

NOVA

ILLINOIS MATHEMATICS AND SCIENCE ACADEMY

IMSA A Pioneering Educational Community

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IMSA Fund Receives \$500,000 Gift from Mystery Alum

This is just astounding." Michael Birck told reporter Dan Rozek in a *Chicago Sun-Times* interview about the recent half-million dollar gift to the Academy by the anonymous alum. Birck, president and CEO of Tellabs, Inc., also is president of the IMSA Fund, the Academy's not-for-profit corporation charged with securing private sector support.

Birck, like other officials of the Fund, thought it would take as long as 30 years before graduates would be able to make a donation of this magnitude. IMSA's charter class graduated in 1989, placing most of its alums still in their twenties.

In making the donation to the IMSA Fund, the young alum, who wished to remain anonymous, said "IMSA has contributed greatly to my success, and this gift is made to contribute back to IMSA's success."

The contribution is the largest one from an alumnus and one of the largest private gifts in IMSA's history. "This gift represents a major boost to the IMSA Fund's philanthropic efforts and is a strong endorsement of the quality of work being done at the Academy," said Birck.

In announcing the gift at the November 4 meeting of the IMSA Board of Trustees, Chairman Jack McEachern, president of Wayne Circuits Incorporated, said, "... On behalf of the entire IMSA community (I) want to thank the donor for this heartfelt and most generous investment in IMSA's future."

Following the announcement, news of the donation spread quickly and IMSA fielded many calls from Chicago reporters clammering to obtain an interview with the anonymous donor. In a weekly editorial column entitled 'Bows' and 'Arrows' published by the *Aurora Beacon-News*, editors wrote "Give this shining donor a selfless **BOW** for trying to ensure that

others enjoy the same kind of opportunities for years to come. It is indeed amazing that an IMSA grad — and, thus, IMSA itself — has done so well already."

IMSA President Dr. Stephanie Pace Marshall said the gift will be used to establish a permanent endowment. The endowment earnings will support IMSA programs that advance mentorship and research opportunities for IMSA students and programs that support the Academy's professional development initiatives for mathematics and science teachers throughout Illinois.

(See Related Story on Page 4)

James Burke Speaks at IMSA

Best selling author, award-winning writer-producer and science historian James Burke presented the Seventh Annual James R. Thompson Leadership Lecture at IMSA on Friday, November 21. More than 1,400 people filled IMSA's gymnasium to hear Burke's presentation, "Mechanisms of Change: Do Lemons Whistle?" *(see more on page 5)*

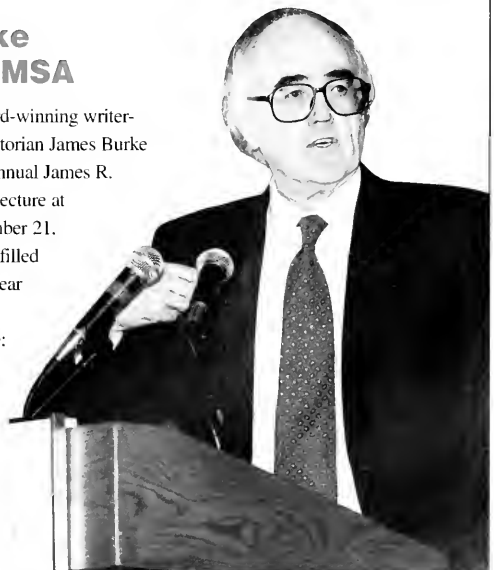


Photo by Rich Malec

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Brenda Buschbacher

From the IMSA Fund Board President



Dear IMSA Shareholders,

I am pleased to report another exciting and productive fall as IMSA blazes more new trails into its second decade. And what better way to end 1997 than with a gift of \$500,000 from a young IMSA alumnus?

The young philanthropist, who wishes to remain anonymous, stated a desire "to ensure that other students have similar opportunities as I had in the years to come." The gift represents IMSA's largest gift from an alumnus and one of the largest private gifts in the school's history.

As president of the IMSA Fund, the Academy's not-for-profit corporation charged with securing private sector support, I did not expect news of this kind so early in IMSA's history. The gift is a major boost to the IMSA Fund's philanthropic efforts and a strong endorsement of the quality of work being done at the Academy. As president and CEO of Tellabs, Inc., a company with a strong technology orientation, I understand the critical need for increased emphasis on proficiency in mathematics and the sciences. Strategic relationships between the education community, private industry and government are essential to creating new learning enterprises for the 21st Century learner. The goal is new teaching and learning processes. The result will be a more competitive state and nation.

Another significant recent event is the opening of the Center for Collaborative Inquiry in Mathematics and Science (CCIMS) at IMSA. The CCIMS will engage teachers throughout the state in the important work of transforming mathematics and science teaching and learning in their respective settings. Look for stories about the Center and the Illinois Transformation Initiative, an important public policy initiative, in future NOVAs.

I am proud to be a part of the IMSA learning enterprise and want to thank you, our shareholders in the public and private sectors, for supporting our work.

On behalf of IMSA, best wishes for the holidays and new year!

Sincerely,

Michael J. Birck
President, IMSA Fund Board of Directors

Located in Aurora, IMSA is a learning enterprise that builds the capacity of students, teachers and policymakers to improve and transform mathematics and science teaching and learning. IMSA's residential educational program serves Illinois students (grades 10-12) talented in mathematics and science; its professional development Centers (mathematics and science, problem-based learning) serve schools, educational systems, teachers and students in Illinois and beyond.

Ethics in Science and Humanities Project: "The Chance to Change the World"

By Arati Shroff, Student Writer

In July of 1997, eight IMSA students and two faculty members traveled to Jerusalem to help develop an ethics in science and humanities curriculum for use by secondary schools worldwide. Ten schools from throughout the world (three from the U.S.) were invited to be a part of this project sponsored by The Society for Excellence Through Education. The summer conference was hosted by the Israel Arts and Science Academy. The IMSA delegation's trip was supported by The Harris Family Foundation, a major investor-partner in IMSA's Center for Problem-based Learning.

Sitting on a kibbutz outside of Jerusalem, Israel, with a Jordanian, Israeli, Cypriote, Canadian and Australian, singing and discussing politics, I couldn't imagine myself being anywhere else in the world at that moment.

Ten schools had come together at the Israel Arts and Science Academy for two weeks to create a unique global ethics curriculum. As one of eight students from IMSA to participate in this extraordinary workshop, I felt that for the first time I was being given the chance to change the world. Here I was, a high school student, doing what I had only imagined myself doing 20 years from now as an ambassador or representative of the United States. After a long day or touring the beautiful ruins of Caesaria and staring at picturesque scenes of the Dead Sea, our group had settled down for the night at the quiet and peaceful kibbutz. Sleepy and exhausted though we were, we were not going to pass up the chance to enjoy the company and get to know each other.

The workshops were a place where the world was literally at our fingertips. Sometimes these were open forums for discussion, debate and role playing. Other times they served as brainstorming sessions. Each individual brought different ideals and morals into the workshops, based on his or her background, culture and nationality. A simple activity like



Photo by Claire Looker

IMSA Student Arati Shroff (left) of Libertyville stands at the top of Masada, an old Jewish fortress, with her conference roommates, Clare Barnett (center) and Daine Singer (right), students at the Methodist Ladies' College in Victoria, Australia.

attempting to define the words "science" and "humanities" made me realize that there is no universal, specific definition for what is scientific and what is humanistic.

We brainstormed different methods on how to include ethics in a curriculum and what barriers we would face within our own schools and communities. An activity with an element of a moral dilemma would be designed and then we would actually conduct the activity. Many times it was frustrating as we would wrestle with an issue and realize there is no one "right" or "wrong" answer to ethical dilemmas.

All of us learned not to put aside our differences, but to expand and flourish in our uniqueness. We argued on the expectations of our societies and how we as future leaders of this world can create better societies in which to live. And together we cried with our Israeli friends when we visited the Holocaust memorial as they mourned many of their relatives who died in the Holocaust.

Traveling in Israel also was enlightening. I learned much about the history that serves as a basis of western civilization. Here in the U.S., some think only of Israel as a militaristic country trying to create peace in her land. But underneath all the stories of war is a beautiful mesh of cultures, religion and history, all in a land the size of Massachusetts.

One week after I returned from Israel, I read about the suicide bombing that had taken place in Ben Yehuda Market. I was shocked as I knew people who could have been hurt by this event. Only days before, I was standing in that market, touching the silk clothes and bargaining for cookies. It was strange to think how the whole time we were in Israel, there was not a single problem with safety or security, yet now, once again, Israel was a country torn apart by strife and conflict.

I hope that we can help our own IMSA community and the communities around us by making others aware of the role and importance of ethics, ethical questions and ethical dilemmas in all aspects of life, and by encouraging others to think about these before making decisions that will affect themselves and others.

Sometimes it takes a person a learning experience half way around the world to realize new and important truths. This experience was about confronting one's own morals, beliefs and ethics, and sharing those with others. I learned much about who Arati Shroff is, what I stand for, and what my personal ethics are. For me, that was the most important and most valuable part of this experience.

Arati Shroff is a senior from Libertyville, Illinois.

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Alumni Give Back Time and Talent in Addition to Treasure

by Britta Wilk McKenna, Alumni Coordinator

Although the recent anonymous gift of \$500,000 by an IMSA alum made Chicago headlines, alumni are giving back more than just money. Alumni also are eager to continue their IMSA experience by giving their time and talents ... something you often cannot put a price on.

Some of the ways in which IMSA alumni are giving back include mentoring current IMSA students with their ongoing research projects, serving on the alumni cabinet, helping to organize special events and assisting with legislative strategy. A successful Alumni College and Career Day was held on November 8 at IMSA and featured 32 alumni who shared career wisdom and college knowledge with current students.

Other alumni projects underway include designing an IAA (IMSA Alumni Association) Online Database and developing regional IMSA Clubs. The IAA database will be located on the IMSA home page and alumni who have released their information will have personal and professional vitals accessible on the web with updates available by password. The IAA database will be located at the following internet address after January 15 <<http://www.imsa.edu/org/iaa>>.

Regional IMSA clubs are now being developed in San Francisco, New York City, Boston, Washington, D. C., Champaign-Urbana and Chicago, cities which have high concentrations of IMSA alumni. The purpose of these clubs is to formally organize alumni who live or attend school in these locations and

develop IMSA events around their areas of interest. These clubs also are designed to serve as another forum for career and social networking as well as to keep alumni in touch with the Academy.

IMSA graduates are now realizing the importance of their IMSA experience at college and in their careers. Alumni are proving to be a great resource for knowledge and support to each other and current IMSA students; their level of involvement will only increase as the base of support grows and involvement opportunities each year continue to expand.



Photo by Rich Malcek

Michael Peil ('90) presented the convocation address to IMSA students August 25. Peil is a Post-Doctoral Associate at Cornell Law School.

Seventh Annual James R. Thompson Leadership Lecture



James Burke listens intently as his young admiring fan Stephen Trevick of Decatur asks Burke about his work.



Social science teacher Dr. Christian Nokkentved (center) and Dr. Martin Ramirez, director of curriculum and learning assessment (right) visit with James Burke at a special reception following his lecture.



Best-selling author James Burke signs a copy of one of his books, The Day the Universe Changed, for a loyal fan following the James R. Thompson Leadership Lecture.

Photos by Rich Malec



Platform Party Members: (left to right) IMSA Director of Institutional Advancement Ted Parge; William White, chairman of Bell & Howell Company and IMSA Fund vice president; James Burke; IMSA Student Council President Jen Wang and IMSA President Dr. Stephanie Pace Marshall.

Dedication Day: IMSA Honors Founding Chairman and Corporate Partner

On November 21, two of the Academy's primary locations for student research, lectures and presentations were formally dedicated to honor founding chairman James D. Pearson and corporate donor Bell & Howell Company/UMI.

IMSA's primary lecture and presentations hall, now named the James D.

Pearson Hall, was dedicated in honor of Pearson who served as founding chairman of the IMSA board of trustees from 1985-1997. Pearson, president of Aurora Metals



*James D. Pearson
Past Chairman, 1985-1997*

Division L.L.C., resigned as chairman in May but continues to serve as a member of the IMSA board of trustees.

In naming the James D. Pearson Hall, the board stated "His visionary leadership, pioneering spirit, responsible stewardship and wise counsel served IMSA and the People of Illinois exceptionally well. For his extraordinary commitment and exemplary service, the Board of Trustees proudly dedicates this lecture hall in his honor."

IMSA President Dr. Stephanie Pace Marshall praised Pearson, saying "Jim Pearson has led our Board with skill, integrity, humor and a generosity of spirit that has made working with him an honor and a joy."

Bell & Howell/UMI Dedication

The Bell & Howell and UMI Research Area in IMSA's Information Resource Center also was formally dedicated during a reception following the James R. Thompson Leadership Lecture.



Bob Malott, IMSA Fund vice president, congratulates Jim Pearson for his years of service to the Academy.

Bell & Howell and UMI have contributed more than \$135,000 to the Academy for in-kind support of the ProQuest system, a state-of-the-art resource that enables IMSA students, staff and statewide partners to obtain immediate up-to-date information from national and international periodicals and professional journals while conducting research.

Mr. William White, chairman of Bell & Howell Company and vice president of the IMSA Fund for Advancement of Education board of directors, thanked the Academy for honoring Bell & Howell and said he is pleased to know that ProQuest has become a powerful tool in the learning process for IMSA students, teachers and partners.

"I know that the ProQuest system has greatly enhanced the educational and research opportunities available for students and am glad that IMSA has fully integrated ProQuest within the Academy's curriculum," White said.

"The ability for students and teachers to access worldwide information literally at their fingertips is critical to 21st Century learning which takes place inside a global classroom."



Photo by Rich Makee

William White, Chairman of Bell & Howell Company and IMSA Fund vice president, is congratulated by IMSA sophomore Miguel Marling of O'Fallon at the dedication of the Bell & Howell and UMI Research Area in IMSA's Information Resource Center November 21.

Class of 2001 Applicants

IMSA is seeking applicants for the Class of 2001. Admissions counselors are on the road this fall and winter, conducting 53 informational meetings throughout Illinois for prospective students and their parents. Two Visitor Information Program Days also are planned (January 31 and February 22, 1998) for students and parents to visit the campus, and learn more about academic, residential and admissions programs. Applications, which are due March 1, 1998, may be obtained from school guidance counselors, state legislators or IMSA. Talented students enrolled in the equivalent of a ninth grade program are eligible for consideration. Contact: Admissions Office, 630-907-5027.

Professional Contributions

IMSA staff serve the educational community and others in numerous ways—for example, through presentations, publications and service in leadership roles.

Examples of recent **presentations** include: sustainable learning communities for the 21st century, *State of the World Forum*; Illinois Learning Standards, problem-based learning, and curriculum and instruction leadership, *Illinois Association of Supervision and Curriculum Development*; staff development, problem-based learning, Smithsonian Integrated Science Network, *Illinois Science Teachers Association*; linking standards and assessment, geometric thinking, Mathematica™ in the classroom, *Illinois Council of Teachers of Mathematics*; cross-disciplinary mini-problems, multi-generational history lessons, *National Council for the Social Studies*; Boyle's Law applications, integration of chemistry and physics, *Chem West*; logistics of working on the Internet, *Association of Illinois High Schools*; and journal writing in a foreign language curriculum, *American Association of Teachers of Slavic and East European Languages*.

Examples of recent **publications** include: Marshall, Stephanie Pace, *New*

Work for Leaders: Creating Sustainable Learning Communities and New Languages for New Learning and Torp, Linda T. *What is Problem-Based Learning?*, Wingspread Journal, Summer 1997; Dods, Richard. *An Action Research Study of the Effectiveness of Problem-Based Learning in Promoting the Acquisition and Retention of Knowledge*, Journal of the Education of the Gifted, October 1997; Hamberg, Charles. Six *Student Math Notes* publications, 1996-1999, National Council of Teachers of Mathematics; and Dosch, Donald, John Eggebrecht and Susan Styer, *Transforming Science Teaching and Learning*, Smithsonian Institution/Illinois Mathematics and Science Academy Integrated Science Partnership, September 1997.

Examples of **leadership roles** include: Ron Vavrinek, mathematics teacher, member, Illinois State Board of Education Third International Mathematics and Science Study Task Force; Susan Eddins, mathematics teacher, Illinois state coordinator, and Patrick McWilliams, English teacher, developer of benchmarks for a portfolio assessment for English teachers, Interstate New Teacher Assessment and Support Consortium; and Branson Lawrence, vice-president, Illinois Association of Chemistry Teachers.

Children's Rights Advocate

Bruce Harris, children's rights advocate and executive director of Casa Alianza, presented *Street Children in Central America: Human Rights and Life on the Streets*, Nov. 10 at IMSA. Casa Alianza, the Latin American arm of the New York-based charity Covenant House, is the largest provider of direct services to street and homeless children and youth. Mr. Harris' talk was sponsored by the IMSA Office of Student Leadership Development and several student organizations. His presentation also was broadcast several times on Aurora Cable Channel 6 and to high schools and colleges that are members of the Fox Valley Educational Consortium.

IMSA Centers & Illinois Teachers

Through its Center for Collaborative Inquiry in Mathematics and Science and Center for Problem-Based Learning, IMSA continues to increase its work with Illinois teachers. Standards-based professional development experiences are tailored to the needs of teachers. Unlike many programs which credential teacher competency based on the successful completion of specific time-based packages (live courses, 40 hours, three-week seminar, etc.), IMSA endorses professional practice when a teacher demonstrates learning through application and performance which result in increased student interest, participation and achievement in mathematics and science. In other words, the focus is on results (outputs), not experiences (inputs). Contacts: CCIMS, 630-907-5950; CPBL, 630-907-5956.

Student Achievements

Examples of recent accomplishments include: 59 seniors named semifinalists in the National Merit Scholarship Corporation competition; six seniors named semifinalists in the National Achievement Scholarship Program for Outstanding Negro Students; four students attended the Mu Alpha Theta National Convention and wrote a program with more than one million lines of code to handle the registration and competitions for the convention; two students helped the Aurora Police Department develop its home page; and student musicians helped ring in the holidays in Chicago with December performances at the Skate on State, Art Institute and Drake Hotel. Contact: Glenn Schwartzwalder, 630-907-5026.



IMSA Seeks Student and Teacher Applicants for Programs, Partnerships and Conferences

The Illinois Mathematics and Science Academy will conduct a number of conferences and programs for students and teachers in Illinois and beyond in 1998. At this time, IMSA is accepting applications for:

*** IMPACT II Mentor and Adaptor Awards** for public K-12 Illinois mathematics and/or science teachers. The goal of Illinois' IMPACT II program, administered by IMSA, is to build a network of and for teachers to share innovative learning experiences in mathematics, science and/or technology.

Eligible applicants for **Mentor Awards** include teachers who have developed, implemented and tested a creative, successful learning experience in mathematics, science or technology. Eligible applicants for **Adaptor Awards** include teachers who take a learning experience profiled in an IMPACT II catalog or on the website and creatively modify it to his/her own classroom

setting. The awards provide grants for individuals or teams of teachers in addition to networking privileges.

The deadline for IMPACT II Mentor and Adaptor Award applications is February 1, 1998. To obtain an application, teachers may call 630-907-5921 or email Michelle Adams at adams@imsa.edu.

***Third Annual Summer Sleuths Program** for middle school students in the Fox Valley area who are entering 8th or 9th grade in the fall of 1998. During the program at IMSA July 20-23, students will gather data and information, talk with experts, conduct interviews and experiments, record observations, explore the Internet and share information while working in teams on real-world problems. During this time, they will explore problems using mathematics, science and social science activities. Students then will present their solutions to a panel of experts.

The deadline for Summer Sleuths applications is April 15, 1998. To obtain an application, call 630-907-5956 or email Gary Ketterling at gary@imsa.edu.

***The Annual Conference for the National Association of Science, Technology and Society** hosted by IMSA and sponsored by the National Association of Science, Technology, and Society. The conference March 5-7 will include guest speakers, networking opportunities and concurrent sessions exploring issues of problem-based learning and democracy in the information age.

The deadline for program presenter applications is February 1, 1998. The deadline for program participant applications is January 15, 1998; however, late registration for program participants will be in effect until the week before the conference.

To obtain an application, call 630-907-5950 or email ccims@imsa.edu.



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Grainger Center for Imagination and Inquiry to Open in Fall 1998: Student Research Space to Quadruple

IMSA students can look forward to a new and expanded space to pursue research projects this fall following the construction this summer of the Grainger Center for Imagination and Inquiry. The Center will more than quadruple the current space for student research and inquiry at IMSA thanks to a \$750,000 gift from The Grainger Foundation of Skokie, Illinois.

This latest gift to the IMSA Fund for Advancement of Education, the Academy's not-for-profit corporation charged with securing private sector support, puts the Fund over the \$11 million mark in fundraising since its inception in 1986.

"We are grateful for the partnership and investment of The Grainger Foundation as we look to IMSA's second decade," said Ted Parge, IMSA Vice President for Institutional Advancement. "The Grainger Center for Imagination and Inquiry will serve as the hub of student research and inquiry at IMSA."

The expansion of current research space will enable more students to participate in cutting edge research and also would increase the variety of research opportunities available. "Tinkering" activities for the 21st Century learner will range from research in spectroscopic studies to

(Continued on back page)

Examples of Research Projects that the Grainger Center for Imagination and Inquiry Could Support:

- ▶ Student electronic research projects for the control of robotic devices or logic boards for the control of circuits
- ▶ Opportunities for design and research in spectroscopic studies
- ▶ Holographic studies of materials for imaging and stress
- ▶ Computer software and network research about computers such as issues of distributed computing or neural network programming
- ▶ The study of biological research relating to DNA and protein electrophoresis, development and behavior genetics
- ▶ Investigations into predator-prey and/or competition relationships, diversity, and soil community interactions.

IMSA Student Wins 5th Place in Westinghouse Competition! Only Illinois Finalist!

IMSA senior Travis Schedler of Carbondale (left) receives a certificate of honor from G. Reynolds Clark, chairman of the Westinghouse Foundation as Thomas Peter Bennett, former president of Science Service, looks on. Travis captured 5th place in the annual national science competition and was the only finalist from Illinois. See more inside on page 3.



Photo courtesy of Tom Alden

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Send comments or questions to:

Editor and Writer
Brenda Buschbacher
brenda@imsa.edu

From an IMSA Partner in Education



Dear IMSA Shareholders,

As an IMSA partner in 1997-98, I am pleased to share some highlights of my district's work with IMSA to improve teaching and learning in our schools.

It is gratifying to know that IMSA places such a high priority on assisting teachers and students throughout Illinois. This year, 41 teachers and 350 students in Plainfield School District #202 have been the direct recipients of IMSA services offered through its Center for Collaborative Inquiry in Mathematics and Science (CCIMS).

The Plainfield partnership with IMSA addresses three areas. First, IMSA helped our high school develop and implement an interdisciplinary unit on predator-prey relationships. This contact later expanded to include teachers from Timber Ridge Middle School. Second, IMSA staff and our K-12 Science Curriculum Committee have developed a K-12 science curriculum, aligned with the Illinois Learning Standards and grounded in research of "best practices" for teaching and learning. Third, IMSA staff are directing our 6-12 Mathematics Curriculum Committee and helping us align our curriculum with the state standards, select resources and develop assessments.

We are fortunate to be able to draw on the expertise of IMSA's staff and are especially grateful to Ed Moyer, CCIMS director, John Thompson, science teacher, and Sue Eddins, mathematics teacher. We at Plainfield believe the work we are accomplishing will become a model to benefit other school districts within the state. I look forward to a continuing partnership with the Illinois Mathematics and Science Academy and its Center for Collaborative Inquiry in Mathematics and Science. Our work together will eventually affect the teaching of our 350 faculty members and the learning of our 8,000 students.

As an educator in Illinois, I also am grateful that a recent \$100,000 gift from the Tellabs Foundation will enable IMSA to create a professional development studio for Illinois teachers involved in various IMSA partnerships.

I am proud to work in collaboration with IMSA and want to thank you, our shareholders in the public and private sectors, for supporting IMSA's work with educators throughout Illinois who also are committed to transforming mathematics and science teaching and learning.

Sincerely,

Eve Panice

Director of Instruction, Plainfield District 202

IMSA Students' Research Receives National Praise: Students Present at Prestigious National Science Conference and Take Westinghouse Honors

While a group of IMSA students were presenting their research projects at a prestigious national science conference in Pennsylvania, IMSA senior Travis Schedler was back on campus preparing himself for the final round of judging in the Westinghouse Science Talent Search Competition.

The preparation time paid off. In March, Travis won fifth place and a \$15,000 scholarship in the nationwide 57th Westinghouse Science Talent Search Competition. Schedler was one of 40 national finalists and was the only finalist from Illinois.

Westinghouse Winner

Schedler is the son of George and Stefanie Schedler of Carbondale. His award-winning research project is entitled *Construction and Properties of Set-theoretical Solutions to the Quantum Yang-Baxter Equation*. It involves quantum group theory, a subject at the interface of mathematics and physics. His research was conducted last summer during the Research Science Institute at the Massachusetts Institute of Technology, a six-week program.

Among his many interests, Travis sings and plays the piano. He says that music helps him focus on his mathematical inquiries. He also participates in the science, math and engineering clubs and chaired the IMSA Junior High Math Contest last year, a student-run contest for local schools. Upon graduation May 30, Schedler will study mathematics and physics at Harvard.

In the Westinghouse competition, primary emphasis is placed on a written report of an independent science, mathematics or engineering research project. An entry form, designed to elicit evidence of creativity and interest in science, also is required, along with a high school transcript, recommendations and standardized test scores.

AAAS Conference

Preparation time also paid off for a group of seven IMSA students who attended the 1998 American Association for the Advancement of Science (AAAS) Annual Meeting and Science Innovation Exposition February 12-18 in Philadelphia, Pennsylvania.

This is the second year IMSA students attended and presented at the professional conference, which includes representatives from the National Academy of Sciences, National Science Teachers Association, AAAS and other national science organizations. Dr. Peggy Connolly, IMSA mentorship coordinator, said the event was a unique opportunity for students.

"The conference gave IMSA students the exciting opportunity to demonstrate to the professional world their proficiencies in substantive research," Connolly said.

Students who made oral and poster presentations were: Peter Adamczyk of

Deerfield, Abidemi Adeboje of Dolton, Jimmy Cheung of Westmont, Julie Comerford of Charleston, Candi Reincke of Lake Zurich, Andrew Torres of Tinley Park and Derrick Tung of Roselle.

Research topics presented included:

- ▶ Anticarcinogenic effects of soybean extract
- ▶ Blood clotting characteristics of synthetic anticoagulants
- ▶ Changes in the morphology of Hydra after treatment with ATP
- ▶ Changes in growth factors produced in bone marrow as a result of aging
- ▶ Immune system regulation by cytokines
- ▶ Ovarian autoimmunity and infertility
- ▶ Analysis of charge conjugation symmetry in particle physics

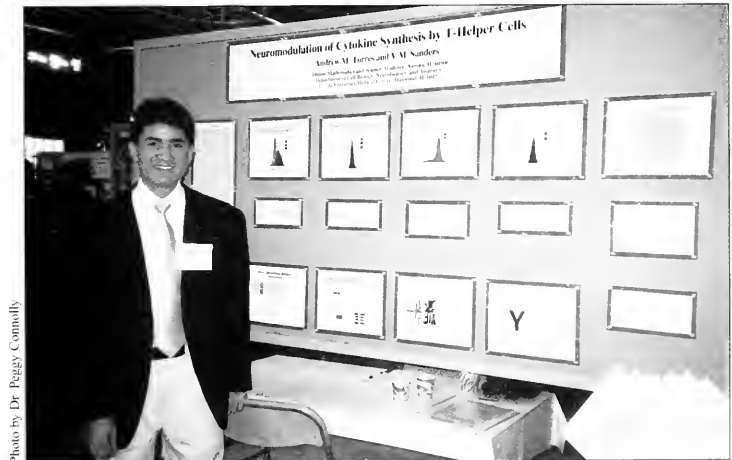


Photo by Dr. Peggy Connolly

IMSA senior Andrew Torres presents the findings of his research project, Neuromodulation of Cytokine Synthesis by T-Helper Cells, at the prestigious 1998 American Association for the Advancement of Science Annual Meeting and Science Innovation Exposition. Andy conducted his research in the Department of Cell Biology, Neurobiology and Anatomy at Loyola University Medical Center through IMSA's Mentorship Program.

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IMSA Alumni Create Networks

by Britta Wilk McKenna, Alumni Coordinator

IMSA alumni are hungry for information about each other. Because of this, alumni are developing several key systems which would allow them to network with and help one another as well as to provide assistance to current IMSA students.

Of course, whenever a system is developed, it also must be maintained over a period of time. The IMSA Alumni Association (IAA) has played a key role in helping to keep these network systems maintained and updated; the first stop on the road to connectivity was the creation of the IAA Database.

Online Database

Jodi Anderson '91 first maintained the IAA Database - census information provided by alumni and input by hand on her personal computer. However, as the number of alumni surpassed the 1500 mark in 1997, so did the demands for electronic organization and the ability to seek alumni.

The newly created IAA Database will soon be accessible from the World Wide Web thanks to the work of Arun Bhalla '96 and Zachary Miller '95. In addition to being able to search the database, alumni also will have the power to directly edit their entries in the database.

The database will also provide great flexibility, allowing alumni to search by different fields and topics. Whether someone is looking for one alum in particular, classmates, regional alumni or professional classifications, the possibilities are endless. A professional networking component, also in the design stage, could help alumni with career needs, whether it be locating a job or connecting with other alumni in their field.

Personalized Online College Guide

Another networking tool available for alumni, current students and their parents is the IAA Guide to Colleges, now located on the World Wide Web at <http://www.imsa.edu/org/iaa/guide/>. This guide is actually two resources in one.

First, alumni have compiled specific web sites to assist students and parents with college shopping. This guide includes everything from college statistics and bare bones information on schools to online links to educational institutions in the U.S.

Second, the guide also is an index that lists the colleges and universities IMSA alumni have attended. The index gives a personal insight about their college choice — what they liked most and least, plus the ability for students to contact the alum directly to ask questions if they would like more information.

Online Job Bank

The third way alumni are networking with each other is through the newly created Alumni Job Bank. A number of requests have come from companies that have hired IMSA grads. The good news is that they want to hire more IMSA grads!

Alumni may submit Illinois employer information to be listed in upcoming issues of the IMSALUM newsletter. If the future demand exceeds the allotted space, the Job Bank will be maintained on the IAA web page. Questions about alumni programs or any of the alumni networking programs should be directed to: britta@imsa.edu.

Tellabs Foundation Awards IMSA \$100,000 Grant To Expand Professional Development

IMSA has received a \$100,000 grant from The Tellabs Foundation of Lisle, Illinois, to create the Tellabs Studio for Professional Development on the IMSA campus.

The Tellabs Studio for Professional Development will serve as a technologically-enhanced classroom for IMSA partner teachers and as the central hub for professional development activities. These activities include individual study and research work, small group conferences, meetings, seminars and forums (*see examples of summer service programs on opposite page*).

The 1,100 square-foot space will include fixed workspace for independent and group work, computer projection screens and workstations for the development of mathematics and science

electronic curriculum prototypes, a teacher resource library for current books and journals on educational practice, research reports on mathematics and science curriculum and testing, video conferencing equipment, and computer software.

"We appreciate this investment by the Tellabs Foundation and their commitment to improving mathematics and science education," said Ted Parge, IMSA Vice President for Institutional Advancement. "Their leadership support will play a key role in advancing Academy programs that help build the capacity of mathematics and science teachers from schools throughout Illinois," Parge added.

Michael J. Birek, President and CEO of Tellabs, Inc., said increased professional development for mathematics and

science teachers will result in a more competitive state and nation. "As head of a company with a strong technology orientation, I understand the critical need for increased proficiency in mathematics and the sciences," Birek said. "Strategic relationships among the education community, private industry and government are essential to creating new learning enterprises in the 21st Century. The Tellabs Foundation is proud to support IMSA in its efforts to develop new teaching and learning processes."

This latest gift to the IMSA Fund for Advancement of Education, the Academy's not-for-profit corporation charged with securing private sector support, puts the Fund over the \$2 million mark in fundraising for the current fiscal year.

IMSA Schedules Summer Service Programs

This summer, the Illinois Mathematics and Science Academy once again will fill its classrooms and corridors with students and teachers from throughout Illinois.

Calendar of IMSA Summer Service Programs

June 22-26

Science Explorers

4-6th grade students from the Fox Valley will study communications, environmental management, climate and weather, flight and waves.

June 21-27

Summer 'AD' Ventures II

professional development for teachers and program for students entering grades 9-10 in 1998, to be held at Eastern Illinois University

June 26

Illinois Scientific Literacy Network Conference

promotes scientific literacy in the State of Illinois through ongoing dialogue, collaborative learning, project development and shared opportunities with support from the Illinois State Board of Education

July 13-24

Illinois Problem-Based Learning Network Summer Institute

professional development for teachers new to problem-based learning — teachers will implement a problem-based learning experience with students

July 20-23

Summer Sleuths

middle school students from the Fox Valley will be introduced to problem-based learning

August 2-6

Harris Institute for Introduction to Problem-Based Learning to be held in Lisle

For more information on these or other statewide service initiatives, call the Center for Collaborative Inquiry in Mathematics and Science (630) 907-5950 or Center for Problem-Based Learning at (630) 907-5956.

IMSA Students Organize First Multicultural Awareness Week

by Arati Shroff, Student Writer

The IMSA community recently celebrated the diversity of its students, faculty, and staff and in the process addressed some real-life issues during its first Multicultural Awareness Week March 30-April 3.

Stemming from Student Councils International Celebration that is usually held every spring, many ethnic student groups at IMSA came together to plan events for the community. Monday evening kicked off the week with a one woman show in the auditorium entitled "Faces of America" which portrayed viewpoints of diverse cultures from across America.

Senior Molly Breslin enjoyed one character in particular. "The East Indian woman was my favorite of all the characters and was very poignantly portrayed," Breslin said.

Tuesday evening created a totally different atmosphere as members from IMSA gathered in the old cafeteria to listen to cultural songs, watch ethnic dances, and taste a sample of the plethora of specialty dishes representing food from all around the world. Highly organized, some of the entertainment included two Latino dances,

a song performed in German, and a traditional North Indian dance that required audience participation.

Senior Twashanda Burke said she enjoyed having an entire week of events rather than just one day. "Having a week of multicultural events instead of just International Celebration caused me to become much more involved in the cultural activities at IMSA," Burke said. "It was exciting to represent the African American Student Association through a step performance," she added.

Others reflected on tasting the different foods and learning how different or similar they are to one another. "It surprised me at the many ways cultures use rice, whereas in America we consider rice as a side dish. For example, both Mexican harchada, a drink, and Greek grape leaves are made from rice," observed senior PJ Balin.

Wednesday night served as an information fair where students set up displays about different cultures and countries sponsored by the IMSA culture clubs. The week came to an end Friday with a rally addressing campus issues.

During the rally, representatives from

IMSA's Cultural Council urged all members of the community to have respect for one another. Student groups represented on the council included the African American Student Association, Alma Latina, Asian Cultures Club, IMSA Christian Fellowship, European Cultures Club, Hanguk Youth Association, Spectrum, Peer Multicultural Educators, and the Jewish Student Alliance.

At the end of the rally, everyone present was encouraged to sign the statement: *We, the undersigned members of the IMSA community, respect all cultures on our campus and will not tolerate the disrespect of any culture within our community.*

"Overall, Multicultural Awareness Week was an excellent opportunity for students to interact with cultural organizations on campus and a strong attempt to alleviate any prejudices," summed up senior Veena Villivalem.

In the future years, IMSA hopes to invite other schools to participate in campus events during the week.

Arati Shroff is a senior from Libertyville, Illinois.



IMSA students from the Asian Cultures Club perform to a Korean contemporary dance song (above) while other members perform a semi-traditional dance to *Dil To Pagal He* (a Korean movie song).



Professional Contributions and Achievements

IMSA staff serve the educational community and others in numerous ways—for example, through presentations, publications and service in leadership roles.

Examples of professional contributions and achievements include:

IMSA President **Dr. Stephanie Pace Marshall** gave the keynote address *Leading, Learning, Loving and Letting Go: Creating Learning Communities that Invite and Nurture the Intelligence, Creativity and Power of a Human Spirit—What Is Possible Now?* at the annual conference of the Association for Supervision and Curriculum Development in San Antonio, Texas.

Dr. Linda Torp, director for research, evaluation and development, co-authored the book *Problems as Possibilities: Problem-Based Learning in K-12 Education* for the Association for Supervision and Curriculum Development with former staff member Sara Sage. In addition, **Dr. Torp** presented *Professional Development Partnerships: Leaders and Learners Building Knowledge Together* at the National Staff Development Conference in Nashville, TN.

Mathematics teacher **Susan Eddins** was invited to serve on the Expert Panel on Mathematics and Science Education, a joint project by the U.S. Department of Education and National Science Foundation. The panel will review educational programs in math, science and technology for national recognition and those designated as “promising” or “exemplary” will be publicized by the Department of Education.

Dr. Peggy Connolly, IMSA mentorship coordinator, was invited to participate in the Summer Faculty Institute at Dartmouth College entitled *The Ethical, Legal and Social Implications of the Human Genome Project*. During this time, she will do guided research, lead weekly undergraduate discussion groups, participate in faculty seminars, take a genome class and

develop a college syllabus for teaching issues related to the human genome. In addition, Dr. Connolly also presented *Nurturing Ethical Researchers: Research Ethics Education* at the annual meeting of the Association for Practical and Professional Ethics in Dallas, TX.

Mathematics teachers **Susan Eddins, Ron Vavrinek** and **Dr. Ann Hobbs** co-presented and wrote the integrative curriculum entitled *Helping Students Develop their Own Mathematical Voice through Explorations and Collaboration* at the National Council of Teachers of Mathematics Central Regional Conference in St. Louis, MO. In addition, math teachers **Charles Hamberg** and **George Milauskas** presented *Constructing Mathematical Understanding Using Patterning, Discovery and Connections*.

Dr. David Workman, science teacher, presented the session *Together or Separate? One School's Experiment with Single-Sex Education* at the Go Girl: Empowering Girls to Women conference held at Parkland Community College in Champaign, IL.

Russian teacher **Julia Husen** presented *Incorporating Journal Writing into the Russian High School Curriculum* at the annual conference of the American Association of Teachers of Slavic and East European Languages (AATSEEL) in Toronto, Canada.

IMPACT II Awards

IMSA recently announced the latest recipients of IMPACT II Mentor and Adaptor Awards for Illinois mathematics and science teachers. IMPACT II, a national network, is designed to encourage teachers to share their professional knowledge with each other. Illinois' IMPACT II network, administered by IMSA, enables teachers to share innovative learning experiences for students in mathematics, science and/or technology. Entry into the network is through a grant award program which occurs cyclically through the year. Projects are published and the teachers receive network privileges for the statewide IMPACT II network.

Student Achievements

Examples of recent accomplishments include:

Mathematics

- ▶ three students were among the 179 nationally who qualified to take the USA Mathematical Olympiad exam
- ▶ a team of IMSA students captured first place in the North Suburban Math League competition
- ▶ IMSA students placed second out of 3,600 high schools nationwide in the American High School Math Exam (AHSME); IMSA also had the highest number of students achieve national honor roll status on the AHSME and qualify to take the American Invitational Math Exam

Foreign Language

- ▶ IMSA students won 15 medals (five gold, five silver and five bronze) in the 16th National Russian Essay Contest

Other

- ▶ a team of IMSA students won first place in the Illinois Scholastic Bowl competition
- ▶ a team of IMSA students finished first in Illinois and fourth in the nation in the December Knowledge Master Open competition
- ▶ an IMSA student won the National High School Model United Nations Essay Contest
- ▶ an IMSA student designed an online version of the Particle Families exhibit on the Fermilab Education Website. Visit the website at: www-ed.fnal.gov/work/vpground/particlefamilies/index.html.
- ▶ an IMSA student was selected to attend the National Youth Leadership Forum on Defense, Intelligence and Diplomacy
- ▶ the IMSA Titan Dance Squad took first place in the state championship Pom Category sponsored by Halftime, Illinois

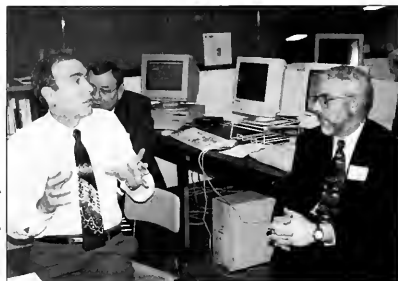
Grainger Center for Imagination and Inquiry (continued from page 1)

biological research relating to DNA and protein electrophoresis.

Renovation of the 3,336 square ft. space will include creating multi-functional mobile and fixed workspace for independent and collaborative research, increasing storage space for student research works "in progress", providing specialized hardware and software for research and experiments that require high level recording of complex data, creating a library space for technical manuals and research/ethics books and creating seminar space where students can have video conferences with off-site mentors and conduct multimedia presentations.

The Student Research and Inquiry Program at IMSA provides learning experiences for students to pursue compelling questions of interest, conduct original research in science and other fields, create and invent products and services, share their work through presentations and publications, and collaborate with other students, mentors, scholars, researchers and inventors throughout the world.

Photos by Cathy Veal



Senator Steve Rauschenberger (right) and Dr. Keith Sanders, the new Executive Director of the Illinois Board of Higher Education, visited IMSA in March to learn more about IMSA's programs that serve students and teachers in Illinois. Dr. David Barr (left), IMSA's director of Learning-at-a-Distance Programs, and Sen. Rauschenberger discuss IMSA's Internet Toolkit for educators.



IMSA faculty member Bernard Hollister (seated left) shows Dr. Sanders products and services available to Illinois educators via <www.imsa.edu>. Looking on are Dr. Ross Hodel, BHE Deputy Director, and Dr. Stephanie Pace Marshall, IMSA President.



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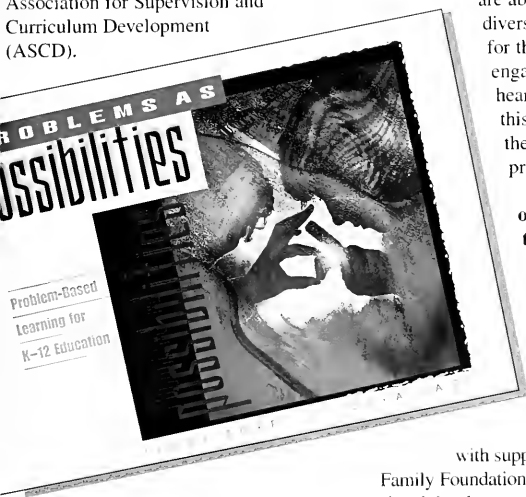
ILLINOIS MATHEMATICS AND SCIENCE ACADEMY

IMSA A Pioneering Educational Community

Volume 12 No. 3 • Summer 1998

ASCD Publishes Problem-Based Learning Book with IMSA Educators; Video Also Available

The book *Problems as Possibilities*, a thoughtful guide to the problem-based learning educational approach, is now available through IMSA's Center for Problem-Based Learning and the Association for Supervision and Curriculum Development (ASCD).



“We wanted teachers and parents to be able to experience — in a limited way — the possibilities uncovered through a problem-based learning approach,”

Torp said. “Through this medium they are able to visit three diverse classrooms to see for themselves students engaged in learning and hear teachers reflect upon this learning along with their growing sense of professionalism.”

To order copies of the video and/or the book, contact Michelle Adams in the Center for Problem-Based Learning at (630) 907-5956 or email adams@imsa.edu.

IMSA established the Center in 1992

with support from The Harris

Family Foundation to engage in professional development, curriculum development, research, information exchange and networking in K-16 educational settings. The book is an extension of the authors' work at the Center and includes contributions of many teachers, students, parents, administrators and curriculum developers. The book also shows readers how to design and develop PBL curriculum to support powerful student learning.

PBL is focused, experiential learning (minds-on, hands-on) organized around the investigation and resolution of messy, real-world problems. To see examples of problem-based learning in a K-12

classroom, visit IMSA's Problem-Based Learning Website at <http://www.imsa.edu/team/cpbl/>.

“These products of IMSA's Center for Problem-Based Learning will extend the reach of the staff and open other doors enabling the power of PBL to reach more and more learners of all ages.”

Torp said she hopes these latest products will offer more tools for teachers in their attempts to reach students and provide more meaningful learning experiences in the classroom.

“These products of IMSA's Center for Problem-Based Learning will extend the reach of the staff and open other doors enabling the power of PBL to reach more and more learners of all ages.”

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Naperville resident and IMSA Director for Academic Planning and Research Linda Torp co-authored the book, along with former IMSA staff member Sara Sage. It offers a first-hand look at problem-based learning through the varied experiences of students and teachers at IMSA and in classrooms throughout Illinois.

In addition, IMSA has produced a PBL video entitled *Problem-Based Learning: 3 Classrooms in Action* featuring IMSA partners. Torp said the video “breathes life into the ideas represented on the printed page.”



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Send comments or questions to:
Editor and Writer
Brenda Buschbacher
brenda@imsa.edu

From an IMSA Alumnus



Dear IMSA Shareholders,

I am excited to be writing you about several news items from the Academy and some personal reflections as I look back on my years at IMSA (1987-1990). I am very proud of and grateful for my IMSA education. Each day, I utilize the problem-solving, leadership and teamwork skills I developed at the Academy to help me in my work and life. I also now have the opportunity to use those skills directly in the service of IMSA.

I recently was appointed the first alumnus liaison to the IMSA Board of Trustees. I am honored to serve in this role, and I plan on helping to advance the Academy in various ways. The IMSA Alumni Association (IAA) is in its fourth year and is starting to grow into a vital organization. A close working relationship between the Academy and the IAA is important to IMSA's future during its second decade and beyond. Having alumni closely involved with the Board, staff and IAA will help the partnership grow and help IMSA fulfill its mission and legislative charge to the State of Illinois.

A recent program highlight was the first ever IMSA Science Explorers summer program. This five-day experience for 4th-6th graders was built around specific science themes. Each day, current IMSA students taught the concept of the day, assisted by a Resident Scientist from industry or research. I served as the Internet expert and had a great time being involved and observing the interactions between the IMSA students and the younger children. The Academy and I look forward to greater alumni participation in programs such as these in the future.

I'm excited about the future. There is a strong group of IMSA alumni interested in working with the Academy to help it excel in the 21st Century for the benefit of Illinois, our nation and our world. The IMSA alumni voice will help to contribute to the mix of creative and important ideas, making positive things happen for IMSA and Illinois in the new millennium.

Sincerely,

David Gabrius
Senior Engineer, Motorola, Inc.
IMSAs Graduate '90
Alumnus Liaison to the Board of Trustees

IMSA Students Present Their Work at National Research Symposium

Research — the fundamental activity of science. For the fifth consecutive year, IMSA seniors began their summer vacation presenting their research in areas such as neurobiology, mechanical engineering and xenotransplantation.

Three participated in the Fifth Annual Student Research Symposium of the National Consortium for Specialized Secondary Schools of Mathematics, Science and Technology. Daniel Murario of Aurora, Ethan Wozniak of Bartlett and Stephanie Wu of Darien were among the 60 students from more than 23 consortium schools selected to attend. Students gave both oral and poster presentations.

During the symposium, held June 4-7 at Illinois Wesleyan University in Bloomington, IL., students also attended hands-on workshops in fields including mathematics, robotics, embryology, chemistry and physics.

The IMSA student representatives conducted their research as part of the

Academy's Mentorship Program (see photos). In mentorship, students work on-site with scientists and scholars in corporations, educational institutions and laboratories in the Chicagoland area. In 1997-98, more than 140 IMSA students participated in the Mentorship Program.

At IMSA, student research serves as the foundation of the academic program. Student Research and Inquiry Programs provide learning experiences for students to pursue compelling questions of interest, conduct original research in science and other fields, create and invent products and services, share their work through presentations and publications, and collaborate with other students, mentors, scholars, researchers and inventors throughout the world.

In addition to mentorship, experiences also are provided through courses, independent study, individual student plans of inquiry and cocurricular activities.

Student presenters, their research projects and mentorship sites include:



Daniel Murario

The Effects of Androgen on Nitric Oxide Synthase Expression in Adult Rat Brains
Loyola University
Medical Center



Ethan Wozniak

Controlling a Microelectromechanical Clamp Using the Basic Stamp II Microcontroller
University of Chicago



Stephanie Wu

Complement Inhibitors - Use in Xenotransplantation
Northwestern University
Medical School

Nobel Laureate Dr. Leon Lederman to Lead the IMSA Great Minds Program

Ten years after winning the Nobel Prize in Physics, Dr. Leon Lederman is approaching yet another milestone in his long and illustrious science career.

Lederman, also known as the 'founding father' of IMSA and recently dubbed the 'Mel Brooks of Physics' in a *New York Times* article, will join IMSA's staff in September to lead the newly-established Great Minds Program as its inaugural Resident Scholar.

"We could think of no one better to lead this program than Dr. Lederman," said IMSA President Dr. Stephanie Pace Marshall. "His worldwide reputation as an expert authority in the field of physical science and his strong connections with the international scientific community will help bring the best minds in the world to IMSA," she said.

"The IMSA Great Minds Program will create enormous learning opportunities for IMSA students, other Illinois students and Illinois mathematics and science educators that can help shape public policy in Illinois and the nation," Marshall added.

In the first year of the program, Lederman will teach a seminar to some IMSA students, mentor students involved in independent research and study experiences and interact with Illinois math and science teachers through professional development experiences that include symposia, lectures, workshops and summer research institutes.

In the second and third year, the Great Minds Visiting Scholar Program will bring other Nobel Laureates and thought leaders to the IMSA campus to engage in lectures, participate in student research



Photo by Fermilab Visual Media Services

Dr. Leon Lederman
Resident Scholar,
IMSA Great Minds Program

activities and interact with IMSA and other Illinois students and teachers on topics including science, ethics and humanity.

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IMSA Fund Has Record Fundraising Year: \$2.3 Million Secured

Leadership Gift Comes From An Unexpected Source

IMSA Fund Board President Michael J. Birck said it best earlier in the year in describing a half-million dollar gift to the Academy by an anonymous alumnus: "This is just astounding."

The unexpected gift as well as gifts from foundations, corporations and other individual donors enabled the IMSA Fund for Advancement of Education to raise a record \$2.3 million in external support in 1997-98.

Leadership Gifts Advance Student Research

The graduate's gift is the largest ever from an IMSA alumnus. What was so "astounding" was the age of this individual. IMSA's oldest alumni are still in their 20s. In making the donation, the individual said "IMSA has contributed greatly to my success, and this gift is made to contribute back to IMSA's success."

The gift will be used to establish a permanent endowment supporting IMSA mentorship and research programs for IMSA students (see related story page 3) and professional development programs for Illinois mathematics and science teachers.

In January, the Fund received a \$750,000 grant from The Grainger Foundation of Skokie, Ill., to create the Grainger Center for Imagination and Inquiry, slated for opening in the fall. The gift will more than quadruple the current space for student research.

"The Grainger Center for Imagination and Inquiry will serve as the hub of student research and inquiry at IMSA," said Ted Parge, IMSA vice president for institutional advancement.

Tellabs Gift Creates Teachers' Studio

In March, IMSA received a \$100,000 gift from The Tellabs Foundation of Lisle, Illinois, to create the Tellabs Studio for Professional Development on the IMSA campus.

The studio will serve as a technologically-enhanced classroom for IMSA partner teachers and as the hub for professional development activities.

Birck, President and CEO of Tellabs, Inc., said increased professional development for mathematics and science teachers will result in a more competitive state and nation. "As head of a company with a strong technology orientation, I understand the critical need for increased proficiency in mathematics and the sciences," Birck said.

Parge said that while leadership gifts continue to be crucial to the IMSA Fund's success, support from other investors also is important.

"As IMSA looks toward the next century, the support we receive from groups such as alumni, parents of current students and alumni, and other friends of IMSA will become even more important," he said.



Former Illinois Comptroller Dawn Clark Netch presented the sixth annual Richard L. Horwitz Lecture on Ethics at IMSA May 4. Netch spoke with students following her lecture, "Governmental Ethics: An Oxymoron?" The lecture series is held in memory of Auroran Rich Horwitz, IMSA's first legal counsel, who died in August 1990.

IMSA Students Share Love of Science with Fox Valley Youth

"I learned that lightening starts at the ground."

Student, IMSA Science Explorers Program

Students also learned how to create tornadoes, fly rockets, make recycled paper, measure wind speed and clean an oil slick... just some of the hands-on learning that took place during IMSA's inaugural Science Explorers Program June 22-26.



Photo by Britta McKenna

IMSA senior Jackie McKenna of Cicero assists "science explorers" during an experiment on electricity.

Some may find it unusual that a group of 50 fourth-sixth graders would want to spend a week of their summer vacation learning about science. However, parent Kathleen Leyshon of Wheaton, whose son Brian enrolled in the program, said "My son really enjoyed the program because of the hands-on 'real' projects that were not over-simplified."

The goal of the Science Explorers Program is to stimulate students' interest in science through hands-on explorations about the importance of science in the world. Students explored a different topic of study daily under the direction of 10 IMSA students and a "Resident Scientist" from area corporations and laboratories. Topics for the week included communications, waves, environmental management, climate, weather and flight.

The IMSA students also wrote the curriculum for the week under the

guidance of David Gabrius (IMSA '90) of Motorola Inc., Dr. David McGinnis of Fermi National Accelerator Laboratory, Dr. Deborah Hockman of Waste Management Technology Center, Doug Sisterson of Argonne National Lab and Gregory Snow of Fermilab.

"Science Explorers provided a unique environment for younger students to learn from IMSA students, who served as their role models as well as friends," said Britta McKenna, program director. "The dynamics of kids teaching kids worked wonderfully."

IMSA students who served as leaders in the program said it was a valuable learning experience for them as well.

"It was also great that we each had different things that we were able to bring to the program which helped us to be flexible and improvise when we needed to," said IMSA senior Jackie McKenna of Cicero.

When asked, "what was the most interesting thing you learned?" science explorers cited "how to fly a rocket," "that the United States has the most devastating tornadoes," "how atoms are formed," and "making 5 light bulbs glow."



Photo by Britta McKenna

IMSA senior Kenyatta Ruffin of Maywood shows students from McWayne School in Batavia how to launch a rocket.

Parent Margaret Arens of Hinsdale said that having students who share a common interest fostered learning. "Our child (Jonathon) loved everything, but especially the chance to experience science with other kids with a great deal of interest and enthusiasm!"

Plans are underway for an expanded program in 1999.



Photo by Brian Quinby

Ever so gently, Professor Robert Steinbach of Elgin Community College shows a perfectly-formed frog to students participating in IMSA's 1998 Summer Sleuths Program. Approximately 100 middle school students and 40 teachers from throughout Illinois attended this program and used the problem-based learning approach to investigate the deformed frog phenomenon in Minnesota.

IMSA Honors 10th Graduating Class

Seniors' Legacy Includes Extensive Community Service Contributions

The list is long and impressive — 246 hours at United Samaritans Medical Center, 240 hours at the Camp Rainbow Foundation, 218 hours at Loyola University Medical Center, 213 hours at Hinsdale Hospital. As members of the Class of 1998 prepared to graduate on May 30, IMSA President Dr. Stephanie Pace Marshall recognized their service to humankind.

completed another 84 hours by the end of the year as a tutor at Smith Elementary School in Aurora (see related story on page 8).

"Tshawnda was one of my most reliable tutors and did it just because she wanted to tutor and not because she needed to every Wednesday from 8:30 a.m. - 2:30 p.m.," said Gnanika Suriarachchi, community service coordinator.

Stanford University Professor Dr. Stephen Schneider, a senior fellow at the Institute for International Studies at Stanford and an international expert on climate and environmental issues, gave the commencement address. Schneider spoke on the topic of whole-system thinking and told graduates that working in collaboration with others was very important in solving complex "real world" problems.

"There's much more information out there than you could ever assimilate by yourself so don't forget your colleagues and your neighbors and your community because putting it together is the only way we can deal with complex system problems that we all have to deal with in the years ahead," Schneider said.

Nalo Jackson of Rock Island and Adrian Wong of Homewood were the student speakers. (see photos)

President Marshall told graduates that they were "joining the IMSA Movement - a movement committed to liberating the genius and goodness of all children and inviting the creativity and imagination of the human spirit for the world."

"We hope that IMSA has instilled in you the desire and commitment not to be first in the world, but to be first for the world," she said.



1998 graduates Andrew Torres of Tinley Park, Jennifer Ohlson of Chicago and Katja Meyer of Maple Park celebrate their special day.

"Their academic and intellectual achievements have been impressive, but equally as significant, these seniors have contributed more than 16,000 hours of community service to the citizens of Illinois — by serving as tutors, mentors and volunteers in hospitals, senior citizen and child care facilities, schools, libraries and museums," Marshall said.

"And one of our seniors quite silently travels to Chicago and using his own money, has lunch with the homeless," she added.

In addition, 56 seniors completed more than 100 hours of community service, even though the graduation requirement is 80 hours. For example, although Tshawnda Burke already had completed 81 hours at a hospital by the beginning of her senior year, she

First For the World

Burke and her 200 classmates graduated from IMSA on May 30 at Aurora's Paramount Arts Centre.



Adrian Wong of Homewood
Student Speaker
Class of 1998



Nalo Jackson of Rock Island
Student Speaker
Class of 1998

IMSA Alumni Association

The IMSA Alumni Association held its annual meeting June 20 at IMSA; the Class of '93 held its 5-year reunion in conjunction with this event. The Association discussed its new Club Chartering Bylaws which allow alumni to form association within the IAA, based on region, professional interest, or other common features of membership.

ISLN Conference

IMSA hosted the Third Annual Illinois Scientific Literacy Network Conference June 26. Educators from schools throughout Illinois participated in sessions aimed at improving scientific literacy statewide including learning applications on the Internet and instruction in using IMSA's Internet Search Toolkit. IMSA administers the statewide network program which is funded by the Illinois State Board of Education.

Highsmith Innovation Award

The Illinois Library Association and textbook publisher Highsmith Inc. have presented the Illinois Mathematics and Science Academy with the 1998 Highsmith Innovation Award. The award recognizes the Leto M. Furnas Information Resource Center at IMSA for its achievement in planning and implementing an innovative or creative program or service which has a measurable impact on its users.

Professional Contributions

IMSA President **Dr. Stephanie Pace Marshall** recently was elected to the Board of Directors of the Lloyd A. Fry Foundation in Chicago.

A tutorial for *Mathematica 3.0* software written by mathematics teacher **Ruth Dover** is featured on the Wolfram Research, Inc. website, the makers of the software. The address is <www.wolfram.com/precollege/what/notebooks.html>.

Social science teacher **Bernie Hollister** was featured in the May 1998 newsletter of the National Council for History Education, Inc. for his work in problem-based learning. An example of his work, *To See the Forest for the Trees: Population Growth Rates in the United States, 1790-1980*, can be seen on IMSA's website at <www.imsa.edu/team/cpbl/lincoln/index.html>.

English teacher **Dr. Larry Chott** published the article *The Sight of Sound: Cummings' "oil tel duh woil doi sez."* in the Spring 1998 issue of The Journal of the E. E. Cummings Society.

The poem, *Imaginary Logic*, written by English teacher **Jackie White** won in the international poetry division and the local Triton College district division in the category of "Disillusionment."

Joe Prieto, college and academic counselor, served as a member of the faculty and planning committee of the Illinois Association for College Admission Counseling Summer Institute.

German teacher **John Stark** serves on the Midwest Professional Standards Project for the American Association of Teachers in German.



Photo courtesy of Frances Manson

*Stephanie Manson
1998 Presidential Scholar*

Student Achievements

Recent examples include:

- ▶ Stephanie Manson of Woodstock was one of only two Illinois students selected to be a 1998 Presidential Scholar by The White House Commission on Presidential Scholars. (see photo above) The Scholars are selected based on demonstrated leadership, scholarship, contribution to school and community and exceptional accomplishments in the arts, sciences, and other fields of interest.

- ▶ Kuntal Shah of Burr Ridge received the Student Intern Award from the Elizabeth Glaser Pediatric AIDS Foundation. His research focuses on understanding the molecular evolution of the HIV-1 Vpr.
- ▶ Jeffrey Fonck of Channahon was one of 24 students nationwide who qualified for training in the 1998 U.S.A. Mathematical Olympiad.
- ▶ A team of IMSA students captured first place in overall points (Division A) in this year's national Mandelbrot Competition. More than 100 schools from across the United States and several foreign countries participate.
- ▶ David Mellis of Chicago was one of 16 students in the nation selected to be a member of the 1998 U.S. Computing Team.
- ▶ Six projects by IMSA students received superior ratings at the 12th Annual Illinois History Exposition. Two of the projects qualified for National History Day competition. One took Best Project in the Women's Labor History category at National History Day.
- ▶ Jung Hong of Chicago qualified to compete in the 24th annual Future Problem Solving Program International Conference by winning a first place award in an individual written problem at the 1998 Illinois Future Problem Solving Bowl State Conference.
- ▶ A team of IMSA students captured first place in Illinois and seventh place nationally at the spring Knowledge Master Open competition.
- ▶ Two IMSA students were among 20 from the Chicago area selected to attend the Inaugural National Youth Leadership Mission to the U.S. Holocaust Memorial Museum in Washington, D.C. sponsored by the Anti-Defamation League.

Above and Beyond the Call of Duty: 1998 Graduates Give Back to Illinois

All members of the Class of 1998 contributed at least 80 hours of community service to organizations throughout Illinois as a requirement for graduation. However, many went above and beyond the call of duty! Examples include:

200 HOURS+

- Pavan Brahmamdam** - 246 hours at
United Samaritans Medical Center
- Nathan Gross** - 240 hours at Camp
Rainbow Foundation
- Lee Huynh** - 218.25 hours at Loyola
University Medical Center
- Vijay Khiani** - 213 hours at Hinsdale
Hospital

100 HOURS+

- Peter Adamczyk** - 168 hours at
Muscular Dystrophy Association
- Harish Agarwal** - 111 hours at
Palos Community Hospital
- Rob Brieler** - 170 hours at
Clinton YMCA
- Tshawnda Burke** - 165 hours Ingalls
Memorial Hospital & Smith
Elementary School Tutor

- Jasmine Daugherty** - 106 hours at
IMSA Early Involvement Program
- Vivian Gibson** - 134 hours at American
Cancer Society
- Tamara Gossman** - 172 hours at
McLeery Elementary School Tutor
- Thomas Johnson** - 132 hours at IMSA
IRC & McCleery Elementary
School & Aids Walk
- Richard Lee** - 106.75 hours at Mutual
Ground, Hoffman Estates Medical
Center & Camp Pride
- Stephanie Manson** - 196.5 hours -
Northern Illinois Special Recreation
Association
- Sarah Mebane** - 195 hours - Crisis Line
of Fox Valley

- Stacey Rose** - 125 hours at McHenry
County Defenders & IMSA Summer
Navigation
- Virginia Ryan** - 108 hours at U.S. Fish
and Wildlife Service
- Sameer Sundresh** - 100 hours at Scitech
- Derrick Tung** - 163 hours at
Bloomington Park District and
Lexington Health Care Center
- Adam Van Den Boom** - 136 hours at
Summer AD Ventures & Aids Walk
- David Yang** - 165 hours at Muscular
Dystrophy Camp & Smith School
Tutoring
- Trisha Younquist** - 120 hours at James
Helfrich Hatchery-Department of
Conservation



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