long bones. Rattus spec. (Rodentia)
c Transmission and scanning electron microscopy of cultured amniotic cells. Same species as a
d Prenatal diagnosis of lysosomal storage diseases (transmission electron microscopy of cultured abnormal amniotic cells). Same species as a

SELVERSTON, A. I.; Ph.D. – Dept. of Biol., Univ. of California, San Diego, P. O. Box 109, LA JOLLA, CA 92037, U.S.A.

SEMBA, R.; M.D. – Dept. of Perinatol., Inst. of Developm. Res., Aichi Pref. Colony, Kamiya-cho, KASUGAI, Aichi 480–03, Japan
a Epidemiology of cardiovascular anomalies in embryos. Homo sapiens (Primates)
b Developmental pathology of anencephaly. Same species as a

SERR, D. M. – Dept. of Embryol. and Teratol., Ch. Sheba Med. Ctr., Tel-Aviv Univ., TEL-AVIV, Israel
a Physio-pathology of cervical mucus in reproductive failure. Homo sapiens (Primates) (with L. A. NEBEL and J. EICHENBRENNER)

SESHAN, K. R.; Ph.D. – Inst. of Developm. Biol., Texas A & M Univ., COLLEGE STATION, TX 77843, U.S.A.
a Dynamics of juvenile hormone production in vitro. Periplaneta americana, P. fuliginosa, Pycnoscelus surinamensis, Nauphoeta cinerea, Blaberus discoidalis (Blattodea), Kalotermes snyderi (Isoptera), Hyalophora cecropia, Manduca sexta, Achroia grisella, Aphomia gularis, Galleria mellonella (Lepidoptera), Sarcophaga bullata (Diptera)
b Growth and differentiation of epidermis in vitro. Manduca sexta, Galleria mellonella (Lepidoptera)

SETO, F.; Ph.D. – Dept. of Zool., Univ. of Oklahoma, 730 Van Vleet Oval, Rm. 222, NORMAN, OK 73069, U.S.A.
a Ontogenetic appearance and maturation of the homograft rejecting and humoral antibody producing potential in embryo and growing juveniles. Gallus domesticus (Aves)
b Cellular basis of antibody-mediated immunoregulation and T cell-dependent humoral immune responses. Same species as a

SETOGUTI, T.; Dr.Med., Prof. – 3rd Dept. of Anat., Nagasaki Univ., Sakamoto-machi, NAGASAKI, 852 Japan
a Electron microscopy of mast cell development. Triturus pyrrhogaster (Urodela)

SHAAYA, E.; Ph.D. – Lab. of Insect Physiol., Hebrew Univ., Terra Sancta Bldg., JERUSALEM, Israel
a Control of nucleic acids and protein synthesis by ecdysone and juvenile hormone during postembryonic development. Periplaneta americana (Blattodea), Calliphora erythrocephala (Diptera)
b Growth regulation of regeneration. Periplaneta americana (Blattodea)

SHAH, R. M.; Ph.D. – Dept. of Oral Biol., Fac. of Dent., Univ. of Brit. Columbia, 2075 Westbrook Place, VANCOUVER, B.C. V6T 1W5, Canada
a Comparison of mechanisms in cleft palate formation following administration of different chemical teratogens (ultrastructure, autoradiography, biochemistry; in vivo and in vitro). Mesocricetus auratus (Rodentia)
b Teratological evaluation of cancer chemotherapeutic agents, sedatives and tranquillizers. Mesocricetus auratus, Mus musculus, Rattus norvegicus (Rodentia)

SHAH, R. V.; Ph.D., Prof. – Dept. of Zool., Fac. of Sci., M.S. Univ. of Baroda, BARODA 390002, India
a Tail regeneration in embryos and adults. Gekko spec., Mabuya spec. (Lacertilia)
b Liver regeneration and physiology. (Vertebrata)
c Spleen, pancreas, and lymph gland regeneration. (Vertebrata)
d Physiology of developing muscles (respiration). (Vertebrata)

SHANKLIN, D. R.; M.D., Prof. – Depts. of Pathol., Obstet. and Gynecol., Univ. of Chicago, 1101 East 57th St., CHICAGO, IL 60637, U.S.A.

SHAPIRO, B. L.; D.D.S., Ph.D., Prof. – Div. of Oral Biol., Sch. of Dent., Univ. of Minnesota, MINNEAPOLIS, MN 55455, U.S.A.
a Palatal development: programmed cell death in epithelial seam (histochemistry, biochemistry, ultrastructure). Rattus rattus (Rodentia)
b Development of phenotype in Down's syndrome (trisomy 21) and other aneuploid conditions (clinical studies). Homo sapiens (Primates)

SHAPIRO, S.; Ph.D., Prof. – Dept. of Bot., Univ. of Massachusetts, AMHERST, MA 01002, U.S.A.

SHAPPIRIO, D. G.; Ph.D., Prof. – Div. of Biol. Sci., Univ. of Michigan, ANN ARBOR, MI 48109, U.S.A.
a Developmental physiology and biochemistry, especially growth and metamorphosis. (Saturniidae, etc., Lepidoptera; Chironomidae etc., Diptera; Lygaeidae, Heteroptera)

SHARMA, B.; M.Sc. – Dept. of Biochem., Fac. of Sci., Allahabad Univ., ALLAHABAD 211002, India
a Nitrogen metabolism during development. Philosamia ricini (Lepidoptera)
b Trehalase, arginase, protease, beta-glucuronidase, and metabolites during embryogenesis. Same species as a
c Variation studies on some metabolites during larval-pupal development e.g. urea, uric acid, total protein, total lipid, total free amino acids and glycerol. Same species as a, and Attacus atlas (Lepidoptera)

SHARMA, S. C.; Ph.D. – Dept. of Ophthalmol., New York Med. Coll., Flower and 5th Ave. Hosp., NEW YORK, N.Y. 10029, U.S.A.
a Development and regeneration of the visual pathways. Xenopus laevis, Rana pipiens (Anura), Carassius auratus (Teleostei)
b Developmental neurobiology: spinal cord. Gallus domesticus (Aves)

SHAVER, Miss E. L.; Ph.D., Assoc. Prof. – Dept. of Anat., Univ. of W. Ontario, LONDON, Ont., Canada

SHAVER, J. R.; Ph.D., Prof. – Dept. of Zool., Michigan State Univ., EAST LANSING, MI 48824, U.S.A.
a Antigenic localization on spermatozoa (electron microscopy, immunofluorescence). Xenopus laevis (Anura)
b Role of male accessory organs in reproduction. (Amphibia)

SHELDRAKE, A. R.; Ph.D. – Intern. Crops Res. Inst. for the Semi-Arid Tropics, 1–11–256 Begumpet, HYDERABAD 500016, A.P., India
a Growth of shoot and root systems including developmental anatomy and regeneration after experimental mutilations. Cajanus cajan, Cicer arietinum (Papilionaceae)

SHEPARD, T. H.; M.D., Prof. – Central Lab. for Human Embryol., Dept. of Pediat., Univ. of Washington, SEATTLE, WA 98195, U.S.A.
a Effect of rubella virus on the fetus. Homo sapiens (Primates)
b Effect of galactoflavin on the fetus. Rattus spec. (Rodentia)
c Histology and biochemistry of achondroplasia (ac/ac strain; organ culture, radio-isotopes) Oryctolagus cuniculus (Lagomorpha), Homo sapiens (Primates)
d Effects of teratogens on embryos in vitro. Rattus norvegicus (Rodentia)
e Effect of cytochalasin B on closure of the anterior neuropore in vitro. Gallus domesticus (Aves), Rattus spec. (Rodentia)

SHERMAN, M. I.; Ph.D. – Dept. of Cell Biol., Roche Inst. of Molec. Biol., NUTLEY, NJ 07110, U.S.A.
a Differentiation of early embryos in vivo and in vitro; the role of cell communication during differentiation of early embryonic cell types (embryo proper, yolk sac, trophoblast). Mus musculus (Rodentia)
b Differentiation of teratocarcinoma cells in vivo and in vitro; relations with cells of the early embryo. Same species as a

SHINOHARA, T.; Ph.D. – Lab. of Molec. Genet., Natl. Inst. of Child Health and Hum. Developm., Natl. Inst. of Health, BETHESDA, MD 20014, U.S.A.
a Delta-crystallin and delta-crystallin mRNA determination and correlation with lens induction. Gallus domesticus (Aves)

SHIOKAWA, K.; D.Sc. – Embryol. Lab., Dept. of Biol., Fac. of Sci., Kyûshû Univ., Hakozaki, FUKUOKA, 812 Japan
a Regulation of ribosomal RNA synthesis during embryonic development. Xenopus laevis (Anura)

SHIOMI, T.; Dr., Prof. – Dept. of Genet., Nagasaki Univ., 12–4, Sakamoto-machi, NAGASAKI, 852 Japan
a Radiation genetics (embryo, germ cells). Drosophila melanogaster (Diptera)

SHIRAI, Miss H.; D.Sc. – Lab. of Physiol., Ocean Res. Inst., Univ. of Tokyo, Minamidai, Nakano-ku, TOKYO, 164 Japan
a Mechanism of spawning. Asterias amurensis, Asterina pectinifera (Asteroidea)
b Electron microscopy of spawning and oocyte maturation. (Asteroidea)
c Biochemical pathway of l-methyladenine formation in ovary. (Asteroidea)

SHKOLNIK, Mrs. H.; M.Sc. – Bee Res. Lab., Dept. of Entomol., Fac. of Agric., Hebrew Univ., P. O. Box 12, REHOVOT 76 100, Israel

SHOGER, R. L.; Ph.D., Prof. – Biol. Dept., Carleton Univ., Olin Hall of Sci., NORTHFIELD, MN 55057, U.S.A.
a Activation of sperm by material derived from eggs or oviduct; artificial activators; sperm-egg interaction. Limulus polyphemus (Xiphosura)

SHOJI, R.; Ph.D., – Dept. of Embryol., Inst. of Developm. Res., Aichi Pref. Colony, Kamiya-cho, KASUGAI, Aichi 480–03, Japan
a Effects of x-rays and ultrasound on developing embryos, especially on the central nervous system. Mus musculus, Rattus norvegicus, Mesocricetus auratus (Rodentia) (with U. MURAKAMI)
b Developmental genetics of abnormal characters. Same species as a

SHOKITA, S.; Aquat. Biol. – Dept. of Marine Sci., Univ. of the Ryukyus, NAHA, Okinawa, 903 Japan
a Laboratory rearing and description of larval stages. Species from Ryukyus and Taiwan, e.g.: Palaemon (P.) debilis, Macrobrachium asperulum, M. grandimanus (Palaemonidae), Paratya compressa, Caridina spec. (Atyidae), Penaeus latisulcatus (Peneidae, Decapoda, Crustacea)

SHOSTAK, S.; Ph.D., Assoc. Prof. – Dept. of Biol., Univ. of Pittsburgh, 552 Crawford Hall, PITTSBURGH, PA 15260, U.S.A.

SHUKLA, G. S.; Ph.D. – Dept. of Zool., Fac. of Sci., Univ. of Gorakhpur, GORAKHPUR 273001, India

SHUKUYA, R.; M.D., Prof. – Dept. of Biochem., Nippon Med. Sch., Sendagi, Bunkyo-ku, TOKYO, 113 Japan
SHULOV, A.; D.Sc., Prof. – Dept. of Entomol., Hebrew Univ., JERUSALEM, Israel
a Regeneration, transplantation, and tissue implantation. Leiurus quinquestriatus (Scorpiones)
SHUPE, J. L.; D.V.M., Prof. – Dept. of Vet. Sci., Utah State Univ., LOGAN, UT 84322, U.S.A.
a Congenital malformations, especially musculo-skeletal and cleft palate. Bos taurus, Ovis aries (Artiodactyla)
b Congenital multiple exostosis (hereditary osteochondromatosis). Equus caballus (Perissodactyla)
c Fluorides as related to placental transfer and intra-uterine development. Same species as a
d Comparative developmental anomalies and aging. domestic animals (Aves, Mammalia)
SILHACEK, D. L.; Ph.D. – Insect Attract., Behav. and Basic Biol. Res. Lab., Agric. Res. Serv., U.S.D.A. 1700 S.W. 23rd Drive, P. O. Box 14565, GAINESVILLE, FL 32604, U.S.A.
a Mechanisms of hormonal control of energy metabolism during development. Plodia interpunctella (Lepidoptera)
b Structural and conformational requirements of molecules with a juvenilizing effect. Same species as a
SIMON, M. I.; Ph.D. – Dept. of Biol., Univ. of California, San Diego, P. O. Box 109, LA JOLLA, CA 92037, U.S.A.
SINGER, M.; Ph.D., Prof. – Dept. of Anat., Developm. Biol. Ctr., Case Western Reserve Univ., 2119 Abington Rd., CLEVELAND, OH 44106, U.S.A.
a Regeneration. (Amphibia)
b The neurotrophic control of limb regeneration. Triturus viridescens (Urodela)
SINGER, R.; D.Sc., Prof. – Dept. of Anat., Div. of Biol. Sci., Univ. of Chicago, 1025 East 57th St., CHICAGO, IL 60637, U.S.A.
SINGER (ALTBEKER), Mrs. R.; Ph.D. – Endocrinol. Unit of the Rogoff-Wellcome Med. Research Inst., Beilinson Hosp., PETAH-TIKVA, Israel
a Histone content of developing ovaries. Bos taurus (Artiodactyla)
SINGH, R. P.; Ph.D., Assoc. Prof. – Dept. of Anat., Univ. of W. Ontario, LONDON, Ont., Canada
SINGH, S.; M.S., Prof. – Dept. of Anat., Inst. of Med. Sci., Banaras Hindu Univ., VARANASI 221005, India
a Teratological effect of cyclophosphamide on embryonic brain, Gallus domesticus (Aves)
b Teratological effect of trimipramine maleate on embryo. Same species as a
c Teratological effect of chlorpromazine and papain on fetus. Rattus spec. (Rodentia)
d Teratological effect of cyclophosphamide on limb cartilage. Same species as c
e Fetal hemorrhages following amniocentesis. Same species as c
SINGH, S. D.; M.Sc. – Dept. of Biochem., Fac. of Sci., Allahabad Univ., ALLAHABAD 211002, India
a Variation studies in some enzymes (GOT, GPT, phosphatases, phosphorylase, trehalase and lipase) and metabolites (protein, total free amino acids, nucleic acids, total carbohydrates, reducing sugars, glycogen, inorganic phosphorus, lactate, pyruvate, cholesterol, glycerol and total lipid) during embryogenesis, larval-pupal development, fifth instar silk gland and adult thoracic muscles. Antheraea mylitta, Philosamia ricini (Lepidoptera)
SINGH, Y. N.; Ph.D. – Zool. Dept., Allahabad Univ., ALLAHABAD 211002, India.
SINHA, A. A.; Ph.D., Assoc. Prof. – Dept. of Zool., Univ. of Minnesota, Vet. Adm. Hosp. Bldg. 49, Rm. 207, MINNEAPOLIS MN 55417, U.S.A.
a Developmental morphology of prostate. Mus musculus (Rodentia)
b Effects of steroids on development and differentiation of the prostate gland
c Implantation. Spilogale putorius latipous (Carnivora), Oryctolagus cuniculus (Lagomorpha)
d Comparative studies of placentation and reproduction. Enhydris lutris, Lobodon carcinophagus, Hydrunga leptonyx, Ommatophoca rossi, Spilogale putorius latipous (Carnivora), Odocoileus virginianus (Artiodactyla), and other Mammalia
SINHA, D. N.; M.S. – Dept. of Anat., G.S.V.M. Med. Coll., KANPUR 208002, India
SIRLIN, J. L.; Dr.nat.sci., Prof. – Dept. of Anat., Med. Coll., Cornell Univ., 1300 York Ave., NEW YORK, NY 10021, U.S.A.
SKALKO, R. G.; Ph.D. – Embryol. Lab., Birth Defects Inst., N.Y. State Dept. of Health, Empire State Plaza, ALBANY, NY 12237, U.S.A.
a Experimental teratogenesis in early stages: maternal and embryonic metabolism of teratogens (fluorouracil, 5-bromodeoxyuridine, methotrexate); development of model systems for teratogenesis. (Echinoidea), Mus musculus (Rodentia)
b Cytology and cytochemistry of gametogenesis, fertilization, and cleavage. Arbacia punctulata, Echinarachnius parma, Lytechinus pictus (Echinoidea), Mus musculus (Rodentia)
SKINNER, Ms. D. M.; Ph.D., Prof. – Biol. Div., Oak Ridge Natl. Lab., P. O. Box Y, OAK RIDGE, TN 37830, U.S.A.
a Molt cycle correlated muscle degeneration and reformation. Gecarcinus lateralis (Decapoda, Crustacea)
b Interacting controls of regeneration and molting. Same species as a (with C. A. HOLLAND and J. McCARTHY)
c Formation and dissolution of exoskeleton. Same species as a
d Characterization and study of function of satellite DNAs. Pagurus pollicaris, Cardisoma guanhumi, Gecarcinus lateralis (Decapoda, Crustacea) (with C. A. CHAMBERS, N. T. CHRISTIE and C. A. HOLLAND)
e Organization of the genome. Gecarcinus lateralis, Geryon quinquedens (Decapoda, Crustacea) (with C. A. HOLLAND and N. T. CHRISTIE)
SKINNER, J. D.; Ph.D., Prof. – Mammal Res. Inst., Univ. of Pretoria, PRETORIA 0001, S. Africa
a Growth and development of the foetus. Giraffa camelopardalis (Artiodactyla)

b Development of skin and hair patterns and pigmentation in the foetus and its physiological significance. Antidorcas marsupialis, Giraffa camelopardalis(Artiodactyla) , Equus burchelli (Perissodactyla)

SKOOG, F.; Ph.D., Prof. – Inst. of Plant Developm. and Dept. of Bot., Univ. of Wisconsin, Birge Hall, MADISON, WI 53706, U.S.A.

a Chemical regulation of growth and organogenesis; tissue culture; plant hormones. (Angiospermae)

b Relationships between chemical structure and biological activity of cytokinins and cytokinin antagonists, (Angiospermae)

SLAVINSKI, Mrs. E. A.; B.Sc. – Dept. of Zool., Univ. of Brit. Columbia, VANCOUVER, B.C. V6T 1W5, Canada

a The importance of certain environmental factors in determining the differentiated state of normal adrenocortical cells in vitro. Rattus rattus (Rodentia)

SLAVKIN, H. C.; D.D.S. – Dept. of Biochem., Sch. of Dent., Univ. of S. Calif., Ahmanson Bldg., LOS ANGELES, CA 90007, U.S.A.

SMIT, A. L.; D.Sc., Prof. – Dept. of Zool., Univ. of Durban-Westville, Private Bag X54001, DURBAN, S. Africa

a Developmental morphology and evolution of the columella auris. (Aves)

b Early ontogeny of the visceral skeleton, particularly the composition of, and secondary contributions to, the hyoid arch. (Vertebrata)

SMITH, L. D.; Ph.D., Prof. – Dept. of Biol. Sci., Purdue Univ., WEST LAFAYETTE, IN 47907, U.S.A.

a Quantitative and qualitative studies on RNA synthesis at several stages of oogenesis. Xenopus laevis (Anura)

b Steroid receptors in relation to the induction of oocyte maturation. Xenopus laevis, Rana pipiens (Anura)

SMITH, P. D.; Ph.D., Assoc. Prof. – Dept. of Biol., Emory Univ., ATLANTA, GA 30322, U.S.A.

a Genetic control and enzymatic basis of DNA repair and recombination. Drosophila melanogaster (Diptera)

b DNA polymerase activity during developmental stages. Same species as a

SMUTS, Ms. M. B. S.; Ph.D. – Natl. Inst. of Dent. Res., Natl. Inst. of Health, Bldg. 30, Rm. 406, BETHESDA, MD 20014, U.S.A.

a Characterization of olfactory placode stage and region by biochemical and histochemical methods. Mus musculus (Rodentia)

b Histochemistry of the olfactory placode invagination and primary palate closure (light microscopy, transmission and scanning electron microscopy). Same species as a

SOBEL, Mrs. Y.; Ph.D. – Dept. of Embryol. and Teratol., Ch.Sheba Med. Ctr., Tel-Aviv, Univ., TEL-AVIV, Israel

a Membrane receptors of polar and peripheral trophoblast cells in blastocysts. Mus musculus (Rodentia)

SOFFER, Y.; M.D. – Dept. of Embryol. and Teratol., Ch.Sheba Med. Ctr., Tel-Aviv Univ., TEL-AVIV Israel

a Cellular immunity against seminal elements in infertility. Homo sapiens (Primates) (with L. A. NEBEL)

SOH, W. Y.; Ph.D., Assoc. Prof. – Dept. of Biol., Chonnam Natl. Univ., KWANGJU, Chonnam 500, South Korea

a Early ontogeny of vascular cambium. Campsis chinensis (Bignoniaceae)

SOHAL, G. S.; Ph.D. – Dept. of Anat., Med. Coll. of Georgia, AUGUSTA, GA 30902, U.S.A.

a Cell death and differentiation in the nervous system. Anas platyrhynchos, Gallus domesticus (Aves)

b Effects of periphery and central connections on the morphogenesis of nuclear centers in the brain. Same species as a

c Retinal degeneration following exposure to continuous light. Gallus domesticus (Aves)

SOLL, D. R.; Ph.D. – Dept. of Zool., Univ. of Iowa, IOWA-City, IA 52242, U.S.A.

a Metabolic effects and chemical nature of a regulatory molecule involved in the expression of the non-growing, stationary phase phenotype. Dictyostelium discoideum (Acrasiales)

b The control of transcription during development, employing in vitro transcription systems. Same species as a

c A factor which maintains the zoospore phenotype. Blastocladiella emersonii (Phycomycetes)

d Accumulation and erasure of "morphogenetic information". Same species as a

SOLURSH, M.; Ph.D., Assoc. Prof. – Dept. of Zool., Univ. of Iowa, IOWA-City, IA 52242, U.S.A.

a Differentiation of cultured limb bud and sternal chondrocytes: 1. coregulation of collagen and chondroitin sulfate synthesis; 2. action and characterization of a conditioned medium factor produced by cultured chondrocytes; 3. origins of cartilage and muscle precursor cells in the early limb bud. Gallus domesticus (Aves)

b Characterization, localization and determination of the functions of glycosaminoglycans in early embryos. Gallus domesticus (Aves), Rattus spec. (Rodentia)

SOMA, T.; B.Agr.Sc. – Natl. Inst. of Anim. Industry, CHIBA-shi, 280 Japan

a Transfer of fertilized eggs by non-surgical techniques. Bos taurus (Artiodactyla)

SOMES, R. G.; Ph.D., Prof. – Nutrit. Sci. Dept., Storrs Agric. Exper. Station, Univ. of Connecticut, STORRS, CT 06268, U.S.A.

a Developmental genetics. Gallus domesticus (Aves)

SONOBE, H.; D.Sc. – Dept. of Biol., Kônan Univ., Okamoto 8–9–1, Higashinaka-ku, KOBE, 658 Japan

a Purification of the diapause factor and its mode of action. Bombyx mori (Lepidoptera)

SORENSEN, R. A.; Ph.D. – Dept. of Biol. Sci., DePaul Univ., 1036 W. Belden Ave., CHICAGO, IL 60614, U.S.A.
a Oocyte growth, differentiation, and maturation; in vitro preimplantation development. Mus musculus (Rodentia)
b Protein synthesis in early embryo. Oryzias latipes (Teleostei)

SOUPART, P.; M.D., Ph.D., Assoc. Prof. – Dept. of Obstet. and Gynecol., Sch. of Med., Vanderbilt Univ., NASHVILLE, TN 37232, U.S.A.
a Cytogenetics of preimplantation stages obtained by culture methods. Homo sapiens (Primates)
b Freeze preservation of preimplantation stages. Homo sapiens and others (Mammalia)
c Cryobiology of semen. Same species as a
d Malignancy in germ cell – cancer cell hybrids. Mus musculus (Rodentia)
e Manufacture and culture of embryos by virus-assisted fusion of oocytes. Same species as d

SOUZA, Miss M. L.; – Dept. de Morfol., Fac. de Med. Vet. de Jaboticabal, 14870 JABOTICABAL, S.P., Brazil

SPAZIANI, E.; Ph.D., Prof. – Dept. of Zool., Univ. of Iowa, IOWA-City, IA 52242, U.S.A.
a Mechanism of ovarian and testicular hormone action on growth and development of reproductive tissues: uterus, seminal vesicles, prostate. Rattus norvegicus (Rodentia)
b Hormonal control of melanocyte differentiation and pigment synthesis. Same species as a
c Biosynthesis of growth and differentiating hormone (ecdysone) by the Y-organ; variations according to molt cycle. Cancer spec. (Decapoda, Crustacea)

SPERELAKIS, N.; Ph.D., Prof. – Dept. of Physiol., Sch. of Med., Univ. of Virginia, CHARLOTTESVILLE, VA 22903, U.S.A.
a Membrane properties of myocardial cells and skeletal muscle during embryonic development. Gallus domesticus (Aves), Rattus spec. (Rodentia)
b Electrophysiology of heart cells and whole hearts cultured in vitro. Same species as a
c Control of membrane properties, e.g., effect of mRNA. Same species as a
d Ultrastructure of cardiac and skeletal muscle at different stages of embryonic and postnatal development. Same species as a, and Cavia porcellus, Mus musculus (Rodentia)

SPERRY, R. W.; Ph.D. – Div. of Biol., Calif. Inst. of Technol., PASADENA, CA 91109, U.S.A.

SPIEGEL, Mrs. E. SCLUFER; Ph.D. – Dept. of Biol. Sci., Dartmouth Coll., HANOVER, NH 03755, U.S.A.
a Cell adhesion. Arbacia punctulata, Lytechinus pictus (Echinoidea) (with M. SPIEGEL)

SPIEGEL, M.; Ph.D., Prof. – Dept. of Biol. Sci., Dartmouth Coll., HANOVER, NH 03755, U.S.A.

SPIEGELMAN, M.; Ph.D. – Dept. of Anat., Med. Coll., Cornell Univ., 1300 York Ave., NEW YORK, NY 10021, U.S.A.
a Fine structure of normal and mutant embryos. Mus musculus (Rodentia)
b Cell surface structures in early embryos. Same species as a

SPIKER, S.; Ph.D. – Biol. Dept., American Univ. of Beirut, BEIRUT, Lebanon

SPIRA, A. W.; Ph.D. – Div. of Morphol. Sci., Health Sci. Centre, Univ. of Calgary, CALGARY, Alta. T2N 1N4, Canada

SPIROFF, B. E. N.; Ph.D. – Dept. of Biol., Loyola Univ., 6525 N. Sheridan Rd., CHICAGO, IL 60626, U.S.A.
a Effects of thalidomide on development. (Aves)
b Function and structure of the epiphysis. (Aves)
c Lymphocytes and epiphysis. (Aves)

SPITZER, N. C.; Ph.D. – Dept. of Biol., B-022, Univ. of Calif., San Diego, CA 92093, U.S.A.
a Cell death in development: the electrical excitability of Rohon-Beard neurons prior to their regression at stage 50; hormonal dependence of physiological and anatomical changes beginning at stage 50. Xenopus laevis (Anura)
b Sensitivity to neurotransmitters of primary sensory (Rohan-Beard), and motor neurons in vivo; and of neurons in vitro. Same species as a

SPRATT, N. T., Jr. †; Ph.D., Prof. – Dept. of Zool., Univ. of Minnesota, MINNEAPOLIS, MN 55455, U.S.A.

SPYKER, J. M.; Ph.D. – Dept. of Pharmacol., Univ. of Arkansas for Med. Sci., 4301 West Markham, LITTLE ROCK, AR 72201, U.S.A.
a Subtle and delayed effects of exposure to low-level chemicals during development. Callithrix jacchus (Primates), (Rodentia)
b Brain development and behavior under normal and abnormal conditions. Same species as a

SRIVASTAVA, A. K.; Ph.D. – Zool. Dept., Fac. of Sci., Univ. of Gorakhpur, GORAKHPUR 273001, India

SRIVASTAVA, G. K.; M.Sc. – Dept. of Biochem., Fac. of Sci., Allahabad Univ., ALLAHABAD 211002, India
a Some enzymes (lipase, proteolytic, trehalase, phosphatases, and aminotransferases) and metabolites (proteins, total free amino acids, lipids, nucleic acids and carbohydrates) in some tissues (intestine, malpighian tubules and wing buds) during larval-pupal development. Philosamia ricini, Antheraea mylitta (Lepidoptera)

SRIVASTAVA, H. C.; M.S., Prof. – Dept. of Anat., Med. Coll., BARODA 390001, India
a Palate closure and production of cleft palate by physostigmine. Rattus spec. (Rodentia)
b Development of the squamous part of the occipital bone. Homo sapiens (Primates)

STAAL, G. B.; Dr., Ir. – Zoecon Corp., 975 California Ave., PALO ALTO, CA 94304, U.S.A.
a Influence of insect hormones and synthetic analogs on metamorphosis, reproduction, and embryogenesis. (Orthoptera; Homoptera; Coleoptera; Lepidoptera; Diptera)

STAPLES, R. E.; Ph.D. – Natl. Inst. for Environm. Health Sci., N.I.H., P. O. Box 12233, RESEARCH TRIANGLE PARK, N.C. 27709, U.S.A.
a Zygote development (physiological, biochemical). Oryctolagus cuniculus (Lagomorpha), Rattus norvegicus, Mus musculus (Rodentia)
b Development of methods for screening of teratogenic factors. (DMSO, l-DOPA, microwave, CO, alcohol, pentobarbital, dichlorvos, tenuazonic acid, thalidomide). Oryctolagus cuniculus (Lagomorpha), Rattus norvegicus, Mus musculus, Mesocricetus auratus (Rodentia)
c Effects of combinations of factors (e.g. drug and stress) on development, from gamete to adult (morphology, biochemistry, behaviour). (Mammalia)
d Developing an environmental teratology information center (ETIC) – collecting extracts from the world's literature that present data relating to the teratogenic potential of environmental agents. (Aves; Mammalia)
STAY, Miss B.; Ph.D., Assoc. Prof. – Dept. of Zool., Univ. of Iowa, IOWA-City, IA 52242, U.S.A.
a Secretion of the brood sac and structure and physiology of the pleuropodia in relation to the nutrition of the viviparous embryo, compared to a non-viviparous species. Diploptera punctata, Pycnoscelus surinamensis (Blattodea)
b The composition and control of brood sac secretion in a viviparous form. Diploptera punctata (Blattodea)
STEFFEK, A. J.; D.D.S., Ph.D. – Dept. of Anat., Univ. of Chicago, 1025 East 57th St., CHICAGO, IL 60637, U.S.A. also: Am. Dent. Assoc., 211 E. Chicago Ave., CHICAGO, IL. 60611, U.S.A.
STEFFENSEN, D. M.; Ph.D., Prof. – Dept. of Genet. and Developm., Univ. of Illinois, 515 Morrill Hall, URBANA, IL 61801, U.S.A.
a Cytogenetics and RNA:DNA in situ hybridization. Drosophila spec. (Diptera), Homo sapiens (Primates)
b Nuclear differentiation. Same species as a
STEIN, Miss K. F.; Ph.D., Prof. (Emer.) – Dept. of Biol. Sci., Clapp Lab., Mount Holyoke Coll., SOUTH HADLEY, MA 01075, U.S.A.
STEINBERG, M. S.; Ph.D., Prof. – Dept. of Biol., Princeton Univ., PRINCETON, NJ 08540, U.S.A.
STEINHARDT, R. A.; Ph.D., Assoc. Prof. – Dept. of Zool., Univ. of Calif., BERKELEY, CA 94720, U.S.A.
STERN, H.; Ph.D., Prof. – Dept. of Biol., B-022, Univ. of Calif., San Diego, LA JOLLA, CA 92093, U.S.A.
a Meiotic development. Trillium erectum, Lilium longiflorum, Tulipa gesneriana, Vicia faba (Angiospermae)
STERN, R.; M.D. – Lab. of Biochem., Natl. Inst. of Dent. Res., Natl. Inst. of Health, BETHESDA, MD 20014, U.S.A.
a Synthesis of collagen in the developing embryo; isolation of mRNA for collagen; characterization of mRNA and control of translation of collagen by tRNA; isolation of prolyl and glycyl tRNA preceding and during collagen formation and from non-collagenous tissue. Gallus domesticus (Aves)
b Proline metabolism in the developing embryo; synthesis of hydroxyproline and control of biosynthetic pathway for proline; temporal relationship to collagen synthesis and deposition. Same species as a
STEVENS, L. C.; Ph.D. – The Jackson Lab., BAR HARBOR, ME 04609, U.S.A.
a Histogenesis of testicular teratoma (strain 129). Mus musculus (Rodentia)
b Developmental genetics. Same species as a
c The development of teratomas from parthenogenetically activated ovarian eggs. Same species as a
d Parthenogenesis. Same species as a
STEVENSON, J. ROSS; Ph.D., Prof. – Dept. of Biol. Sci., Kent State Univ., KENT, OH 44242, U.S.A.
a Study of control of epidermal chitin biosynthesis for the developing cuticle by chemical assays and radiotracers. Orconectes sanborni, O. obscurus (Decapoda, Crustacea)
STILES, Miss Sh. S.; M.Sc. – Biol. Lab., Natl. Mar. Fish. Serv., Middle Atlantic Coastal Fish. Ctr., 212 Rogers Ave., MILFORD, CT 06460, U.S.A.
a Cytogenetic studies of irradiation effects on parthenogenetic eggs and cleavage stages "fertilized" with genetically damaged sperm. Crassostrea virginica (Lamellibranchia)
b Use of doubling and mitotic inhibiting agents (e.g. colchicine) on early stages. (Mollusca; Teleostei)
STOCK, A. †; Ph.D., Prof. – Dept. of Zool., Sch. of Biol. Sci., Univ. of New England, ARMIDALE, N.S.W. 2351, Australia
STOCKDALE, F. E.; M.D., Ph.D., Assoc. Prof. – Dept. of Med., Sch. of Med., Stanford Univ., Rm S-025, STANFORD, CA 94305, U.S.A.
a Mechanisms of skeletal muscle differentiation, with special reference to DNA synthesis and cell division. Gallus domesticus (Aves)
b Mechanisms of hormone-dependent differentiation in mammary gland tissue in vitro, with special reference to DNA synthesis and cell division. Mus musculus (Rodentia)
STOCUM, D. L.; Ph.D., Assoc. Prof. – Dept. of Genet. and Developm., Univ. of Illinois, 515 Morrill Hall, URBANA, IL 61801, U.S.A.
a Morphogenesis during regeneration. Ambystoma maculatum, Triturus viridescens (Urodela)
b Control of ribonucleic acid and protein synthesis by tissue interactions during regeneration. Same species as a
c Cell recognition and adhesion during embryology. Gallus domesticus (Aves)

STONE, L. S.; Ph.D., D.Sc., Prof. (Emer.) – Dept. of Comp. Anat., Yale Univ., 333 Cedar St., NEW HAVEN, CT 06510, U.S.A.

STOUT, V. M.; Ph.D. – Dept. of Zool., Univ. of Canterbury, Private Bag, CHRISTCHURCH 1, New Zealand

a Descriptive embryology. Lepidurus apus (Notostraca, Crustacea), Daphnia magna (Cladocera, Crustacea)

STOWE, B. B.; Ph.D., Prof. – Dept. of Biol., 946A Kline Biol. Tower, Yale Univ., NEW HAVEN, CT 06520, U.S.A.

a Relationship between physiologically active lipids and membrane structure: modulation of growth, respiration and hormone synthesis by regulatory membranes. Pisum sativum (Papilionaceae), Ficus carica (Artocarpaceae)

b Synthetic pathways of indole hormones and goitrogens: microanalysis, metabolism, and regulation. Isatis tinctoria (Cruciferae), Polygonum tinctorium (Polygonaceae)

STRATFORD (MILLER), Mrs. B. F.; Ph.D. – School of Anat., Univ. of Melbourne, PARKVILLE, Vict. 3052, Australia

a Developmental anatomy and pathology of the placenta. Homo sapiens (Primates)

STRAZNICKY, K. Ch.; Ph.D. – Dept. of Human Morphol., Sch. of Med., The Flinders Univ., BEDFORD PARK, S.A. 5042, Australia

a Establishment and re-establishment of retino-tectal and retino-diencephalic connections after recombination of the eye or of the optic tectum (autoradiography; Fink-Heimert method for detecting degenerated axons in the CNS; electrophysiology). Xenopus laevis (Anura)

b Development and growth of the eye and diencephalic & mesencephalic visual centres (autoradiography). Same species as a

SUBTELNY, S.; Ph.D., Prof. – Dept. of Biol., Rice Univ., HOUSTON, TX 77001, U.S.A.

SUBURO, Miss A. M.; M.D. – Inst. de Biol. Celular, Fac. de Med., Paraguay 2155, 1121 BUENOS AIRES, Argentina

a Electron microscopy of neural differentiation in vivo and in vitro. Gallus domesticus (Aves)

b Neural cell separation by velocity sedimentation. Same species as a

SUCHESTON, Mrs. M. E.; Ph.D., Assoc. Prof. – Dept. of Anat., Ohio State Univ., 333 West 10th Ave., COLUMBUS, OH 43210, U.S.A.

a Morphology and histology of the male and female adrenal gland from implantation to sexual maturity; histochemistry and electron microscopy of the cortical transient zone. Meriones unguiculatus (Rodentia)

SUDARWATI, Miss S.; Dr. – Dept. of Biol., Sect. Zool., Bandung Inst. of Technol., Jalan Ganesa 10, BANDUNG, Indonesia

SUGA, T.; DVS – Natl. Inst. of Anim. Industry, CHIBA, 280 Japan

a Fructose formation in embryo, chorion, and placenta. Bos taurus, Capra hircus (Artiodactyla) (with Y. IZAIKE)

b Uterine environment for development of fertilized ova. Same species as a (with Y. IZAIKE)

c Development and aging of placenta (DNA synthesis, mitosis, histochemistry). Rattus norvegicus (Rodentia), Oryctolagus cuniculus (Lagomorpha), Bos taurus, Capra hircus, Sus scrofa domesticus (Artiodactyla) (with Y. IZAIKE)

d Implantation and lost implantation (uterine pregnancy preparation). Same species as c (with Y. IZAIKE)

SUGIE, T.; Ph.D. – Natl. Inst. of Anim. Industry, CHIBA-shi, 280 Japan

a Transfer of fertilized eggs by non-surgical techniques. Bos taurus, Capra hircus (Artiodactyla)

SUGINO, H.; D.Sc., Prof. – Osaka Christian Coll., Maruyama-dôri, Abeno-ku, OSAKA, 545 Japan

a Abnormality in chromosome number. Dugesia japonica (Turbellaria)

b Regeneration. Phagocata suginoi (Turbellaria)

SUGIYAMA, M.; D.Sc., Prof. – Sugiyama-Gakuen Univ., Tashirocho-Kameiri, Chikusa-ku, NAGOYA, 464 Japan

a Physiological studies on fertilization and artificial parthenogenesis. Hemicentrotus pulcherrimus, Pseudocentrotus depressus (Echinoidea)

SULLIVAN, D. T.; Ph.D. – Dept. of Biol., Syracuse Univ., 130 College Place, SYRACUSE, NY 13210, U.S.A.

a Biochemical and genetic control of enzyme appearance during differentiation. Drosophila melanogaster (Diptera)

b Biochemistry of pigment synthesis. Same species as a

SULLIVAN, G. F.; Ph.D. – Dept. of Histol. and Embryol., Univ. of Sydney, SIDNEY, N.S.W. 2006, Australia

No work on developmental biology in progress

SULLIVAN, N. Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTESVILLE, VA 22901, U.S.A.

a Ultrastructure of active silk fibroin genes and visualization of nascent silk fibroin molecules in the posterior silk gland. Bombyx mori (Lepidoptera) (with O. L. MILLER)

SUMMERS, R. G.; Ph.D. – Dept. of Zool., Univ. of Maine, Murray Hall, ORONO, Me. 04473, U.S.A.

a Ultrastructure of fertilization and early development. (Invertebrata)

SURJONO, Mrs. T.; M.Sc. – Dept. of Biol., Sect. Zool., Bandung Inst. of Technol., Jalan Ganesa 10, BANDUNG, Indonesia

a Qualitative and quantitative analysis of mesoderm induced in ectoderm of various blastula and gastrula stages by early blastula endoderm. Ambystoma mexicanum (Urodela)

b Influence of cyclophosphamide (endoxan-asta) on the embryo (histology). Gallus domesticus (Aves)

SUSSEX, I. M.; Ph.D., Prof. – Dept. of Biol., Yale Univ., NEW HAVEN, CT 06520, U.S.A.
a Genetically controlled sequence of biochemical events occurring as an embryo enters dormancy, especially the synthesis of abscisic acid, its role in terminating RNA synthesis, and the mechanism by which this is accomplished. Phaseolus vulgaris (Papilionaceae)

SUSSMAN, M.; Prof. – Dept. of Life Sci., Univ. of Pittsburgh, PITTSBURGH, PA 15260, U.S.A.
a Genetic and developmental studies. Dictyostelium spec. (Acrasiales)

SUSSMAN, Mrs. R. B. ROTMAN; Ph.D. – Dept. of Molec. Biol., Hebrew Univ. – Hadassah Med. Sch., JERUSALEM, Israel

SUTASURJA, Miss L. A.; Dr. – Dept. of Biol., Sect. Zool., Bandung Inst. of Technol., Jalan Ganesa 10, BANDUNG, Indonesia
a Effect of Endoxan-Asta (cyclophosphamide) on ossification of long bones. Gallus domesticus (Aves)
b Normal developmental stages (eggs collected and incubated at 33°C). Chelonia mydas (Chelonia)
c Comparative study on the origin of primordial germ cells and mesoderm formation, and phylogenetic implications. (lower Vertebrata incl. Reptilia) (with P. D. NIEUWKOOP, Utrecht)

SUZUKI, Y.; Ph.D. – Dept. of Embryol., Carnegie Inst. of Wash., 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.

SWARTZ, W. J.; Ph.D. – Dept. of Anat., Med. Ctr., Louisiana State Univ., 1542 Tulane Ave., NEW ORLEANS, LA 70112, U.S.A.
a Origin of primordial germ cells and factors involved in their migration. Gallus domesticus (Aves), Mus musculus (Rodentia)
b Oocyte growth and maturation. Mus musculus (Rodentia)

SWATLAND, H. J.; Ph.D. – Dept. of Anim. and Poultry Sci., Univ. of Guelph, GUELPH, Ont. N1G 2W1, Canada
a Quantitative histochemistry of prenatal and postnatal development of striated muscle. Sus scrofa domesticus (Artiodactyla)

SWIFT, H. H.; Ph.D., Prof. – Depts. of Biol. and Pathol., Univ. of Chicago, 1101 E. 57th St., CHICAGO, IL 60637, U.S.A.

SZULMAN, A. E.; Dr. – Dept. of Pathol., Magee-Women's Hosp., Forbes Ave. and Halket St., PITTSBURGH, PA 15213, U.S.A.
a The effect of ABO antibodies on lung organogenesis in vitro (disaggregation-reaggregation in the presence of antibodies). Homo sapiens (Primates)
b The effect of antibodies on organogenesis in vivo; intravenous injection of embryos with antibody directed to a cell surface antigen. Gallus domesticus (Aves)

TABBARA FAWAZ, Mrs. R. – Dépt. d'Histoenzymol., Fac. Française de Méd. et de Pharmacie, B.P. 5076, BEIRUT, Lebanon
a Embryonic and foetal intestine; malabsorption of disaccharides; enzyme aspects. Homo sapiens (Primates)

TACHIBANA, Miss T.; Dr. – Dept. of Biol., Sch. of Dent. Med., Tsurumi Univ., 2–1–3 Tsurumi, YOKOHAMA, 230 Japan
a Adepidermal granules. Rana japonica, R. catesbeiana, Xenopus laevis (Anura), Salmo spec. (Teleostei)

TAGUCHI, S.; Ph.D., Prof. – Biol. Lab., Sch. of Med., Keio Univ., 655 Hiyoshi, Kôhoku-ku, YOKOHAMA, 223 Japan

TAHARA, Y.; D.Sc., Prof. – Dept. of Biol., Osaka Kyôiku Univ., Tennoji-ku, OSAKA, 543 Japan
a Dynamic aspects of interaction between embryo and Myxovirus (Aves)

TAKABAYASHI, T. – Dept. of Obstet. and Gynecol., Tohoku Univ., Sch. of Med., Seiryo-cho 1–1, Miyagi, SENDAI, Japan
temporarily: Dept. of Embryol., Inst. of Developm. Res., Aichi Pref. Colony, Kamiya-cho, KASUGAI, Aichi 480–03, Japan
a Effects of ultrasound on developing embryos. Mus musculus, Rattus norvegicus (Rodentia)

TAKAGI, N.; D.Sc. – Chromos. Res. Unit, Hokkaido Univ., N.10, W.8, SAPPORO, 060 Japan
a Chromosome studies in pre- and post-implantation embryos. Mus musculus, Cricetus auratus (Rodentia)
b X chromosome differentiation. Mus musculus, Rattus norvegicus (Rodentia)

TAKAHASHI, G.; M.D. – Chest Dis. Res. Inst., Dept. of Pathol., Sch. of Med., Kyoto Univ., KYOTO, 606 Japan
a Metabolism of carcinogens in the fetus. Mus musculus, Rattus spec. (Rodentia)
b Transplacental carcinogenesis by aromatic hydrocarbons. Same species as a

TAKAHASHI, H.; D.Sc., Assoc. Prof. – Lab. of Fresh-water Fish Cult., Dept. of Biol., Hokkaido Univ., 3–1–1 Minatocho, HAKODATE, 040 Japan
a Experimental studies of gonadogenesis and sex differentiation. Poecilia spec., Tilapia spec., Oncorhynchus spec. (Teleostei)
b Extragonadal influences of sex steroids in juveniles in relation to subsequent gonad maturation. Oryzias spec., Carassius spec. (Teleostei)

TAKAHASHI, Hitoshi; M.D. – Dept. of Anat., Div. I, Hirosaki Univ., Zaifucho 5, HIROSAKI-City, Aomori-ken, 036 Japan
a Development and differentiation of neural crest cells. Gallus gallus (Aves), Mus musculus (Rodentia)

TAKAHASHI, K.; M.Sc. – Embryol. Sect., Dept. of Biol., Tokyo Metropolitan Univ., 2–1–1, Fukazawa, Setagaya-ku, TOKYO, 158 Japan
a Characterization of poly(A)-containing mRNA in the embryo. Anthocidaris crassispina, Pseudocentrotus depressus, Hemicentrotus pulcherrimus (Echinoidea)
b Protein synthesis directed by poly(A)-containing mRNA. Same species as a

TAKANO, K.; M.D., D.M.S. – Dept. of Drug Safety Evaluat., Takeda Chemical Ind. Ltd., 6–3–6 Himuro-cho, Takatsuki, OSAKA, 569 Japan
a Induction of cleft palate and/or patent foramen incisivum by a glucocorticoid. Mus musculus (Rodentia)
TAKASAKI, Mrs. H. – Dept. of Biol., Osaka Kyôiku Univ., Tennoji-ku, OSAKA, 543 Japan
TAKATA, K.; D.Sc. – Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa, NAGOYA 464, Japan
a Cytology and cytochemistry of embryonic induction in vitro. Cynops pyrrhogaster (Urodela)
TAKAYA, H.; D.Sc., Prof. – Dept. of Biol., Kônan Univ., Okamoto 8–9–1, Higashinaka-ku, KOBE, 658 Japan
a Analysis of the notochordal vacuolation. Rana japonica (Anura), Cynops pyrrhogaster (Urodela)
b Hereditary malformations, especially barred eye. Drosophila melanogaster (Diptera)
TAKEDA, H.; M.D., Dr.Med.Sci., Prof. – Dept. of Anat., Div. I, Kobe Univ. School of Med., Kusunoki-cho, Ikuta, KOBE, 650 Japan
TAKEHIRA, Y.; M.D. – Dept. of Developm. Pathol., Res. Inst. of Environm. Med., Nagoya Univ., Furo-cho, Chikusa-ku, NAGOYA, 464 Japan
a Effects of low-dose x-irradiation upon the developing brain. Mus musculus (Rodentia)
TAKEICHI, M.; Ph.D. – Lab. of Cell Sci., Inst. of Biophys. and Molec. Biol., Univ. of Kyoto, Kitashirakawa, Sakyo-ku, KYOTO, 606 Japan
a Mechanisms of cell adhesion. Gallus gallus (Aves)
b Stability in the differentiation of cells from eye tissues in clonal cell culture. Gallus gallus (Aves), Mus bactrianus (Rodentia) (with T. S. OKADA and G. EGUCHI)
c Factors affecting cell aggregation and cell contact. Same species as a (with T. S. OKADA and K. YASUDA)
TAKEUCHI, I.; M.Sc. – Dept. of Embryol., Inst. of Developm. Res., Aichi Pref. Colony, Kamiya-cho, KASUGAI, Aichi 480–03, Japan
a Teratogenesis of the nervous system. Rattus norvegicus (Rodentia)
b Electron microscopy of the nervous system during embryogenesis. Same species as a
TAKEUCHI, S.; D.Sc. – Zool. Inst., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan
a Mechanisms of epithelial migration during wound healing in the embryo. Gallus domesticus (Aves)
TAKITA, T.; Dr.Agr. – Dept. of Mar. Zool., Fac. of Fish., Nagasaki Univ., 1–14 Bunkyo-machi, NAGASAKI, 852 Japan
a Spawning behavior, embryonic development, and young. Calliurichthys spec., Callionymus spec. (Teleostei)
b Distribution of eggs and larvae; description of embryonic development and larvae. Cynoglossus spec. (Teleostei)
TAMANOI, I.; Ph.D., Prof. – Biol. Lab., Chiba Univ., Yayoi-cho 1–33, CHIBA, 280 Japan
a Radiation effects on haematopoietic organs (immunochemistry). Mus musculus (Rodentia)
TAMAOKI, T.; Ph.D., Assoc. Prof. – Cancer Res. Unit, Univ. of Alberta, EDMONTON, Alta. T6G 2H7, Canada
a Regulation of the synthesis of alpha-fetoprotein and albumin in developing liver and teratomas. Mus musculus (Rodentia)
TANAKA, K.; M.A. – Inst. of Zool., Tokyo Kyoiku Univ., Otsuka 3–29–1, Bunkyo-ku, TOKYO, Japan
a Recognition of specificity in compound forms. Botryllus primigenus, Botrylloides violaceum (Ascidiacea) (with H. WATANABE, Shimoda)
TANAKA, O.; M.D. – Human Embryo Ctr. for Teratol. Studies, Fac. of Med., Kyoto Univ., Konoe-cho, Yoshida, Sakyo-ku, KYOTO, 606 Japan
a Epidemiology of skeletal anomalies in embryos and foetuses. Homo sapiens (Primates)
b Histochemistry of embryo and fetus. Same species as a
c Autopsy of external malformations in embryos and foetuses. Same species as a
d Epidemiology of congenital malformations in embryos and foetuses. Same species as a
TANDAN, B. K.; Ph.D. – Dept. of Zool., Univ. of Lucknow, LUCKNOW, India
TANIMURA, T.; M.D., Assoc. Prof. – Dept. of Anat., Kyoto Univ., Konoe-cho, Yoshida, Sakyo-ku, KYOTO, 606 Japan
a Epidemiology and pathogenesis of malformations in embryos. Homo sapiens (Primates)
b Teratogenicity test of chemicals. Mus musculus, Rattus norvegicus (Rodentia), Macaca mulatta, M. fascicularis (Primates)
TARTAR, V.; Ph.D., Prof. – Dept. of Zool., Univ. of Washington Field Lab., R. 1 Box 250, NAHCOTTA, WA 98637, U.S.A.
a Production of decorticated cells by micrurgical or chemical methods. Stentor coeruleus (Ciliata)
b Size inheritance and regulation of number of body kineties. Same species as a
c Analysis of a strain having rod, not nodulated macronucleus. Same species as a
TASCA, R. M.; Assoc. Prof. – Dept. of Biol. Sci., Univ. of Delaware, NEWARK, DE 19711, U.S.A
a Development of transport mechanisms in the blastocyst. Mus musculus (Rodentia)
b Biochemical mechanisms in early cleavage. Same species as a
TASSAVA, R. A.; Ph.D. – Dept. of Zool., Coll. of Biol. Sci., Ohio State Univ., 1735 Neil Ave., COLUMBUS, OH 43210, U.S.A.
TAUTVYDAS, K. J.; Ph.D. Dept. of Biol., Marquette Univ., 530 N. 15th St., MILWAUKEE, WI 53233, U.S.A.
a Molecular basis for the attainment of asexual reproductive capacity. Eudorina californica, E. illinoisensis, E. elegans (Volvocales, Chlorophyceae)
b Mechanism of action of auxins in the regulation of development. (Spermatophyta)

TAY, D. K. C.; B.Sc. – Dept. of Human Morphol., Sch. of Med., The Flinders Univ., BEDFORD PARK, SA 5042, Australia
a Formation of ipsilateral and contralateral retino-diencephalic projection of compound eyes (Fink-Heimert method for detecting degenerated axons in the CNS; autoradiography; transplantation of eye cup fragments). Xenopus laevis (Anura)
TAYLOR, G. T.; Ph.D. – Dept. of Physiol., Southern Illinois Univ., Life Sciences II, CARBONDALE, IL 62901, U.S.A.
a Polar lobe formation and early development: cytochemical and fine structural analysis of cytodifferentiation. Ilyanassa obsoleta (Gastropoda)
b Early development through gastrulation: fine structural analysis of cytodifferentiation. Crassostrea virginica (Lamellibranchia),
c Ultrastructure of sex-reversal. Crepidula spec. (Gastropoda)
TAYLOR, P. J.; D.Obst. – Div. of Obstet. and Gynecol., Health Sci. Centre, Univ. of Calgary, CALGARY, Alta. T2N 1N4, Canada
a The effect of N-156-BIS on the secretion of pulmonary surfactant in the fetus. Ovis aries (Artiodactyla)
TCHEN, T. T.; Ph.D., Prof. – Chem. Dept., Wayne State Univ., 435 Chemistry Bldg., DETROIT, MI 48202, U.S.A.
a Role(s) of c-AMP, prostaglandins, neurotransmitters and morphogenetic movement on neural differentiation. Xenopus laevis (Anura), Ambystoma mexicanum, Pleurodeles waltlii (Urodela)
b Role of c-AMP in differentiation of stem cells into melanocytes and in cytodifferentiation of melanocytes. Carassius auratus (Teleostei)
TEITELMAN de PINCZUK, Mrs. G. N.; Ph.D. – Inst. de Biol. Celular, Fac. de Med., Paraguay 2155, 1121 BUENOS AIRES, Argentina
a Biochemical differentiation of nervous tissue in vitro and in vivo, especially synthesis of neurotransmitters. Gallus domesticus (Aves)
TEKELIOĞLU-UYSAL, Mrs. M.; M.D. – Inst. of Histol. and Embryol., Med. Fac., Hacettepe Univ., ANKARA, Turkey
TEMIN, H. M.; Ph.D., Prof. – McArdle Lab. for Canc. Res., Univ. of Wisconsin, 450 N. Randall Ave., MADISON, WI 53706, U.S.A.
a The role of RNA-directed DNA polymerase activity in embryonic development; the mechanisms of replication of avian ribodeoxyviruses; the origin of viruses and the formation of genes for neoplastic transformation. Gallus domesticus and other spp. (Aves)
TEN CATE, A. R.; Ph.D., Prof. – Div. of Biol. Sci., Fac. of Dent., Univ. of Toronto, 123 Edward St., TORONTO, Ont. M5G 1G6, Canada
TEPFER, S. S.; Ph.D., Prof. – Dept. of Biol., Univ. of Oregon, EUGENE, OR 97403, U.S.A.
a Morphogenesis of floral organs. Aquilegia formosa (Ranunculaceae)
TERADA, M.; M.D. – Dept. of Human Genet. and Developm., Coll. of Phys. and Surg., Columbia Univ., 630 W. 168th St., NEW YORK, NY 10032, U.S.A.
a Differentiation of normal and transformed erythroid cells; regulation of transcription of globin genes. Mus musculus (Rodentia), Homo sapiens (Primates)
TERASHIMA, Y.; M.D. – Dept. of Orthop. Surg., Nagoya Univ., Tsuruma-cho, Showa-ku, NAGOYA, 466 Japan
a Biochemistry of bone and cartilage growth and differentiation in vivo and in vitro. Rattus spec. (Rodentia)
b Teratogenesis of skeletal system. Same species as a
TERAYAMA, H.; Ph.D., Prof. – Zool. Inst., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan
a Mechanism of homeostatic growth regulation in liver regeneration. Rattus norvegicus (Rodentia)
b Biochemical changes in cell surface structure of tumor cells in comparison with corresponding normal cells. Same species as a
c Activation of DNA-synthetic key enzymes in unfertilized eggs upon homogenization and fertilization. Pseudocentrotus depressus and other spp. (Echinoidea)
d Cell surface glycoproteins of uterus and blastocyst. Same species as a
e Cell surface glycoproteins in developing embryos. Same species as c
THOMAS, V.; M.Sc. – Dept. of Zool., Fac. of Sci., M.S. Univ. of Baroda, BARODA 390002, India
a Transplantation experiments on regenerating systems. (Lacertilia)
THOMMES, R. C.; Ph.D., Prof. – Dept. of Biol. Sci., De Paul Univ., 1036 W. Belden Ave., CHICAGO, IL 60614, U.S.A.
a Hormonal control of yolk sac membrane metabolism. Gallus domesticus (Aves)
b Endocrine function of embryonic pancreas. Same species as a
c Thyroid function in the embryo. Same species as a
THOMPSON, R. P.; Ph.D., Assoc. Prof. – Dept. of Biol. Sci., State Univ. Coll., BROCKPORT, NY 14420, U.S.A.
a Mesodermal induction. (Amphibia)
b Protein synthesis in the early embryo. (Amphibia)
c Somitogenesis. Gallus domesticus (Aves)
THOMPSON, R. S.; Ph.D. – Div. of Exp. Pathol., Dept. of Obstet. and Gynecol., Univ. of S. California, Livingston Res. Center, 1321 Mission Rd., LOS ANGELES, CA 90033, U.S.A.
a Fertilization in vitro and in vivo. (Mammalia)
b Short- and long-term preservation of living embryos (two-cell to blastocyst stage) and ova through cooling and/or freezing (utilizing cryoprotective agents). Mus musculus (Rodentia), Ovis aries, Bos taurus (Artiodactyla)
c Preliminary studies on embryo transfer (8-cell to blastocyst stage) to improve superovulatory response and recipient synchronization. Same species as a

THOMSON, Mrs. D. V.; B.Sc. – Dept. of Reprod. Physiol., Anim. Res. Inst., OTTAWA, Ont. K1A 0C6, Canada
a Endocrinology of the developing embryo. Gallus gallus (Aves)
THURMOND, W.; Ph.D., Prof. – Bid. Sci. Dept., Calif. Polytechnic State Univ., SAN LUIS OBISPO, CA 93401, U.S.A.
a Development of hypothalamic and pituitary control of the adrenal cortex; (extirpation, transplantation and histochemistry). Ambystoma tigrinum (Urodela), Xenopus laevis, Hyla regilla, Bufo boreas (Anura)
b Development of adenohypophyseal and hypothalamic melanophore-expanding activity
TIBA, T.; D.V.M., Assoc. Prof. – Monkey Care Lab., Prim Res. Inst., Kyoto Univ., INUYAMA, Aichi, 484 Japan
TODER, V.; M.D. – Dept. of Embryol. and Teratol., Ch. Sheba Med. Ctr., Tel-Aviv Univ., TEL-AVIV, Israel
a In vitro studies on cytotoxicity of sensitized lymphocytes in delayed hypersensitivity to spermatozoal antigens. Cavia porcellus (Rodentia), Homo sapiens (Primates) (with L. A. NEBEL)
b Antigenicity of normal and pathological trophoblast. (Rodentia), Homo sapiens (Primates) (with J. MENCZER and L. A. NEBEL)
TOERIEN, M. J.; Ph.D., D.Sc., Prof. – Exp. Embryol. Res. Unit of the M.R.C., Dept. of Anat., Univ. of the Orange Free State, P. O. Box 339, BLOEMFONTEIN 9300, S. Africa
a Microsurgical induction of malformations of the central nervous system, sense organs, and skull. Gallus domesticus (Aves)
TOIT, C. A. du; Ph.D., Prof. – Zool. Inst., Fac. of Sci., Univ. of Stellenbosch, STELLENBOSCH, S. Africa
TOKUYASU, K.; Ph.D. – Dept. of Biol., B-022, Univ. of Calif. San Diego, LA JOLLA, CA 92093, U.S.A.
a Spermatogenesis in relation to genetics. Drosophila melanogaster (Diptera)
TOMITA, H.; D.Sc. – Biol. Inst., Fac. of Sci., Nagoya Univ., Chikusa, NAGOYA 464, Japan
a Developmental genetics of body colors and deformities. Oryzias latipes (Teleostei)
TOMPKINS, R.; Ph.D. – Dept. of Biol., Tulane Univ., NEW ORLEANS, LA 70118, U.S.A.
a Characterization of the mutant genes spastic, quiver, and anemic by behavioral, biochemical, histological and transplantation studies. Ambystoma mexicanum (Urodela)
b Localisation of morphogenetic substances in the egg and initiation of development, with emphasis on cortical and subcortical events. Xenopus laevis (Anura)
TOTO, P. D.; D.D.S., Prof. – Dept. of Oral Pathol., Sch. of Dent., Loyola Univ., 2160 South First Ave., MAYWOOD, IL 60153, U.S.A.
a Age changes in dental tissues, oral mucosa and salivary glands. Rattus norvegicus (Rodentia), Homo sapiens (Primates)
b Effects of in vivo local administration of tissue culture medium on sutural bone growth (quantitative autoradiography). Rattus norvegicus (Rodentia)
c Effect of mechanical tension on sutural growth (quantitative autoradiography). Macaca mulatta (Primates)
TOURIAN, A. Y.; M.D., Assoc. Prof. – Dept. of Med., Div. of Neurol., Duke Univ. Med. Center, DURHAM, NC 27710, U.S.A.
TOWERS, B.; M.B., Ch.B. – Dept. of Paediat. & Anat., Center for Health Sci., Univ. of Calif., LOS ANGELES, CA 90024, U.S.A.
a Development of fetal lung and changes at birth (experimental). Rattus rattus (Rodentia), Ovis aries (Artiodactyla)
b Structure and functions of fetal larynx (experimental). Same species as a
TRASLER, Mrs. D. G.; Ph.D. – Dept. of Biol., McGill Univ., P. O. Box 6070 – Stat.A, MONTREAL, Que. H3C 3G1, Canada
a Identification of particular elements of adult and newborn face shape which could be used to predict cleft lip predisposition. Mus musculus (Rodentia)
TRAURIG, H. H.; Dr., Prof. – Dept. of Anat., Univ. of Kentucky, Rose St., LEXINGTON, KY 40506, U.S.A.
No work on developmental biology in progress
TRELSTAD, R. L.; M.D. – Dept. of Pathol., Massachusetts Gen. Hosp., BOSTON, MA 02114, U.S.A.
a Development of the fibrous architecture of the orthogonal collagen lamellae in the corneal stroma. Gallus domesticus (Aves)
b Characterization of the molecular species of collagen in developing connective tissues. Same species as a
c Synthesis and degradation of hyaluronic acid in the developing cornea. Same species as a
d Collagen fibrillogenesis in vivo and in vitro using collagen types I, II, III and IV. Same species as a
TRINKAUS, J. P.; Ph.D., Prof. – Dept. of Biol., Kline Biol. Tower, Yale Univ., NEW HAVEN, CT 06520, U.S.A.
a Mechanism of normal morphogenetic cell movements (especially epiboly), of invasive movements of cancer cells, and of contact inhibition of cell movement. Gallus domesticus (Aves), Fundulus heteroclitus (Teleostei), normal and transformed cell lines (Mammalia)
b The nature of cell adhesions and the mechanism of tissue cell locomotion, both in vitro and in vivo. Same species as a
c The role of microtubules and contractile microfilaments in cell form changes and in locomotion. Same species as a
d Structure and chemistry of the cell surface, as related to adhesiveness and locomotion. Same species as a

TRIONE, E. J.; Dr., Prof. – Dept. of Bot. and Plant Pathol., Oregon State Univ., CORVALLIS, OR 97331, U.S.A.
a Developmental physiology of flowering. Triticum vulgare (Gramineae)
b Developmental physiology of wheat parasites. Tilletia spp. (Basidiomycetes)
TRIPATHI, C. P. M.; M.Sc. – Dept. of Zool., Univ. of Gorakhpur, GORAKHPUR 273001, India
TSAFRIRI, A.; Ph.D. – Dept. of Horm. Res., Weizmann Inst. of Sci., P.O.B. 26, REHOVOT, Israel
a Control of oocyte maturation. Mus musculus, Rattus spec. (Rodentia)
TSUKAHARA, J.; D.Sc., Assoc. Prof. – Dept. of Biol., Coll. of Lib. Arts, Saitama Univ., URAWA, Saitama, 338 Japan
a Electron microscopy and biochemistry of oogenesis. Hemicentrotus pulcherrimus, Mespilia globulus (Echinoidea)
TSUNODA, Y.; Ph.D. – Natl. Inst. of Anim. Industry, CHIBA, 280 Japan
a Antigenicity of eggs and effect on reproduction. Mus musculus, Rattus rattus (Rodentia), Oryctolagus cuniculus (Lagomorpha)
b Freezing of eggs. Oryctolagus cuniculus (Lagomorpha), Capra hircus (Artiodactyla)
TSUSUE, Mrs. Y. M.; Ph.D. – Embryol. Sect., Biol. Dept., Tokyo Metropolitan Univ., 2–1–1, Fukazawa, Setagaya-ku, TOKYO, 158 Japan
a Mechanism of fruit-body formation. Coprinus macrorhizus (Basidiomycetes)
TUCKER, G. S.; Ph.D. – Dept. of Ophthalmol., Univ. of Miami, Bascom Palmer Eye Inst., 1638 N.W. 10th Ave., MIAMI, FL 33152, U.S.A.
a Oogenesis and vitellogenesis: 1. contribution of yolk by somatic cells; 2. oocyte maturation; 3. staging (light and electron microscopy, histochemistry). Campanularia flexuosa (Hydrozoa)
b Neuromuscular junction formation in embryonic forelimb (light and electron microscopy). Didelphys virginiana (Marsupialia)
c Quantitative and qualitative electron microscopy of synapse formation in the inner plexiform layer of eye rudiments cultured in GABA, picrotoxin and other putative retinal transmitters and inhibitors. Xenopus laevis (Anura)
d Quantitative and qualitative electron microscopy of retinal differentiation in light-reared and sutured eye. Felis domestica (Carnivora)
TUNG, T. C.; Dr., Prof. – Inst. of Zool., Acad. Sinica, PEKING, Haitien, People's Rep. of China
TUPPER, J. T.; Ph.D., Assoc. Prof. – Dept. of Biol., Syracuse Univ., 130 College Place, SYRACUSE, NY 13210, U.S.A.
a The role of intercellular communication and membrane permeability in early embryonic differentiation
TURNER, R. S., Jr.; Ph.D. – Biol. Dept., Wesleyan Univ., MIDDLETOWN, CT 06457, U.S.A.
a Cell surface differentiation associated with primary mesenchyme formation (radioactive labeling; lectin agglutinations, fluorography; cell reaggregation). Strongylocentrotus purpuratus, Arbacia punctulata (Echinoidea)
b Changes in calcium associated processes during primary mesenchyme formation (ionophores; electron microscopy; cell reaggregation). Same species as a
TWEEDELL, K. S.; Ph.D., Prof. – Dept. of Biol., Univ. of Notre Dame, NOTRE DAME, IN 46556, U.S.A.
a Oocyte development and incorporation of radioactive precursors. Pectinaria gouldii (Polychaeta)
b Cell source and movement during hydranth regeneration. Tubularia crocea (Hydrozoa)
c Renal tumor induction by subcellular fractions in embryonic and larval stages. Rana pipiens (Anura)
d Tissue and organ culture of embryonic and neoplastic cells. Same species as c
TWEEDLE, Ch. D.; Ph.D. – Depts. of Biochem. and Zool., Michigan State Univ., EAST LANSING, MI 48824, U.S.A.
a Formation of neuromuscular junctions in developing muscle. Ambystoma maculatum (Urodela)
b Nerve effects on myogenesis and limb regeneration. Same species as a
c Collateral nerve sprouting in injured muscle. (Mammalia)
d Development of the fasciculus cuneate – fasciculus gracilis complex. (Mammalia)
TYNDALE-BISCOE, C. H.; Ph.D. – Div. of Wildlife Res., C.S.I.R.O., P. O. Box 84, LYNEHAM, A.C.T. 2606, Australia
a Early development including fine structure. Antechinus stuarti (Marsupialia)
b Fine structure of the blastocyst. Macropus eugenii (Marsupialia), Oryctolagus cuniculus (Lagomorpha)
c Factors involved in resumption of development by blastocysts in diapause. Macropus eugenii (Marsupialia)
UCHIDA, T. A.; Dr.Agr., Prof. – Zool. Lab., Fac. of Agric., Kyûshû Univ., FUKUOKA, Japan
a Reproduction and embryology. Pipistrellus abramus, Miniopterus schreibersi (Chiroptera)
b Electron microscopic analysis of fertilization. Same species as a
UEMURA, I. – Dept. of Bacteriol., Saitama Med. School, Moroyama, IRUMA-gun, 350–04, Japan
a Electron microscopy of calcification in the embryo. Arbacia punctulata (Echinoidea)
b Electron microscopy of cortical changes in early embryology. Hemicentrotus pulcherrimus (Echinoidea)
ULBERG, L. C.; Ph.D., Prof. – Dept. of Anim. Sci., North Carolina State Univ., P. O. Box 5127, RALEIGH, NC 27607, U.S.A.
a Effects of environment upon the development of young embryos. (Mammalia)
b Factors which contribute to death of the embryo during first days of development. (Mammalia)
UMETANI, T.; M.D. – Dept. of Anat., Div. I, Kobe Univ., Kusunoki-cho, Ikuta-ku, KOBE, 650 Japan
UNSWORTH, B. R.; Ph.D., Assoc. Prof. – Dept. of Biol., Marquette Univ., 530 North 15th St., MILWAUKEE, WI 53233, U.S.A.

a Specific RNA and protein synthesis during kidney tubulogenesis; control mechanisms acting in early stages of secondary induction; characterization of a neural factor responsible for tubule initiation. Mus musculus (Rodentia)
b Control of translation at the ribosomal level during organogenesis. Same species as a
c Brain differentiation; correlation between tetrodotoxin binding and brain function; comparison of development in two phyla. Gallus domesticus (Aves), Mus musculus (Rodentia)
d Biochemical changes in aging and developing brain. Mus musculus, Rattus rattus (Rodentia)

UPHOLT, W. B.; Ph.D. – Dept. of Embryol., Carnegie Inst. of Wash., 115 W. University Parkway, BALTIMORE, MD 21210, U.S.A.

URIST, M. R.; M.D. – Bone Res. Lab., Univ. of Calif., 1000 Veteran Ave., Rm A3–34, LOS ANGELES, CA 90024, U.S.A.
a Bone morphogenesis: the physiology and biochemistry of bone matrix in health and disease; the regulation of bone generation, growth and regeneration by a new enzyme system, BMP-BMPase. (Mammalia)
b Calcification and ossification. (Mammalia)

VACQUIER, V. D.; Ph.D. – Zool. Dept., Univ. of California, DAVIS, CA 95616, U.S.A.
a Morphology and biochemistry of fertilization. (Echinoidea)

VAFOPOULOU-MANDALOS, Mrs. X.; M.A. – Biol. Sci. Group, Univ. of Connecticut, Box U-42, STORRS, CT 06268, U.S.A.
a Protein synthesis during larval development. Chironomus spec. (Diptera)

VALDEZ TOLEDO, Mrs. C. L. – Inst. de Biol., Univ. Nac. de Tucumán, Chacabuco 461, S. M. de TUCUMAN, Argentina
a Descriptive analysis of oogenesis. Bufo arenarum (Anura)

VANABLE, J. W., Jr.; Ph.D., Assoc. Prof. – Dept. of Biol. Sci., Purdue Univ., WEST LAFAYETTE, IN 47907, U.S.A.
a The possibility of selectivity in neuromuscular associations: extrinsic ocular muscles. Xenopus laevis (Anura)
b Visual mutants as a tool to study eye development. Mus musculus (Rodentia)
c Electrical currents and regeneration. Rana pipiens, Triturus viridescens, Xenopus laevis (Amphibia)

VAN ALTEN, P. J.; Ph.D., Prof. – Dept. of Anat., Coll. of Med., Univ. of Illinois, P. O. Box 6998, CHICAGO, IL 60680, U.S.A.
a Ontogeny of the immunological mechanism. Gallus domesticus (Aves)
b Development of lymphocyte competence to respond to mitogens in vitro. Gallus domesticus (Aves), Rattus norvegicus (Rodentia)
c Development of antigenic components in the brain. Mesocricetus auratus (Rodentia)
d Isotope studies of blood cell formation, especially lymphocytopoiesis. Same species as a

VAN EXAN, R. – Dept. of Biomed. Sci., Ontario Vet. Coll., Univ. of Guelph, GUELPH, Ont. N1G 2W2, Canada
a Induction of mucous metaplasia of skin and hair follicles in vitro by vitamin A (electron microscopy, separation and recombination of dermis and epidermis, autofluorescence of vitamin A). Mus musculus (Rodentia)
b Differentiation of the dermis, its cell types and intercellular matrix in 12–18 day embryos (histochemistry, light and electron microscopy). Same species as a

VAN STONE, J. M.; Ph.D., Prof. – Dept. of Biol., Trinity Coll., HARTFORD, CT 06106, U.S.A.
a Influence of thyroxine upon the regenerative capacity of the tadpole hindlimb. Rana sylvatica (Anura)

VARMA, H. C.; Ph.D., Prof. – Dept. of Anat., G.S.V.M. Med. Coll., KANPUR 208002, India

VARON, S. S.; M.D., Prof. – Dept. of Biol., M-001, Univ. of Calif. San Diego, LA JOLLA, CA 92093, U.S.A.
a In vitro differentiation of nerve tissue. Gallus domesticus (Aves) and others
b Growth- and differentiation-promoting agents from the submaxillary gland. Mus musculus (Rodentia)
c Glia-neuron interactions in vitro. Gallus domesticus (Aves), Mus musculus (Rodentia) and others
d Development of glial and neuronal surface membrane constituents. Same species as c

VAUGHN, J. E.; Ph.D. – Div. of Neurosci., City of Hope Med. Ctr., 1500 E. Duarte Rd., DUARTE, CA 91010, U.S.A.
a Development of neuroglial cells in the central nervous system (electron microscopy and autoradiography). Rattus domesticus (Rodentia)
b Electron microscopy of spinal cord development. Rattus domesticus, Mus musculus (Rodentia)

VENEZIANO, P. P.; Ph.D., Assoc. Prof. – Dept. of Biol., Wilbur Wright Coll., 3400 N. Austin Ave., CHICAGO, IL 60634, U.S.A.

VENZKE, W. G.; Ph.D., Prof. – Dept. of Vet. Anat., Coll. of Vet. Med., Ohio State Univ., 1900 Coffey Rd., COLUMBUS, OH 43210, U.S.A.
a Morphogenesis and physiology of ultimobranchial gland, pineal gland and blood (Aves)

VERRUSIO, A. C.; Ph.D. – Dept. of Anat., Div. of Biol. Sci., Univ. of Chicago, 1025 East 57th St., CHICAGO, IL 60637, U.S.A. also: Am. Dent. Assoc., 211 E. Chicago Ave., CHICAGO, IL 60611, U.S.A.

VIDIC, B.; S.D. – Dept. of Anat., Georgetown Univ., 3900 Reservoir Rd., N.W., WASHINGTON, D.C. 20007, U.S.A.

VINCENT, W. S.; Ph.D., Prof. – Dept. of Biol. Sci., Univ. of Delaware, NEWARK, DE 19711, U.S.A.
a Control of ribosome formation in early oocytes; nucleolar chemistry of oocytes. Mytilus edulis, Spisula solidissima (Lamellibranchia), Asterias forbesii (Asteroidea), Arbacia punctulata (Echinoidea)

b Analysis of ribosomal gene amplification in oocyte development with respect to uni- and multinucleolate forms. Same species as a and Roccus saxatilis, Fundulus heteroclitus (Teleostei)

VOLPE, E. P.; Ph.D., Prof. – Dept. of Biol., Tulane Univ., NEW ORLEANS, LA 70118, U.S.A.

a Neural crest homotransplantation and its relation to the phenomena of immunity and tolerance. Rana pipiens (Anura)

b Blood cell chimerism in parabiotic animals, as revealed in chromosome preparations of cultured leucocytes. Same species as a

c Histocompatibility studies in animals produced by nuclear transplantation. Same species as a

d Role of the thymus in the development and maintenance of immunity. Same species as a

VOORHEES, F. R.; Ph.D. – Dept. of Biol., Centr. Missouri State Univ., WARRENSBURG, MO 64093, U.S.A.

a Mechanisms controlling reproductive system development. Aedes spec. (Diptera)

WADA, M.; Dr. – Dept. of Bot., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan

a Position and the direction of cell division in gametophytes. Adiantum capillus-veneris (Filicinae)

WAELSCH, Mrs. S. GLUECKSOHN; Ph.D., Prof. – Dept. of Genet., Albert Einstein Coll. of Med., Yeshiva Univ., 1300 Morris Park Ave., NEW YORK, Bronx, NY 10461, U.S.A.

a Developmental physiology, genetics, and pathology. Mus musculus (Rodentia)

WAINWRIGHT, Mrs. L. K.; Ph.D., Prof. – Biol. Dept., Mount Saint Vincent Univ., HALIFAX, N.S. B3M 2J6, Canada

a Regulation of hemoglobin synthesis in blood islands of blastodisc. Gallus domesticus (Aves)

b Hemoglobin synthesis in cell aggregates formed from dissociated blastodiscs. Same species as a

c Isolation and cytological study of erythropoietic cell populations from primitive streak blastodiscs. Same species as a

WAINWRIGHT, S. D.; Ph.D., Prof. – Biochem. Dept., Med. Sch., Dalhousie Univ., Sir Charles Tupper Bldg., HALIFAX, N.S. B3H 4H7, Canada

a Regulation of hemoglobin synthesis in blood islands of blastodisc. Gallus domesticus (Aves)

b Isolation of erythropoietic cell populations from primitive streak blastodiscs. Same species as a

c Development of enzymes of the melatonin biosynthetic pathway in the pineal gland, in vivo and in organ culture; influence of lighting conditions. Same species as a

d Erythropoiesis in embryonic tissues. Same species as a

WAKAHARA, M.; D.Sc. – Zool. Inst., Fac. of Sci., Hokkaido Univ., N.10, W.8, SAPPORO, 060 Japan

a Morphogenesis of the pineal and subcommissural organ. Xenopus laevis (Anura)

WALKER, B. E.; M.D., Ph.D., Prof. – Dept. of Anat., Michigan State Univ., A519 East Fee Hall, EAST LANSING, MI 48824, U.S.A.

a Teratology, experiments on cleft palate, the action of different chemicals. Oryctolagus cuniculus (Lagomorpha), Mus musculus (Rodentia)

WALLACE, R. A.; Ph.D. – Biol. Div., Oak Ridge Natl. Lab., P. O. Box Y, OAK RIDGE, TN 37830, U.S.A.

WARD, R. T.; Ph.D. – Anat. Dept., Downstate Med. Ctr., State Univ. of New York, 450 Clarkson Ave., NEW YORK, Brooklyn, NY 11203, U.S.A.

a Changes in crystalline form of the protein yolk in young oocytes. Rana pipiens (Anura)

b Reconstruction of the nuclear pore complex from serial sections of oocytes. Same species as a

WARREN, Ch. O.; Ph.D., Assoc. Prof. – Dept. of Biol., Southwestern at Memphis, 2000 N. Parkway, MEMPHIS, TN 38112, U.S.A.

a Regulatory role of mitochondria during growth and development. Achlya ambisexualis (Lepidoptera)

b Hormonal regulation of sexual reproduction. Same species as a

WATANABE, H.; Ph.D. – Shimoda Marine Biol. Stat., Tokyo Kyoiku Univ., Shimoda 5–10–1, Shizuoka-ken, SHIMODA, 415 Japan

a Recognition of specificity in compound forms. Botryllus primigenus, Botrylloides violaceum, Clavelina concrescens (Ascidiacea) (with K. TANAKA, Tokyo)

b Asexual reproduction of compound forms. Perophora japonica, Polycitor mutabilis, Botryllus primigenus, Metandrocarpa taylori (Ascidiacea)

c Tissue culture. Perophora japonica, Polycitor mutabilis, Botryllus primigenus (Ascidiacea)

d Periodical spawning in a compound form. Polyandrocarpa misakiensis (Ascidiacea)

WATANABE, K.; Dr., Prof. – Dept. of Biol., Sch. of Dent. Med., Tsurumi Univ., 2–1–3 Tsurumi, YOKOHAMA, 230 Japan

a Electron microscopy of metamorphosis. (Amphibia)

b Electron microscopy and electron cytochemistry of red and white tail muscles in larva and during metamorphosis. Rana japonica, R. catesbeiana, Xenopus laevis (Anura), Oryzias spec., Salmo spec. (Teleostei)

c Electron microscopy of adepidermal granules in the larva. Same species as b

WATANABE, K.; D.Sc. – Kanebo Inst. for Canc. Res., 1–9–1, Misaki-cho, Hyogo-ku, KOBE, 652 Japan

a Cell differentiation and viral susceptibility. Gallus gallus (Aves)

b Implantation of foreign cells (especially cancer cells) into the uterus. Mesocricetus auratus (Rodentia)

WATANABE, K.; M.Sc. – 2nd Dept. of Anat., Kyoto Pref. Univ. of Med., Kawaramachi-Hirokoji, Kamikyo-ku, KYOTO, 602 Japan

a Wolffian lens regeneration. Triturus pyrrhogaster (Urodela)

b Differentiation of cells in vitro. Triturus pyrrhogaster (Urodela), Gallus gallus (Aves)

WATANABE, Y. G.; Ph.D. – Dept. of Anat., Sch. of Med., Tokushima Univ., Kuramoto-cho, TOKUSHIMA, 770 Japan

a Immunohistochemistry of cytodifferentiation of anterior pituitary anlage in vitro. Rattus spec. (Rodentia)

b Responsiveness of developing gonadotropin producing cells to synthetic luteinizing hormone releasing hormone (organ culture, immunohistochemistry). Same species as a
c Ultrastructural aspects of hormone release from anterior pituitary in fetus and newborn. Same species as a

WATERMAN, A. J.; Ph.D., Prof. – Extramural Programs, Natl. Inst. of Child Health and Human Developm., Natl. Inst. of Health, BETHESDA, MD 20014, U.S.A.

WATERMAN, R. E.; Ph.D., Assoc. Prof. – Dept. of Anat., Univ. of New Mexico, 915 Stanford Dr. N.E., ALBUQUERQUE, NM 87131, U.S.A.
a Scanning and transmission electron microscopy of normal and abnormal oro-facial development. (Rodentia), Homo sapiens (Primates)
b Mechanisms of gamete release. Phialidium gregarium (Leptomedusae, Hydrozoa)

WATSON, A. G. – Massey Univ., PALMERSTON NORTH, New Zealand
a Serial sections of embryos at spaced ages, available for inspection. Canis familiaris, Felis catus (Carnivora), Bos taurus, Ovis aries (Artiodactyla) and other Mammalia (with H. E. EVANS, Ithaca)
b Development of the atlas-axis complex. Canis familiaris (Carnivora) (with H. E. EVANS)
c Comparable developmental stages. Canis familiaris (Carnivora), Homo sapiens (Primates) (with H. E. EVANS)

WATTERSON, R. L.; Ph.D., Prof. – Dept. of Genet. and Developm., Univ. of Illinois, 515 Morrill Hall, URBANA, IL 61801, U.S.A.
a Effects of hypophysectomy on development of musculus complexus, long bones, and fat bodies. Gallus domesticus, Anas boschas (Aves)
b Correction of defects in pituitaryless embryos with anterior pituitary grafts and injections of trophic hormones. Same species as a
c Sources and mechanisms of development of lumbosacral level of neural tube with emphasis on development of myeloschisis. Gallus domesticus (Aves)
d Effects of aminoguanidine sulfate on development of liver, mesonephros, metanephros, and heart in vivo and in vitro. Same species as c

WAYMOUTH, Miss C.; Ph.D. – The Jackson Lab., BAR HARBOR, ME 04609, U.S.A.
a The characterization and in vitro development of embryonic tissues and the roles of Na and K and other cations on cellular behavior. Mus musculus (Rodentia)

WEINSTOCK, A.; D.D.S., Ph.D., Assoc. Prof. – Center for Health Sci., Sch. of Dent. 63–032, Univ. of Calif., LOS ANGELES, Calif. 90024, U.S.A.
a Development of bone and tooth matrices, mainly glycoproteins (electron microscope radioautography). Rattus rattus (Rodentia)
b Biosynthesis and secretion of bone and dentin procollagen (subcellular fractionation and radioautography). Gallus gallus (Aves), Rattus rattus (Rodentia)

WEIRICH, G.; Dr.rer.nat. – Inst. of Developm. Biol., Texas A. & M. Univ., COLLEGE STATION, TX 77843, U.S.A.
a Enzymes involved in the metabolism of juvenile hormone, especially their regulation and specificity. Manduca sexta, Hyalophora cecropia (Lepidoptera)
b Proteins involved in transport and cellular action of juvenile hormone. Same species as a

WEIS (SHULMAN), Mrs. J. S.; Ph.D., Prof. – Dept. of Zool., Rutgers Univ., 195 University Ave., NEWARK, NJ 07102, U.S.A.
a Effects of environmental pollutants on development. Fundulus heteroclitus, Cyprinodon variegatus (Teleostei)
b Experimental modification of regenerative response in limbs and fins. Same species as a, and Rana spec. (Anura)
c Regeneration of limbs: modification by environmental conditions. Uca spec. (Decapoda, Crustacea)

WEIS, P.; D.D.S., Assoc. Prof. – Dept. of Anat., New Jersey Med. Sch., 100 Bergen St., NEWARK, NJ 07103, U.S.A.

WEISS, L.; Sc.D., M.D., Ph.D., Prof. – Dept. of Exper. Pathol., Roswell Park Mem. Inst., 666 Elm St., BUFFALO, NY 14203, U.S.A.
a Biophysics of cell interactions

WEISS, P. A.; Ph.D., Sc.D., Prof. (Emer.) – Dept. of Developm. & Neural Biol., Rockefeller Univ., 66th St. and York Ave., NEW YORK, NY 10021, U.S.A.
a Biology of growth, development, and organization of the nervous system.
b Relations between development and systems theory
c Evaluation of large cinemicrographic material on cell interactions and specificity

WELLS, L. J.; Ph.D., Prof. – Dept. of Anat., Sch. of Med., Univ. of Minnesota, MINNEAPOLIS, MN 55455, U.S.A.

WENGER, B. S.; Ph.D., Prof. – Dept. of Anat., Univ. of Saskatchewan, SASKATOON, Sask. S7N 0W0, Canada
a Protease inhibition as a mechanism of teratogenesis by certain cholinesterase inhibiting drugs and insecticides. Gallus domesticus (Aves)
b Effect of nicotine administration to the embryo upon early embryonic, hatching and post hatching behaviour. Same species as a
c Analysis of the site of action of the muscular dysgenesis gene of Mus musculus (Rodentia), by transplantation to the embryo of Gallus domesticus (Aves) and in in vitro culture.

WERNER, Y. L.; Ph.D. – Dept. of Zool., Hebrew Univ., JERUSALEM, Israel
a Temperature effects during embryogenesis on the number of vertebrae. Hemidactylus turcicus, Stenodactylus stenodactylus (Gekkonoidea, Lacertilia)

b Temperature dependence of the duration of embryonic development. (Gekkonoidea, Lacertilia)
c Changes in egg shell structure during incubation. Same species as b
d Inter-dependence of parent size, egg size, and neonatal size. Same species as b

WESSELLS, N. K.; Dr. – Dept. of Biol. Sci., Stanford Univ., STANFORD, CA 94305, U.S.A.
a Tissue interactions, nerve growth in embryos. Gallus domesticus (Aves), Mus musculus (Rodentia)

WESTERMAN, R. A.; Ph.D. – Dept. of Physiol., Monash Univ., P. O. Box 92, CLAYTON, Vict. 3168, Australia
a Electrophysiology, histology, and ultrastructure of functional neuromuscular connections during normal neonatal development and after various experimental reinnervations. Felis domestica (Carnivora)

WESTON, J. A.; Ph.D. – Dept. of Biol., Univ. of Oregon, EUGENE, OR 97403, U.S.A.
a Migration and differentiation of neural crest cells. Gallus domesticus (Aves), Mus musculus (Rodentia)
b Cell surface as an effector of cell specificity. Gallus domesticus (Aves)
c Action of morphogenetic agents on embryonic cell behavior in vivo and in vitro. Same species as b

WHITELEY, A. H.; Ph.D., Prof. – Dept. of Zool., Univ. of Washington, SEATTLE, WA 98195, U.S.A.

WHITT, G. S.; Ph.D., Assoc. Prof. – Dept. of Genet. and Developm., Univ. of Illinois, 515 Morrill Hall, URBANA, IL 61801, U.S.A.
a Developmental genetics: 1. expression of differential gene function during early embryogenesis and cytodifferentiation with an emphasis on those genes responsible for isozymes; 2. correlation of lactate dehydrogenase gene homology with the specificity of the gene activating mechanisms during development; 3. genetical, physical, and chemical analysis of the lactate dehydrogenase isozymes unique to the differentiated nervous system; 4. biochemical genetics of isozymes, especially lactate dehydrogenase; 5. asynchronous allele activation during embryogenesis of interspecific and intergeneric hybrids. Micropterus dolomieui, M. salmoides and other spp. (Centrarchidae, Teleostei)
b Epigenetic and genetic control of protein synthesis during cytodifferentiation with emphasis on the post-translational control of gene product (especially lactate dehydrogenase isozymes), assembly and function. (Teleostei and other Vertebrata)
c Nucleic acid synthesis and processing during embryogenesis of normal and hybrid animals. Oryzias latipes (Teleostei)

WHITTAKER, J. R.; Ph.D. – Wistar Inst. of Anat. and Biol., 36th St. at Spruce, PHILADELPHIA, PA 19104, U.S.A.
a Mechanisms regulating melanogenesis in normal differentiating pigment cells and in malignant tumor cells. Ciona intestinalis (Ascidiacea), Gallus domesticus (Aves), Mesocricetus auratus (Rodentia)
b Positional information in mosaic embryos for histospecific enzyme differentiations: acetylcholinesterase, tyrosinase, and alkaline phosphatase. Ciona intestinalis, Styela partita, Molgula manhattensis (Ascidiacea)
c Differentiation of the pineal gland in vitro and in situ. Gallus domesticus (Aves)

WHITTEN, W. K.; D.Sc., B.V.Sc. – The Jackson Lab., BAR HARBOR, ME 04609, U.S.A.
a Preimplantation stages of development in vivo and in vitro. Mus musculus (Rodentia)
b The numerology of development in aggregation chimeras (two half, two whole and four whole embryos). Same species as a
c The mechanism of development of spontaneous sex mosaics (hermaphrodites). Same species as a

WILDE, Ch. E., Jr.; Ph.D., Prof. – Dept. of Zool., Univ. of Rhode Island, KINGSTON, RI 02881, U.S.A.
a Cellular differentiation (pigment cell; ectomesenchyme): 1. causal biochemistry of cellular differentiation; 2. differentiation of cytoplasmic fragments. Ambystoma maculatum (Urodela)
b Morphology and causal biochemistry of striated muscle differentiation. Same species as a
c Cytochimeras in tissue culture from disaggregated cells of embryos of different classes. Gallus spec. (Aves), Mus spec. (Rodentia)
d Role of probabilistic processes in cellular differentiation. Same species as c
e Ontogeny of proteins and amino acids. Fundulus heteroclitus (Teleostei)
f The energy pathways of differentiating systems. (Vertebrata)
g Informational macromolecules in early development and differentiation. (Echinodermata, Vertebrata)
h The molecular basis of major and minor symmetry in embryogenesis. (Vertebrata)
i Temporal control of morphogenetic information and morphogenesis in the early zygote. (Pisces; Amphibia; Aves)
j Regeneration of lung. (Amphibia)
k Maintenance of site specificity in behavioral differentiation of endothelium. (Aves), Homo sapiens (Primates)

WILLIAMS, D. T.; B.S. – Merck Inst. for Therap. Res., RAHWAY, NJ 07065, U.S.A.
a Studies on fertilization. Mesocricetus auratus (Rodentia)

WILLIAMS, Miss L. A.; Ph.D., Assoc. Prof. – Dept. of Biol., West Virginia Univ., Brooks Hall, MORGANTOWN, WV 26506, U.S.A.
a Control mechanisms in the regeneration of eye lens and iris. Notophthalmus viridescens (Urodela)

WILLIAMS, R. C.; DVM, Ph.D., Prof. – Veterinary School, Tuskegee Inst., TUSKEGEE, AL 36088, U.S.A.
a Development and calcification of teeth (utilizing a graded series of embryos and fetuses of purebred beagles). Canis familiaris (Carnivora)

b Serial sections of embryos at spaced ages, available for inspection. Canis familiaris, Felis catus (Carnivora), Bos taurus, Ovis aries (Artiodactyla), and other Mammalia (with H. E. EVANS, Ithaca, NY)

WILLIS (HORWITZ), Mrs. J.; Ph.D., Assoc. Prof. – Dept. of Entomol., Univ. of Illinois, URBANA, IL. 61801, U.S.A.

WILSON, Mrs. D. BURDA; Ph.D. – Div. of Anat., Med. School, Univ. of Calif. San Diego, LA JOLLA, CA 92093, U.S.A.

a Mechanisms of teratogenesis in the embryonic and neonatal nervous system, using autoradiography, electron microscopy (transmission and scanning), and tissue culture. Gallus domesticus (Aves), Mus musculus (Rodentia), Macaca mulatta (Primates)

b Cellular kinetics in the embryonic nervous system (normal and abnormal); developmental genetics of neurological mutants. Same species as a

WILT, F. H.; Ph.D., Prof. – Dept. of Zool., Univ. of California, BERKELEY, CA 94720, U.S.A.

a Mechanism of origin of hemoglobin-synthesizing machinery during development. Gallus domesticus (Aves)

b Activation of protein and RNA synthesis in cleaving eggs. Strongylocentrotus purpuratus (Echinoidea)

c RNA synthesis during development. Same species as b

WIMSATT, W. A.; Ph.D., Prof. – Div. of Biol. Sci., Cornell Univ., G45 Emerson Hall, ITHACA, NY 14853, U.S.A.

a Embryological basis for structural and functional ovarian asymmetry. (Molossidae, Chiroptera)

WISCHNITZER, S.; Ph.D., Prof. – Dept. of Biol., Yeshiva Univ., 186th St. and Amsterdam Ave., NEW YORK, NY 10033, U.S.A.

WISEMAN, L. L.; Ph.D. – Dept. of Biol., Coll. of William and Mary, WILLIAMSBURG, VA 23185, U.S.A.

a Cell adhesion and cell movement of embryonic cells in culture. Gallus gallus (Aves), Mus musculus (Rodentia)

WOLFE, H. G.; Ph.D., Prof. – Dept. of Physiol. and Cell Biol., Univ. of Kansas, LAWRENCE, KS 66045, U.S.A.

a Basis(es) for abnormal spermiogenesis and consequent sterility caused by a series of radiation-induced alleles at the pink-eyed dilution (p) locus (separation of stage specific cell types, Sertoli cells, and interstitial cells; electron microscopy; culture in vitro). Mus musculus (Rodentia)

b Genetic and chromosomal control of sex ratio: 1. estimating primary (conception) sex ratios (at metaphase of first cleavage) in strains having fixed genetic differences in secondary (birth) and tertiary (weaning) sex ratios; 2. correlating length of Y chromosome to sex ratio and known behavioral characteristics. Same species as a

WOLFE, J. S.; Ph.D., Assoc. Prof. – Dept. of Biol., Wesleyan Univ., MIDDLETOWN, CT 06457, U.S.A.

a Developmental aspects of conjugation (autoradiography, electron microscopy, density gradient centrifugation, electrophoresis, cell cycle analyses, chemical mutagenesis, surface probes). Tetrahymena pyriformis (Ciliata)

b Regulation of ribosomal RNA synthesis during the cell cycle (selection synchrony, molecular hybridization, electrophoresis). Same species as a

c Non histone chromosomal proteins in the division cycle and during sexual differentiation. Same species as a

WOLK, C. P.; Ph.D., Prof. – MSU/ERDA Plant Res. Lab., Michigan State Univ., EAST LANSING, MI 48824, U.S.A.

a Biochemical mechanisms governing differentiation and pattern formation in filamentous forms. Anabaena cylindrica, A. variabilis, Cylindrospermum licheniforme (Cyanophyceae)

WOLK, M.; M.Sc. – Dept. of Zool., Hebrew Univ., JERUSALEM, Israel

a Differentiation and movement of hypoblast cells, based on antigenic differences between epiblast and hypoblast. Gallus spec. (Aves)

WOLSKY, A.; Dr.phil., Prof. – Dept. of Radiol., New York Univ. Med. Center, 550 First Ave., NEW YORK, N.Y. 10016, U.S.A.

a Effect of anti-metabolites, antibiotics (especially actinomycin) and nucleic acids on development and regeneration. Paracentrotus lividus, Arbacia punctulata (Echinoidea), Triturus viridescens, Rana pipiens (Amphibia)

b A re-investigation of the influence of neurogenesis on the development of the compound eye. Bombyx mori (Lepidoptera)

c Effect of ultrasound on development and regeneration. Drosophila melanogaster (Diptera), Triturus viridescens, Rana pipiens (Amphibia)

WOOD, Miss B. G.; Ph.D. – Dept. of Zool., Univ. of Maine, Murray Hall, ORONO, ME 04473, U.S.A.

a Influence of pituitary hormones on the induction of development in the mammary glands of a dwarf mutant. Mus musculus (Rodentia)

b Differentiation of fetal liver enzyme pathways in vitro and in vivo. Same species as a

WOODS, J. E.; Ph.D., Assoc. Prof. – Dept. of Biol. Sci., De Paul Univ., 1036 W. Belden Ave., CHICAGO, IL 60614, U.S.A.

a Histochemistry of androgens and estrogens in the gonads and adrenals and initiation of estrogen synthesis in the gonads of the developing embryo. Gallus domesticus (Aves)

b Functional maturation of the adenohypophysial-testicular-ovarian axes of the developing embryo as determined by plasma testosterone and 17-beta-estradiol levels. Same species as a

WOURMS, J. P.; Ph.D. – Dept. of Zool., Clemson Univ., CLEMSON, SC 29631, U.S.A.

a Cellular aspects of spontaneous dispersion-reaggregation during early development; description of embryogenesis in the reaggregation mass; experimental analysis of development; biochemistry of

development; physiological and genetic basis of embryonic diapause. Annual fishes: Austrofundulus spec., Cynolebias spec., Pterolebias spec., Nothobranchius spec., Aphyosemion spec. (Cyprinodontoidei, Teleostei)
b Oogenesis; egg transport; oviduct differentiation. sperm storage; fertilization and early development; fetal and maternal adaptations for viviparity (ultrastructure, biochemistry, physiology). Isurus spec., Prionace spec., Carcharinus spec., Mustelus spec. (Galeoidea), Squalus spec., Heterodontus spec. (Squaloidea, Pleurotremata), Raja spec., Dasyatus spec. Myliobatis spec. (Batoidea, Hypotremata), Hydrolagus spec. (Holocephali, Elasmobranchii)
c Embryonic adaptations for viviparity. Latimeria spec. (Crossopterygii)

WRIGHT, D. A.; Ph.D. – Dept. of Biol., Cancer Center, Univ. of Texas, M.D. Anderson Hosp. and Tumor Inst., HOUSTON, TX 77025, U.S.A.

WRIGHT, Th. R. F.; Ph.D., Assoc. Prof. – Dept. of Biol., Univ. of Virginia, Gilmer Hall, CHARLOTTESVILLE, VA 22903, U.S.A.
a Genetic control of enzyme activity during development. Drosophila melanogaster (Diptera)
b Temperature sensitive lethal mutations affecting embryogenesis. Same species as a
c Genetic control of myogenesis. Same species as a

WU, G. J. – 150 W. 225th St., Sec. 8–17A, NEW YORK, Bronx, NY 10463, U.S.A.

WUDL, Mrs. L. R.; Ph.D. – Dept. of Cell Biol., Roche Inst. of Molec. Biol., NUTLEY, NJ 07110, U.S.A.
a Biochemical aspects of normal and t-mutant embryogenesis (in vitro culture; microenzyme assay). Mus musculus (Rodentia)

WYATT, G. R.; Ph.D., Prof. – Dept. of Biol., Queen's Univ., KINGSTON, Ont. K7L 3N6, Canada

WYTTENBACH, Ch. R.; Ph.D., Prof. – Dept. of Physiol. and Cell Biol., Univ. of Kansas, LAWRENCE, KS 66045, U.S.A.
a Patterns and mechanisms of cell movement associated with stolon elongation, studied via continuous observations of movements of single vitally-stained epidermal cells in intact stolons and isolated segments. Campanularia flexuosa (Hydrozoa)

YAFFE, Miss A.; B.Sc. – Dept. of Zool., Hebrew Univ., JERUSALEM, Israel
a Origin of gonocytes. Gallus domesticus (Aves)

YAFFE, D.; Dr. – Dept. of Cell Biol., Weizmann Inst. of Sci., P. O. Box 26, REHOVOT, Israel

YAJIMA, H.; Ph.D. – Dept. of Biol., Fac. of Sci., Ibaraki Univ., Bunkyo-2-chome, MITO, Japan
a Malformations induced by irradiation with monochromatic ultraviolet light. Chironomus samoensis (Diptera)
b Effects of temperature, during and after centrifugation of eggs, on the production of double malformations. Same species as a
c Effect of ultraviolet irradiation upon the re-entry of pole cells (electron microscopy). Same species as a
d Electron microscopy of eggs centrifuged at early and middle pre-migration stages. Same species as a

YALÇIN, Miss F.; Ph.D., D.D.S. – Dept. of Histol. and Embryol., Med. Fac., Hacettepe Univ., ANKARA, Turkey
a Teratogenic effect of cortisone on development and fusion of palatal shelves. (Mammalia)

YAMADA, J.; D.Agr., Prof. – Lab. of Physiol. and Ecol., Fac. of Fish., Hokkaido Univ., HAKODATE, Hokkaido, Japan
a Development of the ultimobranchial body. (Salmonidae; Cyprinidae, Teleostei)
b Larval and postlarval death in culture. Sebastes schlegeli (Scorpaenidae, Teleostei)

YAMADA, K.; M.Sc. – Lab. of Biol., Gifu Coll. of Dent., 1851 Takano, Hozumi-cho, Motosu-gun, GIFU-ken, Japan
a Electron microscopy of the embryonic gonad. Gallus domesticus (Aves)

YAMADA, T.; Ph.D. – Div. of Biol., Natl. Inst. of Radiol. Sci., 9–1, 4-chome, Anagawa, CHIBA, 280 Japan.
a Biochemical studies on effect of radiation on the embryo. Oryzias latipes (Teleostei), Bufo vulgaris (Anura)
b Biochemical studies on radiation-induced death of thymic lymphocytes of growing animals. Rattus spec. (Rodentia)

YAMADORI, T.; M.D., Prof. – Dept. of Anat., Div. I, Hirosaki Univ., Zaifucho 5, HIROSAKI-City, Aomori-ken, 036 Japan
a Development of nerve cells in the spinal ganglia. Rattus norvegicus (Rodentia)

YAMAGAMI, K.; D.Sc., Assoc. Prof. – Zool. Inst., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan
a Biochemical studies on embryonic and yolk proteins (Teleostei)
b Purification and characterization of chorionase and mechanism of hatching. Oryzias latipes, Salmo gardneri (= irideus) (Teleostei)
c Ontogeny of hemoglobins in embryos and larvae. Salmo gardneri (= irideus) (Teleostei)

YAMAGUCHI, T.; Ph.D. – Div. of Biol., Natl. Inst. of Radiol. Sci., 9–1, 4-chome, Anagawa, CHIBA, 280 Japan
a Regeneration of cell renewal systems after radiation injury. Mus musculus, Cavia porcellus (Rodentia)
b Chalone mechanisms and the cell cycle (regenerating ear epidermis and epidermis in vitro). Same species as a

YAMAMOTO, K.; D.Sc., Prof. (Emer.) – Dept. of Biol., Fac. of Fish., Hokkaido Univ., 3–1–1 Minatocho, HAKODATE, 040 Japan
a Histo-physiological studies of oogenesis. (Teleostei)
b Studies on the hormones of reproduction. (Teleostei)

YAMAMOTO, T. S.; D.Sc., Prof. – Zool. Inst., Fac. of Sci., Hokkaido Univ., N.10, W.8, SAPPORO, 060 Japan
a Cytochemistry of development. (Teleostei)
YAMANA, K.; D.Sc., Assoc. Prof. – Embryol. Lab., Dept. of Biol., Kyûshû Univ., Hakozaki, FUKUOKA, 812 Japan
a Regulation of ribosomal RNA synthesis during embryonic development. Xenopus laevis (Anura)
YAMAOKA, L. H. – Dept. of Biol. Sci., Bowling Green State Univ., BOWLING GREEN, OH 43403, U.S.A.
a Molt cycle correlated muscle degeneration and reformation. Gecarcinus lateralis (Decapoda, Crustacea)
b Molt cycle correlated changes in the free amino acid pools of muscle and hemolymph fluid. Same species as a
YAMASAKI, F.; M.D., Ph.D., Assoc. Prof. – Dept. of Biol., Sapporo Med. Coll., SAPPORO, 060 Japan
a Development of digestive system. Platanista gangetica, Pontoporia blainvillei, Stenella coeruleoalba (Cetacea)
b Papillary projections at the lingual margin: development in the fetus, maximum development early postnatally, disappearance by weaning, traces in the adult, probable function in suckling. Stenella coeruleoalba (Cetacea)
YAMAZAKI, F.; Ph.D., Assoc. Prof. – Lab. of Embryol. and Genet., Fac. of Fish., Hokkaido Univ., HAKODATE, Japan
a Developmental genetics, especially relations between enzymic polymorphisms and developmental stages. (Salmonidae, Teleostei)
b Developmental oncology. (Pleuronectidae; Gobiidae, Teleostei)
YANAGISAWA, T.; D.Sc., Prof. – Embryol. Sect., Dept. of Biol., Tokyo Metropolitan Univ., 2–1–1, Fukazawa, Setagaya-ku, TOKYO, 158 Japan
a Phosphagens in egg and spermatozoa. (Echinodermata)
b Ion exchange and paper chromatography of the nature of the acid-soluble nucleotides in the egg and their changes during development. Hemicentrotus spec., Anthocidaris spec., Pseudocentrotus spec. (Echinoidea), Asterias spec., Asterina spec. (Asteroidea)
c Tracer experiments on phosphate, sugar, and nucleic acid metabolism of the embryo. (Echinodermata)
YANG, S. F.; Ph.D., Assoc. Prof. – Dept. of Biomorph., Natl. Defense Med. Ctr., P. O. Box 7432, TAIPEI 107, Taiwan, Rep. of China
a Nucleic acids in development
YASUDA, K.; Ph.D. – Lab. of Cell Sci., Inst. of Biophys. and Molec. Biol., Univ. of Kyoto, Kitashirakawa, Sakyo-ku, KYOTO, 606 Japan
a Factors affecting cell aggregation and cell contact. Gallus gallus (Aves) (with T. S. OKADA and M. TAKEICHI)
b Crystallin synthesis in lens cells differentiating in vitro. Same species as a
YASUDA, M.; M.D. – Dept. of Perinatol., Inst. of Developm. Res., Aichi Pref. Colony, Kamiya-cho, KASUGAI, Aichi 480–03, Japan
a Epidemiology of anomalies in embryos and fetuses. Homo sapiens (Primates)
b Morphogenesis of certain malformations of extremities in embryos. Homo sapiens (Primates), Mus musculus (Rodentia)
c Perinatal development of central nervous system. Rattus norvegicus (Rodentia)
YASUDA, Mrs. Y.; M.D. – Dept. of Anat., Kyoto Univ., Konoe-cho, Yoshida, Sakyo-ku, KYOTO, 606 Japan
a Comparative study on in vitro development of organ primordia. Mus musculus (Rodentia), Homo sapiens (Primates)
b Effects of thalidomide on colony formation of embryonic cartilaginous cells. Homo sapiens (Primates)
c Transplacental carcinogenicity of ethinylestradiol administered during 11 to 17 day of gestation. Mus musculus (Rodentia)
YASUGI, S. – Zool. Inst., Univ. of Tokyo, Hongo, Bunkyo-ku, TOKYO, 113 Japan
a Tissue interactions in differentiating digestive organs. Gallus domesticus (Aves)
b Effects of LiCl on regeneration. Pelmatohydra robusta (Hydrozoa)
YAZAKI, Mrs. I.; M.Sc. – Embryol. Sect., Dept. of Biol., Tokyo Metropolitan Univ., 2–1–1, Fukazawa, Setagaya-ku, TOKYO, 158 Japan
a Surface characterization of early embryonic cells. (Echinoidea)
YNTEMA, C. L.; Ph.D., Prof. – Dept. of Anat., Upstate Med. Ctr., State Univ. of New York, 766 Irving Ave., SYRACUSE, NY 13210, U.S.A.
a Acceptance of homografts and xenografts during embryonic stages. (Chelonia)
b Effects of temperature on development. (Chelonia)
YOFFEY, J. M.; D.Sc., M.D., Prof. – Dept. of Anat. and Embryol., Hebrew Univ. – Hadassah Med. Sch., P.O.B. 1172, JERUSALEM 91000, Israel
a Foetal haemopoiesis. Cavia porcellus (Rodentia), Homo sapiens (Primates)
YOSHIKAWA, I. – Dept. of Genet., Nagasaki Univ., 12–4, Sakomoto-machi, NAGASAKI, 852 Japan
a Radiation genetics (embryo, germ cells). Drosophila melanogaster (Diptera)
YOUSON, J. H.; Ph.D., Assoc. Prof. – Dept. of Zool., Scarborough Coll., Univ. of Toronto, WEST HILL, Ont. M1C 1A4, Canada
a Morphology and physiology and regulation of metamorphosis. Petromyzon marinus (Cyclostomata)

YU, M. C.; Ph.D. – Dept. of Anat., New Jersey Med. Sch., 100 Bergen St., NEWARK, NJ 07103, U.S.A.

YÜ (KOU), Mrs. N. W.; B.S., Assoc. Prof. – Dept. of Biomorph., Natl. Defense Med. Ctr., P. O. Box 7432, TAIPEI 107, Taiwan, Rep. of China

a Chemical hypophysectomy agent and metamorphosis. (Anura)

YUKAWA, O.; M.Sc. – Div. of Biol., Natl. Inst. of Radiol. Sci., 9–1, 4-chome, Anagawa, CHIBA, 280 Japan

ZALIK, Mrs. S. EISENBERG see EISENBERG ZALIK, Mrs. S.

ZAMBERNARD, J. – Dept. of Zool., Univ. of Minnesota, ST. PAUL, MN 55101, U.S.A.

a Nuclear transfer of in vitro cultured and cytologically identified renal carcinoma. Rana pipiens (Anura) (with R. G. McKINNELL and D. J. PICCIANO)

ZAMBONI, L.; M.D., Assoc. Prof. – Dept. of Pathol., Harbor Gen. Hosp., U.C.L.A., 1000 W. Carson St., TORRANCE, CA 90509, U.S.A.

ZELENKA, Mrs. P. S.; Ph.D. – Sect. Exp. Embryol., Lab. of Vision Res., Natl. Eye Inst., Natl. Inst. of Health, BETHESDA, MD 20014, U.S.A.

a Biosynthesis of lens fiber plasma membranes and metabolism of their phospholipids during embryogenesis. Gallus domesticus (Aves)

ZIMMERMAN, A. A.; Prof. (Emer.) – Dept. of Anat., Coll. of Med., Baylor Univ., HOUSTON, TX 77025, U.S.A.

ZIMMERMAN, E. F.; Ph.D. – Div. of Fetal Pharmacol., Children's Hosp. Res. Found., Elland & Bethesda Aves., CINCINNATI, OH 45229, U.S.A.

a Developmental microheterogeneity of α-fetoprotein (sialylation; synthesis in yolk sac and fetal liver; presence in amniotic fluid and fetal plasma). Mus musculus (Rodentia), Homo sapiens (Primates) and other Mammalia

b Palate shelf morphogenesis (movement): role of contractile proteins; teratogens (including glucocorticoids) causing cleft palate. Same species as a

ZIMMERMAN, J.; Ph.D. – Dept. of Anat., Tufts Univ., 136 Harrison Ave., BOSTON, MA 02116, U.S.A.

a mRNA manufacture in early melanogenesis in retinal pigment epithelium, including effects of 5-bromodeoxyuridine and 5-fluorodeoxyuridine. Gallus domesticus (Aves)

b Changes in timing of the cell cycle and changes in relative numbers of initiation sites for DNA synthesis in the developing retinal pigment epithelium. Same species as a

ZÜST, Miss B.; Dr.spéc. – School of Biol. Sci., Flinders Univ., BEDFORD PARK, S.A. 5042, Australia temporarily: Inst. de Zool., Univ. de Fribourg, Pérolles, 1700 FRIBOURG, Switzerland

ZWAAN, J.; M.D., Ph.D., Assoc. Prof. – Dept. of Ophthalmol., Children's Hosp. Med. Center, and Dept. of Anat., Harvard Med. Sch., 25 Shattuck St., BOSTON, MA 02115, U.S.A.

a Analysis of macromolecular synthesis during induction and differentiation of the eye lens. Gallus domesticus (Aves). Mus musculus (Rodentia)

b Developmental genetics of mutations affecting eye development. Mus musculus (Rodentia)

DIRECTORY OF INSTITUTES
with Members engaged in Developmental Biology
(geographical order)

The Directory is arranged according to: 1) continents and subcontinents; 2) countries and states; and 3) cities. Within each of these categories an alphabetical order is maintained.

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Names of Institute members who are not explicitly engaged in developmental biology are as rule not listed, with the exception of the names of Institute directors.

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AFRICA

EGYPT

Alexandria, Alexandria Univ.,
Fac. of Sci., Dept. of Zool.
* MICHAEL, M. I. – Prof., Head
* SEDRA, S. N. – Prof.
* KHALIL, S. H. – Lect.
* EL MEKKAWY, D. A. – Asst. Lect.
* AZIZ, F. K. – Asst. Lect.
Giza, Cairo Univ.,
Fac. of Agric., Anim. Sci. Dept.
* KAMAR, G. A. R. – Prof.

NIGERIA

Ibadan, Univ. of Ibadan,
Fac. of Med., Dept. of Anat.
DESALU, A. B. O. – Acting Head
ODUTOLA, A. B. – Lect.
Dept. of Vet. Anat. & Physiol.
* AIRE, T. A. – Lect.
Ile-Ife, Univ. of Ife,
Fac. of Health Sci.,
Div. of Human Biol. & Behav.
GRILLO, T. A. I. – Prof.

SOUTH AFRICA

Bloemfontein, Univ. of the O.F.S.,
Dept. of Anat.,
Exper. Embryol. Res. Unit of the M.R.C.
* TOERIEN, M. J. – Prof.
* BARNARD, Mrs. S. B. – Sen. Lect.
* LAMPRECHT, DeV. B. – Sen. Lect.
* RAUTENBACH, G. F. – Lect.
* ROSSOUW, R. J. – Sen. Prof. Off.
* HENDRIKS, Mrs. D. M. – Sen. Prof. Off.
* DE JAGER, Mrs. L. – Res. Asst.
* LOUW, Miss J. – Res. Asst.
Durban, Univ. of Durban-Westville,
Dept. of Zool.
* SMIT, A. L. – Prof., Head
* FRANK, G. H. – Sen. Lect.

Johannesburg, Rand Afrikaans Univ.,
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SWANEPOEL, J. H. – Lect.
Johannesburg, Univ. of the Witwatersrand,
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* ANDREW, Miss A. – Assoc. Prof.
* BERMAN (KRAMER), Mrs. B. – Lect.
Fac. of Sci., Dept. of Zool.
PATERSON, H. E. – Prof., Head
GABIE (GUBBAY), Mrs. V. – Sen. Lect.
FABIAN, B. C. – Sen. Lect.
CAUNTER (DEVIS), Mrs. R. J. – Lect.
Pretoria, Univ. of Pretoria,
Mammal Res. Inst.
* SKINNER, J. D. – Prof., Dir.
Stellenbosch, Univ. of Stellenbosch,
Fac. of Sci., Zool. Inst.
TOIT, C. A. du – Prof., Dir.
KOCK, J. M. de – Sen. Lect.

CANADA

ALBERTA (Alta.)

Calgary, Univ. of Calgary,
Fac. of Arts & Sci., Dept. of Biol.
DUERKSEN, J. D. – Prof.
BROWDER, L. W. – Assoc. Prof.
BEWLEY, J. D. – Asst. Prof.
Fac. of Med., Health Sci. Ctr.,
Div. of Med. Biochem.
* CHURCH, R. B. – Prof., Head
* HANCOCK, R. L. – Assoc. Prof.
LIN, C. C. – Assoc. Prof.
* SCHULTZ, G. A. – Asst. Prof.
Div. of Obstet. & Gynecol.
* HAY, D. M. – Prof.
* TAYLOR, P. J. – Asst. Prof.
Div. of Pathol.
DICKSON, A. D. – Prof., Head
HOLMES, P. V. – Asst. Prof.
SPIRA, A. W. – Asst. Prof.
Fac. of Sci., Dept. of Physics
* CHALLICE, C. E. – Prof.
Edmonton, Univ. of Alberta,
Cancer Res. Unit
* TAMAOKI, T. – Assoc. Prof.
Fac. of Med., Dept. of Immunol.
LONGENECKER, B. M.
Fac. of Sci., Dept. of Entomol.
* CRAIG, D. A. – Assoc. Prof.
* HEMING, B. S. – Assoc. Prof.
Dept. of Physiol.
* SANDERS, E. J. – Assoc. Prof.
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* EISENBERG ZALIK, Mrs. S. – Assoc. Prof.

BRITISH COLUMBIA (B.C.)

Burnaby, Simon Fraser Univ.,
Dept. of Biol. Sci.
* NAIR, K. K. – Prof.
Vancouver, Univ. of Brit. Columbia,
Cancer Res. Ctr.
* GOLDBERG, R. B. – Post-doct. Fellow
Fac. of Dent., Dept. of Oral Biol.
* SHAH, R. M. – Asst. Prof.
Dept. of Chem.
* LACALLI, Th. C.
Poultry Sci. Dept.
* FITZSIMMONS, R. C. – Assoc. Prof.
Dept. of Zool.
* FINNEGAN, C. V. – Prof.
* AUERSPERG, N. – Prof.
* FORD, P. – Assoc. Prof.
* BERGER, J. D. – Asst. Prof.
* KASINSKY, H. E. – Asst. Prof.
* REEVES, O. R. – Asst. Prof.
* SLAVINSKY, Mrs. E. A. – Grad. Stud.
* JONES, Miss A. H. – Grad. Stud.
* HASWELL, Ms. P. – Grad. Stud.
* HUANG, Ms. S. Y. – Grad. Stud.
* KREIS, C. G. – Grad. Stud.
* POLLOCK, Ms. C. – Grad. Stud.
* BOOGAARD, Ms. C. L. – Grad. Stud.
West Vancouver, Fish. & Mar. Serv.,
Dept. of Environm., Vancouver Lab.
* DONALDSON, E. M. – Res. Scient. II

MANITOBA (Man.)

Winnipeg, Univ. of Manitoba,
Fac. of Agric., Dept. of Entomol.
* BRUST, R. A. – Prof.
Facs. of Med. and Dent.,
Dept. of Anat.
* BERTALANFFY, F. D. – Prof.
* HOSHINO, K. – Prof.
* PERSAUD, T. V. N. – Prof.
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* RON, A. – Lect.
* SEKELES, E. – Lect.
* GANCHIROW, D. – Lect.
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malformations
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Aves
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Berman
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	Hall
	Overman
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	Uemura
Homo	Gray
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	Kollros
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	Kischer
	Kollar
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Homo	Carmona
	Cauna
	Hashimoto
	Kischer
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Insecta	Tokuyasu
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Mammalia	Lakshmanan
histones	
Amphibia	Byrd
Echinoidea	Byrd
hybrids	
Insecta	Novaes
	Salles
	Schreiber
immunology	
Mammalia	Bennett

VEGETATIVE NERVOUS SYSTEM
see Autonomic nervous system

VERTEBRAE (vertebral column)

Aves	Lamprecht
Mammalia	Evans
	Watson
Reptilia	Werner
Teleostei	Gabriel

VIRUS(ES)

Amphibia	Mizell
Aves	Drachman
	Roth
	Tahara
	Temin
	Watanabe
Homo	Benirschke
	Shepard
Mammalia	Brown
	Kao
	Rifkind

VISCERA

VISCERAL SKELETON
see Skull (& visceral skeleton)

VITAL STAINING

VITAMIN(S)

	Caston
Amphibia	Chandra
	Michael
Aves	Levenson
Mammalia	Azoubel
	Beresford
	Fraser
	Hardy
	Herold
	Iucif
	King
	Lamano
	Lewis
	Pennypacker
	Van Exan

VITELLINE MEMBRANE
see Egg(s)

VITELLOGENESIS
see Oogenesis

VIVIPARITY
see Reproduction

WATER

Reptilia	Goel

WING(S)

Aves	Cairns
	Goff

WOLFFIAN DUCT
see Urogenital system

WOUND HEALING

Amphibia	Derby
	Radice
Anthozoa	Lenhoff
Aves	Takeuchi
Homo	Deck
	Kischer
Insecta	Bryant
Mammalia	Deck
	Schmidt
Reptilia	Maderson

XANTHOPHORES
see Chromophore(s)

X-IRRADIATION
see also Irradiation; Radiomimetic agents

Amphibia	Farberov
Insecta	Rockstein
Mammalia	Altman
	Bertalanffy
	Hayashi
	Hoshino
	Kameyama
	Murakami
	Nakazawa
	Shoji
	Takehira

YOLK
see also Egg; Nutrition; Oogenesis

Amphibia	Massover
	Ward
Aves	Fainstain
	Harrison
	Kobayashi
	Nonami
Crustacea	Kerr
	Laufer
Insecta	Laufer
	Loughton
Teleostei	Yamagami

YOLK SAC
see Embryonic membranes

Most of these notices are descriptive rather than critical. Their main aim is to provide an idea of the scope and potential usefulness of the books. All notices (unless signed) are written by the editor; if necessary he solicits the opinion of the staff of the Hubrecht Laboratory or of other specialists.

Dissertations, some research monographs, and other works of a very specialized nature or written in languages not generally known, are usually provided with brief annotations only.

Various types of books are distinguished according to the following criteria:

Treatises: large comparative or systematic works, incl. serial publications
Textbooks: incl. "readers", introductions, compendia, practical manuals, etc.
Monographs: incl. collections of reviews, essays, atlases etc.
Dissertations: academic theses
Symposium reports: incl. reports of congresses, conferences, meetings, etc.
Collections of papers: containing original research papers by various authors, or reprintings of papers by one author
Books of readings: containing reprintings of papers by various authors
Reference works: incl. glossaries, data books, source books, etc.

CONTENTS

The numbers refer to the serial numbers of the notices. Cross references will be found in the heading of each category on the page where it begins.

INDEX TO AUTHORS AND EDITORS

with reference to serial numbers of book notices

GENERAL DEVELOPMENTAL BIOLOGY (see also 100,119)

Textbooks

1.
B. I. BALINSKY. 1975. AN INTRODUCTION TO EMBRYOLOGY. 4th edit.
Saunders, Philadelphia, etc. XVIII, 648 pp., 469 figs., 19 tabs., subject index.

The third edition (1970) of this well-known text was reviewed in Gen. Embryol. Inf. Serv. *14*, 1971. Our comments on the fourth edition are essentially the same as those given at that time. Although the subject matter has been rearranged and updated in places, it has essentially remained the same book and its flaws stand out more clearly than in 1970. Several important and exciting frontier areas are neglected or just grazed, while much seminal work of the last decade is not mentioned at all. (A section that has been considerably expanded and contains several good new figures is that dealing with cellular aspects of morphogenesis.) Although the book has no doubt performed an important function in the past there are now much more modern treatments available.

Very little of the older material has been weeded out, although this would have been possible without much loss to the reader. The bibliography contains about 120 new titles on a total of ca. 900, and only about half of these are from 1970 or later.

2.
R. CHANDEBOIS. 1976. MORPHOGÉNÉTIQUE DES ANIMAUX PLURICELLULAIRES
Maloine, Paris. 461 pp., 185 figs., subject index. Ffr. 195.00

Contents (abbreviated): I. Le métabolisme de la cellule différenciée: 1. Les définitions du terme différenciation, 2. Les principes de la spécialisation métabolique des cellules différenciées; II. Les transformations des populations cellulaires au cours de l'existence des métazoaires: 1. Les grandes périodes de la vie d'un Métazoaire, 2. La croissance des populations de cellules différenciées, 3. La progression de la différenciation, 4. La morphochorèse; III. L'intégration des phénomènes de croissance et de differenciation aux diverses périodes de la vie des métazoaires: 1. Les systèmes d'intégration et les modèles structuraux, 2. La programmation du développement jusqu'à la gastrulation, 3. La parcellation et l'organisation des champs morphogénétiques au cours de l'organogénèse préfonctionnelle chez les vertébrés, 4. Le rôle de la diffusion des hormones dans l'achèvement de l'organogénèse, 5. L'intégration des phénomènes de croissance au cours de la période post-embryonnaire, 6. La morphogénèse chez l'adulte

This textbook is a successful attempt at integration of a vast amount of information on morphogenesis, based on an original central idea. The author felt that a reconciliation was in order between the theories of morphogenesis as framed in the older literature and

the prospects opened by molecular biology. She has tried to bridge the gap by stressing a concept that she has given the happy name of "cell sociology": the integration of the functions of individual cells in the organism by constant interchange of information resulting in continuous cellular transformation.

The book is in several respects typically French: lucid but at times rather abstract style; critical preoccupation with theory and definition; much more emphasis than usual on morphogenesis in later stages and in the adult, and on work with invertebrates. Although the necessary knowledge of developmental cell biology is only beginning to emerge, the book provides a broad and dynamic theoretical framework for older, recent and future studies. It is not surprising that the author comes up with some unorthodox but nevertheless well-argued views, particularly as regards the role of gradients and morphogenetic fields and the significance of regulation for normal development.

An interesting didactic feature is the provision of 355 numbered "abstracts" in the page margins summarizing the main conclusions drawn in the text. Each part has a lengthy "conclusion" and the book is rounded off by a 20-page chapter of general conclusions. The numerous line drawings are good and have explanatory captions. Although numerous authors are quoted in the text the general reading list at the end of the book is regrettably short.

3.
S. E. LURIA. 1975. 36 LECTURES IN BIOLOGY
M.I.T. Press, Cambridge, Mass., etc. XX, 439 pp., numerous illustrations, subject index. £ 9.00 (cloth), £ 4.95 (paper)

Contents: I. Cell biology and cell chemistry, II. Biochemistry, III. Genetics, IV. Developmental biology, V. Physiology

This book is based on a transcript of a General Biology course taught at M.I.T. in 1973 and '74. The unifying theme is that of living organisms as possessors of a programme, so the emphasis is on molecular genetics and cell biology. Developmental biology and physiology are treated as the expression of the programme. The book is primarily meant for junior students but is admirably suited for biology teachers and for physicists and chemists entering the area of biology.

Part IV on development covers seven lectures (62 pages). Although there are a few minor unclarities and inaccuracies the text reads well. It touches on many developing systems, from bacteria and slime moulds through plants to lower and higher animals, but nevertheless is logically coherent. Subjects which are not covered are cellular metaplasia, transdetermination, and homeotic mutations.

No literature is of course cited in the text, but reference is made to a number of recent texts. The illustrations are extremely simple line drawings copied directly from the blackboard. They do not convey more than the main principles.

4.
J. McKENZIE. 1976. AN INTRODUCTION TO DEVELOPMENTAL BIOLOGY
Blackwell Scient. Publ., Oxford, etc. VIII, 223 pp., 111 figs., subject index. £ 4.25 (paper)

This text for beginning students is based on many years of teaching experience. Its aim is breadth rather than depth of treatment and as such it serves its purpose well, in addition to being written in a pleasant, readable style. The arrangement of the subject matter is unconventional but useful because it facilitates the selection of specific topics by the student or teacher. The emphasis is on structural aspects and when mechanisms are discussed this is generally done in a tentative manner. Although much stress is placed on mammals, particularly in the chapter on organogenesis, comparative and evolutionary viewpoints are never lost sight of.

In the chapter on the early development of amphioxus, amphibians and birds the figures are very schematic and the text is not free from occasional errors. After the main

descriptive sections, occupying about half of the book, there are a series of brief chapters dealing, among other things, with growth and ageing, cell differentiation and its mechanisms, regeneration and repair, immunological aspects, teratology, and behaviour and learning. The last three chapters deal somewhat more extensively with development in higher plants and invertebrates (with emphasis on insects), and with cell and organ culture.

This reviewer feels that the central concept of selective gene activation could have been brought out more clearly, and that it would have been useful to have succinct definitions of important concepts such as morphogenesis, regulation, and metaplasia.

The book is illustrated mainly with good line drawings. All chapters are concluded by a list of books for further reading.

5.
J. NITSCHMANN. 1973. ENTWICKLUNG BEI MENSCH UND TIER (Embryologie)
Vieweg, Braunschweig. Wissensch. Taschenbücher Biologie 111. 175 pp., 45 figs., 16 pls., combined subject, author and taxonomic index. DM 12.80 (paper)

This little book was written primarily for biology teachers and beginning students. It is a synthesis of the classical data on comparative, experimental and biochemical embryology. Within the limited space available the author has produced a solid, well-organised text which can be very useful as an introduction. It must be said, however, that the coverage of experimental embryology is very selective and decidedly dated. For those specifically interested in this aspect collateral reading must be recommended. At the end of the book there are brief chapters on developmental anomalies, cell culture and regeneration, and ageing.

The book is illustrated with simple but good line drawings and interesting photographic plates.

Symposium reports

6.
CIBA – Symposium. 1975. CELL PATTERNING
Elsevier – Excerpta Medica – North-Holland, Amsterdam, etc. Ciba Foundation Symposium 29 (new series). VIII, 356 pp., 90 figs., 11 tabs., subject index. Dfl. 62.50, $ 26.95

Contributors: Barbera, Brenner (chairman), Bryant, Frankel, García-Bellido, Gardner, Gurdon, Hunt, Johnson, Kauffman, Lawrence, Lewis, Marchase, Mark, Meinertzhagen, Roth, Sander, Sengel, Summerbell, Wolpert

This report of a Ciba Symposium is again an outstanding success. The chairman has succeeded in bringing together a large proportion of the world's leading investigators of pattern formation in all sorts of organisms including protozoans. Although to those who regularly keep up with the literature in this area there is little that is very new in the volume, it is very useful to have it all together in readable short chapters. To outsiders and newcomers to the field the book is an invaluable source of information.

As usual the discussions following each chapter are among the most interesting parts of the book. The sometimes heated exchanges between the proponents of the molecular and the global (macroscopic) approaches are both stimulating and revealing. There are also many non-trivial remarks on terminology.

As we have come to expect from this publisher the book is very well produced and illustrated.

7.
D. McMAHON and C. F. FOX, eds. 1975. DEVELOPMENTAL BIOLOGY: Pattern formation, gene regulation
Benjamin, Menlo Park, etc. ICN-UCLA Symposia on Molecular and Cellular Biology, vol. 2. X, 604 pp., 207 figs., 56 tabs., subject index. $ 19,95

This symposium was held in Squaw Valley, Calif. in March 1975. Of the more than 100 contributors almost one quarter came from countries other than the U.S.A. Several are established workers but there were also many younger scientists. The contributions vary widely in scope, some being reviews of recent work and others shorter or longer research reports. There is much in the volume that was very new at the time of writing. No discussions are recorded.

Almost all of the 19 contributions in the section on cell surface receptors, cell adhesion and pattern formation will be of interest to our readers. The range of systems covered is very broad, with cellular slime moulds and the vertebrate visual system slightly predominating. Among the 20 contributions in the section on regulation of translation and transcription at least half are of direct interest to developmental biologists. Here amphibians, slime moulds and insects are particularly well represented. Two papers finally deal with abnormal human development.

The book is produced direct from minimally edited typescripts. The photographic illustrations are well reproduced.

8.
W. RATHMAYER, ed. 1975. VERHANDLUNGEN DER DEUTSCHEN ZOOLOGISCHEN GESELLSCHAFT; 67. Jahresversammlung
Fischer, Stuttgart. XII, 420 pp., 272 figs., 26 tabs. DM 140.00 (paper)

More than one third of this session report of the German Zoological Society is devoted to embryology and developmental physiology, an area that has a strong tradition in Germany. Most of the 33 papers in this section are brief summaries of recent original research that has often been or will be extensively published elsewhere. There is no special order to the papers. More than half of them are concerned with insect development. All papers have English abstracts. The series is opened by an excellent 12-page review on pattern formation in metazoans by Sander.

The volume provides a useful cross-section of what is going on in Germany at present, which is a great deal. The picture becomes more complete if one reads the successive session reports, which are published each year. The volumes are printed on glossy paper and have beautiful illustrations, but this makes them rather expensive to buy as an "extra".

Reference works

9.
T. A. DETTLAFF, ed. 1975. DEVELOPMENTAL-BIOLOGICAL SYSTEMS (in Russian)
Publ. House Nauka, Moscow. Series: Problems in Developmental Biology. 579 pp., 132 figs., 27 tabs.

Source book on the following developing systems: *Amoeba, Chlamydomonas, Hydra, Tubifex, Lymnaea, Chironomus, Drosophila, Apis, Bombyx,* Sea urchins, *Acipenser* (2 spp.), *Salmo, Misgurnus, Triturus, Pleurodeles, Ambystoma, Xenopus, Rana, Gallus,* Laboratory mammals: extensive information on taxonomy, distribution, maintenance and breeding, gametes and fertilisation, developmental stages, etc.; normal tables included wherever available; numerous good photographs and excellent line drawings from many sources; much recent literature; subject and taxonomic indexes.

Monographs

10.
G. T. HERMAN and G. ROZENBERG. 1975. DEVELOPMENTAL SYSTEMS AND LANGUAGES
North-Holland, Amsterdam, etc.; American Elsevier, New York. XVI, 363 pp., 34 figs., 5 pls., 9 tabs., author and subject indexes. Dfl. 75.00, $ 31.25

This book was written for both biologists and language theorists and its main body (part I: Languages and part II: Sequences) is difficult to read for biologists lacking a background in formal language theory. The biologist will be interested most in ch.0 (Developmental systems and languages in their biological context, contributed by Lindenmayer) and in part III (consisting of chapters on the firing squad synchronisation problem, on polarity and the French Flag problem, and on the simulation of pigmentation patterns on snail shells and of heterocyst formation in blue-green algae).

Lindenmayer states in his introductory chapter that the main strength of the theory expounded in the book at present lies in the area of interactionless developmental systems (0L or zero Lindenmayer systems – a Lindenmayer system being a growing cellular array of finite automata). The mathematics of interactive systems is not as far advanced yet, although there are promising results.

In contrasting the discrete, combinatorial methods of the present study with continuous mathematical models Lindenmayer stresses that the former "are far more advantageous in cases where many different cytological and biochemical processes combine in determining development".

11.
R. THOM. 1975. STRUCTURAL STABILITY AND MORPHOGENESIS, an outline of a general theory of models, translated from the French edition, as updated by the author, by D. H. Fowler
Benjamin, Reading., Mass. XVIII, 348 pp., 168 figs., subject index. $ 22.50, £ 7.45 (paper), £ 12.40 (cloth)

This book first appeared in French in 1972 and was reviewed in Gen. Embryol. Inf. Serv. *15*, part 1, 1973. We refer the reader to that review and only say here that several critics have hailed the book as a highly original and stimulating, though speculative contribution to the methodology of thought.

C. H. Waddington has provided a special foreword to the English edition which goes some way in telling the reader what he may expect. He emphasizes that the book is "a part of mathematics, not in a direct way a part of biology". He also points out that Thom's approach deals particularly with the boundaries of things, and thus with discontinuities (catastrophes), whereas the mathematics used in almost all science so far presupposes continuity.

The translation was made in close cooperation with the author. Although the present reviewer cannot judge the more technical parts, it certainly reads very well. All figures have been redrawn for this edition. (In the caption of special illustration 11 the name of the second author is badly mangled.)

Symposium reports

12.
J. D. COWAN, ed. 1974. SOME MATHEMATICAL QUESTIONS IN BIOLOGY. V
Amer. Mathematical Society, Providence. Lectures on Mathematics in the Life Sciences, vol. 6. VI, 141 pp., 35 figs., 2 tabs., author and subject indexes.

This symposium was held in 1973 and part of the work reported is therefore probably already published more extensively elsewhere. Three out of the six papers in this

heterogeneous collection deal in some way with development. That by Thom on gradients in biology and mathematics is probably only understandable for mathematicians, and that by Wolpert on positional information brings nothing new. The paper by Robertson and Cohen on slime mould development is the only one that has considerable body, although it is essentially a progress report.

Other papers deal with a two-cell model, with population dynamics, and with models of large-scale nervous activity.

PLANT DEVELOPMENT (general) (see also 3,4)

Textbooks

13.
S. S. BHOJWANI and S. P. BHATNAGAR. 1974. THE EMBRYOLOGY OF ANGIOSPERMS
Vikas Publ. House, Delhi, etc. XII, 264 pp., 170 figs., 19 tabs., combined taxonomic and subject index. Rs 24 (paper)

This text is primarily intended for B.Sc. courses in India but it could be very useful to more advanced students and teachers. It is the first comprehensive book on the subject in English. The treatment is didactically clear and up to date.

The major topics covered are the development of gametophytes, pollination and fertilisation, development of endosperm and embryo, polyembryony, apomixis, and seed development. A valuable feature is a chapter on experimental and applied embryology. Experimental findings are also treated elsewhere if appropriate.

The numerous good line drawings and diagrams have explanatory captions. Some photographs are also included. All chapters have a brief list of further readings.

14.
D. HESS. 1975. PLANT PHYSIOLOGY; molecular, biochemical, and physiological fundamentals of metabolism and development
Springer, Berlin, etc. XVI, 333 pp., 248 figs., 11 tabs., subject index. DM 36.30, $ 14,80 (paper)

This is the English translation of a German text first published in 1970 and favourably reviewed in Gen. Embryol. Inf. Serv. *15*, 2, 1974. It has been well received in Germany. Its outstanding feature is the integrated treatment of both general and developmental physiology from the point of view of molecular biology.

The text has been slightly updated here and there. Although the translation is not entirely faultless and was apparently not checked by the author, it reads well and there are no outright mistakes. The illustrations have gained by the larger format. The extensive reading list has not been updated.

15.
A. C. LEOPOLD and P. E. KRIEDEMANN. 1975. PLANT GROWTH AND DEVELOPMENT. 2nd. edit.
McGraw-Hill, New York, etc. XIV, 545 pp., 413 figs., 41 tabs., subject index. $ 17.95, £ 9.00

Contents (abbreviated): I. Assimilation and growth (3 chs.), II. Growth regulation (6 chs.), III. Development (5 chs.), IV. Ecological physiology (3 chs.), V. Chemical modification of plants (1 ch.)

This text was first published in 1964 but has now been substantially revised and expanded. Both authors are horticulturists; the second author is particularly responsible for parts I and IV. Their philosophy is to confront the student with the actual experi-

mental evidence, even if it is sometimes conflicting. They have tried to strike a balance between classical and recent findings, and this is reflected in the bibliography.

The book is clearly attuned to the requirements of horticultural students and consequently contains little information on the embryo, meristems, plant tissue and cell culture, and regeneration. Part II has a brief chapter on polarity and differentiation, while the chapters in part III deal with germination and dormancy, maturation and senescence, flowering, fruiting, and tubers and bulbs.

The book is attractively produced and very well illustrated.

16.
E. THOMAS and M. R. DAVEY. 1975. FROM SINGLE CELLS TO PLANTS
Wykeham, London. The Wykeham Science Series. XVI, 171 pp., 59 figs., 7 tabs., taxonomic and subject indexes. £ 2.50 (paper), $ 7.20 (cloth)

This book was written primarily for beginning students but is so comprehensive that it may also be of use to more advanced students. It is a well-organised and critical survey of the whole field of plant tissue and cell culture (including morphogenesis *in vitro* and the culture of isolated protoplasts and haploid cells). Much emphasis is placed on technical and methodological aspects, while a final chapter discusses unsolved problems in relation to technical difficulties and prospects for the future.

The book is profusely illustrated, particularly with well-chosen photographs (whose reproduction is however not always optimal). The literature references are restricted to a brief reading list.

Monographs

17.
H. N. KRISHNAMOORTHY, ed. 1975. GIBBERELLINS AND PLANT GROWTH
Wiley Eastern, New Delhi. XVI, 356 pp., 65 figs., 42 tabs., author and subject indexes. £ 5.25, $ 10.50

Contributors: Barendse,Chen, Crozier, Ecklund, Fletcher, Kaufman, Krishnamoorthy, Low, Mann, Moore, Reeve, Corcoran, Russell, Shininger, Valdovinos

This is the first reference work on gibberellins in the English language. It was written by a team of specialists from all over the globe, and in 13 chapters covers every conceivable aspect from the chemistry and biosynthesis of gibberellins through their morphological and physiological effects to their mechanism of action and their antagonists.

The chapters are well organised and adequately cross-referenced. Evidently the book has taken considerable time to produce for in most chapters the literature is no more recent than about 1972; only three chapters have been updated by means of addenda.

The standard of production is very reasonable and the price surprisingly low. If only the process of production could be speeded up, publishing in India could become very attractive.

18.
D. VINCE-PRUE. 1975. PHOTOPERIODISM IN PLANTS
McGraw-Hill, London, etc. XIV, 444 pp., 116 figs., 67 tabs., combined taxonomic and subject index. £ 9,95

The transition from the vegetative to the reproductive state in plants is a dramatic switch in developmental pathway that is under the (often absolute) control of an environmental trigger (daylength) and is of considerable importance to developmental biology generally. This book is a competent, well-organised and judiciously selective survey of this complicated and confusing topic.

Almost one third of the book is devoted to what is known at present about the induction of flowering as a photoperiodic response and includes discussions of such topics as the existence of a flowering hormone, the phytochrome system, and the biochemistry of flowering and flower induction. The remainder of the book deals with the effects of daylength on flower differentiation and growth, and on vegetative growth, respectively.

19.
M. M. YEOMAN, ed. 1976. CELL DIVISION IN HIGHER PLANTS
Academic Press, London, etc. Experimental Botany, an international series of monographs, Vol. 7. X, 542 pp., 92 figs., 16 tabs., combined subject and taxonomic index. £ 16.50, $ 41.00

Contents: 1. Significance of division in the higher plant; 2. The visible events of mitotic cell division; 3. Molecular events of the cell cycle: a preparation for division; 4. The replication of plastids in higher plants; 5. The cell in sporogenesis and spore development; 6. Modification and errors of mitotic cell division in relation to differentiation; 7. The root apex; 8. The shoot apex; 9. Cell division in leaves; 10. The cambium; 11. The role of cell division in angiosperm embryology; 12. Disorganized systems; 13. Summary and perspectives

Of the 12 co-authors of this volume 11 are British, and six of those are from the Department of Botany of Edinburgh University. The book brings together for the first time most of the varied aspects of cell division in the vegetative stage of the life of the plant: mitosis and meiosis as processes in their own right, and the contributions of cell division to growth, differentiation, and the genesis of form. To ensure an integrated treatment some overlap among chapters was deliberately retained and frequent cross-references are made. The treatment is critical and the authors clearly point out the gaps in our knowledge and the most fruitful areas for future research.

The table of contents speaks for itself. Ch.1 provides the historical and general background and introduces some theoretical questions. The final chapter is brief but serves its integrative function very well.

The book is well produced and has numerous very good illustrations. The 80-page bibliography contains both older and recent literature (up to 1974) and conveniently serves as an author index.

Symposium reports

20.
J. G. TORREY and D. T. CLARKSON, eds. 1975. THE DEVELOPMENT AND FUNCTION OF ROOTS
Academic Press, London, etc. Third Cabot Symposium. X, 618 pp., 217 figs., 49 tabs., author and subject indexes. £ 12.50, $ 32.25

This international symposium was held in Petersham, Mass. in April 1974 and brought together close to 30 experts from eight countries. We briefly announce the book for the benefit of those who are interested both in roots as such and in the role they play in whole plant development.

The 24 reviews and research reports making up the book contain much new information on a variety of subjects. Among these we specifically mention: the quiescent centre, the root cap, role and production of cytokinins in roots, differentiation patterns in roots, development of lateral roots and root buds, genetics of root development, physiology of growing root cells, auxin transport in roots, and structural development of endodermis.

INVERTEBRATE DEVELOPMENT (general) (see also 48,56)

Treatises

21.
G. CZIHAK, ed. 1975. THE SEA URCHIN EMBRYO, biochemistry and morphogenesis Springer, Berlin etc. XX, 700 pp., 352 figs., 90 tabs., subject index. DM 139.00, $ 57.00

Contributors: Baltzer, Brandriff, Chen, Gustafson, Hinegardner, Hörstadius, Ishikawa, N. Isono, Y. Isono, Lallier, von Ledebur-Villiger, Millonig, Okazaki, Osanai, Piatigorsky, Rappaport, Runnström, Rustad, Schmekel, Yanagisawa

The nature of this treatise is primarily compilatory. In over 560 pages of text and some 100 pages of bibliography, all in small print, an enormous wealth of information has been amassed by carefully selected American, European and Japanese authors. In 22 chapters of very unequal length almost every conceivable aspect of the normal and experimental morphology, cell biology, physiology and biochemistry of sea urchin development passes in review. There are two introductory chapters on the care and handling of American and Japanese sea urchins, respectively. Although a certain amount of molecular biology is found throughout the book, a systematic treatment of this subject was considered premature.

In a work of this kind one clearly cannot expect to find the most recent advances. In most chapters the literature cited goes no further than 1970 or '71, with occasional titles from later years. Only one chapter was updated later. The literature prior to 1970 is very completely covered. Inevitably there is considerable overlap between chapters in some areas. In the shorter chapters the emphasis is usually on the author's own contributions.

The book is printed in close offset; it is profusely illustrated with high-quality figures, many of which are original.

Textbooks

22.
J. M. ASHWORTH and J. DEE. 1975. THE BIOLOGY OF SLIME MOULDS
E. Arnold, London. The Institute of Biology's Studies in Biology no. 56. IV, 68 pp., 27 figs. £ 2.80 (cloth), £ 1.40 (paper)

This little book was written primarily for teachers and students and is not meant to be comprehensive but to present a personal view arising from the authors' own research experience and interests. Nevertheless, an attempt was made to give a balanced account. All problems of slime mould development that are at present being studied are at least briefly touched upon, and attention is drawn to unsolved problems.

The Myxomycetes and the Acrasiales are each allotted about half of the space. The text is well organized and fluently written. No literature is cited in the text and the reading list consists almost entirely of books. An appendix lists culture methods and sources of supply.

The illustrations are of good quality except for the three electron micrographs.

Monographs

23.
W. F. LOOMIS. 1975. DICTYOSTELIUM DISCOIDEUM, a developmental system
Academic Press, New York, etc. X, 214 pp., 102 figs., 9 tabs., subject index. $ 19.50, £9.35

Contents: 1. The life cycle, 2. Amoeboid stage, 3. The genome, 4. Genetics of *Dictyostelium*, 5. Aggregation stage, 6. Pseudoplasmodial stage, 7. Culmination stage, 8. Macromolecular aspects of development, 9. Enzymatic aspects of development, 10. Changes in metabolites during development, 11. The relation of biochemical differentiations to morphogenesis, 12. Modifications of development, 13. Tissue proportioning

This book on an increasingly popular and promising, simple eukaryotic developmental system does not attempt to be exhaustive, but rather to bring into focus most of the major past and present studies on this organism in a concise and readable form. In this it is successful and it will certainly perform a most useful function for many years to come.

As is apparent from the table of contents the subject matter is organised partly on the basis of developmental stages and partly around selected aspects applying to all stages. This approach has made possible a subdivision into short, easily surveyable chapters. Ch.12 deals mainly with external factors, while ch.13 discusses various models proposed to explain the regulation of the differentiation pattern in the pseudoplasmodium, and the evidence for and against them.

The photographic illustrations, provided by P. Farnsworth, are excellent. The bibliography contains some 700 titles and runs well into 1974. An author index would have been helpful.

24.
L. S. OLIVE. 1975. THE MYCETOZOANS
Academic Press, New York, etc. X, 293 pp., 251 figs., taxonomic and subject indexes. $ 23.50, £11.30

This monograph for the first time brings together comprehensive information on the biology and taxonomy of the mycetozoans and associated groups (*Plasmodiophorina* and *Labyrinthulina*). A revised classification is proposed that places the *Dictyostelia* and myxomycetes in one class and the *Acrasida* in another. The resulting six main groups (including the recently discovered primitive *Protostelia*) are treated clearly and systematically, each chapter showing the same format: isolation and maintenance, classification and descriptions, details of life cycle, ultrastructure, and genetics.

Because of their significance for developmental studies the life cycles, ultrastructure and genetics of the *Dictyostelia* and the myxomycetes are reviewed fairly extensively (over 30 pp. for each group). Investigators working on these groups will also be interested to read about the life cycles of other, less familiar mycetozoans.

The book is illustrated mainly with a profusion of excellent photographs and micrographs from recent sources, many of them previously unpublished. The literature reviewed goes until 1973 with occasional references from 1974.

25.
P. F. RÖSELER. 1975. DIE KASTEN DER SOZIALEN BIENEN
F. Steiner, Wiesbaden. Akademie der Wissensch. und der Literatur (Mainz), Math.-Naturw. Kl., Informationsaufnahme und Informationsverarbeitung im lebenden Organismus *3*. 97 pp., 26 figs., 2 tabs. DM 26.40 (paper)

Systematic review of literature data on three bee families with many subfamilies; sections on morphological and physiological polymorphism, caste determination, and fertility regulation; evolutionary considerations; 12-page bibliography until 1973; good line drawings.

Dissertations

26.
H.-J. MARTHY. 1976. LES DÉTERMINISMES DANS LA MORPHOGENÈSE, contribution à l'embryologie expérimentale des Céphalopodes
Ph.D. thesis, Paris (Univ. Curie). 55 pp., 7 figs. (mimeographed)

Synthesis of 7 previous publications (1970–75) and newer findings on the embryology of *Loligo vulgaris*; conclusions contrasted with those of Arnold; excellent photographs.

27.
F. S. CHIA and A. H. WHITELEY, eds. 1975. DEVELOPMENTAL BIOLOGY OF THE ECHINODERMS
Amer. Soc. of Zoologists, Utica, N.Y. American Zoologist *15*, 3. 293 pp., 199 figs., 26 tabs. $ 6.50 (paper)

Contributors: Brachet, Bryan, Chia, Ebert, Epel, Hendler, Hinegardner, Kanatani, Okazaki, Pearse, Raff, Spiegel, Strathmann, Summers, Timourian, Whiteley

This symposium was held in December 1973 at Houston, Tex. Apart from the delightful historical introduction by Brachet, all contributions are lengthy research reports or reviews of recent work on a great variety of topics.

We briefly characterise the contributions that we think are of prime interest to our readers: maturation-inducing substances; programme and mechanism of fertilisation; functional morphology of sperm; spicule formation in isolated micromeres; reaggregation of embryonic cells; determination in the blastula; repetitive DNA and determination; microtubule assembly and biochemistry; morphology, genetics and adaptational significance of postembryonic development; growth zones in skeletal ossicles.

The volume is illustrated mainly with a profusion of beautiful photographs and micrographs.

28.
R. LAFONT, organiser. 1973. PREMIER SÉMINAIRE SUR LA DIFFÉRENCIATION CELLULAIRE CHEZ LES INSECTES
École Normale Supérieure, Lab. de Zool., Paris. Publ. du Lab. de Zool., École Norm. Supér. No. 1. 72 pp. 21 figs. (mimeographed)

The first of a series of publications from the above laboratory; first all-French colloquium held in Nemours in September 1972; research reports of work on blattid embryo and leg, lepidopteran wing, and odonate visual system; review on nucleic acid metabolism; line drawings and diagrams.

29.
R. LAFONT, organiser. 1974. DEUXIÈME SÉMINAIRE SUR LA DIFFÉRENCIATION CELLULAIRE CHEZ LES INSECTES
École Normale Supérieure, Lab. de Zool., Paris. Publication du Lab. de Zool., École Norm. Supér. No. 2. 252 pp., 44 figs., 3 pls., 4 tabs. (mimeographed)

See review no. 28 above; second all-French colloquium held in Nemours in October 1973; research reports of work on, among other things, lepidopteran wing and dipteran integument; reviews on ecdysones, juvenile hormones, and RNA metabolism; line drawings, diagrams, and offset photographic plates.

VERTEBRATE DEVELOPMENT (general) (see also 45)

Textbooks

30.
J. B. PHILLIPS. 1975. DEVELOPMENT OF VERTEBRATE ANATOMY
Mosby, St. Louis. VIII, 473 pp., 287 figs., 12 tabs., subject index. $ 15.70

This text aims at integrating comparative anatomy and comparative embryology into one continuous whole. The emphasis is very much on structure, although a limited number of key experiments are described or mentioned and some molecular-biological background is provided.

An introductory Perspective deals with morphogenetic principles, phylogeny, and vertebrate reproductive systems (64 pp.). Of the two almost equally long main parts, Early developmental processes and Organogenesis of vertebrate systems, the latter is more successful than the former. Particularly in the sections on the blastula and germ layer formation the text is often based on outdated information and contains several inaccuracies. The figures of fate maps are over-schematised and in part highly speculative. The attempt to bring all submammalian classes to a common denominator is commendable but no longer acceptable in this form, particularly as regards the early avian embryo. Fig. 6–15 is cryptic and fig. 6–18 decidedly wrong.

The book is produced in a pleasing format and the illustrations (both drawings and photographs) are on the whole quite good. All chapters have reading lists containing both older and fairly recent literature.

31.
S. WISCHNITZER. 1975. ATLAS AND LABORATORY GUIDE FOR VERTEBRATE EMBRYOLOGY
McGraw-Hill, New York, etc. XIV, 157 pp., 129 figs., 5 tabs., index of terms. DM 22.30 (paper)

This manual is intended to help instructors to do justice to both the descriptive and the experimental aspects of vertebrate development within a limited time period. The treatment has therefore been strongly condensed and will have to be supplemented by oral instruction or reading. This reviewer feels that in some respects the condensation has gone too far (for instance: no mention of embryonic induction or primitive streak regression).

The descriptive part consists of five exercises on the frog (gametogenesis till hatching), six on the chick (gametogenesis till 72 hrs.), and three on the pig (gametogenesis till 6 mm., and 10 mm.). Three experimental exercises follow: one on induced ovulation and fertilisation in the frog, one on chick embryos in finger bowls or plastic bags, and one on mouse embryos (normal development and vitamin A teratogenesis).

The two and three-dimensional line drawings are schematic but very successful. Each exercise has a reading list consisting of classical and more recent primary publications; no books are listed.

Monographs

32.
E. M. DEUCHAR. 1975. XENOPUS: THE SOUTH AFRICAN CLAWED FROG
Wiley, London, etc. A Wiley – Interscience Publication. X, 246 pp., 104 figs., 6 tabs., subject index. £ 10.25

Contents: 1. The discovery of Xenopus in its natural habitats; 2. The anatomy of Xenopus; 3. Physiological studies on Xenopus; 4. Gametogenesis, fertilization and the initiation of embryonic development; 5. Development of the embryo and larva of Xenopus laevis; 6. Observations on cleavage and blastula stages; 7. The mechanisms of gastrulation and neurulation; 8. Interactions between tissues in the early embryo; 9. Organogenesis in Xenopus; 10. The control of later events in development; 11. Future possibilities in research on Xenopus

This is a useful survey of many features of a widely used experimental animal by an author who has been familiar with it for many years. Its extensive bibliography makes it particularly suitable as a reference work. However, in some areas (particularly biochemistry) the material has not been sifted very critically. Moreover, in some places the author seems to have written from memory without re-checking her data, which has resulted in a number of mistakes and unclarities.

The table of contents speaks for itself. The treatment is of course selective and different readers will notice different gaps; for instance, I would have liked more information on the mutants described by the Geneva group.

The numerous line drawings are on the whole satisfactory, but most of the photographs are not well reproduced. The caption of fig. 5.3 fails to point out that this is an egg cleaving without the vitelline membrane. The 24-page bibliography runs up to 1972/'73; an addendum lists some 20 more titles from 1972–'74, which have been incorporated into the text.

33.
A. DJANASHVILI, ed. 1975. SOME PROBLEMS OF DEVELOPMENTAL BIOLOGY OF ANIMALS, Vol. 1 (in Russian)
Tbilisi Univ. Press, Tbilisi. 208 pp., 30 figs., 3 tabs.

Summary by Chanturishvili and Goshkheteliani of unorthodox results on the putative genetic and epigenetic role of albumen in avian development; theoretical paper by Chanturisvili on the role of extra-embryonic materials in development; English summaries.

Dissertations

34.
M. A. VEINI-HARITOS. 1975. EXPERIMENTAL STUDIES ON THE DIFFERENTIATION OF HENSEN'S NODE IN THE CHICK EMBRYO (in Greek)
Ph.D. thesis, Athens. 125 pp., 27 figs., 5 tabs. (1-page English and French summaries)

The essential results of this thesis have been published in Wilhelm Roux' Arch. Devel. Biol. *177*, 89–100 (1975).

Symposium reports

35.
G. J. THORBECKE, ed. 1975. BIOLOGY OF AGING AND DEVELOPMENT
Faseb, Bethesda; Plenum, New York, etc. Faseb Monographs Vol. 3. VIII, 344 pp., 143 figs., 39 tabs., subject index. $ 30.00, £ 13.25

This is the report of a series of symposia held in 1974 and first published in Federation Proceedings *34*, nos. 1 and 2. Of the 37 speakers three each were from Canada and England, the remainder from the U.S.A. The papers are short to medium-length reviews intermingled with occasional research reports. The immune system takes pride of place as a model of organogenesis, although other systems are also considered.

Of the six symposia, three contain much material of interest to developmental biologists. They are entitled respectively: Theoretical concepts of developmental and age changes (3 papers, among them a compact but lucid one by Wolpert and Lewis); Gene regulation in differentiation and development (6 papers, all on the immune system); Development and aging in organ systems (6 papers, all on the immune system). One of the other symposia dealt with finite *vs* infinite proliferative and functional capacities of cells, mostly *in vitro*.

The book is well produced and illustrated.

Collections of papers

36.
R. COURRIER, preface. 1975. EMBRYOLOGIE CHIMIQUE ET EXPÉRIMENTALE, résultats récents
Masson, Paris. VI, 400 pp., 35 figs., 15 pls., 9 tabs.

This *Festschrift* for Et. Wolff is a reprinting from *L'Année Biologique*, ser. 4, vol. *13*, 1974. Of the 40-odd articles it contains, a few are brief essays, the remainder either

original research reports or reviews of recent work. Together they reflect the profound influence Wolff has had on embryology, particularly in France but also outside it. Most of the papers are by colleagues in the French-speaking world, by former associates, or by his collaborators at the time of his retirement. Most papers are in French but almost all of them have brief English summaries.

The papers are grouped in four main sections as follows: Experimental morphogenesis and teratogenesis (18 papers), Sex differentiation (8), Physiological, chemical and molecular embryology (9), and Cancer studies (4).

The volume is printed on glossy paper and very well illustrated.

Reference works

37.
T. YAMAMOTO. 1975. MEDAKA (KILLIFISH), biology and strains
Keigaku, Tokyo. Series of Stock Culture in Biological Field. VIII, 365 pp., 92 figs., 18 pls., 8 tabs.

This is an invaluable source book on a species of cyprinodont fish that has already contributed considerably to several areas of biology, including embryology. It consists of 21 short chapters of which several have been contributed by the author's colleagues. Almost everything that is known about the Medaka can be found here.

The chapters of most use to developmental biologists are those on developmental stages (with Normal Table plates), fertilisation, artificial activation, genetics (mainly of colour genes, some 40 in number), and sex determination and differentiation.

The book is very well illustrated and has a series of beautiful colour plates of colour phenotypes and chromatophores. It is concluded by a complete bibliography on the Medaka consisting of close to 1,000 titles; the large majority are in Japanese or were published in Japanese journals. There are no indexes.

DEVELOPMENT OF MAMMALS AND MAN (general) (see also 52,54,57,68,70,79,114, 116, 123)

Textbooks

38.
M. B. L. CRAIGMYLE and R. PRESLEY. 1975. EMBRYOLOGY. 2nd edit.
Baillière Tindall, London. Concise Medical Textbooks. VIII, 263 pp., 105 figs., 9 tabs., subject index

The first edition of this elementary text for medical students appeared in 1966. The present edition was almost entirely rewritten and considerably extended. Since it deals exclusively with human development the references to experimental embryology are minimal. On the other hand, the major developmental anomalies are briefly considered.

All the illustrations are new and much better than in the first edition. A further improvement is the addition to most chapters of suggestions for further reading, consisting of both older and fairly recent literature.

39.
L. V. CROWLEY. 1974. AN INTRODUCTION TO CLINICAL EMBRYOLOGY
Year Book Medical Publishers, Chicago. XIV, 425 pp., 262 figs., 7 tabs., subject index. £ 8.25

This book is meant for students in medicine and related fields and is strongly oriented towards congenital anomalies and clinical and pathological subjects. Those organ systems in which congenital defects are relatively common are emphasised, while others, such as the nervous system, are treated concisely. The muscular system is not treated separately. Many congenital anomalies are illustrated with case reports. There are separate chapters

on cytogenetics and on the causes of congenital abnormalities. The treatment is practical and competent throughout.

The book is well produced and illustrated with a profusion of good line drawings and photographs. All chapters are concluded by review questions and reading lists.

40.
R. F. GASSER. 1975. ATLAS OF HUMAN EMBRYOS
Harper & Row, Hagerstown, MD. XII, 318 pp., 130 figs., index of structures. $ 29.95

This beautiful atlas is a fine teaching aid and reference source. It covers the first eight weeks of development and is based almost entirely on material from the Carnegie Collection. An effort was made to use recent internationally accepted terminology.

There is one chapter for each week of development (based on a single representative embryo after the third week). Each chapter first outlines the important events, if possible arranged by organ systems, and then presents an extensive series of carefully identified and labelled cross sections (up to 58 per embryo). The salient features of each section are pointed out in a brief text.

The photography is excellent and the micrographs are supplemented by very good, instructive line drawings. The book is luxuriously produced and sturdily bound.

41.
J. LANGMAN. 1975. MEDICAL EMBRYOLOGY, human development – normal and abnormal. 3rd edit.
Williams & Wilkins, Baltimore. XII, 421 pp., 312 figs., subject index. $ 12.50

This text has by now grown so popular that we will restrict ourselves to mentioning the major changes made in this new edition.

First of all more attention is devoted to clinical aspects, particularly congenital malformations and their etiology. Secondly, new illustrations have been added throughout the book, which now contains many more photographs. Colour has been applied to many of the drawings; the colour illustrations are separately available in the form of 35 mm. slides. The chapter bibliographies have been extended; some of them are quite long and provide an extremely useful entry into the original literature.

The book is produced with the usual care.

42.
W. F. WALKER, Jr. 1974. DISSECTION OF THE FETAL PIG. 2nd edit.
Freeman, San Francisco. Laboratory Studies in Biology 883–889. X, 58 pp., 40 figs. $ 1.95 (paper)

New material (e.g. musculature, skeleton) included to allow use in comparative and mammalian anatomy courses; exercises on circulatory system rewritten; many new figures; excellent art work.

Monographs

43.
A. PUGET. 1973. ÉTUDE ANATOMIQUE, PHYSIOLOGIQUE ET BIOCHIMIQUE DE L'OCHOTONE AFGHAN (OCHOTONA RUFESCENS RUFESCENS) EN VUE DE SON UTILISATION COMME ANIMAL DE LABORATOIRE
Privately printed, obtainable from author: Lab. de Pharmacol. et Toxicol. Fond. C.N.R.S., 305 Rte de Narbonne, Toulouse, France. 583 pp., 39 figs., 73 pls., 43 tabs. $ 25.00 (paper)

Extensive study on the utility as a laboratory animal of the Afghan pika, a very small desert-dwelling Lagomorph; anatomy, embryology, physiological and biochemical studies; pilot experiments in toxicology and teratology in comparison with other species; very good illustrations.

44.
M. BALLS and A. E. WILD, eds. 1975. THE EARLY DEVELOPMENT OF MAMMALS
Cambridge Univ. Press, Cambridge, etc. The second symposium of the British Society for Developmental Biology. VIII, 410 pp., 41 figs., 38 pls., 55 tabs., subject index. £ 18.00

This symposium was held in Norwich, England in September 1974. Almost all the leading investigators in the field of early mammalian development in Great Britain and the U.S.A. have contributed to the volume. Later stages are less completely covered. The excellent reviews and research reports reflect the enormous advances that have recently been made in this field.

Of the 23 papers, the first 18 are devoted to early development (including genetic aspects, antigen expression, work on teratomas, genome imbalance, and sex reversal). The remaining papers deal with inductive interactions, prenatal hemopoiesis and lymphopoiesis, genetic athymia, and the role of cell death in abnormal development.

The numerous light and electron micrographs are well reproduced and the subject index is very detailed.

45.
K. ELLIOTT and M. O'CONNOR, eds. 1976. EMBRYOGENESIS IN MAMMALS
Elsevier – Excerpta Medica – North-Holland, Amsterdam, etc. Ciba Foundation Symposium 40 (new series). VIII, 308 pp., 94 figs., 23 tabs., subject index. $ 21.95, Dfl. 57.00

This symposium a "must" for mammalian embryologists and teratologists and highly recommended reading for all other developmental biologists. It admirably supplements the earlier symposium reviewed under no. 44 above. There is some overlap in attendance but the present symposium was more international. It was held in London in June 1975.

The 13 contributions are medium-length research reports or reviews of recent work and cover morphological, biochemical, genetic and immunological aspects of mainly post-implantation development. Two papers deal with other than mammalian material (cell migration in chick embryo and "transdifferentiation" of amphibian cells) but they readily fit into the present context.

As usual in the Ciba symposia the discussion material is particularly interesting because of the unrestrained exchange of new ideas. Apart from the discussions following each paper there are separate discussions on determination/differentiation, origin of germ cells, culture systems, mutations, bilateral symmetry, germ layer terminology, and teratocarcinoma.

The book is beautifully produced and has top-quality illustrations.

46.
E. S. E. HAFEZ, ed. 1975. THE MAMMALIAN FETUS, comparative biology and methodology
Thomas, Springfield. XIV, 352 pp., 89 figs., 43 tabs., subject index. $ 29.75

This symposium was held in December 1973 in Detroit, Mich. Most of the contributors were from North America. Some are veterans, but many others coming men in the field. Of the 17 papers some are research reports and others brief to medium-length reviews of recent work. Most papers are of particular interest to pediatricians, but at least five could be of interest to mammalian embryologists.

The papers are arranged in four sections as follows: Perinatal physiology (5 papers), Nutrition and fetal growth and development (4), Methodology and interuterine diagnosis (4), and Anomalies of fetal development (4). Of special interest to teratologists is a review by Gruenwald on the role of cell death in abnormal development.

The book is well produced and illustrated.

47.
W. A. HEMMINGS, ed. 1976. MATERNOFOETAL TRANSMISSION OF IMMUNOGLOBULINS
Cambridge Univ. Press, Cambridge, etc. Clinical and Experimental Immunoreproduction, Vol. 2. XX, 461 pp., 147 figs., 57 tabs., subject index. £ 11.00

This symposium was held in Bangor, North Wales some time in 1974. It brought together a large group of specialists from Britain, the U.S.A. and various other countries. The 32 reviews and research reports with the discussions following them (complete with references) first lay the general physiological foundations and then cover the field indicated by the title comprehensively and critically.

We briefly enumerate the broad categories of subjects covered: the factors involved in the passage of antibodies and similar molecules across the placenta to the foetus; their passage across the intestine of the suckling rodent or ruminant; and the effects of such antibodies upon the young. The volume is very fittingly dedicated to the memory of F. W. Rogers Brambell, of whom a brief biography is included.

The book is well produced and illustrated.

REPRODUCTION, SEXUAL DEVELOPMENT, GAMETOGENESIS, FERTILIZATION
(see also 36,113)

Treatises

48.
A. C. GIESE and J. S. PEARSE, eds. 1975. REPRODUCTION OF MARINE INVERTEBRATES. Vol. III: Annelids and echiurans
Academic Press, New York, etc. XIV, 343 pp., 71 figs., 23 tabs., author, subject, and taxonomic indexes. $ 36.50

This is the third volume of a 7-volume treatise first announced in Gen. Embryol. Inform. Serv. vol. 16, part 1, 1976, to which the reader is referred.

Ch.1 on Polychaetes takes up two thirds of the book. The two other chapters deal with *Clitellata* and *Echiura* (with emphasis on *Urechis caupo*). The section on development in ch.1 occupies 61 pages, those in the other two chapters are much shorter. This volume again contains a wealth of useful information.

Monographs

49.
B. BACCETTI and B. A. AFZELIUS. 1976. THE BIOLOGY OF THE SPERM CELL
Karger, Basel, etc. Monographs in Developmental Biology, vol. 10. VI, 254 pp., 19 figs., 26 pls., 1 tab. S.fr. 127.00, DM 127.00, $ ca. 49.00 (paper)

This monograph by two eminent specialists draws together the main findings in comparative spermatology as they have emerged during the last 15 years. The emphasis is very much on sperm structure (including its chemical aspects). Sperm metabolism is not considered separately, although many data on enzymes and their substrates are given along with the structural details. Other aspects that were intentionally left out are spermiogenesis and the immunological and genetic aspects of sperm biology.

The first three quarters of the book are mainly devoted to a systematic discussion of the cell surface and all the various sperm organelles (7 chapters). Then follow chapters on aflagellate spermatozoa, on sperm movement (10 pp.), and on the spermatozoon in fertilisation (10 pp.).

The book is illustrated with a profusion of excellent line drawings and light and electron micrographs. An appendix lists references on electron microscope studies of sperm in about 1,000 animal species. The bibliography contains close to 1,500 titles and is very up to date. The absence of indexes is a definite drawback.

50.
M. CALLEBAUT. 1975. BIJDRAGE TOT DE STUDIE VAN DE OOGENESIS VAN DE VOGELS (in Dutch) (Contribution to the study of avian oogenesis)
Dissertation, State Univ. Centre Antwerp. 320 pp., 141 figs., (9-page French summary, 8-page English summary)

Detailed cytological, cytochemical and autoradiographic study of chick and quail oogenesis, both in the embryo and chick (last intensive proliferation till start of intrafollicular development) and in the adult (pre-lampbrush, lampbrush and post-lampbrush stages); ovarian organ culture; autoradiography with thymidine and other labelled precursors; formation of cortex, yolk, and germinal disc; numerous excellent micrographs and diagrams.

Symposium reports

51.
R. J. BLANDAU, ed. 1975. AGING GAMETES, their biology and pathology
Karger, Basel, etc. XII, 415 pp., 148 figs., 61 tabs., author and subject indexes. Sfr. 120.00, $ ca. 44.00, DM 114.00, £ 17.50

This volume embodies the papers presented at an international symposium held in Seattle, Wash. in June 1973. Although the subject is marginal for most of our readers, we briefly review it for its interest to teratologists and reproductive biologists.

Almost all of the 19 papers are well-organized reviews of recent work, and at least half of them are of considerable interest to those mentioned above as well as to those interested in the pathology of early mammalian development. Most of the authors are eminent authorities in the field. Almost all the work reported is on mammals and man, but one paper deals with avian gametes.

The book is sumptuously produced and superbly illustrated.

52.
C. L. MARKERT and J. PAPACONSTANTINOU, eds. 1975. THE DEVELOPMENTAL BIOLOGY OF REPRODUCTION
Academic Press, New York, etc. XIV, 352 pp., 162 figs., 29 tabs., subject index. $ 14.50, £ 6.95

Contributors: Barraclough, Clark, Dure, Fawcett, Flerkó, Gardner, Glasser, Harris, Kochert, Manes, Salomon, Sherman, Smith, Stevens, Tarkowski, Turgeon, Walbot, Whitten, Williams

The 33rd symposium of the American Society for Developmental Biology was held in Athens, Ga. in June 1974. Among the 25 contributors three were from outside the U.S.A. The contributions are authoritative, well-organised and well-illustrated reviews of selected basic aspects of reproduction in the broad sense, and almost all are of immediate interest to our readers.

The 13 papers are arranged in five sections as follows: Gametogenesis (3 papers, of which one on *Volvox*); Parthenogenesis (2 on mouse); Early development (3 on mammals and one on cotton embryogenesis); Hormonal controls in reproduction (2 on rat); Implantation (2 on mammals).

Some papers are up to date until 1973 but most until 1974. The book is well printed and the numerous photographic illustrations are well reproduced.

53.
R. REINBOTH, ed. 1975. INTERSEXUALITY IN THE ANIMAL KINGDOM
Springer, Berlin, etc. XVI, 449 pp., 221 figs., subject index. DM 97.00, $ 41.80

This symposium was held in Mainz (West Germany) in July 1974. It brought together 57 specialists of whom 48 were Europeans (significantly, more than half of these were French). Their specialisations varied greatly and so do the contributions, which are either research reports or reviews. They were edited and if necessary (re)-translated for the book, (though not always optimally, in the interest of rapid publication).

The 39 contributions are equally divided among the invertebrates and vertebrates. Among the former nine major groups are considered, with the annelids and arthropods predominating. The vertebrates are represented by the five major classes but with nearly half of the papers devoted to the fishes.

The volume is well produced and profusely illustrated with excellent drawings and photographic material.

54.
I. W. ROWLANDS, W. R. ALLEN and P. D. ROSSDALE, eds. 1975. EQUINE REPRODUCTION
Blackwell Scient. Publ., Oxford, etc. J. Reprod. Fertil. suppl. No. 23. XXII, 746 pp., numerous illustrations. £ 25.00, $ 62.50 (paper)

This mammoth symposium was held in Cambridge, England in July 1974. It had nearly 200 participants from 22 countries. Of the total of 140 contributions the great majority are brief research reports. At least 30 of them are of potential interest to mammalian embryologists and veterinary obstetricians.

The papers are grouped in the following main sections: Evolution, The stallion, The non-pregnant mare, The pregnant mare, The fetal and newborn foal. Most of the papers of interest to our readers are to be found in the last two sections.

The volume is well produced and has excellent photographic plates. There are no indexes.

55.
C. THIBAULT, rapporteur. 1975. LA FÉCONDATION
Masson, Paris. Colloque de la Société Nationale pour l'Etude de la Stérilité et de la Fécondité. X, 137 pp., 39 figs., 7 pls., 5 tabs. F.fr. 78.00, $ 22.10 (paper)

This is the report of a colloquium held in Paris at an unspecified time in the recent past. Of the nine papers five are brief reviews of recent work which are of interest to mammalian embryologists.

Szöllösi, and Moricard and Moricard deal with ultrastructural aspects of oocyte maturation and fertilisation (the latter paper is in French). Zaneveld discusses the biochemistry of sperm capacitation. Dukelow and Kuehl, and Soupart deal with *in vitro* maturation and fertilisation in non-human primates and man, respectively.

The volume is illustrated mostly with electron micrographs.

56.
E. VANNINI, ed. 1974. SOME ASPECTS OF SEX DIFFERENTIATION IN PLURICELLULAR ANIMALS AT A LOWER ORDER OF ORGANIZATION: PORIFERA, FRESHWATER HYDRAS AND PLANARIANS
Unione Zoologica Italiana. Bolletino di Zoologia *41*, 4. 108 pp., 57 figs.

Contributors: Grasso, Gremigni, Sara, Stagni

This is the report of a symposium organized by the *Unione Zoologica Italiana* in September 1974. Apart from its obvious importance for those interested in sex differen-

tiation, it is of much wider interest because in the organisms in question the localization of sex organs or cells is linked up with morphogenesis of the body as a whole. This aspect is brought out in all contributions, although in sponges very little is yet known about it.

In his 37-page introductory review Vannini sets the stage for the four more specialized papers, one on sponges, one on hydroids and two on planarians. All these are lengthy reviews in English and are illustrated with many light and electron micrographs.

IMPLANTATION, PLACENTA, FETAL MEMBRANES AND FLUIDS (see also 47,68)

Textbooks

57.
P. GRUENWALD, ed. 1975. THE PLACENTA and its maternal supply line: effects of insufficiency on the fetus
MTP, Lancaster. X, 366 pp., 145 figs., 19 tabs., subject index. £ 11.50

This multi-author volume was compiled for use as a textbook, particularly in the relatively recent area of the maternal (non-placental) component of the supply line of the fetus. In his introductory chapter the editor does away with three misconceptions: the idea of the fetus as a successful parasite, the notion of prematurity based on birth weight, and the erroneous concept of placental insufficiency.

The authors of the volume are 14 American, one West-German, and three British placentologists. More than half of the 19 chapters will be of considerable interest to placentologists and mammalian embryologists.

The book is well produced and the quality of reproduction of the photographic illustrations is reasonable. Somewhat strange in a general work of this kind is the fact that the English-speaking authors cite very little recent literature in other languages. One wonders how much valuable information may be lost in this way.

58.
D. H. STEVEN, ed. 1975. COMPARATIVE PLACENTATION, essays in structure and function
Academic Press, London, etc. Monographs for Students of Medicine. XIV, 315 pp., 132 figs., 5 tabs., subject index. £ 4.80, $ 12.00 (paper)

Contents: 1. Placenta depicta – illustrations and ideas (Steven), 2. Anatomy of the placental barrier (Steven), 3. Development of the foetal membranes (Steven and Morriss), 4. Placental evolution and embryonic nutrition (Morriss), 5. Placental circulation (Carter), 6. Placental exchange of blood gases (Silver and Steven), 7. Pregnancy and the central nervous system (Priedkalns), 8. Endocrine functions of the placenta (Allen), 9. Placenta as an allograft (Borland), 10. Tumours of the placenta: a breakdown in foetal-maternal relationships (Loke)

This book is intermediate in level between an elementary textbook and a specialised work. It was written by a team of younger British specialists and should be of particular use to advanced preclinical medical and veterinary students. The text is clearly organised, reasonably up to date, and extensively documented. The approach is broadly comparative. The book should also be useful to those active in or entering the field of mammalian embryology.

The book is profusely illustrated with light and electron micrographs and very good line drawings, many of which are original.

Monographs

59.
S. SAARIKOSKI. 1974. FATE OF NORADRENALINE IN THE HUMAN FOETOPLACENTAL UNIT; in vivo studies on placental transfer, metabolism and distribution in foetal tissues
Scand. Physiol. Soc., Stockholm. Acta Physiol. Scandinavica, suppl. 421. 82 pp., 16 figs., 22 tabs.

Study on 44 human fetuses of 11–24 wks; new method for determination of ^{3}H-noradrenaline; extensive literature review.

Symposium reports

60.
R. G. EDWARDS, C. W. S. HOWE and M. H. JOHNSON, eds. 1975. IMMUNOBIOLOGY OF TROPHOBLAST
Cambridge Univ. Press, Cambridge, etc. Clinical and Experimental Immunoreproduction, Vol. 1. X, 284 pp., 49 figs., 25 tabs., subject index. £ 6.00

This symposium was held in January 1974 in Cambridge, England and brought together a group of outstanding specialists from both basic and clinical departments, working in or visiting Britain. The 12 reviews and research reports cover almost every conceivable aspect of the broad problem of the trophoblast/placenta as an immunological barrier or "filter" between mother and fetus. The treatment is comprehensive and critical.

The often extensive discussions held at the meeting are also recorded, complete with references and illustrations.

The volume is well produced and adequately illustrated.

61.
L. K. de IKONICOFF and L. CEDARD, eds. 1975. NEW CONCEPTS IN HUMAN PLACENTAL BIOLOGY
INSERM, Paris. Colloques et Séminaires de l'INSERM, vol. 45. 111 pp., 56 figs., 10 tabs. F.fr. 30.00, $ 7.50 (paper)

This is the report of a colloquium held in Buenos Aires, Argentine in October 1974. Of the five papers three are research reports of immediate interest to human embryologists.

Burgos and Cavicchia deal with the ultrastructure of placental villi. De Ikonicoff discusses the immunohistochemical localisation of placental protein hormones (the paper is in French with an English summary). Tominaga *et al.* report for the first time on interactions between human trophoblastic and endometrial cells *in vitro*.

The volume is illustrated with good light and electron micrographs.

TERATOGENESIS (see also 36,39,41,46,51,69,89,121)

Monographs

62.
C. L. BERRY and D. E. POSWILLO, eds. 1975. TERATOLOGY, trends and applications
Springer, Berlin, etc. X, 238 pp., 78 figs., subject index. DM 82.00, $ 33.70

This book was written by a team of 12 English, seven American, and one German teratologist. The definition of teratology is broad, appealing both to academic and applied scientists, and the unifying feature of the book is its future-directedness: the authors discuss areas which may soon undergo radical change, and some of the chapters are deliberately speculative. The viewpoint of most authors is clearly developmental.

The 13 chapters are arranged in four groups as follows: New attitudes to experimental teratology (4 chapters, with emphasis on genetic and cytotoxic factors); Problems of predictive teratology (4); Influencing the fetal milieu (2, placenta and fetal surgery); New aspects of developmental teratology (3, with emphasis on the CNS).

The book is well produced and illustrated.

63.

D. A. GOOR and C. W. LILLEHEI. 1975. CONGENITAL MALFORMATIONS OF THE HEART, embryology, anatomy, and operative considerations
Grune & Stratton, New York, etc. XVIII, 430 pp., 209 figs., 18 tabs., subject index. $ 32.50, £17.90

This book, written by two distinguished cardiac surgeons, is of course primarily meant for clinicians. However, since it is based on 20 years of combined embryological, clinical and autopsy studies it contains many original anatomical and embryological findings which can be of interest to embryologists and teratologists. Some of these findings have not been published previously.

We restrict ourselves to mentioning the first two chapters of the book, which together occupy one quarter of the space. Ch.1 deals with the anatomy (37 pp.) and ch.2 with the embryology of the heart (65 pp.). Ch.2 consists of two parts entitled The heart and its systemic tributaries, and The development of the pulmonary circulation (part II was contributed by F. D. Skidmore). The remaining seven chapters deal with separate malformations and their surgical correction.

The book is beautifully produced and superbly illustrated with many original line drawings, micrographs, and photographs of dissection specimens.

64.

H. TUCHMANN-DUPLESSIS. 1975. DRUG EFFECTS ON THE FETUS, a survey of the mechanisms and effects of drugs on embryogenesis and fetogenesis
ADIS Press, Sydney; Publ. Sciences Group, Acton, Mass. Monographs on Drugs Vol. 2. X, 267 pp., 92 figs., 19 tabs., subject and author indexes. $ 31.00

The author of this monograph is a leading French authority on experimental teratogenesis. The book is probably of greatest use to pediatricians. It draws heavily on the work of the author and his associates over long years, but is at the same time an up-to-date, though highly selective review of the international literature.

The basic embryological and genetic principles are clearly set out and attention is devoted to the mechanisms of action of many drugs, in so far as they are known. Screening methods are discussed. Apart from drugs, hormonal and nutritional imbalance, metabolic disorders and radiation are also considered.

The book is illustrated with many photographs and light micrographs and a number of helpful diagrams; in the latter the captions are sometimes unclear or even deficient.

Dissertations

65.

R. MEINIEL. 1975. CONTRIBUTION A L'ÉTUDE EXPÉRIMENTALE DE L'ACTION DES INSECTICIDES ORGANOPHOSPHORÉS SUR L'EMBRYON D'OISEAU
Ph.D. thesis, Clermont. 213 pp., 11 figs., 30 pls., 15 tabs. (mimeographed)

Teratogenic effects of parathion on chick and quail embryos; morphological, cytological and (enzyme) histochemical studies; complementary studies with other drugs (reserpine, eserine) and protective agents; cytophysiological effects of acute parathion poisoning (liver, muscle, adrenals); conclusion: primary effect on cholinesterases; excellent photographs and light and electron micrographs.

66.
D. NEUBERT and H. J. MERKER, eds. 1975. NEW APPROACHES TO THE EVALUATION OF ABNORMAL EMBRYONIC DEVELOPMENT
Thieme, Stuttgart. XVI, 828 pp., 321 figs., 99 tabs., subject index. DM 49.00

This symposium was held in Berlin in September 1975 and publication has therefore been extremely rapid. It was organised by the Workgroup for Embryonic Development and Embryonic Pharmacology at the Free University, Berlin and most of its members took part. Of the 130 participants more than 100 came from West Germany. The 55 contributions are brief to medium-length research reports or reviews of recent work, all of them in English.

The papers are grouped in nine sections as follows: Tools for teratological research (5 papers), Use of organ culture systems for teratological research (13 papers, most of which deal with cultured mammalian limb buds), Pharmacokinetics in teratological research (4), Genetic aspects of teratological research (4), Studies on early stages of embryonic development (3), Postnatal manifestations of prenatal lesions (7), Mechanisms of embryotoxic effects (biochemical approaches) (7), Mechanisms of embryotoxic effects (morphological approaches) (7), and Mechanisms of differentiation (5).

The papers are reproduced directly from typescript. The numerous photographic illustrations are well reproduced.

DEVELOPMENTAL PATHOLOGY, CANCER (see also 36,45,51,66)

Monographs

67.
N. G. ANDERSON. 1975. EMBRYONALENTWICKLUNG, RETROGENESE UND KREBS
Fr. Steiner, Wiesbaden. Akad. der Wissensch. und der Literatur, Mainz, Math.-Naturw. Klasse, Karl-August-Forster-Lectures, Informationsgesteuerte Synthese 11. 44 pp., 5 figs., 2 tabs.

Lecture on embryonic auto-antigens and cancer held in English in 1973; prospect of cancer research; extensive discussion in English.

Symposium reports

68.
R. A. CAMERINI-DAVALOS and H. S. COLE, eds. 1975. EARLY DIABETES IN EARLY LIFE
Academic Press, New York, etc. XXIV, 615 pp., 135 figs., 147 tabs., subject index. $ 25.00

This international symposium was held in Madeira in December 1974 and was attended by many specialists in the field, both established and younger ones. Its subject matter is primarily of interest to clinicians, but the first half of the book contains much that may be of importance to those interested in fetal nutrition and endocrinology and in the functions of the placenta. All the papers briefly describe or review recent work.

The first part, which we consider here only, has sections on Embryogenesis, differentiation, and functional maturation (2 papers), The fetal pancreas (7), Fetal endocrine development (5), Nutritional factors during fetal development (6), and The placenta (8). Each section moreover contains a lengthy group discussion.

The book is well produced in small but readable offset print. It is illustrated almost exclusively with graphic material.

69.
P. L. MORSELLI, S. GARATTINI, and F. SERENI, eds. 1975. BASIC AND THERAPEUTIC ASPECTS OF PERINATAL PHARMACOLOGY
Raven, New York. Monographs of the Mario Negri Inst. for Pharmacological Research, Milan. XVI, 440 pp., 181 figs., 84 tabs., subject index. $ 18.95

This volume embodies the papers read at a symposium held in Milan in June 1974. The contributors are mostly pediatricians and pharmacologists from North America and various Western-European countries. The book will be of most interest to clinicians, but several papers are of potential interest to mammalian embryologists and teratologists. The papers are brief research reports or reviews of recent work.

Of the 41 papers, most of those that are of interest to our readers are to be found in the sections Placental transfer of drugs and effects on the fetus and the newborn (9 papers), Effects of narcotics on the fetus and the newborn (3), and Developmental aspects (7).

The book is well produced.

70.
M. I. SHERMAN and D. SOLTER, eds. 1975. TERATOMAS AND DIFFERENTIATION
Academic Press, New York, etc. XVIII, 324 pp., 103 figs., 30 tabs., subject index. $ 16.50, £ 8.60

Murine teratomas are of germ cell origin and are composed of tissues derived from all three germ layers. During their early development they consist of cells that closely resemble those of the inner cell mass or embryonic ectoderm of the blastocyst. Advances during the last years have brought out their great potential as model systems for the study of differentiation.

This report of a symposium held in the U.S.A. in May 1975 is the first book to be devoted entirely to teratomas. A small international community of workers in this area has developed, and it seems that almost every one of them was present or at least represented at the symposium. Most of the 20 papers are research reports or reviews of recent original work. They successively deal with embryo-teratoma relationships, surface antigens, teratoma-host interactions, properties and differentiation control of embryonal carcinoma cells (multipotential stem cells derived from malignant teratomas), and properties of teratomas *in vitro* (including clonal culture). No discussions are recorded.

The book is printed in photo-offset and adequately illustrated. It is concluded by a comprehensive bibliography on experimental and spontaneous rodent teratomas.

REGENERATION, RENEWAL (see also 95,97)

Textbooks

71.
S. M. ROSE. 1974. REGENERATION
Addison-Wesley, Reading, Mass. Addison-Wesley Module in Biology No. 12. 32 pp., 16 figs.

This is a reasonably comprehensive, readable, and well-illustrated account of the main problems in invertebrate and vertebrate regeneration. Understandably, the author places rather much stress on his own work and that of his associates. Key findings from the older literature are included.

72.
R. CHANDEBOIS. 1976. HISTOGENESIS AND MORPHOGENESIS IN PLANARIAN REGENERATION
Karger, Basel, etc. Monographs in Developmental Biology *11*. VIII, 182 pp., 50 figs., 1 tab., no indexes. Sfr./DM 90.00; ca. U.S. $ 34.75 (paper)

This monograph is essentially a summary and discussion of work carried out by the author and her associates at the University of Marseille for a quarter of a century. The first part, on histogenesis, contains a wealth of highly unorthodox findings culminating in a challenge of the current "neoblast" concept: these cells would in reality represent a thymus-like system involved in the organism's defense reactions; their role in regeneration would be exclusively trophic.

Part two reconsiders the current concepts of morphogenesis in adult planarians on the basis of what the author calls the "cell transformation system" of the flatworm. Much attention is also devoted to "distalisation" and the role of wound healing in it, and to intercalary regeneration, a subject usually associated mainly with insect appendages.

Much of the older literature cited is seen in an entirely new light. No one working on or interested in planarian regeneration can afford not to read this highly stimulating book.

73.
L. D. LIOZNER. 1975. FUNDAMENTAL PROBLEMS IN REGENERATION (in Russian)
Izd. Nauka, Moscow. 103 pp., 28 figs.

Extended review of all major descriptive, comparative and experimental aspects of regeneration in the animal kingdom (7 chapters); selected references (123 Russian till 1973; 86 foreign till 1972).

74.
J. K. McGEACHIE. 1975. SMOOTH MUSCLE REGENERATION, a review and experimental study
Karger, Basel, etc. Monographs in Developmental Biology Vol. 9. X, 90 pp., 39 figs., 7 tabs. SFr. 55.00, $ 20.00, DM 52.00, £ 8.00 (paper)

This is a very thorough study of the regeneration of the taeniae of the guinea pig caecum after a localized small crush injury. The parameters studied were cell population changes (quantitative light microscopy), DNA synthesis (autoradiography), and ultrastructure. The conclusion from the results is quite clear: smooth muscle cells adjacent to the lesion divide by mitosis to produce a population of self-generating myoblasts.

The actual research report is preceded by a lengthy literature review organized by organ systems. The book has good light and electron micrographs.

Monographs

75.
P. CAU, M. MICHEL-BÉCHET, and G. FAYET. 1976. MORPHOGENESIS OF THYROID FOLLICLES IN VITRO
Springer, Berlin, etc. Advan. Anat. Embryol. Cell Biol. *52*, 2. 66 pp., 16 figs.

EM study of dissociated cells of adult porcine thyroids cultured for up to 11d. in the presence or absence of TSH; emphasis on the early phases of re-association and follicle formation; extensive discussion; excellent electron micrographs and diagrams.

76.
R. GOSSRAU. 1975. DIE LYSOSOMEN DES DARMEPITHELS, eine entwicklungsgeschichtliche Untersuchung
Springer, Berlin, etc. Advan. Anat. Embryol. Cell Biol. *51*, 5. 95 pp., 74 figs.

Thorough study on the intestinal epithelium of rats and mice from 13d. *in utero* till 35d. postnatally, with special reference to lysosomes and hydrolases; methods: light microscopy, histochemistry, microchemistry, electron microscopy, electron cytochemistry; experiments: hormone treatment, adrenalectomy, castration, starvation, nutritional changes; excellent light and electron micrographs; 3-page English summary.

77.
F. A. KISS. 1975. VASCULARIZATION AND TISSUE DIFFERENTIATION, translated from the Hungarian by E. Kerner and N. Kerner
Akad. Kiadó, Budapest. Studia Biologica Hungarica 14. 168 pp., 95 figs., 12 tabs., author and subject indexes. DM 24.70, $ 9.50 (paper)

Summary of work carried out over more than 15 years; many different embryonic and adult tissues of the chick and various mammals, studied both *in vivo* and explanted onto chick CAM; saline extract of adult rat adrenals is effective stimulator of vascularisation; effect of increased vascularisation on tissue differentiation, particularly in cartilage; partial characterisation of active principle; many photographs and light micrographs.

78.
I. M. MEDVEDEVA. 1975. THE OLFACTORY ORGAN IN AMPHIBIA AND ITS PHYLOGENETIC SIGNIFICANCE (in Russian)
Izd. Nauka, Leningr. Otdel., Leningrad. 174 pp., 78 figs., 10 tabs. English summary (1 p.)

Comparative-embryological and comparative-experimental studies on 7 urodelan and 7 anuran species with special reference to choanae, Jacobson's organ and nasolacrimal duct; transplantations and extirpations of olfactory placode and parts of it; extirpations of orbito-nasal process of infra-orbital sensory placode; effects on associated skeletal structures also considered; 12-p. bibliography (4 pp. Russian literature); good drawings and light micrographs.

79.
J. M. ORDY and K. R. BRIZZEE, eds. 1975. NEUROBIOLOGY OF AGING, an interdisciplinary life-span approach
Plenum, New York, etc. Advances in Behavioral Biology vol. 16. X, 603 pp., 164 figs., 47 tabs., subject index. $ 39.00, £ 17.25

In so far as development, maturity and aging are integrated aspects of the ontogenetic programme, this book may be of interest to developmental biologists. It is an interdisciplinary undertaking by 30 American, two Canadian, and two Czech authors.

The 25 chapters are short to medium-length reviews covering theoretical aspects, methodology, psychophysiology, neurophysiology, neurochemistry, morphology, environmental factors, and neuropathology. We specifically mention a comprehensive review on the relation of development and aging by Schjeide (48 pp.), and a chapter by Davis and Himwich on the neurochemistry of the developing and aging brain (30 pp.). The final chapter by Ordy deals specifically with non-human primates.

The book is produced in offset print and has good light and electron micrographs.

80.
P. SENGEL. 1976. MORPHOGENESIS OF THE SKIN
Cambridge Univ. Press, Cambridge, etc. Developmental and Cell Biology Series, vol. 3. VIII, 277 pp., 98 figs., 8 tabs., subject index. £ 14.00

For two decades the author of this monograph has headed an extremely active group working (among other things) on skin morphogenesis, mainly in the chick embryo. This work is essentially of an experimental-morphological nature and forms the nucleus of the book, but the available data on mammalian and reptilian skin are well integrated with the avian data. The material is set out with great clarity. Cutaneous gland development and pigmentation were deliberably left out. The cell and tissue interactions in adult skin are duly considered but there are no data on wound healing and regeneration.

Chapter 1 reviews the essential morphological features of amniote skin development. Then follow chapters on cell proliferation and cell differentiation and their control by intrinsic and extrinsic factors and by dermo-epidermal interaction. The last chapter is devoted to morphogenesis and successively deals with histogenesis, morphogenesis of single cutaneous appendages, and pattern formation (in chick skin mainly).

The book is profusely illustrated with good line drawings and photo(micro)graphs; of the latter most are originals from the author's laboratory or from other workers. There is a bibliography of some 300 titles which runs until late 1973.

81.
K. TIEDEMANN, 1976. THE MESONEPHROS OF CAT AND SHEEP, comparative morphological and histochemical studies
Springer, Berlin, etc. Advan. Anat. Embryol. Cell Biol. Vol. 52, 3. 119 pp., 47 figs., subject index

Cat embryos of 14–40 days of pregnancy, sheep embryos of 1–11 cm CRL; microdissection, injection, maceration, serial sections; electron microcopy, enzyme histochemistry, biochemistry; filtration and reabsorption experiments; diagrams and excellent light and electron micrographs.

82.
C. ALLING. 1974. ESSENTIAL FATTY ACID MALNUTRITION AND BRAIN DEVELOPMENT; an experimental study on rats from foetal to adult age of the effects of low dietary levels of essential fatty acids on brain phosphoglycerides in relation to extraneural organs
M.D. thesis, Göteborg. 36 pp., 2 figs., 3 tabs.

Summary of work described in six published papers (1972–1974).

83.
G. CLEMEN. 1972. ÜBER DIE ENTWICKLUNGSPHYSIOLOGISCHEN VORAUSSETZUNGEN FÜR DIE METAMORPHOSEBEDINGTEN VERÄNDERUNGEN DES BEZAHNUNGSMUSTERS AM GAUMEN VON SALAMANDRA SALAMANDRA
Ph.D. thesis, Köln. 84 pp., 30 figs., 15 pls., 25 tabs. (mimeographed)

Causal analysis of formation of posterior vomeral process and associated dental ridge during metamorphosis; defect and transplantation experiments involving various parts of roof of oral cavity; influence of n.facialis; drawings, photographs and light micrographs.

84.
P. GLAS. 1975. ONDERZOEK NAAR DE VROEGE ONTWIKKELING VAN DE COMMISSUREN IN HET MEDIANE GEBIED VAN HET TELENCEPHALON BIJ DE WITTE MUIS (in Dutch) (An investigation of the early development of the commissures in the median portion of the telencephalon in the white mouse)
M.D. thesis, Groningen. 75 pp., 53 figs., 8-page English summary

Extensive, carefully staged series of embryos from 9–34 d. post coitum; serial sections in 4 directions at various levels; excellent micrographs with English captions.

85.
G. J. LAMMERS. 1976. ON THE DEVELOPMENT OF THE STRIO-AMYGDALOID COMPLEX IN THE CHINESE HAMSTER, CRICETULUS GRISEUS
M.D. thesis, Nijmegen. 130 pp., 28 figs., 30 pls., 4 tabs.

Morphological and autoradiographic study on animals ranging in age from 12 d. embryo till adult; very good reconstructions, line drawings and micrographs.

86.
A. G. M. MOSS-SALENTIJN. 1976. THE EPIPHYSEAL VASCULARIZATION OF GROWTH PLATES, a developmental study in the rabbit
M.D. thesis, Utrecht. 177 pp., 63 figs.

Detailed study of long bone epiphyses from 49 rabbits ranging in age from 21 d. *in utero* till 225 d. *post partum*; histology, Indian ink perfusion, cleared whole mounts, thick cleared sections; numerous line drawings and very good light micrographs.

87.
G. OUDHOF. 1975. DEVELOPMENT AND GROWTH OF THE CRANIUM, a quantitative experimental study in the chick embryo
M.D. thesis, Univ. of Amsterdam. 132 pp., 59 figs.

Chick embryos made unilaterally micropthalmic at 68 hrs.; growth of experimental and control skulls analysed by means of X-ray projection microscope between 13 and 19 days; 50 measurements for each skull; statistical treatment of results; good illustrations.

88.
A. J. PUERTA FONOLLÁ. 1975. CONTRIBUTION TO THE STUDY OF THE DEVELOPMENT OF THE SINUS VENOSUS AND ITS ASSOCIATED STRUCTURES, AND ITS LATER ABSORPTION BY THE AURICLE (in Spanish)
M.D. thesis, Madrid. 121 pp., 277 figs., mimeographed

Study using human embryos of O'Rahilly stages 11–17 (3.5–11 mm.); numerous micrographs, dissections and reconstructions of the heart.

Symposium reports

89.
D. BERGSMA, J. LANGMAN, and N. W. PAUL, eds. 1975. MORPHOGENESIS AND MALFORMATION OF FACE AND BRAIN
A. R. Liss, New York. The National Foundation – March of Dimes-Birth Defects: Original Article Series Vol. XI, No. 7. XII, 364 pp., 156 figs., 22 tabs., subject index. $ 30.00

This conference was held at Airlie House, Virg. in June 1974 and brought together 20 specialists from North America and six from various other countries. They were both basic scientists and clinicians and the topics discussed covered a broad range of descriptive, interpretative, experimental and clinical work in man and a variety of animals.

The 21 papers are research reports or reviews of recent work. A few are very short, while three of the full-length papers are exclusively of clinical interest. Seven of the papers are followed by group discussions.

The book is well produced and very well illustrated.

90.
L. JÍLEK and S. TROJAN, eds. 1974. ONTOGENESIS OF THE BRAIN. Vol. 2. The biochemical, functional and structural development of the nervous system.
Universita Karlova, Praha. Proceedings of the International symposium Neuroontogeneticum Secundum. 483 pp., 228 figs., 12 tabs., author and subject indexes.

This symposium was held in Prague in July 1973 as a sequel to the symposium with the same title published in 1968. Many of those attending the earlier symposium were again present. Attendance was largely European, with a predominance of workers from Eastern Europe (particularly Czechoslovakia, East Germany and Russia). Most contributions are brief research reports.

No less than 49 papers are grouped in six sections as follows: Prenatal ontogeny (8 papers), Brain hypoxia during ontogeny (6), Determinants of the postnatal development of the central nervous system (13), Development of behavior (7), Electrogenesis of the brain (8), and Metabolism of the developing brain (7). In section 1 most of the papers report on studies on avian embryos, while the other sections deal mostly with later stages of mammals and man.

The book is profusely illustrated; the many photographic illustrations are not always optimally reproduced.

91.
A. T. MILHORAT, ed. 1974. EXPLORATORY CONCEPTS IN MUSCULAR DYSTROPHY. II, Control mechanisms in development and function of muscle and their relationship to muscular dystrophy and related neuromuscular diseases
Excerpta Medica, Amsterdam; Amer. Elsevier, New York. XVIII, 664 pp., 340 figs., 84 tabs., subject index. $ 56.25, Dfl. 135.00

In this volume at least ten contributions, mostly by American authors, are of direct interest to those working on cell differentiation and myogenesis, and on nerve influences

in muscle development. Many more papers supply information on the cell biology of muscle that was new at the time of writing.

The international symposium was held in October 1973 in Carefree, Arizona and the contributions are medium-length reviews of work that was very recent at that time. They are exceedingly well illustrated and are followed by stimulating discussions.

CELLULAR DEVELOPMENTAL BIOLOGY (incl. cell culture, cytochemistry) (see also 3,7,21,70,75,76,80,91,102,108)

Textbooks

92.
M. F. GREAVES. 1975. CELLULAR RECOGNITION
Chapman & Hall, London; John Wiley, New York. Outline Studies in Biology. 72 pp., 24 figs., 5 tabs., subject index. £ 1.30 (paper)

This is a highly condensed but extremely useful survey of what may be called "receptor biology" in a broad sense, a subject of considerable importance for developmental biology. The principles are clearly set out and attention is devoted to cell membrane structure in relation to receptor function, and to the roles of cyclic nucleotides and calcium ions. Then follow sections on neurotransmitter and hormone receptors, receptors in the immune system, and several categories of selective cell interaction (among them developmental interactions). Electrical and metabolic coupling between cells are not considered.

The book is illustrated mainly with good diagrams and the text is documented with numerous references, most of them very recent.

Monographs

93.
R. P. COX, ed. 1974. CELL COMMUNICATION
Wiley, New York, etc. Wiley Series in the Dynamics of Cell Biology. X, 262 pp., 59 figs., 9 tabs., subject index. $ 22.00

Cell communication is of such vital importance for developmental biology that we briefly review this book here, although it was published some time ago and contains no specific information on developing systems. The 11 chapters are authoritative medium-length reviews which describe experimental evidence from a variety of systems on which the current concepts and speculations regarding cell communication are based.

We specifically mention the chapters by Gilula on cell junctions generally, by Sheridan on electrical coupling, by Cox *et al.* on "metabolic cooperation" between cells, by Kolodny on transfer of macromolecules (with a valuable methodological section), and by Rubin on cell growth regulation.

The volume is well produced and superbly illustrated.

94.
T. P. EVGENEVA. 1975. CELL SURFACES AND THEIR TRANSFORMATION DURING DEVELOPMENT; an atlas of photomicrographs with the scanning electron microscope (in Russian)
Publ. House Nauka, Moscow. 79 pp., 91 figs.

Atlas of close to 100 SEM micrographs matched with a brief text and arranged according to the following "types": Porifera (9 micrographs), Coelenterata (6), Ctenophora (10), Chaetognatha (9), Echinodermata (11), Hemichordata (12), Tunicata (13), Vertebrata (21); quality of reproduction moderate to reasonable.

95.

J. C. HOUCK, ed. 1976. CHALONES

North-Holland, Amsterdam, etc.; American Elsevier, New York. XIV, 510 pp., 68 figs., 53 tabs., subject index. Dfl. 165.00, $ 63.50

Chalones are tissue-specific inhibitors of cell division. Although the chalone concept has recently become much more respectable than it used to be, it is still wrought with great difficulties of methodology and interpretation. It is therefore fortunate that this book, the first to be devoted entirely to chalones apart from symposium reports, is pervaded by a critical spirit and a thorough awareness of methodological pitfalls.

The 22 chapters are written by an international group of specialists. They differ widely in length and there is sometimes considerable overlap between them. Almost all of the presently known or suspected chalones have their own chapter. There is a brief chapter on chalones and organogenesis, and several chapters on chalones and cancer. In addition, a number of general chapters are interesting from the point of view of cell proliferation and growth regulation *per se*, quite apart from chalones.

The book is well produced and illustrated. It is concluded by a comprehensive and up-to-date bibliography of chalone literature (some 280 titles) arranged by tissue and chronologically. The subject index is surprisingly inadequate.

96.

J. REINERT and H. HOLTZER, eds. 1975. CELL CYCLE AND CELL DIFFERENTIATION

Springer, Berlin, etc. Results and Problems in Cell Differentiation Vol. 7. XII, 331 pp., 92 figs., 8 tabs., subject index. DM 69.00. $ 29.70

Contributors: Borun, Braun, Dienstman, Gurdon, Holtzer, Hunt, King, Lawrence, Meins, Nelson, Pfeiffer, Phelps, Selitrennikoff, Shapiro, Siegel, Tsanev, Weintraub, Wood

This is a collection of excellent reviews on a topical subject still characterized by rather divergent views. The editors have chosen not to evade controversy: of the 13 chapters about one third (on myogenesis, erythrocyte differentiation, neurogenesis, and neuronal specificity) defend the thesis of a critical dependence of differentiation on the cell cycle, while the remainder are more equivocal or even sceptical. Among the cell types considered in this latter category are amphibian embryos, insect generative and somatic cells, the bacterium *Caulobacter*, *Neurospora*, and several types of plant cells. There are also chapters on liver regeneration and on the possible functions of histones.

The bibliographies of most chapters run up to 1973, while a few go into 1974. The book is very well produced and illustrated.

97.

R. ROHRBACH. 1975. ZUR STEUERUNG DER ZELLPROLIFERATION DURCH CHALONE, experimentelle Untersuchungen an Epidermis-Hyperplasien. (The regulation of cell proliferation by chalones, experimental investigations on epidermal hyperplasia)

Fischer, Stuttgart. Veröffentlichungen aus der Pathologie. Heft 99. X, 68 pp., 25 figs., 7 tabs., subject index. English Summary (2 pp.). DM 34.00 (paper)

Proliferation (thymidine incorporation, mitotic rate and DNA content) of "hairless" mouse epidermis treated in various ways is regulated by probably two water-soluble chalones, one acting on mitosis and one on DNA synthesis.

98.
S. PUISEUX-DAO, ed. 1975. MOLECULAR BIOLOGY OF NUCLEOCYTOPLASMIC RELATIONSHIPS
Elsevier, Amterdam, etc. XIV, 328 pp., 116 figs., 27 tabs., subject index. Dfl. 98.00, $ 40.95

This symposium was held in France at an unspecified time and had an almost exclusively European attendance. Although most of the contributions are brief to very brief research reports, the book provides a useful cross section of the great variety of molecular-biological research on unicellular eukaryotes being carried out in Europe.

Only part II (Nucleocytoplasmic interactions in differentiating cells) is of direct interest to developmental biologists. The papers in this section are somewhat ill-assorted. Apart from some 10 research reports on nuclear, cytoplasmic and membrane aspects of the biology of a variety of unicellular organisms (among which *Acetabularia* takes precedence), there are general reviews by Brachet (embryogenesis and cell differentiation) and Samarina (information transfer) and a lengthy review by Benedetti and Dunia on the properties of gap junctions. The brief paper by Babloyantz, Hiernaux and Prigogine on the thermodynamics and kinetics of self-organisation is particularly interesting – not so much for its contents, which are sketchy, but because it introduces a new view of one of the most difficult problems of theoretical biology.

The book is well produced and illustrated.

99.
H. C. SLAVKIN and R. C. GREULICH, eds. 1975. EXTRACELLULAR MATRIX INFLUENCES ON GENE EXPRESSION
Academic Press, New York, etc. XLII, 833 pp., 259 figs., 74 tabs., subject index. $ 39.50, £ 18.95

This is one of those rather rare cases where publication of a symposium proves more than worth while. The book was published within a year from the date of the symposium (Santa Catalina Island, Calif., September 1974) and the contents are by-and-large new and exciting and more many-sided than the title suggests. Many of the leaders and coming men in the field were there, with the Americans in the majority but with a fair sprinkling of people from Western Europe.

No less than 74 papers were delivered, of which at least half are of direct interest to developmental biologists, and many more than that to cell biologists generally. We must restrict ourselves to enumerating the ten major areas covered: (1) chromosomal and extrachromosomal influences upon transcription; (2) translational and post-translational regulation during development; (3) regulation of extracellular matrix molecular biosynthesis; (4) regulation of tissue-specific collagen biosynthesis; (5) extracellular matrix macromolecules; (6) outer cell surface specificity and cell interactions; (7) epithelial-mesenchymal interactions; (8) extracellular matrix influences on gene expression; (9) matrix-cell and cell-matrix interactions and mineralization processes; (10) aberrations in developmental processes. One of the veterans in this whole area, Clifford Grobstein, provided an introductory essay and the concluding reflections, both of which are equally masterly. The discussions following each section are also included.

The book is very well produced and illustrated.

100.
G. P. TALWAR, ed. 1975. REGULATION OF GROWTH AND DIFFERENTIATED FUNCTION IN EUKARYOTE CELLS
Raven, New York, XX, 564 pp., 204 figs., 95 tabs., subject index. $ 35.00

This international symposium was held in New Delhi in October 1974. It focussed on the mechanisms by which animal (and some plant) cells are triggered to multiply and differentiate, and covered many areas ranging from the intracellular to the organismic

level. More than half of the contributors were from India, some institutes being particularly well represented: the All India Institute of Medical Sciences, the Bose Institute, the Indian Institute of Science, and the National Chemical Laboratory. Most of the contributions are research reports or reviews of recent work.

The 55 papers are arranged in the following sections: Cell cycle and its regulation (6 papers), General mechanisms influencing cellular growth and differentiation (8), Surface properties and role of membrane-linked events in cellular multiplication (5), Differentiation and replication of immunocompetent cells: regulation of immune response by hormones and nutritional factors (12), Action of growth promoting and developmental hormones (14), Fertilization and early embryonic development (8 papers, most of them of direct interest to mammalian embryologists), Central nervous system: genetic controls (2).

The book is very well produced and illustrated.

DEVELOPMENTAL BIOCHEMISTRY, MOLECULAR BIOLOGY (see also 3,7,21,35,36, 82,90,92,93,96,98,99,110,111,116,119)

Treatises

101.
R. WEBER, ed. 1975. THE BIOCHEMISTRY OF ANIMAL DEVELOPMENT. Vol. III. Molecular aspects of animal development
Academic Press, New York, etc. XVI, 509 pp., 78 figs., 52 tabs., author, taxonomic, and subject indexes. $ 35.00, £ 16.80

Contributors: Bass, Boell, Church, Eppenberger, Gregg, Greenfield, Hogan, Klein, Knowland, Lane, Merker, Neubert, Schultz, Smith, Tiedemann, Tobler

Vols. I and II of this multi-author treatise appeared in 1965 and '67, respectively. The series is now concluded by a volume highlighting several areas where the impact of molecular biology has been particularly strong. The result is a selective but extremely useful collection of well-organised reviews. The discussions are largely restricted to vertebrate eggs and embryos.

The subjects treated are oocyte maturation, transcription in early mammalian embryos, gene amplification, the *Xenopus* oocyte test system for transcription, post-transcriptional control of protein synthesis, iso-enzyme patterns, morphogenetic substances, growth-promoting proteins, and functional differentiation of mitochondria.

The most recent literature cited dates from 1972 in some chapters, from 1973 in others (with occasional titles from 1974). The book is well produced and illustrated and contains much tabular material.

Monographs

102.
U. DREWS. 1975. CHOLINESTERASE IN EMBRYONIC DEVELOPMENT
Fischer, Stuttgart. Progr. Histochem. Cytochem. vol. 7, no. 3. VI, 52 pp., 38 figs., 2 tabs., subject index. DM 50.00 (paper)

Review of work carried out over nearly ten years but so far only published in German; cholinesterase found in cells engaged in morphogenetic movements; sea urchin and chick embryos and a variety of other cell types, including chick limb mesenchyme forming cartilage *in vitro*; good micrographs and diagrams.

103.
C. J. MASTERS and R. S. HOLMES. 1975. HAEMOGLOBIN, ISOENZYMES AND TISSUE DIFFERENTIATION
North-Holland, Amsterdam, etc.; Amer. Elsevier, New York. Frontiers of Biology *42*. XIV, 308 pp., 92 figs., 23 tabs., subject index. $ 32.95, Dfl. 79.00

Contents: 1. Introduction; 2. Haemoglobin and evolution; 3. Isoenzymes and phylogeny; 4. Haemoglobin synthesis and ontogeny; 5. Isoenzymes and ontogeny; 6. Turnover of isoenzymes; 7. Micro-localization of isoenzymes; 8. General conclusions

This well-written book by two Australian authors provides a selective compilation of recent results with regard to haemoglobins and (mainly) multiple-locus isoenzymes, together with extensive comment on the role of protein multiplicity in biology. These subjects are considered for their own intrinsic interest as well as for their considerable practical applications. Because isoenzymes are powerful tools in its analysis, tissue differentiation is the connecting thread, but evolutionary aspects are integrated throughout.

Chs.6 and 7 deal with the extremely important aspects now commonly called "enzyme realisation", i.e. those relating to the functioning of enzymes in the real cell rather than the test tube.

The book is well produced and illustrated and has a bibliography of 22 pages in small print.

Dissertations

104.
O. H. J. DESTRÉE. 1975. HISTONES IN DEVELOPMENT OF XENOPUS LAEVIS
M.D. thesis, Univ. of Amsterdam. 114 pp., 24 figs., 11 tabs.

Based on 3 previous publications and new data; histone patterns in chromatin from cleavage till tailbud embryos, with emphasis on early stages; all major fractions present from 16-cell stage onwards, but additional basic proteins at blastula stage; new chromatin model; discussion of histone literature.

105.
R. LAFONT. 1975. ASPECTS BIOCHIMIQUES DE LA DIFFÉRENCIATION DES DISQUES IMAGINAUX ALAIRES DES LÉPIDOPTÈRES
Ph.D. thesis, Paris. Publ. du Lab. de Zool., École Norm. Supér. No. 5. 157 pp., 70 figs. (mimeographed), 3-page English summary

Imaginal wing discs of *Pieris brassicae* in last larval instar and pupa; nucleic acid and protein metabolism; wing pigmentation; hormonal control (part. haemolymph ecdysone levels).

106.
H. MEISSL. 1975. DER EINFLUSS VON PROLAKTIN UND SOMATOTROPIN AUF DEN LIPIDSTOFFWECHSEL WÄHREND DER METAMORPHOSE DES KRALLENFROSCHES XENOPUS LAEVIS DAUDIN
Ph.D. thesis, Karlsruhe. 54 pp., 22 figs., 1 tab. (mimeographed)

Changes in lipid amounts and in hormonal regulation of lipid metabolism during metamorphosis.

107.
W. NEUBRAND. 1975. UNTERSUCHUNGEN ZUR INDUKTION UND REGULATION DER GLUCONEOGENESE BEI XENOPUS LAEVIS DAUDIN DURCH CORTICOSTEROIDE UND ACTH
Ph.D. thesis, Karlsruhe. 79 pp., 19 figs., 2 tabs. (mimeographed)

Carbohydrate metabolism and induction of gluconeogenesis by increasing hormone or substrate levels in three phases: prometamorphosis, metamorphic climax, and juvenile.

Symposium reports

108.
G. BERNARDI and F. GROS, eds. 1975. ORGANIZATION AND EXPRESSION OF THE EUKARYOTIC GENOME. BIOCHEMICAL MECHANISMS OF DIFFERENTIATION IN PROKARYOTES AND EUKARYOTES
North-Holland, Amsterdam; American Elsevier, New York etc. Proc. of the Tenth FEBS Meeting, vol. 38. VI, 342 pp., 104 figs., 5 pls., 37 tabs., subject index. $ 29.75, Dfl. 77.00

This meeting was held in Paris in July 1975. Of the 24 contributions seven are by American groups. The papers are short to medium-length research reports or reviews of recent work.

It is particularly the second part of the book (see second half of the title) that is of interest to our readers. From among its 11 contributions we single out the following as particularly interesting: a review by Moscona *et al.* on embryonic cell recognition, papers by Gerisch *et al.* and Pereira da Silva *et al.* on aggregation mutants and the acquisition of aggregation competence in *Dictyostelium*, a paper by Paul *et al.* on the control of globin synthesis in erythroleukaemic cells, and papers by Yaffe *et al.* and Buckingham *et al.* discussing evidence for posttranscriptional control in myogenesis. Of the remaining papers three deal with prokaryotes, one with cell "reconstruction" and one with the organisation of immunoglobulin genes.

The book is produced in offset print and adequately illustrated. The index is rather short.

109.
C. L. MARKERT, ed. 1975. ISOZYMES. III. Developmental biology
Academic Press, New York, etc. XXII, 1034 pp., 407 figs., 138 tabs., combined author, taxonomic, and subject index. $ 37.50, £ 18.00

This volume contains the papers read at part of an international conference held at Yale University in April 1974. Among the contributors to this volume about one quarter came from countries outside North America. The book reflects the enormous growth of this relatively young area. Almost all papers are either research reports or reviews of recent original work on a great variety of enzymes in many different organisms (both animals and plants).

Although many of the 61 papers transcend the boundaries of what is traditionally called developmental biology, about half of them are of direct interest to developmental biologists.

The book is produced in good photo-offset and adequately illustrated. The index is however far from adequate.

Monographs

110.
W. J. DICKINSON and D. T. SULLIVAN. 1975. GENE-ENZYME SYSTEMS IN DROSOPHILA
Springer, Berlin, etc. Results and Problems in Cell Differentiation Vol. 6. XII, 163 pp., 32 figs., 4 tabs., subject index. DM 58.00, $ 23.80

Drosophila is probably the eukaryotic organism that has been studied in most detail from both genetical and developmental viewpoints. This monograph is an extremely well-organised and readable survey of the existing literature on well-defined gene-enzyme systems in this species. It provides a complete description of all gene-enzyme systems that have been studied in detail, gives an introduction to the most useful methods, and indicates the range of problems on which such studies can be brought to bear. In this latter area the main emphasis is on work relevant to gene regulation in eukaryote development and to the organisation of the eukaryotic genome.

The text is in the main organised according to individual enzymes and cites no less than 64 genetic loci. The book contains a wealth of tabular and graphic material and some good illustrations. The bibliography consists of some 375 titles.

Symposium reports

111.
L. RENSING, H. H. TREPTE, and G. BIRUKOW, eds. 1975. REGULATIONSMECHANISMEN DER GENAKTIVITÄT UND REPLIKATION BEI RIESENCHROMOSOMEN
Vandenhoeck & Ruprecht, Göttingen. Nachrichten der Akademie der Wissenschaften in Göttingen. II. Mathematisch-Physikalische Klasse, Jahrgang 1975, Nr. 11. 72 pp., 18 figs.

Summaries in German of a series of papers presented at a colloquium held in Göttingen, West Germany in March 1975; 18 papers, mostly by German authors; the great majority deal with physiological and molecular work on polytene and lampbrush chromosomes in insects; illustrated with diagrams; useful particularly for those active in this area.

Reference works

112.
R. C. KING. 1974. A DICTIONARY OF GENETICS. 2nd edit. revised
Oxford Univ. Press, New York, etc. 375 pp. £ 4.75 (paper)

This revised 2nd edition bears the year 1974 but was not issued until March 1976. Some of the flaws signalised in previous reviews have been removed, but the main change is a considerable expansion of the appendices A (chronology of genetics and cytology), B (periodicals), C (laboratories in North America), and D (films). A new appendix lists gene localisations and other properties of human chromosomes.

113.
R. C. KING, ed. 1975. HANDBOOK OF GENETICS
Vol. 3 Invertebrates of genetic interest
Vol. 4 Vertebrates of genetic interest
Plenum, New York, etc. Vol. 3: XIV, 874 pp., 60 figs., 65 tabs. Vol. 4: XIV, 669 pp., 38 figs., 101 tabs.; author and subject indexes. $ 59.50 each

These two volumes contain much information that can be of importance to developmental geneticists. The books are largely compilatory in nature and are intended as source books on the morphology, reproductive biology, culture methods, stocks and mutant

strains, genetic maps, and many other aspects of those species that are of greatest genetic interest. No strict format is adhered to and the coverage is rather uneven. Nevertheless an enormous amount of information is amassed here and still more is made accessible through references.

Apart from a chapter on molluscs, vol. 3 is entirely devoted to insects: one blattid species, two lepidopterans, one coleopteran, three hymenopterans, and ten dipterans. Eleven chapters are devoted to *Drosophila melanogaster* alone and five to other species of this genus. (It is odd that no reference whatsoever is made in the text to homeotic mutations in *Drosophila*.)

The chapters in vol. 4 that are of greatest interest to our readers are those on amphibians (one on the axolotl, one on *Rana*, and two on *Xenopus*) and on birds. The fishes are represented by the platyfish, the medaka and the guppy. The section on mammals covers no less than 12 species apart from man, among them six rodents and four carnivores (sheep, swine and cattle are missing). Six chapters are devoted to human genetics.

The books contain a great deal of tabular material and many useful figures. They are well produced and sturdily bound.

DEVELOPMENTAL PHYSIOLOGY (incl. endocrinology, immunology, behaviour, etc.)

(see also 36,46,59,60,68,69,90,106,107)

Textbooks

114.
D. B. VILLEE. 1975. HUMAN ENDOCRINOLOGY; a developmental approach
Saunders, Philadelphia, etc. XIV, 479 pp., 95 figs., 17 tabs., subject index. $ 16.75

This book was written primarily for students of human endocrinology but could be very useful for those interested in human development. It is based on an interesting idea: that of presenting human development "as a sequence of events regulated in part by genetic expression, in part by nutritional milieu, and in part by the circulating hormones". The treatment thus emphasises such aspects as differentiation, growth, homeostasis, and maturation (particularly skeletal and sexual). The book is well written and entirely up to date, incorporating many new biochemical data.

The 14 chapters follow the chronological sequence from fertilisation till senescence. The "feto-placental unit" receives detailed attention, as do the endocrine and metabolic changes and disorders in the newborn, and abnormalities of sexual differentiation.

The book is well produced and illustrated. All chapters are concluded by good reading lists of annotated book titles and often additional recent primary publications.

Monographs

115.
T. W. BETZ. 1975. PARTIAL DECAPITATION OF CHICKEN EMBRYOS
Periodica, Copenhagen. Acta Endocr. Suppl. 198 to vol. 79. 28 pp.

Description of simple and efficient operation simulating adenohypophysectomy; evaluation in comparison with other methods.

116.
D. B. CHEEK. 1975. FETAL AND POSTNATAL CELLULAR GROWTH, hormones and nutrition
Wiley, New York, etc. XXII, 538 pp., 250 figs., 141 tabs., subject index. $ 33.60, £ 16.80

This book will appeal most to members of the medical profession. It was written by the chief author together with 27 colleagues with whom he collaborates in various groups in the U.S.A. The book clearly brings out the significance of research on the fetal rhesus

monkey for the solution of problems of fetal undernutrition in man. It reports on a large number of correlated studies of fetal "chemical anatomy", both in the normal primate fetus and under conditions of hormonal and nutritional imbalance.

Most of the attention is focussed on the brain, but many other organs and tissues as well as the growth process *per se* are also considered. The book's concluding section deals with postnatal growth in the human and the roles of hormones and nutrition in it. One appendix gives methodological details and another lists data on normal fetal and postnatal development in the rhesus monkey.

The book is produced in photo-offset and contains a large amount of tabular and graphic information.

117.
V. J. A. NOVÁK. 1975. INSECT HORMONES
Chapman & Hall, London. XXII, 600 pp., 73 figs., 37 pls., 8 tabs., subject, taxonomic and author indexes. £ 16.80

Contents: 1. Introduction; 2. Methods and techniques in insect hormone research; 3. The metamorphosis hormones; 4. Entocones, natural and synthetic substances with insect hormone activity; 5. Hormones and morphogenesis; 6. Hormones and diapause; 7. The neurohormones; 8. The protohormones; 9. Incompletely known substances with allegedly hormonal characteristics; 10. The exohormones; 11. Effects of insect hormones on other animal groups and *vice versa*; 12. The theoretical and practical significance of insect hormones

This is the second English edition of a book that, since its first publication in German in 1959, has found a place of its own alongside other similar works. We will therefore restrict ourselves to mentioning the main changes from the previous edition (1966). A major feature of the book still is that it devotes much attention to work by investigators in Czechoslovakia and other Eastern-European countries that is less well known to readers in the West.

There is a new chapter of 40 pages (4) on substances with MH and JH activity, the major new subject since the previous edition. The original chapter on the metamorphosis hormones was split up into two (3 and 5, together 66 pp.). Naturally, the author draws extensively on work and ideas of himself and his associates; this holds particularly for the sections on the gradient-factor hypothesis and its general developmental implications in ch.5. However, his own conclusions are always kept clearly separate from those of others.

Because of the tremendous increase in the number of publications, the references to articles are restricted to those published after 1964, but this list was made as complete as possible and consists of over 2.000 titles. The book is illustrated with excellent line drawings and more than 40 good photographs.

Symposium reports

118.
E. L. COOPER, preface. 1975. DEVELOPMENTAL IMMUNOLOGY
Amer. Soc. of Zoologists, Utica, N.Y. American Zoologist *15*, 1. 213 pp., 111 figs., 35 tabs. $ 6.50 (paper)

Contributors: Ashman, Auerbach, Boraker, Bryant, Cohen, Cooper, Decker, Duquesnoy, Goldstine, Horton, Kindred, Linna, Manning, Moticka, Phillips-Quagliata, Riviere, Ruben, Schapiro, Turpen, Wright

This symposium was held in Houston, Tex. in December 1973 and covered both phylogenetic and ontogenetic aspects of immunity. All of the 21 contributions are summaries of recent original research by well-known individuals and groups (three from outside the U.S.A.). Three deal with invertebrates, seven with amphibians and other lower vertebrates, two specifically with cyclostomes, three with birds and marsupials, and the

remainder with rodents. More than half of the papers are of direct interest to developmental immunologists.

The volume is well printed and illustrated.

METHODS (see also 9,43,113,115)

Monographs

119.
J. A. LAST, ed. 1976. EUKARYOTES AT THE SUBCELLULAR LEVEL, development and differentiation
Dekker, New York, etc. Methods in Molecular Biology, Vol. 8. X, 460 pp., 31 figs., 11 tabs., author and subject indexes. $ 32.50, SFr. 115.00

This book is a compendium of sophisticated methods in molecular biology that will certainly prove most useful to developmental biologists. It contains a wealth of well-organised practical information. Apart from a general chapter on nucleic acid hybridisation the book is organised around six widely divergent developing systems which are either known in detail or hold great promise for the future. Many chapters provide a description of the protein inventory of the system and all but one describe the techniques for the isolation, purification and further analysis of messenger RNA.

The following systems are considered: the insect chorion (by Kafatos), cellular slime moulds (by Jacobson), erythroid development (by Tobin *et al.*), lung collagen (by Cowan *et al.*), chick embryo myosin (by Sarkar), and the chick oviduct (by Rosen *et al.*). Immunoglobulin mRNA is not considered, and no details are given of the immunoprecipitation method for the purification of polysomes. The chapters are adequately cross-referenced.

The book is produced in readable offset print. The subject index is somewhat limited.

Symposium reports

120.
O. MÜHLBOCK, ed. 1976. BASIC ASPECTS OF FREEZE PRESERVATION OF MOUSE STRAINS (Proceedings of a Workshop)
G. Fischer, Stuttgart. X, 133 pp., 36 figs., 42 tabs. DM 48.00 (paper)

Although freeze preservation of mammalian embryos was developed for other than embryological purposes, embryologists may be interested in this report. The workshop was held at the Jackson Laboratory in Bar Harbor, Maine in September 1974 and was attended by investigators from the U.S.A., England and the Netherlands.

A series of 11 brief reports treat various aspects of this new method. At least half of them contain methodological and other data that may be of interest to embryologists and developmental geneticists. More similar information is to be found in the discussions. Many "tricks of the trade" are extensively discussed. One report deals with the effects of ionising radiation on pre-implantation mouse embryos *in vitro*, and another with immunological aspects of maternal influences.

121.
Th. H. SHEPARD, J. R. MILLER, and M. MAROIS, eds. 1975. METHODS FOR DETECTION OF ENVIRONMENTAL AGENTS THAT PRODUCE CONGENITAL DEFECTS
North-Holland, Amsterdam, etc.; Amer. Elsevier, New York. 263 pp., 58 figs., 27 tabs., subject index. $ 34.75, Dfl. 90.00

This is predominantly a book of practical information and as such will be indispensable to many teratologists in their everyday work. The conference, held in Guadeloupe, West Indies in January 1974 and sponsored by the "Institut de la Vie", brought together

a large proportion of the world's leaders in the field, of widely different specialisations (about three quarters of them from North America).

Eighteen short reviews cover three main areas: Animal testing and chemical prediction, In vitro testing (also the subject of a separate conference to be published in the same series in 1976), and Monitoring of the fetus and newborn. This material is interspersed with interesting discussions and brief editorial comments, and the subject matter is updated in places. The editors have provided a general summary and a set of recommendations, both based on the consensus of the participants.

The book is very well produced and illustrated.

HISTORY, BIOGRAPHIES, etc.

Monographs

122.
R. MOCEK. 1974. WILHELM ROUX – HANS DRIESCH. Zur Geschichte der Entwicklungsphysiologie der Tiere ("Entwicklungsmechanik")
Gustav Fischer, Jena. Biographien bedeutender Biologen, Band 1. 229 pp., author and subject indexes. M. 26.00 (paper)

The author of this book is Professor of Philosophy at the Martin Luther University in Halle, German Democratic Republic. His aim is to show the interactions between the history of philosophy and the history of science by analysing the scientific contributions of Roux and Driesch. He naturally does this within the framework of dialectic materialism (the book abounds with citations of Friedrich Engels!). Nevertheless, his treatment cannot be called dogmatic. Among other things, he shows that Roux and Driesch cannot be treated as paradigms for mechanistic and vitalistic reasoning, respectively, but that the situation is much more complex.

Because of its constant preoccupation with philosophical questions the book is probably less interesting for bio-historians than for historians of philosophy. At the very least, it provides insights into dialectic materialism from an unexpected angle. Interesting for bio-historians are the appended bibliographies of Roux and Driesch and a catalogue of Driesch's correspondence present in the University Library at Leipzig.

MISCELLANEOUS ITEMS

Monographs

123.
P. RAMSEY. 1975. THE ETHICS OF FETAL RESEARCH
Yale Univ. Press, New Haven, etc. XXII, 104 pp. £ 4.00 (cloth), £ 1.50 (paper)

Contents: 1. Background history and guidelines, 2. Types of fetal research, 3. Themes in ethical analysis, 4. Research on the condemned, the dying, the unconscious, 5. Medical ethics skewed by the abortion issue, 6. Fetal research in utero: the NIH provisional guidelines, 7. Live abortus research: the NIH provisional guidelines, 8. Controversial cases, 9. The revised guidelines, 10. Who "consents" to fetal research?

The author of this book is an American Professor of Religion and a well-known authority on medical ethics. His aim is not to tell the reader *what* to think, but *how* to think about research on human fetuses. He does this in a balanced manner, without concealing his own opinions but also without drawing in theological arguments. Moreover, he is scientifically well informed. His book is well worth reading for anyone who is or may become involved in these intricate problems and feels that the level of the current debates should be raised.

The table of contents speaks for itself, except that it may be pointed out that the author not only analyses the recent American guidelines but also the British Peel report.