

# *SOUTHEASTERN BIOLOGY*



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*ASB*      **ASB 75<sup>TH</sup> ANNUAL MEETING**      *ASB*  
                 APRIL 2-5, 2014  
                 Converse College  
*ASB*      Spartanburg Community College      *ASB*  
                 Spartanburg Methodist College  
*ASB*      University of South Carolina Upstate      *ASB*  
                 Wofford College  
                 Spartanburg, South Carolina  
*ASB*      See Page 136 and Consult Website      *ASB*  
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All contributions, inquiries about missing back numbers and other matters should be addressed to the Journal Editor. News items should be sent to the News Editor. Send books to be reviewed to the Book Review Editor.

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**PURPOSE**

The purpose of this association shall be to promote the advancement of biology as a science by encouraging research, the imparting of knowledge, the application of knowledge to the solution of biological problems, and the preservation of biological resources. The ASB has representation in Section G Committee of the AAAS. Varying types of membership are available to individuals and institutions. See inside back cover.

**TIME AND PLACE OF FUTURE MEETINGS**

2014 April 2-5: Hosted by Converse College, Spartanburg Community College, Spartanburg Methodist College, University of South Carolina Upstate, and Wofford College, all four in Spartanburg, SC. Meeting site is the Convention Center at the Spartanburg Marriott.  
2015 April 1-4: Hosted by the University of Tennessee at Chattanooga. Meeting site is the Convention Center at the Marriott.

**THE VIEW FROM HERE****A MESSAGE FROM THE PRESIDENT****ZACK MURRELL**

Mindfulness is a concept that has become popular in some portions of our culture. As we age, we all become acutely aware of the need to be mindful of our health and, if we fail to do so, we often pay a high price. I've recently been reminded of the need to be mindful in both personal and professional aspects of my own life. Some of the lessons I've learned regarding mindfulness may be applicable to the health and well-being of the Association of Southeastern Biologists.

So what can we learn about mindfulness that can be applied to our organization? First, we need to be mindful of our past, our present and our future. Second, we need to be mindful of our goals. Finally, we need to be mindful of the resources we have available to accomplish these goals.

This past year has been a challenging one for ASB. Due to resignations from both the Treasurer, Tim Atkinson, and the Meetings Coordinator, Scott Jewell, in January 2014, we were faced with the prospect of conducting our 2014 meeting in Spartanburg without the institutional memory and support from these two people. With these resignations, it became clear to the current Executive Committee that the institutional memory of conducting our annual meeting had been partially lost to the last few generations of the Executive Committee (EC). It also became clear that we were not as mindful about our organization as we should have been or thought we were. Upon review, the EC is firmly resolved that the past method of paying a meetings coordinator to do the hard work of conducting a meeting and relying on a single volunteer treasurer to maintain the financial well-being of the organization is relying too much on use of the "easy button". While we were telling ourselves we could rely on this "easy" solution, we are now mindful that the present and future strength of our organization and accomplishment of our goals lies in the continued and increased use of our volunteer members.

As various committee members and other volunteers worked tirelessly to bring the 2014 meeting to fruition, it became self-evident that the "easy button" method of the recent past with respect to various aspects of ASB operations was not being as mindful as we should of either our present or future well-being. In spite of the these challenges created by past reliance on the "easy button", we managed to have a very successful meeting in Spartanburg, in terms of numbers of participants (750), satisfaction for the attendees, and, ultimately, the financial well-being of the organization. This was largely due to the tremendous efforts of the ASB Executive Committee who met via teleconference at least once a week for hours at a time to organize the meeting; many past officers of ASB, including Pat Cox, Mike Baranski and Andy Ash, who made themselves available for teleconferences, advice, institutional memory, and as points of contact for meeting tasks; committee members and other volunteers who stepped up and independently took care of their jobs at hand; the excellent staff of the Spartanburg Marriott and the very effective efforts of the five featured institutions

(Converse College, University of South Carolina-Upstate, Spartanburg Community College, Spartanburg Methodist College, and Wofford

College). I'm extremely proud and grateful for all of these volunteers who took part in making the 2014 Spartanburg meeting a great success. It was through this extensive network of volunteers that we began to see the "old ASB" return, where we rely on our own strength in our membership to provide much of the effort and "know-how" to keep our organization strong, healthy and growing.

Now that we have successfully met this immediate challenge to our organization, how do we move forward to enhance our strengths and shore up our weaknesses? In other words, how do we promote mindfulness and volunteerism? To accomplish this task, I believe it is imperative that we understand the decisions and actions that led up to our current state of affairs. First and foremost, we need to acknowledge that two past presidents, Mike Baranski and Andy Ash, pointed out some potential problems several years ago. They were essentially telling the ASB leadership that we needed to be more mindful of our organization's operations, our relationships with our affiliates and our dwindling membership base. Many of us tried to explain away the situation as being tied to a weak economy and institutional budget cuts that have impacted travel to meetings; however, it is now clear that these gentlemen were right. The model that we were operating under was expensive, wasteful, and our dependence on paid or incentivized workers rather than ASB member volunteers led our membership to feel less connected to our organization. I have offered my personal apology to both Mike and Andy for the criticism they both received while trying to advocate for the best interests of ASB. We owe both of these brave men a debt of gratitude.

We are well into our transition phase toward a healthy and robust Association. Preparations are underway for the April 2015 meeting at the Marriott and Convention Center in Chattanooga, Tennessee. Both our President-elect, Joey Shaw, and one of our new members-at-large, Peggy Kovach, are at the University of Tennessee at Chattanooga, the featured institution for the 2015 meeting, and they are already working to provide a super venue for the event. Our Interim Treasurer, Ed Lickey, has been working to piece together a detailed financial history of the last several years and we will have a detailed report of the Association's incomes, and expenditures, and financial health by the end of the year. Ed has been working diligently to thoroughly review our financial records. The EC, with Ed's leadership, intends to obtain an external audit and then apply to the Internal Revenue Service to seek retroactive tax exempt status. With our new, enthusiastic leadership team, we believe we can reduce expenditures and pass these savings on to our members in the form of reduced registration costs for the meetings. However, for two reasons we plan to do this in increments over the next few years. First, we want to be prudent and not cut too much too quickly and second, if we are accurate in the amount of money we believe we can save, we hope to make significant reductions in costs for upcoming meetings while simultaneously restoring the enrichment fund to an appropriate level to maintain the health and well-being of our organization.

Being mindful of our future, we have changed the Presidency to a two-year term to facilitate institutional memory and ensure that ASB benefits from the investment of the learning curve these volunteers commit to in the first year of

their tenure. We added an Associate Treasurer position to provide better record keeping and timely response to queries from the membership regarding dues and fees. The Associate Treasurer will not only back up the Treasurer, but the overlap in tenures of the Treasurer and Associate Treasurer will ensure that there are always at least two EC members with access to, and detailed knowledge about, our finances. We are working to develop a more detailed and thorough overall strategy for financial oversight that will include more transparent budgeting and better auditing efforts. Now that we have regained our institutional memory of how to conduct a meeting, we are beginning to address the organizational structure of ASB so that we are more efficient and effective in all aspects of our mission. To this end, over the last couple of years we have put other policies and procedures in place to ensure better institutional memory and more efficient transfers of position. We are pairing the EC Members at large into teams with delegated tasks for each meeting on a three year horizon, we have put into place an Assistant and an Associate Archivist to assist in maintaining continuity of our institution's memory and we are working to restructure our committees to reflect up-to-date needs. These changes reflect the mindfulness of the current leadership that is dedicated to making ASB strong now and even stronger into the future.

It is the courage, perseverance, mindfulness, and volunteerism of members like Mike Baranski and Andy Ash, the tremendous efforts of the many other volunteers, and the dedication of the ASB members who are teachers, researchers, students and conservationists that demonstrate the importance of volunteers to our organization. In fact, I believe that ~~our over~~ reliance on our Treasurer and Meetings Coordinator over the past several years has had a negative impact on our organization by downplaying the importance of volunteers to the organization. In a 2006 report by Andy Ash, Ken Shull and James Hull to the ASB leadership, they were very prescient in describing how ASB's transition to a meeting coordinator could have a negative impact on the organization. Eight years later, it is now time to reassess where we are and where we are going as an organization. We know we need to meet at sites with enough housing to support 800-1000 attendees, so we will continue to meet at conference centers. We have learned that many tasks that provide support of our exhibitors, patrons, affiliates, and members need the constant attention of the ASB leadership and we are redoubling our efforts to make sure our structure reflects this emphasis. Over the next year we intend to formalize our restructuring efforts to provide the support to the many dedicated ASB members and affiliates, so they can, in turn, have an opportunity to strengthen and expand ASB's efforts.

The success of the 2014 Spartanburg meeting is owed to the volunteerism of the many who stepped up and did yeoman's work for our organization. As ASB can only exist through the volunteer efforts of the membership, it is imperative that the level of volunteerism seen through the last year is maintained into the future. It is from the President's office that I ask you, ASB members, to contact EC members and find ways to volunteer for our organization. There is a lot of work to do and we need every member to try to donate time and effort. As you all know, ASB is an organization focused on science and science education. We need to be mindful of the value of ASB to science and science education regionally, nationally and globally. The leadership of ASB is committed to helping you, as an integral part of this organization, to have a real impact on our

organization and, in turn, on our society and our world. By being an active volunteer member and being ever mindful of our past, present and future, the health, well-being and goals of our Association will be assured. Thank you for your support, encouragement and efforts that further ASB's mission and make us one of the strongest and most effective regional professional associations in America.



Dr. Zack Murrell

**ASB CANDIDATES FOR OFFICE—2014**

The Nominating Committee composed of Donald H. Roush (Chair), Joey T. Shaw, and Ray S. Williams has selected the following slate of nominees for the ASB offices to be filled in 2014. Voting will take place at the annual business meeting which begins on Friday morning, April 4, 2014. Additional nominations will be accepted from the floor before voting is conducted. Please plan to attend and vote. Elections can sometimes be close. Therefore, your vote could make a difference on who gets elected to office.

<i>President-Elect</i>	<b>Joey T. Shaw</b>	University of Tennessee Chattanooga, Tennessee
<i>Vice President</i>	<b>Dennis C. Haney</b>	Furman University Greenville, South Carolina
	<b>Ashley B. Morris</b>	Middle Tennessee State University Murfreesboro, Tennessee
<i>Executive Committee Members-at-Large</i>		
	<b>Riccardo Fiorillo</b>	Georgia Gwinnett College Lawrenceville, Georgia
	<b>Margaret J. Kovach</b>	University of Tennessee Chattanooga, Tennessee
	<b>Kirk A. Stowe</b>	Beacon College Leesburg, Florida
	<b>Ray S. Williams</b>	Appalachian State University Boone, North Carolina



Dr. Joey T. Shaw



Dr. Dennis C. Haney



Dr. Ashley B. Morris





Dr. Riccardo Fiorillo



Dr. Margaret J. Kovach



Dr. Kirk A. Stowe



Dr. Ray S. Williams

### PRESIDENT-ELECT

**Joey T. Shaw** – Dr. Shaw is a University Foundation Associate Professor in the Department of Biological and Environmental Sciences at the University of Tennessee at Chattanooga. He was recognized by his College as an Outstanding Researcher in 2010 and by the Board of Governors as the UT Alumni Outstanding Teacher for 2011. Joey received a B.S. in Biology from the University of Tennessee at Chattanooga (1998). He continued his education at the University of Tennessee, Knoxville where he received a M.S. in Botany (2001) under the direction of Dr. B.E. Wofford and a Ph.D. in Botany in 2005 under the direction of Dr. Randy Small. Since beginning his professorship at UTC in 2005, he has graduated ten graduate students and mentored numerous undergraduate students through independent botanical studies – both in the lab and in the field. Students in his lab group have worked on botanical projects from floras to monitoring species of conservation concern to molecular based phylogenetic and phylogeographic studies. Joey teaches Plant Morphology, Plant Taxonomy, Biogeography, and Evolution. Joey not only teaches biology and botany in the classroom, but he has served as a volunteer trip leader for 15 years at the Annual Spring Wildflower Pilgrimage in the Great Smoky Mountains National Park. He has served Southeastern Naturalist as an editor and SABS as a Member-at-Large. Joey has served ASB and as Member-At-Large and during that time he worked on the field trip committee, the publication committee, and the student travel award committee. He is currently serving ASB as Vice President and in this capacity he is on numerous committees. He is a Life Member of ASB and he has attended every meeting since his first one in 1999. Joey continues the tradition of his mentors by bringing students with him to the ASB annual meeting.

### VICE PRESIDENT

**Dennis C. Haney** – Dr. Dennis Haney is Professor and Chair of the Biology Department at Furman University in Greenville, South Carolina. He received a B.A. in Biology at the University of California, San Diego, a M.S. in Zoology from Oregon State University, and a Ph.D. in Zoology at the University of Florida (1996). Dr. Haney's research is in the area of environmental and comparative physiology. More specifically he is interested in the physiological responses of animals, especially fish, to environmental stressors. Since 1999 Dr. Haney has been involved in an interdisciplinary watershed research program at Furman University, the River Basins Research Initiative (*RBRI*), collaborating with colleagues in the Biology, Earth and Environmental Sciences, and Chemistry departments. His research within the *RBRI* has focused on studying the interactions between land use, water chemistry, and geomorphology and how these factors affect the distribution and physiology of local stream fish. He is a strong advocate of undergraduate research, helping to mentor well over 100 undergraduate students over the past 10 years as part of the *RBRI*. Dr. Haney's students have given numerous presentations at national and regional scientific conferences, many at the ASB annual meetings, and have been co-authors on a number of publications. Dr. Haney teaches courses in Animal Physiology, Human Physiology, Marine Biology, Freshwater Ecology, Biostatistics, and has led field

courses in Florida, the Bahamas, Belize, Ecuador, and the Galápagos Islands. Dr. Haney has been a member of ASB since 1995, has served on and chaired the Poster Awards Committee, the Student Research Awards Committee, the Education committee, has been a member of the Executive Committee of ASB, and served for two years as the ASB web editor.

**Ashley B. Morris** – Dr. Morris is an Assistant Professor in the Department of Biology and the Center for Molecular Biosciences at Middle Tennessee State University in Murfreesboro. She grew up in Alabama, and she holds a B.S. in Natural Resources (1997, University of the South-Sewanee), a M.S. in Botany (2001, University of Tennessee), and a Ph.D. in Botany (University of Florida). She has held faculty positions at the University of South Alabama (Department of Biology, 2007-2011) and Middle Tennessee State University (2011-present). She currently teaches undergraduate Genetics and a dual-listed undergraduate / graduate course in Dendrology. In May 2013, she became Curator of the MTSU herbarium, which houses approximately 25,000 specimens. She has been active in national biological collection digitization efforts, including collaborating with iDigBio to present a joint symposium and workshop at ASB 2013. Her research interests focus largely on plant conservation genetics, phylogeography, and molecular systematics. She has been a member of ASB since 1999, and she was elected to the Executive Committee as a Member-at-Large from 2010-2013, and was appointed to the position of ASB Web Editor during that time. Ashley has spent significant time redesigning the website and maintaining our online presence through Facebook and Twitter. Additionally, she won the 2011 ASB Senior Research Award and the 2011 North Carolina Botanical Garden Award for two different presentations.

#### **EXECUTIVE COMMITTEE MEMBERS-AT-LARGE**

**Ricky Fiorillo** – Dr. Fiorillo is an Associate Professor in the School of Science and Technology at Georgia Gwinnett College. He has a B.S. degree in Biology, and a M.S. in Ecological Parasitology from Southeastern Louisiana University and a Ph.D. with an emphasis in Ecology and Evolution from Mississippi State University. Ricky's teaching and research background is broad and organismal-based. He has taught Animal Diversity, Parasitology, Ichthyology, Ecology, Freshwater Biology, Evolutionary Biology and an Introductory Biology sequence. Currently at GGC he teaches Parasitology, Zoology and the Freshman Biology course. Ricky truly enjoys being in the classroom and involving undergraduates in field research and believes strongly that "to be a biologist," one must "*do* biology." His research interests are primarily in Ecological Parasitology, especially the ecology of worm parasites of aquatic organisms (to quote his students: "Dr. Fio looves worms!!!"), but he is also interested in the natural history/ecology of fish, amphibians and reptiles. Ricky has been attending ASB since he was an M.S. student—way too long ago!—and enjoys bringing his students to the meeting in the hope that they too will be positively affected and inspired by ASB as much as he was as a student. Ricky has served on the ASB Student Research Award and Education Committees and, currently, he is a member of the Program Committee, the News Editor for *Southeastern Biology*

and an Interim Member of the ASB Executive Committee. Dr. Fio is crazy about soccer (the *real* football!!) and in his spare time (i.e. never) he enjoys cooking, playing guitar and board games.

**Margaret J. Kovach** – Dr. Kovach is a University Foundation Professor in the Department of Biological and Environmental Sciences at the University of Tennessee at Chattanooga. Margaret received a B.S. in Microbiology (1987) from Southern Illinois University at Carbondale and a Ph.D. in Molecular Biology (1995) from Colorado State University in Fort Collins, CO. She conducted postdoctoral research at Brown University and the SIU School of Medicine before joining the faculty at UTC in 2002. At UTC, Margaret is co-director of the STEM Education program and enjoys teaching Introductory Genetics, Molecular Genetics, Virology and Research Methods. Her research focus is primarily in the field of mammalian genomics. Specifically, Margaret is investigating typical and atypical mechanisms of gene regulation involved in the molecular pathogenesis of cancer and hereditary deafness. She received the College of Arts and Sciences Outstanding Research Award (2004) and Outstanding Advisor Award (2007) from UTC and was recognized by the Board of Governors as the UT Alumni Outstanding Teacher for 2010. She is a life member of ASB, Beta Beta Beta and the Sigma Xi Research Society. A strong advocate of undergraduate research, her students have been presenting their research at the ASB annual meeting since 2006.

**Kirk A. Stowe** – Dr. Stowe is an Assistant Professor of Biology in the Department of Interdisciplinary at Beacon College in Leesburg, FL. Kirk received a B.S. in Biology with a concentration in Ecology and Evolution from the University of California at Irvine (1989). He graduated with an honors thesis under the direction of T. Bradley. He continued his education at the University of Missouri, St. Louis where he received a M.S. in Biology (1992) and a Ph.D. in Evolutionary Ecology (1997) under the direction of R.J. Marquis. Since the start of his professional career he has strived to work with undergraduates. He has mentored 13 undergraduates, both in the lab and in the field, which have led to three publications, and several presentations. Students that have worked with him have studied physiological/evolutionary ecology, chemical/evolutionary genetics, as well as molecular ecology. Kirk teaches Introductory Biology, Evolution, Entomology, Field Botany, Ecology, Insects and Mythology, Botanical Research and Illustration, Plants and People, and Economic Botany. Kirk not only teaches in the classroom, but he serves as a volunteer at Trout Lake Nature Preserve teaching Entomology. He is also active in Educational Research and has published several paper in this area. He has been a reviewer of four books and an editor of *The International Journal of Modern Botany*. Kirk is currently the faculty advisor of the national honors society on his campus. He has served ASB as an education committee member for 5 years and as a chair or co-chair of that same committee for 2 years. He is currently serving as the co-chair of the education committee. Kirk is committed to the success of ASB and has attended every meeting since moving to the Southeast in 2007.

**Ray S. Williams** – Dr. Williams joined the faculty in the Department of Biology at Appalachian State University (ASU) in 1997 and currently holds the position of

full Professor. His research examines the interactions between plants and insects, with a particular focus on the role intraspecific genetic variation in a foundation plant species plays in structuring insect communities. His laboratory has a particular focus on chemical mechanisms directing insect responses to host plants. At ASU Ray teaches courses in Entomology, Plant-Insect Interactions, General Biology (introductory course for majors and general education course in climate change), and a graduate course in writing and oral presentation. Dr. Williams has been a member of ASB since the 1980s as a Masters of Science student at ASU. He and his students have presented over 20 oral and/or poster presentations at ASB. In the past he served as the Chair of the student Posters Award and Senior Research Award Committees and proctored oral sessions at meetings. He is currently a member of the Nominating Committee. <sup>CS</sup>

**75th Annual Meeting Program  
Association of Southeastern Biologists**



Hosted by

Converse College  
Spartanburg Community College  
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# AST Environmental

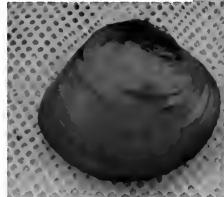
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AST Environmental (AST) was established in response to the increased need for cost efficient and timely professional environmental consulting services in Alabama and the southeastern United States.

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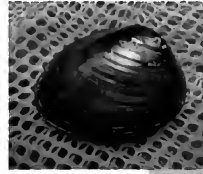
AST is experienced in various aquatic survey techniques including EPA Rapid Bioassessment. AST's Aquatic Resource Team is equipped to perform population studies for aquatic organisms, and water quality assessments in accordance with various state and federally prescribed protocols.



AST's environmental scientists and biologists are experienced in performing species assessments and habitat assessments for protected fauna and flora. The Team specializes in aquatic fauna and is permitted to survey for most of the federally protected fish, mussel, and snail species in the Southeast. AST has SCUBA and HOOKAH diving capabilities.

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## Program Committee for 2014 ASB Meetings

**Chair:**                    **Howard S. Neufeld**  
Appalachian State University

**Members:**                **Riccardo Fiorillo**  
Georgia Gwinnett College

**Christopher Brown**  
Georgia Gwinnett College

The program committee wishes to thank Mark Suggs, Appalachian State University Learning Technology Services, for his help in creating the abstract submission form and for assistance with the formatting of this document. We also thank Chris Fleming for creating the Mobile App that enables members to search the program on mobile devices. Finally, we express our sincere appreciation to Ashley Morris, Middle Tennessee State University, for her excellent maintenance of the ASB webpage.



## Welcome from the Association of Southeastern Biologists

Dear ASB Community,



Welcome to the 75<sup>th</sup> annual meeting of the Association of Southeastern Biologists (ASB) at the Spartanburg Marriott in Spartanburg, South Carolina. ASB is dedicated to supporting science and science education in the southeastern region of the country.

We will have 422 posters and presentations and three symposia at this meeting, along with two field trips and a bioblitz, providing our community with a grand opportunity to learn, exchange ideas, and form collaborations. We are excited to have five Featured Institutions supporting our meeting this year, and I hope you will get a chance to learn more about Converse College, Spartanburg Community College, Spartanburg Methodist College, University of South Carolina Upstate and Wofford College at their booths in the Exhibit Hall and also on their local campuses. Our Exhibitors and Patrons also have booths and I encourage you to visit with them and learn about their products and services.

The Association of Southeastern Biologists is a volunteer organization. The ASB Officers, Executive Committee, Committee Chairs, Committee Members, Editorial Boards and our members all work to make our meetings, our journals (*Southeastern Naturalist* and *Eastern Biologist*) and our information packed bulletin (*Southeastern Biology*) successful. Please take the time to visit the ASB booth in the Heritage Ballroom, learn more about your organization, and consider volunteering.

We hope you will enjoy the meeting, our Band and Barbecue Bash on Thursday evening and our Awards Banquet Friday evening. The ASB meeting is a great time to renew acquaintances and friendship, form new friendships and discover new opportunities. I hope you enjoy your meeting and thanks for helping make our Association successful.

Sincerely,

Zack Murrell  
President, Association of Southeastern Biologists

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Spartanburg Convention & Visitors Bureau/Spartanburg Marriott  
The Compleat Naturalist  
University of Tennessee at Chattanooga  
Vashaw Scientific  
Dwayne Wise, PhD-*Patron*

## Registration Hours • ASB

**Wednesday, April 2, 2014**

**11 am – 9 pm**

**Thursday, April 3, 2014**

**7 am – 7 pm**

**Friday, April 4, 2014**

**7 am - noon**

## Enrichment Fund Challenge

Make a donation to the enrichment fund of \$1 or more at the Registration Desk and receive a special Enrichment Fund ribbon to wear on your badge! A \$25 or more donation will enter you in the \$100 cash drawing to be given away at the Friday Night Awards Banquet!

## Exhibit Hall Hours

---

### Wednesday, April 2

9 AM – 4 PM

Exhibitor Move-In

Noon – 2 PM

Exhibitor Pizza Party-  
Exhibitors Only

---

### Thursday, April 3

8 AM – 5 PM

Exhibits Open

---

### Friday, April 4

9 AM – 2 PM

Exhibits Open

2 PM – 4 PM

Exhibitor Move-Out



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## Symposia

### **Natural Disturbances and Historic Range of Variation: Type, Frequency, Severity, and Post-disturbance Structure in Central Hardwood Forests**

**8:30 AM – 5:00 PM • Thursday, April 3 • Azalea A**

**Hosts: Katie Greenberg and Beverly Collins**

**US Forest Service and Western Carolina University**

Expert scientists presenting state-of-the-art knowledge on different types of natural disturbances, and historic range of variation in frequency, severity, extent, and the gradient of forest structural conditions they created.

### **Educational Opportunities at Biological Field Stations of the Southeastern United States**

**8:00 AM – Noon • Friday, April 4 • Daniel Morgan A/B**

**Hosts: Chris Havran and Kirk Stowe**

**ASB Educational Committee**

The Education Committee of the Association of Southeastern Biologists (ASB) symposium will highlight the educational opportunities at biological field stations in the Southeastern United States. Representatives from seven stations located in the Southeastern United States will introduce their stations and highlight educational opportunities at those stations. The field stations involved encompass a variety of ecosystems from forest, riparian, to marine and serve as important sites for conservation, research and education. The symposium will end with a question and answer session with all representatives involved.

## Workshops



### **10:30 AM – 11:30 AM • Thursday, April 3 • Blackstock Room**

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### **Partnership for Undergraduate Life Sciences Education (PULSE)**

#### **8:30 AM – Noon • Friday, April 3 • Azalea A**

#### **Led by Judy Awong-Taylor, Georgia Gwinnett University**

It is important to develop a shared vision of excellence if a department's members are to work together toward reform. In this session, participants will work to identify where their department is currently situated on a continuum of best practices in undergraduate life sciences education. Participants will consider the level to which their students are regularly engaged in authentic scientific inquiry, and if students are building the metacognitive skills and core scientific competencies necessary for their future success. They will also reflect on their department's use of effective pedagogies, assessment practices, and collaboration/cooperation with administrators in their pursuit of excellence. This workshop is intended as an introduction to the PULSE project in general, and an overview of upcoming PULSE initiatives for the southeast that seek to develop the regional networks and individual leadership capacities that enable the type of departmental reform called for in Vision and Change in Undergraduate Biology Education: A Call to Action.

This workshop will be offered in two parts, both emphasizing different topics based on participant feedback.



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## Meeting-At-A-Glance

All Meeting Functions are held at the Spartanburg Marriott  
*unless otherwise specified*

Wednesday, April 2

Time	Event	Location
9:00 AM – 4:00 PM	Exhibitor Move-In	Heritage Ballroom
11:00 AM – 9:00 PM	Registration Open	Communal Break Area
11:00 AM – 2:00 PM	Exhibitor Pizza Lunch (exhibitors only)	Heritage Ballroom
Noon – 10:00 PM	PowerPoint and Preview Check	Musgrove Mill
1:00 PM – 6:00 PM	ASB Executive Committee Mtg.	Oak Boardroom
1:00 PM – 6:00 PM	SABS Executive Council Mtg.	Jesse Cleveland Boardroom
7:30 PM – 9:00 PM	<b>Plenary Welcome</b> <b>Dr. Nayef H. Samhat</b> President of Wofford College <b>Plenary Speaker</b> Dr. Henry M. Wilbur BFD Runk Professor of Biology and Professor of Environmental Science University of Virginia <b><i>Switching Sex in an Uncertain Environment</i></b>	Old Main Building Wofford University
9:00 PM – 10:30 PM	<b>Plenary Welcoming Social</b> (must have ticket to attend)	Old Main Building Wofford University

## Meeting-At-A-Glance

Thursday, April 3

<b>Time</b>	<b>Event</b>	<b>Location</b>
7:00 AM – 7:00 PM	Registration Open	Communal Break Area
7:00 AM – 5:00 PM	PowerPoint and Preview Check	Musgrove Mill
8:00 AM – 5:00 PM	<b>Exhibits Open</b>	Heritage Ballroom
7:00 AM – 8:30 AM	<b>ASB Past President's Breakfast</b>	Sparks Private Dining B
<b>Poster Sessions</b>		
7:00 AM – 8:00 AM	ASB Poster Sessions 1 & 2 Setup • 1–136	Heritage Ballroom
8:00 AM – 5:00 PM	<b>ASB Poster Sessions 1 &amp; 2</b>	Heritage Ballroom
9:45 AM – 10:45 AM	Presenters of odd-numbered posters must be present at this time	
2:45 PM – 3:45 PM	Presenters of even-numbered posters must be present at this time	
5:00 PM	Poster Removal	Heritage Ballroom
<b>Presentations</b>		
8:30 – 11:30 AM	<b>Symposium</b> Disturbance and Historic Range of Variation	Azalea A
8:30 AM – 9:45 AM <i>See Presentations Schedule for Details, p. 166</i>	<b>ASB Paper Presentations</b> Community & Population Ecology Entomology / Invertebrate Biology Freshwater Ecology & Aquatic Biology Floristics and Systematics Scholarship of Teaching	Wadsworth Croft Daniel Morgan A&B Azalea B Dogwood
9:45 AM – 10:45 AM	<b>Break-</b> No oral presentations at this time - Please visit Posters and Exhibits	
10:30 AM – 11:30 AM	<b>eScience Laboratory Workshop</b>	Blackstock Room
10:45 AM – Noon	<b>ASB Paper Presentations</b>	

<b>Time</b>	<b>Event</b>	<b>Location</b>
<i>See Presentations Schedule for Details, p. 166</i>	<i>See above for topics and rooms</i>	
Noon – 1:30 PM	<b>Lunches</b> (Individuals and Organizations) Box Lunch (pre-order only with ticket) Buffet Lunch (order in line) SWS South Atlantic Chapter Luncheon SHC SE Chapter Luncheon and Business Meeting	Registration Desk Sparks Dining Room Sparks Private Dining A Sparks Private Dining B
1:30 PM – 5:00 PM	<b>Symposium</b> Disturbance and Historic Range of Variation	Azalea A
1:30 PM – 2:45 PM <i>See Presentations Schedule for Details, p. 170</i>	<b>ASB Paper Presentations</b> Community & Population Ecology Entomology / Invertebrate Biology Freshwater Ecology & Aquatic Biology Floristics and Systematics Scholarship of Teaching	Wadsworth Croft Daniel Morgan A&B Azalea B Dogwood
2:45 PM – 3:45 PM	<b>Break</b> - No oral presentations at this time Please visit Posters and Exhibits	
3:45 PM – 5 PM <i>See Schedule for Details, p. 170</i>	<b>ASB Paper Presentations</b> <i>See above for topics and rooms</i>	
5:15 PM – 6:15 PM	<b>ASB Business Meeting</b> <i>NOTE NEW TIME FOR THIS MEETING!</i>	Azalea B
6:30 PM – 8 PM	<b>Thursday Night Social</b> - Buffet Dinner	Back Lawn of Marriott Hotel
8 PM – 11 PM	<b>Thursday Night After-Dinner Social</b>	Back Lawn of Marriott Hotel

## Meeting-At-A-Glance

Friday, April 4

<b>Time</b>	<b>Event</b>	<b>Location</b>
7:00 AM – Noon	Registration Open	Communal Break Area
7:00 AM – 5:00 PM	PowerPoint and Preview Check	Musgrove Mill
7:00 AM – 8:30 AM	<b>SABS/BSA Breakfast</b>	Sparks Private Dining Room B
7:00 AM – 8:30 AM	<b>ASB Patrons and Exhibitors Breakfast</b>	Sparks Private Dining Room A
<b>β β β</b>		
8:00 AM – 6:00 PM	β β β Officers & Judges Room	Cowpens
9:00 AM – 11:00 AM	β β β Joint Business Meeting	Cedar Spring
9:30 AM – Noon	<b>β β β Poster Presentations</b>	Heritage Ballroom
1:00 PM – 4:00 PM	<b>β β β Paper Presentations</b> I II III	Wisteria Cedar Spring King Mtn.
4:00 PM – 5:00 PM	<b>β β β Joint Meetings</b>	Cedar Spring/King Mtn.
4:00 PM – 6:00 PM	<b>β β β Joint Session and Awards</b>	Wadsworth/Croft
<b>ASB Poster Sessions</b>		
7:00 AM – 8:00 AM	ASB Poster Sessions 3 Setup (137-203)	Heritage Ballroom
8:00 AM – 4:00 PM	<b>ASB Poster Sessions 3</b>	
9:45 AM – 10:45 AM	Presenters of all posters must be present at this time	
4:00 PM	Poster Removal	

<b>ASB Presentation Sessions</b>		
8:30 AM – Noon	<b>Symposium</b> PULSE Transforming Undergraduate Life Sciences	Azalea A
8:00 AM – Noon	<b>Symposium</b> Educational Opportunities at Biological Field Stations of the Southeastern United States	Daniel Morgan A&B
8:30 AM – 9:45 AM <i>See Presentations Schedule for Details</i>	<b>ASB Paper Presentations</b> Physiological & Population Ecology Conservation Biology Floristics & Systematics Genetics / Cell / Molecular Biology Microbiology	Wadsworth Croft Azalea B Dogwood Wisteria
9:45 AM – 10:45 AM	<b>Break</b> – No oral presentations at this time Please visit Posters and Exhibits	
10:45 AM – Noon <i>See Schedule</i>	<b>ASB Paper Presentations</b> <i>See above for topics and rooms</i>	
Noon- 12:30 PM	<b>ASB Business Meeting</b>	Azalea B
12:30 PM – 1:30 PM	<b>Lunch</b> (Individuals and Organizations) Box Lunch (pre-order only with ticket) Buffet Lunch (order in line) Education Committee Luncheon ESA Luncheon and Business Mtg.	Registration Desk Sparks Dining Room Sparks A Private Dining Room Sparks B Private Dining Room
1:30 PM – 3:00 PM <i>See Presentations Schedule for Details</i>	<b>ASB Paper Presentations</b> Ecosystems Conservation Biology Ichthyology & Herpetology Floristics & Systematics Genetics / Cell / Molecular Biology	Wadsworth Croft Daniel Morgan A/B Azalea B Dogwood
3:00 PM – 3:30 PM	<b>Break</b> - No oral presentations at this time Please visit Posters and Exhibits	

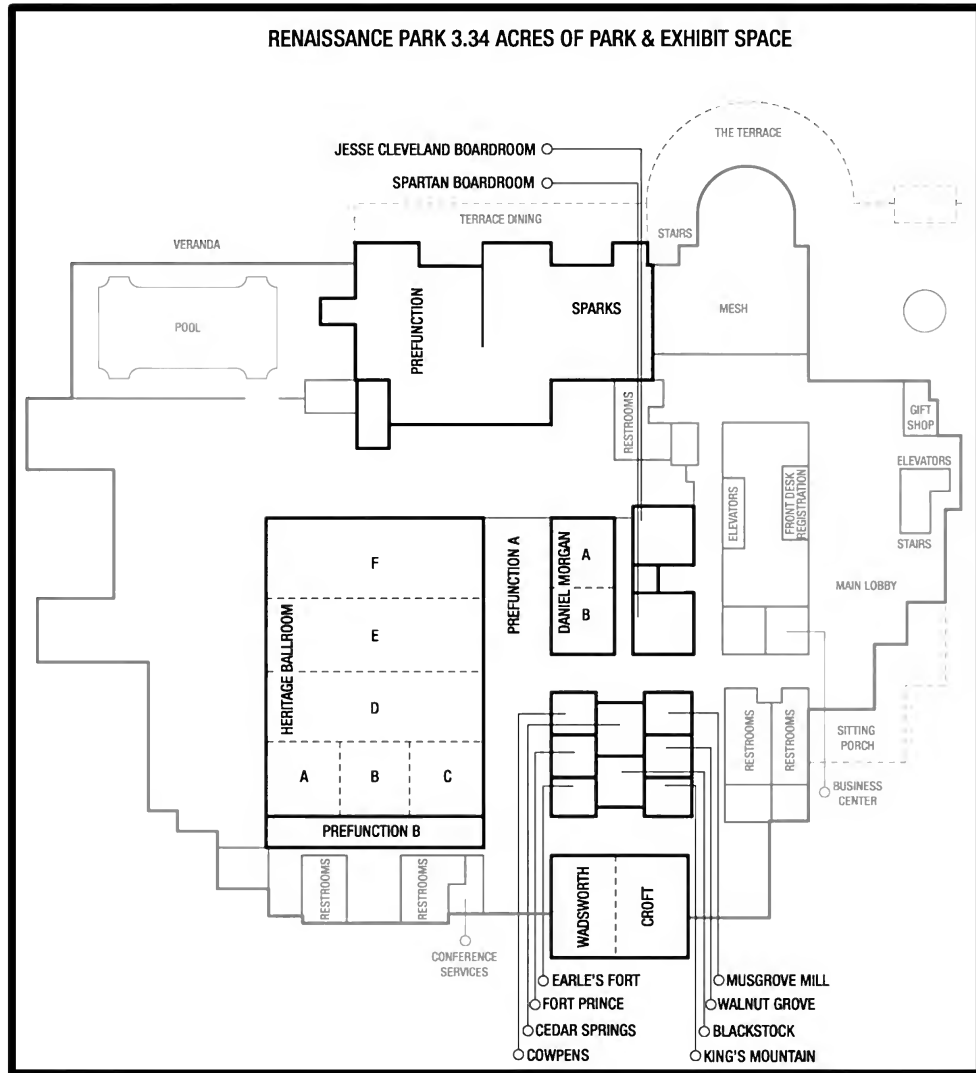


3:30 PM – 5 PM	<b>ASB Paper Presentations</b> <i>See above for topics and rooms</i>	
<i>See Presentations Schedule for Details</i>		
4:00 PM – 5:30 PM	<b>SABS/BSA Botany Students Reception</b>	Sparks Private Dining Room B
7:00 PM – 9:30 PM	<b>Awards Banquet</b> Dinner and Presentation of Awards	Heritage Ballroom

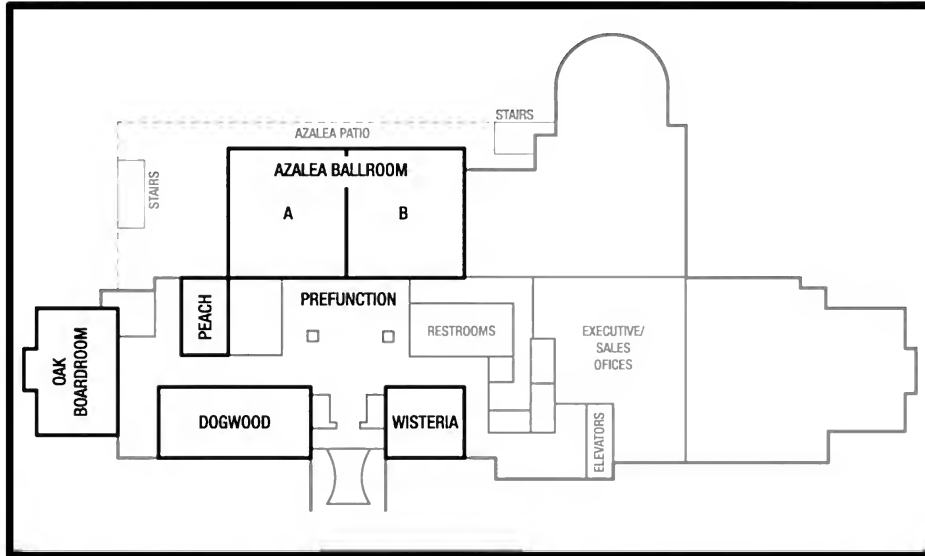
### Saturday, April 5

<b>Time</b>	<b>Event</b>	<b>Location</b>
7:30 AM – 8:30 AM	<b>ASB Executive Committee Breakfast</b>	Sparks B Private Dining Room
8:30 AM – Noon	<b>ASB Executive Committee Meeting</b>	Sparks B Private Dining Room
8:00 AM – 5:00 PM	<b>ASB Field Trips</b>	Leave from Marriott Hotel

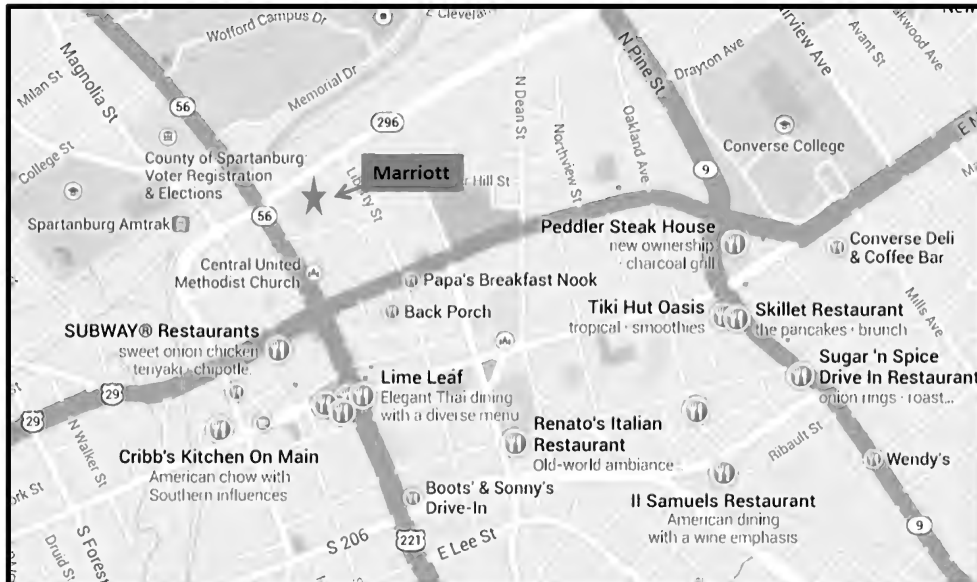
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## Spartanburg Marriott Meeting Rooms Second Floor



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## Transportation and Parking at the Spartanburg Marriott Hotel

### HOTEL PARKING INFORMATION

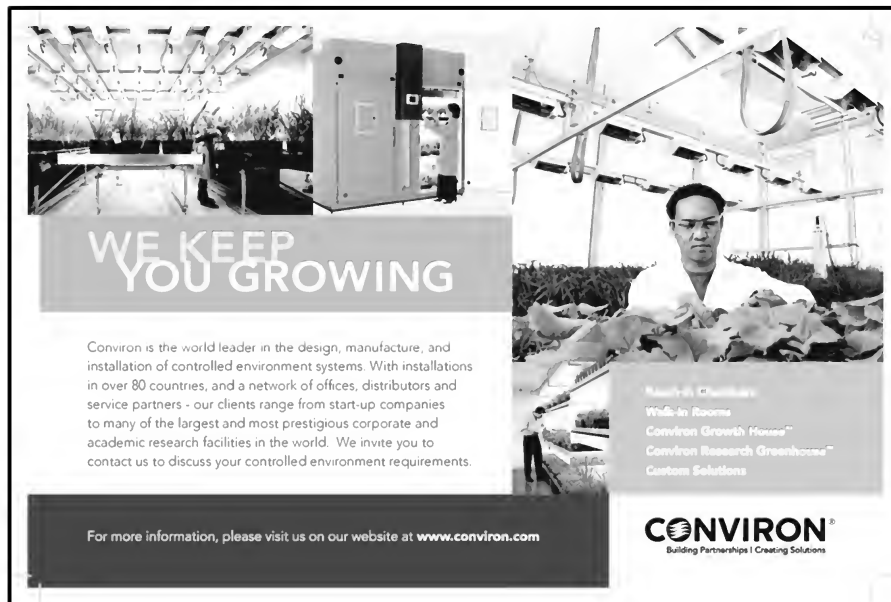
Parking is available on-site. Additional parking is available in the St. John Street Parking Garage behind the hotel.

### HANDICAP PARKING

Handicapped parking is available on-site

### SHUTTLE BUS SCHEDULE

There will be two shuttle buses to transport people from the Marriott to Wofford on Wednesday evening for the opening welcome and plenary session. Check at the registration desk for times of departure and return.



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## Plenary Speaker

**Dr. Henry M. Wilbur**

**BFD Runk Professor of Biology  
Professor of Environmental Sciences  
University of Virginia, Charlottesville, VA**

*Switching Sex in an Uncertain Environment*

**Wednesday, April 2 • 7:30 PM**

**Old Main Building, Wofford College**



Henry Wilbur spent his formative years in Waynesboro active in Boy Scouts and Nature Camp. He majored in zoology at Duke and then received his PhD in Zoology at The University of Michigan. He returned to the Duke Zoology Department for 17 years before moving to the University of Virginia to be Director of the Mountain Lake Biological Station. He has served as president of The American Society of Naturalists and has been an editor for The American Naturalist, Ecology, and Evolution. His research has included fieldwork on Leach's Petrel, Painted Turtles, various amphibians, temporary pond communities, forest dynamics and life history evolution. His plenary talk

will focus on sex switching in maple trees.

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### Please donate to the Silent Auction!!

The silent auction was a huge success the past two years in Charleston and Athens. With YOUR HELP, we raised over \$8,500 for the Student Travel Fund in the past two years. This fund was established in 2006 to help defer travel cost for Graduate Student members presenting papers or posters during the ASB Annual Meeting. Since the fund was created, many students have benefited from these travel grants.

In order to surpass the amount we raised in Charleston and Athens, we need Your Help again this year in Spartanburg, SC, the site of the Annual ASB Meeting, April 2-5, 2014. The donated items can be books, to handcrafts, to memorabilia, to nature photography, to t-shirts or anything else you think appropriate. Some examples of the recent bestselling items are gift baskets, gift cards, nature books, jewelry, wine or any adult beverage and unique gifts.

- If you have an item you would like to donate to the Silent Auction, please contact Patricia Cox at [pbcox@tva.gov](mailto:pbcox@tva.gov) so we can add your item to our list.
- If you are unable to attend, please mail (via US Postal Service) your item to Patricia B. Cox before Friday March 28<sup>th</sup> at:

**Patricia B. Cox  
3601 Garden Dr.  
Knoxville, TN 37918**

- If you are attending the meeting, please bring your item to the Silent Auction Area in the Exhibit Hall before 10:00 AM on Thursday April 11 and one of the committee members will be available to receive it.

We want to thank you in advance for participating in this worthwhile event. If you have any questions, please feel free to contact one of the Committee Members below:

Patricia Cox -- [pbcox@tva.gov](mailto:pbcox@tva.gov)  
Kim Marie Tolson -- [tolson@ulm.edu](mailto:tolson@ulm.edu)  
Pat Parr -- [parrpd@ornl.gov](mailto:parrpd@ornl.gov)  
Eloise Carter -- [ecarter@learnlink.emory.edu](mailto:ecarter@learnlink.emory.edu)  
Bonnie Kelley -- [bonnie.kelley@uncp.edu](mailto:bonnie.kelley@uncp.edu)  
Diane Nelson -- [jandnelson@yahoo.com](mailto:jandnelson@yahoo.com)





## Silent Auction

\_\_\_\_\_ Yes, I would like to contribute to the Silent Auction to help with student travel to the Annual Meeting.  
 (100% of all proceeds to benefit student travel).

### Examples of Previous Submitted Items

- Dissection Set
- Corporate Gift Certificates
- Frog Model
- Dinner for Two
- Two Nights Hotel Accommodations
- Books
- Charts
- Wine Gift Basket
- Educational Charts
- Microscope
- Books

Description of item(s) to be donated:

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Please check appropriate option:

\_\_\_\_\_ Please contact me at the convention to pick up donation.

\_\_\_\_\_ I will mail donation to Patricia B. Cox, 3601 Garden Drive, Knoxville, TN 37918; 865-632-3609; [pbcox@tva.gov](mailto:pbcox@tva.gov).

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Signature	Date	phone
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Title	e-mail
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Return Silent Auction form Patricia B. Cox, 3601 Garden Drive, Knoxville, TN 37918; 865-632-3609; [pbcox@tva.gov](mailto:pbcox@tva.gov).

## Field Trips

Welcome to the 2014 ASB Meeting Field Trip Page. As biologists in the Upstate of South Carolina we are so very fortunate to have a diverse set of habitats to explore; we would love to introduce you to a few of our favorite places. As science education is central to ASB's mission, we chose sites where science is integrated with service learning and educational outreach activities in our area. We hope you are able to join us!

### 10:00 AM on Saturday, April 5 • Leaving from Marriott Lobby



#### 1. Join Beth Button for a Stream Ecology Program at Camp Mary Elizabeth

##### *Family-Friendly Option!*

Beth Button of the USC Upstate Watershed Ecology Center will lead a Stream Ecology Program at Camp Mary Elizabeth. The program will center on capturing stream benthic macro-invertebrates for identification. After identifying the stream residents, we will discuss what they tell us about the water quality of their home. All ages are welcome, but come dressed to wade in the stream and get a little wet! [http://www.uscupstate.edu/academics/arts\\_sciences/watershed](http://www.uscupstate.edu/academics/arts_sciences/watershed)

**Who:** Limited to 25 people  
**Where:** Camp Mary Elizabeth; 330 Scout Drive; Spartanburg, SC 29301  
**When:** Saturday, April 5, 10:00 AM to Noon



#### 2. Join Dr. Patrick McMillan for a Tour of the South Carolina Botanical Garden

Dr. Patrick Mc Millan, Director of the South Carolina Botanical Garden ([www.clemson.edu/public/scbg](http://www.clemson.edu/public/scbg)) and host of the Emmy

Award-winning ETV nature show *Expeditions with Patrick McMillan*

([www.clemson.edu/public/expeditions](http://www.clemson.edu/public/expeditions)), will lead a tour of the Heritage Nature Garden at the South Carolina Botanical Garden. Wear your comfortable hiking boots!

**Who:** Limited to 20 people  
**Where:** 102 Garden Trail; Clemson, SC 29634  
**When:** Saturday, April 5, 10:00 AM to 2:00 PM



### 3. Explore Spartanburg SPACES Bioblitz style

Dr. Mike Dorcas  
 (Davidson College,  
[www.bio.davidson.edu/dorcas](http://www.bio.davidson.edu/dorcas)),  
 and Dr. Melissa Pilgrim  
 (USC Upstate,  
[srel.uga.edu/facstaffpages/pilgrim.html](http://srel.uga.edu/facstaffpages/pilgrim.html)), and Dr. Stephen

Richter (Eastern Kentucky University, [people.eku.edu/richters/meca](http://people.eku.edu/richters/meca)) will lead Bioblitz surveys focused on building species list of herpetofauna discovered on recently acquired Spartanburg Area Conservancy (SPACE) properties ([spartanburgconservation.org](http://spartanburgconservation.org)). Please come dressed for field work and bring a change of clothes, as we will likely get wet and muddy).

**Who:** No limit; number of teams will be dependent on number of people who register  
**Where:** Starting locations will be sent to registered participants.  
**When:** Saturday, April 5, 10:00 AM to 3:00 PM

# Oral Presentations

Thursday AM, April 3

Time	Community & Population Ecology Wadsworth Moderator: R. Lucardi	Entomology / Invertebrate Biology Croft Moderator: W. Dees	Freshwater Ecology & Aquatic Biology Daniel Morgan A/B Moderator: J. Strickland	USFS Disturbance Symposium Azalea A Moderators: K. Greenberg and B. Collins	Floristics & Systematics Azalea B Moderator: E. Gillespie	Scholarship of Teaching & Learning Dogwood Moderator: B. Odum
8:30 AM	1 • Dennis D. Tarasi, Robert K. Peet Do Invasive Plant Species Impact Community-Level Species Richness or Composition Patterns in Temperate Forests?	11 • Andrea L. Rodriguez, Victor R. Townsend, Jr. Leg Morphology of Cosmetid Harvestmen (Arachnida, Opiliones, Laniatores)	21 • Justin C. Strickland, Ana P. Pinheiro, Kristen K. Cecala, Micahel E. Dorcas Physiological Constraints to Respond to Climate Change: Insights From the Effects of Temperature on Standard Metabolic Rate in Larval Salamanders	31 • Cathryn H. Greenberg, Beverly Collins, W. Henry McNab, Douglas Miller Introduction: Natural Disturbances Shaping the Structure and Composition of Central Hardwood Forests	38 • Titian Ghandforoush, Kathleen A. Kron Phylogenetic Reconstruction of Relationships in the Paleotropical Vaccinieae (Ericaceae) Based on DNA Sequence Data	48 • Darlene Panvini Different Approaches to Service-Learning in Majors and Non-Majors Biology Courses
8:45 AM	2 • S. Douglas Kaylor, M. Joseph Hughes, Jennifer A. Franklin Recovery Trends and Predictions of High Elevation Forest Change in the Southern Appalachian Mountains	12 • Zachary J. Loughman Life History of the New River Crayfish in Anthony Creek, West Virginia	22 • John J. Hains, Jessica Logan, Brittany Broome, Sarah Fishburne, Lauren Frees, Rebecca Helstern, Joshua Howard, Garrett Woolen The Ecology of a New Invasion by <i>Bellamyia japonica</i> In the Savannah River Basin	32 • Justin L. Hart Gap-Scale Disturbances in Eastern Oak Forests With Implications for Management	39 • Andy G. Gardner, Kelly A. Shepherd, Dianella G. Howarth, Rachel S. Jabaily The Australian Plant Family Goodeniaceae as a New Model System for Floral Symmetry Evolution	49 • Christopher E. Barton Identifying and Addressing Nursing Students' Perceptions of Anatomy & Physiology Courses
9:00 AM	3 • Jonathon K. Loyd, Steven Murphree A Comparative Study of Wildlife Diversity in an	13 • Suellen F. Pometto, Peter H. Adler, Charles E. Beard	23 • Sarah Fishburne, Jessica Logan, Brittany Broome, Lauren Frees,	33 • Steven Oak, Martin A. Spetich Oak Decline in Central	40 • Joshua L. Steele, Richard Carter Floristic Inventory of the	50 • Marlee B. Marsh, Allan Nail Improving Lab Report

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	Old-Growth and Adjacent Secondary Growth Forest in Davidson County, Tennessee	Reassembly of the Butterfly Proboscis, With Restored Functionality	Rebecca Helstern, Joshua Howard, Garrett Woollen, John Hains Metabolism of <i>Bellamyia japonica</i> : Experimental Design and Limitations	Hardwood Forests: Frequency, Spatial Extent, and Changes to Forest Composition and Structure	Lake Louise Field Station, Lowndes County, Georgia	Writing and Student Confidence Using Scaffolding Assignments and a Classroom Partner Program
9:15 AM	4 • Gabrielle King, Wayne Rossiter Assessment of the Roles of Endothermy and Ecothermy in Food Chain Length	14 • Marc A. Milne, Marcelo Schwarz Size Matters: Purple Pitcher Plant ( <i>Sarracenia purpurea</i> ) Pitcher Size Influences the Presence or Absence of <i>Aedes albopictus</i> Larvae	24 • Amy R. Wethington Distributional Differences in the Freshwater Pulmonate Snails <i>Physa acuta</i> And <i>Physa gyrina</i> : Competitive Exclusion or Habitat Choice?	Continuation of Talk 33	41 • Wesley M. Knapp A Reexamination of <i>Juncus validus</i> Var. <i>Fasciatus</i> , a Texas Endemic, and Notes on Closely Related Species	51 • Chris Murdock, LaJoyce Debro Inquiry-Based Alternatives to Traditional Introductory Biology Laboratories
9:30 AM	5 • Katrina D. R. Moeller, H. Dawn Wilkins Effect of Census Method and Season on the Number and Types of Vocalizations Uttered by Barred Owls in the Area Surrounding Reelfoot Lake, Tennessee	15 • Amy M. Gutting, Jennifer A. Zettler, Lawrence W. Zettler, Larry W. Richardson Mealybugs: An Old Threat Poses a New Risk to Native Epiphytic Orchids in South Florida	25 • Daniel Hoffman, Troy Mutchler, William Ensign Quantifying Potential Differences in Trophic Relationships Across Freshwater Streams of Varying Urbanization	34 • John Nowak, William Carothers, Kier Klepzig Southern Pine Beetles: Frequency, Spatial Extent, and Changes to Forest Structure Across the Southeastern Upland Hardwood Forest Region	42 • Richard Stalter, Eric E. Lamont The Vascular Flora of Plum Island, Long Island Sound, New York	52 • Cody L. Starnes, C. Brian Odum No More Early Morning Virgin Hunts: Eliminating Male Offspring in Classroom Teaching Stocks of <i>Drosophila Melanogaster</i> , Using a Readily Available Male-Lethal Strain
9:45 AM	<b>BREAK</b> 9:45-10:45 ASB Poster Session 1 (1-136 Odd # Posters)	<b>BREAK</b> 9:45-10:45 ASB Poster Session 1 (1-136 Odd # Posters)	<b>BREAK</b> 9:45-10:45 ASB Poster Session 1 (1-136 Odd # Posters)	35 • Chris J. Peterson, Christopher M. Godfrey Meteorological and Ecological Perspectives on the Patterns and Consequences of Wind Disturbance to Central	<b>BREAK</b> 9:45-10:45 ASB Poster Session 1 (1-136 Odd # Posters)	<b>BREAK</b> 9:45-10:45 ASB Poster Session 1 (1-136 Odd # Posters)

Time	Community & Population Ecology Wadsworth Moderator: R. Lucardi	Entomology / Invertebrate Biology Croft Moderator: W. Dees	Freshwater Ecology & Aquatic Biology Daniel Morgan A/B Moderator: J. Strickland	USFS Disturbance Symposium Azalea A Moderators: K. Greenberg and B. Collins	Floristics & Systematics Azalea B Moderator: E. Gillespie	Scholarship of Teaching & Learning Dogwood Moderator: B. Odum
10:30 AM				Hardwood Forests 36 • Henri Grissino-Mayer, Charles Lafon Fire Regimes of the Southern Appalachian Central Hardwood Forests: Effects of Climatic and Human Influences		
10:45 AM	6 • Rachael Maulorico, John McCall Fish Communities in an Alabama Salt Marsh With Consideration of the Impact of the Deepwater Horizon Oil Spill Disaster	16 • Brian Scholtens, Joe Culin, John Snyder, Tom P. Smith The Moths of Congaree National Park	26 • Joseph M. Dirnberger, Julia Love Seasonal Shifts to Planktonic Prey by the Eastern Mosquitofish, <i>Gambusia holbrooki</i>		43 • C. Theo Witsell, Brent T. Baker Arkansas's Newest Herbarium: The Herbarium of the Arkansas Natural Heritage Commission (ANHC)	53 • Jennifer T. Thomas Student Engagement in Upper-Level Biology Courses: The Role of the Professor
11:00 AM	7 • Tara L. Keyser, Peter M. Brown Climate-Growth Relationships for Yellow-Poplar Across a Structural and Site Quality Gradient in the Southern Appalachian Mountains	17 • Peter A. Van Zandt, Benjamin Hunt, Sarah Martin, Grant Gentry Are Warm Bugs Early Bugs? The Impact of Birmingham's Urban Heat Island on Moth Phenology	27 • Vanessa Y. Rubio, Kirsten A. Work The Effects of Nutrient Cycling by the Exotic Catfish, <i>Pterygoplichthys disjunctivus</i> , on Algal Growth in a Central Florida Spring	37 • Charles Lafon Ice Storms in Central Hardwood Forests: The Disturbance Regime and Vegetation Influences	44 • Brad R. Ruhfel, Heidi Braunreiter, William Ciocca, Claudia P. Bove, C. Thomas Philbrick Resolving the Evolutionary History of the Riverweeds (Podostemaceae)	54 • Gary D. Grossman The Use of Music Videos as Teaching Aids for a Course in Natural History
11:15 AM	8 • Lora Sigmon-Chatham, Alexander Krings, Zeb L. Robinson, Thomas Harris, Gary Blank, William Hoffmann Historic Forest Structure and Composition of the Xeric Hardpan Forest Community of the Picture Creek Diabase	18 • Tom J. Fink, Alina Suedbeck How Lepidopteran Larval Spiracles are Really Made: The Lamellae	28 • Tommy B. Blanchard, Jeffrey Fore Preliminary Assessment of the Ecological Effects of Natural Channel Design Stream Restoration Projects in West Tennessee		45 • C. Theo Witsell, Michael H. MacRoberts, Barbara R. MacRoberts, Brent T. Baker The Vascular Flora of Blackland Prairie and Woodland Remnants in the West Gulf Coastal Plain of	55 • Jennell M. Talley, Jennifer Hurst-Kennedy, Rebekah Ward Using <i>Caenorhabditis elegans</i> to Teach Principles of Mendelian Inheritance in an Undergraduate Genetics

<b>Time</b>	<b>Community &amp; Population Ecology Wadsworth Moderator: R. Lucardi</b>	<b>Entomology / Invertebrate Biology Croft Moderator: W. Dees</b>	<b>Freshwater Ecology &amp; Aquatic Biology Daniel Morgan A/B Moderator: J. Strickland</b>	<b>USFS Disturbance Symposium Azalea A Moderators: K. Greenberg and B. Collins</b>	<b>Floristics &amp; Systematics Azalea B Moderator: E. Gillespie</b>	<b>Scholarship of Teaching &amp; Learning Dogwood Moderator: B. Odum</b>
	Barrens; Insights From Dendrochronology				Arkansas, USA	Course
<b>11:30 AM</b>	<b>9 • Rima D. Lucardi, Lisa E. Wallace, Gary N. Ervin</b> Introduction History and Hybridization Modulate Propagule Pressure in a Successful Exotic Grass Invasion: Cogongrass ( <i>Imperata cylindrica</i> ) in the Southeast	<b>19 • David M. Donnell</b> Caste-Bias in Odorant-Binding Protein Genes of the Polyembryonic Wasp <i>Copidosoma floridanum</i>	<b>29 • Nicole M. Sadecky, Luke K. Sadecky, Zachary J. Loughman</b> Development of a Captive Rearing Protocol for <i>Cambarus</i> Crayfish: A Pilot Study With New River Crayfish	<b>LUNCH 11:30-1:00</b>	<b>46 • R. Austin Prater, Joey Shaw</b> The Vascular Flora of the Lula Lake Land Trust on Lookout Mountain in Walker County, Georgia	<b>56 • C. Brian Odom</b> Two are Better Than One: Realigning an Undergraduate Biology Curriculum to Create a Two Semester General Genetics Sequence
<b>11:45 AM</b>	<b>10 • Luke H. Turner, Wade B. Worthen</b> Community Structure of Dragonfly Assemblages and Effects on Parasitism Rate: A Test of the "Dilution Effect"	<b>20 • Stephanie R. Balsler, Jennifer A. Zettler, Bil Leidersdorf</b> Preference of Insect Frass in Fungus Gardening <i>Cyphomyrmex</i> Ants	<b>30 • Michael J. Lucero, Raquel A. Fagundo, Nicole M. Sadecky, Zachary J. Loughman</b> Determination of Causal Mechanisms in <i>Cambarus</i> Crayfish Assemblage Structure in Central Virginia	<b>LUNCH 11:30-1:00</b>	<b>47 • Dwayne Estes, Aaron Floden, Theo Witsell, Joey Shaw, Brian Keener</b> Untangling the Viny Viornas: Taxonomic Studies in the Genus <i>Clematis</i> (Ranunculaceae)	<b>57 • Pearl R. Fernandes</b> Teaching an Online Lecture and Laboratory Course in Biology: Strategies That Work
<b>12:00 -1:30 PM</b>	<b>LUNCH Noon-1:30 PM</b>	<b>LUNCH Noon-2:00 PM</b>	<b>LUNCH Noon-1:30 PM</b>		<b>LUNCH Noon-1:30 PM</b>	<b>LUNCH Noon-2:00 PM</b>

## Thursday PM, April 3

Time	Community & Population Ecology Wadsworth Moderator: C. Ruehl	Entomology / Invertebrate Biology Croft Moderator: W. Dees	Freshwater Ecology & Aquatic Biology Daniel Morgan A/B Moderator: J. Strickland	USFS Disturbance Symposium Azalea A Moderators: K. Greenberg and B. Collins	Floristics & Systematics Azalea B Moderator: L. J. Musselman	Scholarship of Teaching & Learning Dogwood Moderator: J. T. Thomas
1:00 PM				84 • Richard M. Wooten, Anne C. Witt, Chelcy F. Miniat, Tristram C. Hales, Jennifer L. Aldred Frequency and Magnitude of Selected Historical Landslide Events in the Southern Appalachian Highlands of North Carolina and Virginia: Their Relationships to Rainfall, Geologic and Geomorphic Settings, Ecohydrological Controls, and Their Resulting Effects on Forest Structure		
1:30 PM	58 • Lauren C. McCarthy, David R. Chalcraft How Do Differences in Zooplankton Hatching Phenology and the Presence of Predators Affect Population and Ecosystem Level Properties of Aquatic Food Webs?		74 • Raquel A. Fagundo, Zachary J. Loughman Feeding Ecology of the New River Crayfish in Anthony Creek, West Virginia	85 • David S. Leigh Paleoenvironmental Range of Variation in Floods, Fires, and Biomes in the Upper Little Tennessee River Valley, Blue Ridge Mountains	92 • Mason Brock, Dwayne Estes Flora and Vegetation of Riverscours Communities of Tennessee Caney Fork River	
1:45 PM	59 • Mehul Desai, Angela Burrow, James Russell Ecological Significance of		75 • Kelly Anderson, Dwayne Estes Riverscours Communities on		93 • Charles N. Horn Challenges in Properly Identifying Species of	



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	Sex Ratio Distortion on Parasitoid and Butterfly Populations		the Locust Fork of the Black Warrior River System: Floristics, Vegetation, and Biogeography		<i>Rhododendron</i> (Ericaceae) in South Carolina	
2:00 PM	60 • Michael J. Cherry, Robert J. Warren, L. Mike Conner Trait-Mediated Indirect Interactions Between Coyotes ( <i>Canis latrans</i> ) and White-Tailed Deer ( <i>Odocoileus virginianus</i> )	68 • Blake W. Nelson, Andrew J. Jajack, Andrew E. Rosselot, Jay A. Yoder Capacity of Cave Crickets to Carry Various Amounts of Fungi Depending on the Extent of Cave-Dependence: Observations Before Reports of Bat White-Nose Syndrome in the Cumberland Plateau	76 • Jordan R. Gann, Lori L. McGrew Effects of Glyphosate Exposure on Anxiety-Like Behavior in <i>Danio rerio</i>	86 • Peter A. Wilfahrt, Julie P. Tuttle, Peter S. White Assessing the Disparities and Similarities in Functional Diversity of Tree Communities Following Natural and Anthropogenic Disturbance	94 • Jamie D. Smith, Conley K. McMullen The Relationship Between Riparian Zone Width and Floristic Quality Along Streams in Shenandoah County, Virginia	102 • Jeffrey Thomas Queens Is Going to the Birds: Data Analysis in Courses Using Community Partners
2:15 PM	61 • Meredith Campbell, Lawrence E. Hurd, Pieter A. P. deHart, Joseph M. Taylor Exploring the Trophic Niche of an Apex Predator: What Praying Mantids Really Eat	69 • MaLisa Spring, Katy Lustofin, Dave McShaffrey Bee Diversity and Pollen Collection in Washington County, Ohio	77 • Spencer S. Bell, Zachary J. Loughman Comparative Life History of the Allegheny Crayfish Across West Virginia		95 • Michael T. Lee, Alan S. Weakley Classification of the Distribution Patterns of Plant Taxa Occurring in the Unglaciated Southeastern United States	103 • Patricia A. Koplak, Jeffrey Thomas Raptor CSI: Queens University of Charlotte
2:30 PM	62 • Daniel M. McNair Red Imported Fire Ant and Herbit: A Possible Mutualism Between Two Invasive Species	70 • Angela K. Burrow, Mehul Desai, James E. Russell Reproduction and Optimal Foraging in the Parasitoid Wasp <i>Trichogramma kaykai</i>	78 • Neil Billington, Sirisha Bethal, Janet Gastor Population genetic structure in sauger: management implications	87 • Julie P. Tuttle, Peter S. White Changes in Disturbance and Structural Range of Variation in Great Smoky Mountains National Park, 1930s-2000s	96 • Emily L. Gillespie, Kathleen A. Kron Preliminary Phylogeny of the Southeastern Azaleas ( <i>Rhododendron</i> Subg. <i>Pentanthera</i> )	104 • Jennifer C. Easterwood, Jeffrey Thomas Girl or Boy? Molecular Sex Determination of Raptors in an Upper-Level Genetics Course
2:45	<b>BREAK</b>	<b>BREAK</b>	<b>BREAK</b>	88 • Kendrick Weeks,	<b>BREAK</b>	<b>BREAK</b>

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PM	2:45-3:45 ASB Poster Session 2 (1-136 Even # Posters)	2:45-3:45 ASB Poster Session 2 (1-136 Even # Posters)	2:45-3:45 ASB Poster Session 2 (1-136 Even # Posters)	Cathryn H. Greenberg, Susan C. Loeb, Gordon S. Warbuton Disturbance-Adapted Animals: Habitat Requirements and Historic Distribution Across Central Hardwood Forests	2:45-3:45 ASB Poster Session 2 (1-136 Even # Posters)	2:45-3:45 ASB Poster Session 2 (1-136 Even # Posters)
3:15 PM				89 • Scott E. Schlarbaum, Faith T. Campbell, Stacy L. Clark Changes in Forest Structure by Exotic Pests: Challenges in Policy, Biology, and Forest- Related Infrastructure		
3:45 PM	63 • Clifton B. Ruehl, David R. Chalcraft, Heather Vance-Chalcraft A Test of Ratio-Dependent Predation	71 • Brittany D. Harry, Flor Acevedo, Michelle Peiffer, Shan Jin, Ketia Shumaker, Dawn S. Luthe, Gary Felton Corn Earworm Saliva Induces Herbivore Defense Gene Expression in Corn	79 • Kristen T. Carlisle, James R. Rayburn Developing a Cryopreservation Protocol for Embryos of <i>Xenopus laevis</i> , the South African Clawed Frog	90 • Virginia Dale, Dan Hayes, M. Joseph Hughes Potential Effects of Climate Change on Natural Disturbances in the Southeastern Upland Hardwood Forest Region	97 • Alexander Krings, Bruce K. Kirchoff, Piyush Agarwal A New, Open-Access, Visual Learning Tool to Promote Active Learning: Overview and Experiences With Its Application in Teaching Rare Plant Identification	105 • Jimmy Davis, Darlene Panvini Linking Communication and Biology
4:00 PM	64 • Amber Kincaid, James E. Russell Population Genetic Analysis of <i>Trichogramma kaykai</i> Using Molecular Markers	72 • William Dees, Janie Theriot, Kathryn Leonards, Joel Byrne, Caleb Ardizzone, Adam Richard, Tatiana Estrada, Omar Christian,	80 • W. Walker Stinnette, Jordan M. Ellington, Peter Van den Hurk, Dennis C. Haney Relationships Between Land Cover, Water Chemistry,		98 • Judy Redden, Dwayne Estes Austin Peay Goes Digital: Developing an Online Herbarium for the Interior Plateaus Ecoregion	106 • Valarie A. Burnett Building Scientific Literature Research and Presentation Skills in a College Setting

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		Cecilia Richmond The Effect of Plant Parts From Eight Plant Families on the Yellow Fever Mosquito, <i>Aedes aegypti</i>	Biomarkers, and Fish Diversity in the Piedmont Region of South Carolina, USA			
4:15 PM	65 • Nigel Wolfram, Annette M. Golonka, Bettie Obi Johnson, Austin Blackwell The Sweet Smell of Carolina Jessamine: Evaluating the Floral Scent Profile of <i>Gelsemium sempervirens</i>	73 • Daniel K. Hasegawa, Charles E. Beard, Konstantin G. Kornev, Peter H. Adler Behavior Influences Permeability of the Butterfly Proboscis	81 • Jordan M. Ellington, W. Walker Stinnette, Dennis C. Haney The Effect of Agricultural, Pastured, and Forested Land Covers on Freshwater Stream Fish in the Piedmont of South Carolina	91 • Eric K. Zenner Managing Central Hardwood Forests Within the Historic Range of Variation in Natural Disturbances	99 • Devin M. Rodgers, Dwayne Estes Vascular Flora and Vegetation of the Cumberland Riverscours Ecological System in Daddy's Creek Gorge, Cumberland County, Tennessee	107 • Erika A. Scocco, Ameer Odom, Greta Wood Integrating Google Sites into the Old Paper Report Assignment
4:30 PM	66 • Claudia L. Jolls, Carol Goodwillie The Tragedy of the Uncommon: the Reproductive and Population Ecology of Rare Herbs of Forested Eastern North America		82 • Gary Pandolfi, Michael M. Gangloff Do Changes in Stream Physiochemistry and Landsuse Explain Appalachian Elktoe ( <i>Alasmidonta raveliana</i> ) Declines in Western North Carolina?		100 • Lytton John Musselman, Rebecca Bray, Peter W. Schafran, W. Carl Taylor Misconceptions About Quillworts ( <i>Isoetes</i> , Isoetaceae, Lycopphyta)	
4:45 PM	67 • Carol Petricevic Differences Among Populations of an Invasive Plant, <i>Alliaria petiolata</i> , In Germination and Growth in a Common Garden		83 • Michael Perkins, Michael M. Gangloff, Nathan Hjohnson Phylogeny of the Critically Endangered North American Spinyussels		101 • Alan S. Weakley, Michael T. Lee Floraquest- A New Mobile App for the Southeastern United States Flora	

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5:15- 6:15 PM	<b>ASB BUSINESS MEETING – AZALEA B</b>					
6:30- 11:00 PM	<b>THURSDAY NIGHT SOCIAL – Dinner Buffett, Live Music, and Libations!</b> Back Lawn of Marriott Hotel (Ticket Required)					

## Friday AM, April 4

Time	Physiological & Population Ecology Wadsworth Moderator: P. deHart	Conservation Biology Croft Moderator: M. Caspary	Field Station Symposium Daniel Morgan A&B Moderator: C. Havran and K. Stowe	PULSE Azalea A Moderator: J. Awong-Taylor	Floristics & Systematics Azalea B Moderator: K. Burgess	Genetics / Cell / Molecular Biology Dogwood Moderator: B. Thornton	Microbiology Wisteria Moderator: H. Spratt
8:00 AM			128 • J. Christopher Havran, Kirk A. Stowe Educational Opportunities at Biological Field Stations of the Southeastern United States				
8:15 AM			129 • Stephen C. Richter Educational and Research Opportunities in Appalachia and Across Kentucky Via a Network of Field Stations				
8:30 AM	108 • Z. Carter Berry The Importance of Fog as a Water Source in Southern Appalachian Cloud Forests	118 • Tori M. Brenner, Josh Smith, John Quinn Using Optimal Foraging Theory to Assess the Conservation Value of Managed Ecosystems	130 • Karen L. Kandi Highlands Biological Station: Nine Decades of Research and Education in a Biodiversity Hotspot	137 • PULSE- Partnership for Undergraduate Life Sciences Education Workshop 8:30-10:00	139 • Clayton M. Costa, Roland P. Roberts Molecular Phylogeny of the Goldenasters, Subtribe Chrysopsidinae (Asteraceae, Astereae), Based on Nuclear Ribosomal and Chloroplast Sequence Data	149 • Brianna L. Taylor, Naomi Jackson, Benjamin J. Thornton The Effects of Ascorbic Acid on <i>Drosophila melanogaster</i> Susceptibility to Permethrin and Suppression of Cytochrome P450 Activity	159 • Brian S. Burnes Sources of <i>Escherichia coli</i> In the West Fork of the Salmon River, Idaho
8:40 AM							
8:45 AM	109 • Kaitlyn Schaaf, Rita Malia Fincher, Alex Gilman Costs of Chemical	119 • Thomas A. Maigret, John J. Cox, Dylan R. Schneider, Christopher D. Barton,			140 • Timothy A. Hammer, Robert W. Davis, Kevin R. Thiele A Molecular Framework	150 • Jemirian Pitts A Mathematical Model for Glucose-Oxygen Kinetics and Cell-	160 • Brian S. Burnes Sources of <i>Escherichia coli</i> In Lake Martin, Alabama

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	Defense and Ant Symbiosis in Two Rain Forest Understory Shrubs in the Genus <i>Piper</i>	<b>Steven J. Price, Jeffrey L. Larkin</b> Effects of Timber Harvest Within Streamside Management Zones on Salamander Populations in Ephemeral Streams of Southeastern Kentucky			Phylogeny for <i>Ptilotus</i> R.Br. (Amaranthaceae)	Mediated Response in Prostate Cancer Cells of Type II Diabetes	
9:00 AM	<b>110 • A. Joseph Pollard</b> Facultative Hyperaccumulation of Heavy Metals and Metalloids in Plants	<b>120 • Meaghan L. Fabrycki, David Vandermast</b> Patterns of Tree Mortality and Replacement on Elon University Forest	<b>131 • Theron M. Terhune</b> Plugging-in to Research in the Red Hills: Research and Education at Tall Timbers Research Station		<b>141 • Kunsiri Chaw Grubbs, Hugo Volkaert</b> A Possible Hybrid Origin for Edible <i>Lansium domesticum</i>	<b>151 • Linda A. Major, Roger A. Sauterer</b> Histone Binding to Mitochondria in Plants	<b>161 • Andrew J. Jajack, Andrew E. Rosselot, Blake W. Nelson, Jay A. Yoder</b> Pathogenic Consequences to Honey Bee Colonies From Reducing the Abundance of Beneficial Fungi by Fungicide Spraying
9:05 AM							
9:15 AM	<b>111 • Rachel L. McAlister, Duane A. Kolterman, A. Joseph Pollard</b> Intraspecific Variation in Nickel Hyperaccumulation in Populations of <i>Psychotria grandis</i> From Serpentine	<b>121 • Rob Hopkins</b> Biodiversity Conservation in Wales, U.K.: DNA Barcoding Applications and Implications	Continuation of Talk 131	Continuation of PULSE workshop	<b>142 • Bruce A. Sorrie, Robert K. Peet</b> Floristics of East Gulf Coastal Plain Pitcher Plant Bogs	<b>152 • Roger A. Sauterer, Linda A. Major</b> Plant Cell Nuclear, Mitochondrial and Chloroplast Isolation: Procedures and Pitfalls	<b>162 • Haiwen Zhang</b> Selection for Triclosan Resistance Causes Antibiotic Resistance in <i>Pseudomonas aeruginosa</i> but Not <i>Escherichia coli</i>

Time	Physiological & Population Ecology Wadsworth Moderator: P. deHart	Conservation Biology Croft Moderator: M. Caspary	Field Station Symposium Daniel Morgan A&B Moderator: C. Havran and K. Stowe	PULSE Azalea A Moderator: J. Awong-Taylor	Floristics & Systematics Azalea B Moderator: K. Burgess	Genetics / Cell / Molecular Biology Dogwood Moderator: B. Thornton	Microbiology Wisteria  Moderator: H. Spratt
	and Non-Serpentine Soils of Puerto Rico						
9:30 AM	112 • Andrew E. Rosselot, Blake Nelson, Andrew J. Jajack, Jay A. Yoder Common Treatments Applied to Honey Bee Colonies and Their Implications for Rise of Lethal Chalkbrood Disease	122 • Geoff Call Plant Conservation Under the Endangered Species Act: Proposals to List Three Plants as Endangered and Designate Critical Habitat			143 • David L. Cutherell Restoring the Northern Longleaf Pine Ecosystem: South Quay Sandhills Natural Area Preserve	153 • Daniel W. Konzman, Linda Niedziela The Effect of Pentylene-tetrazol-Induced Seizure and the Anti-Epileptic Drug Phenytoin on Learning in <i>Danio rerio</i>	163 • Mai H. Tran, Joong-Wook Park Tarballs on Freshwater Shoreline as Reservoirs for Pathogens
9:45 AM							
10:00 AM	<b>BREAK</b> 9:45-10:45 ASB Poster Session 3 (Posters 137-204)	<b>BREAK</b> 9:45-10:45 ASB Poster Session 3 (Posters 137-204)	132 • Robin C. Buchannon The University of Mississippi Field Station and Center for Water and Wetlands Resources: Educational Research Opportunities	<b>PULSE BREAK</b> 10:00-10:30	<b>BREAK</b> 9:45-10:30 ASB Poster Session 3 (Posters 137-204)	<b>BREAK</b> 9:45-10:45 ASB Poster Session 3 (Posters 137-204)	<b>BREAK</b> 9:45-10:45 ASB Poster Session 3 (Posters 137-204)
10:25 AM			133 • Hilary M. Swain, Fred E. Lohrer, Dustin D. Angell Archbold Biological				
10:30				138 • (PULSE) Partnership for	144 • Richard A. Matthews, Lytton J.		

Time	Physiological & Population Ecology Wadsworth Moderator: P. deHart	Conservation Biology Croft Moderator: M. Caspary	Field Station Symposium Daniel Morgan A&B Moderator: C. Havran and K. Stowe	PULSE Azalea A Moderator: J. Awong-Taylor	Floristics & Systematics Azalea B Moderator: K. Burgess	Genetics / Cell / Molecular Biology Dogwood Moderator: B. Thornton	Microbiology Wisteria Moderator: H. Spratt
AM			Station: Sustaining the Confluence of Research, Conservation, and Education in Florida	Undergraduate Life Sciences Education Workshop 10:30-Noon	Musselman, W.C. Taylor, Peter W. Schafran <i>Isoetes snowii</i> , a New Diploid Quillwort From the Southeastern United States		
10:45 AM	113 • Hayden Summers, Kel Arlinghaus, Timothy Griffith Will Geographic Range Shifts Impact Rates of Photosynthesis? a Study of Extended Day Lengths on Leaf Photosynthesis of a Commercial Corn Variety	123 • Jesse M. Wood, John E. Quinn IV A Multi-Scale Analysis of the Effects of Local- and Landscape-Level Habitat Variables on Avian Cavity-Nesting Species Occupancy	134 • Matthew E. Kimball, Dennis M. Allen Research and Education at the Univ. of South Carolina's Baruch Marine Field Laboratory: Opportunities for Undergraduate Field-Based Experiences		145 • John M. Herr, Jr., James T. Morris The Anatomy of the Rhizome of <i>Spartina alterniflora</i> : Fossil and Extant Specimens	154 • Colleen K. Mikelson, Manuel Bernal Mejia, Margaret Kovach A Feasibility Study of Utilizing a Biocompatible Nanofiber Matrix for Bone Regeneration	164 • Amanda N. Hyre, Philip Rock <i>Wolbachia</i> Infection in a Local Strain of the Common Fruitfly <i>Drosophila melanogaster</i>
10:50 AM							
11:00 AM	114 • Alyssa L. Teat, Howard S. Neufeld Physiological Responses of <i>Miscanthus giganteus</i> Under a Short Term Drought Scenario	124 • Crystal A. Chambers A Survey of Potential Threats and Population Dynamics of the Evergreen Quillwort ( <i>Isoetes hyemalis</i> )	Continuation of Talk 134	Continuation of PULSE Workshop	146 • Ashley B. Morris It Takes a Village: Building a Network of Primarily Undergraduate Institutions to Address Large-Scale Phylogeographic Problems	155 • Molly R. Shankles, Robert Grammer Integrating Chemotaxis and Thermo taxis in <i>Caenorhabditis elegans</i>	165 • Annette M. Golonka, Bettie Obi Johnson, Jonathan Freeman, Daniel W. Hinson Impact of Nectarivorous Yeasts on <i>Silene caroliniana</i> 's Scent
11:15 AM	115 • Benjamin R. Montgomery, Brittany	125 • Kendell R. Bennett, Laura E.	135 • Tom B. Blanchard, Jennifer		147 • Kevin S. Burgess, John A.	156 • Cristina M. Caldwell, Michele	166 • Henry G. Spratt, Jr., Martin M. Brown,



Time	Physiological & Population Ecology Wadsworth Moderator: P. deHart	Conservation Biology Croft Moderator: M. Caspary	Field Station Symposium Daniel Morgan A&B Moderator: C. Havran and K. Stowe	PULSE Azalea A Moderator: J. Awong-Taylor	Floristics & Systematics Azalea B Moderator: K. Burgess	Genetics / Cell / Molecular Biology Dogwood Moderator: B. Thornton	Microbiology Wisteria  Moderator: H. Spratt
	<b>P. Twitty, Donathan S. Dendy</b> Petals Promote Delayed Self Pollination in <i>Linum rigidum</i>	<b>DeWald</b> Genetic Variation in Mountain and Coastal Fox Squirrel Populations	<b>Greenwood, Dawn Wilkins, Lisa Krueger</b> The Changing Role of Reelfoot Lake Environmental Field Station in Providing Educational and Research Opportunities Along the Mississippi River Floodplain of Northwest Tennessee		<b>Barone, Robert B. Futrell</b> DNA Barcoding a Complex Prairie Flora Using the rbcL-matK Gene Regions	<b>Elmore, Julie Ballenger, Kevin S. Burgess</b> Examining the Genetic Structure in a Hybrid Zone of Rare Georgia Pitcher Plants ( <i>Sarracenia</i> Spp.)	<b>Erin Liner, William C. Hayes</b> Development of Sporulating Bacterial Cultures for Incorporation Into Pervious Concrete Before Curing
<b>11:30 AM</b>	<b>116 • Pieter A. P. deHart, Dana J. Morin</b> Eating Off the Land: Exploring Regional Variations in Coyote Diets	<b>126 • Emma Sheffield, Rita Malia Fincher, R. Scott Duncan</b> Initiation of Prescribed Burning May Initially Delay Mountain Longleaf Pine Regeneration			<b>148 • Peter W. Schafran, W. Carl Taylor, Rebecca Bray, Jay F. Bolin, Lytton J. Musselman</b> Systematics of the Genus <i>Isoetes</i> (Isoetaceae, Lycophyta) in the Southeastern United States	<b>157 • Matthew A. Heard, Robert Grammer</b> Innate Versus Learned Response to <i>Bacillus thuringiensis</i> and Isoamyl Alcohol as Modeled by Olfactory Chemotaxis Response in <i>Caenorhabditis elegans</i>	<b>167 • Crystal N. LeBlanc, Jennifer T. Thomas</b> The Evaluation of Type I Interferon Levels in HPV-Positive Cervical Cancer Cell Lines
<b>11:45 AM</b>	<b>117 • Joseph C. White, William K. Smith</b> Effects of Surface Flow Regime on Water Source Utilization in <i>Liquidambar styraciflua</i>	<b>127 • Ashley D. Montgomery, Laura E. DeWald</b> Predicting Suitable Habitat of Federally Threatened Species <i>Isotria Medeoloides</i> (Pursh) in the Southern Appalachian Region	<b>136 • Field Station Symposium Discussion (11:40 AM)</b>			<b>158 • Alex Panuccio, Renee J. Chosed</b> Modeling the Mixed-Lineage Leukemia ( <i>MLL1</i> ) Multi-Protein Complex in Budding Yeast <i>Saccharomyces cerevisiae</i>	<b>168 • Grace L. Chafin, James W. Brown, Melanie J. Lee-Brown</b> Mutagenesis of the FMN Riboswitch of Photorhabdus Luminescens and an Analysis of Mutagenic Effects on Its Pathogenicity on

<b>Time</b>	<b>Physiological &amp; Population Ecology Wadsworth Moderator: P. deHart</b>	<b>Conservation Biology Croft Moderator: M. Caspary</b>	<b>Field Station Symposium Daniel Morgan A&amp;B Moderator: C. Havran and K. Stowe</b>	<b>PULSE Azalea A Moderator: J. Awong-Taylor</b>	<b>Floristics &amp; Systematics Azalea B Moderator: K. Burgess</b>	<b>Genetics / Cell / Molecular Biology Dogwood Moderator: B. Thornton</b>	<b>Microbiology Wisteria  Moderator: H. Spratt</b>
		Using Maxent Model					Caenorhabditis Elegans
<b>Noon-12:30 PM</b>	<b>ASB Business Meeting- AZALEA B</b>						
	<b>LUNCH 12:30-1:30</b>			<b>LUNCH 12:30-2:00</b>		<b>LUNCH 12:30-1:30</b>	

## Friday PM, April 4

Time	Ecosystem / Landscape Ecology Wadsworth Moderator: J. Thomas	Conservation Biology Croft Moderator: J. Storm	Herpetology & Ichthyology Daniel Morgan A&B Moderator: S. Bartol	Floristics & Systematics Azalea B Moderator: E. Gillespie	Genetics / Cell / Molecular Biology Dogwood Moderator: J. Talley
1:30 PM	169 • Jake H. Billmyer, Frank S. Gilliam Effects of Nitrogen Deposition on <i>Rubus</i> Spp. (Raspberry) Within a Central Appalachian Hardwood Forest	181 • A. Renee Fortner, Claudia L. Jolls, Carol Goodwillie Limited Seed Set and Germination Cues of the Federally Endangered Perennial <i>Thalictrum cooleyi</i>	192 • Justin D. Latoni, Erin L. Quinlan Estimating Urban Amphibian Diversity Using Modified Funnel-Traps		210 • Jennifer Myer, Lori L. McGrew The Effect of Chronic Exposure to Different Concentrations of Lexapro on Long-Term Memory in Adult Zebrafish ( <i>Danio rerio</i> )
1:45 PM	170 • Christopher J. Payne, Robert K. Peet Long-Term Forest Growth in a North Carolina Piedmont Forest: Examination of Recent Growth Trends Using Individual Tree Growth and Mortality Data	182 • Rebecca K. McKee, Kristen K. Cecala, Michael E. Dorcas The Effect of Bycatch Reduction Device Presence and Orientation on Diamondback Terrapin Capture and Behavior	193 • Elliott P. Gibbs, Adrian K. O. Hayes, Melissa A. Pilgrim Development of an Automated Computer Recognizer That Isolates <i>Hyla cinerea</i> Breeding Calls From Sound Files		211 • Allison McCoy, Lori L. McGrew The Effects of Chronic Exposure of Celexa (Citalopram Hydrobromide) on Behavior and Memory of <i>Danio rerio</i>
2:00 PM	171 • Elizabeth Martin, Beverly Collins Paleoecological History of a High Elevation Valley in the Blue Ridge Mountains of North Carolina	183 • Joanna E. Hawley Howard, Rob F. Baldwin, Amber L. Pitt, Elizabeth D. Baldwin The Utility of State Parks as a Conservation Tool for Isolated and Ephemeral Wetlands: A Case Study From the Southern Blue Ridge	194 • Carlos D. Camp, Jessica A. Wooten, Zachary I. Felix A Contradiction in Genes: Phylogeography of the Black Mountain Salamander ( <i>Desmognathus welleri</i> Barbour 1950)	202 • Richard Carter Digitization of the Valdosta State University Herbarium	212 • Fakhry M. Daowd, Robert Grammer Investigating the Attraction of <i>Caenorhabditis elegans</i> to <i>Bacillus thuringiensis</i> Through Volatile Organic Compounds
2:15 PM	172 • Emily C. Adams, Frank P. Day Blue Carbon in Coastal Freshwater Marshes on the Barrier Islands of Virginia: Aboveground Carbon Pools	184 • Ryan C. Ernstes, John E. Quinn Shift in Songbird Vocalizations Suggest Possible Threats of Acoustic Masking for Human Health	195 • Erin L. Quinlan, Tatiana A. Giraldo Bioacoustic Monitoring of Amphibian Diversity and Behavior in an Urban Environment	203 • Michael O. Holt, Richard Carter The Valdosta State University Virtual Herbarium	213 • KelviNeisha L. Williams, Timothy Odom, Teodora Best, Nicole Zembower, Ketia Shumaker, John Carlson Comparative Analysis of Ozone Effects and Genomic Expression of

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					Two Hardwood Trees
2:30 PM	173 • Howard S. Neufeld, Alyssa Teat Ozone Trends in Great Smoky Mountains National Park Over the Past Two Decades: Evidence That the Clean Air Act Works	185 • John E. Quinn Protecting Species in Unexpected Places: An Opportunity for Conservation in Managed Ecosystems	196 • Timothy E. Baldwin, Yong Wang, Callie J. Schweitzer The Influence of Forest Management Practices on Amphibian Accessibility, Larval Performance, and Adult Choice Within the Cumberland Plateau in Grundy County, Tennessee	204 • Phillip D. Lowe, Richard Carter Two Birds With One Stone: Using Excel and Mail Merge to Create Herbarium Specimen Labels in Word and Populate a Specify Database	214 • Sasha Gogoli, Renee J. Chosed Modeling the MLL (Mixed-Lineage Leukemia) Complex in <i>Saccharomyces Cerevisiae</i>
2:45 PM	174 • Matthew S. Herron, Joydeep Bhattacharjee Evaluating Multiple Restoration Strategies in a 30 Year Old Bottomland Hardwood Forest Restoration Site	186 • Samantha L. Poarch, Joseph M. Morrissey, Theodore V. Khleborod, Jonathan J. Storm Small Mammal Community Structure Within Urban Greenways	197 • Thomas P. Wilson, Paul-Erik Bakland, Nyssa Hunt, Simone Madsen, Preston Prigmore, Robert Altonen, Sarah Bohr, Brittany Bird, Tabitha M. Wilson In the Shadows of a Brownfield: Nest Site Selection by Marbled Salamanders ( <i>Ambystoma opacum</i> ) in an Isolated Wetland in Southeastern Tennessee	205 • Anna K. Monfils, Gil Nelson Recruiting and Retaining Small Natural History Collections in the National Digitization Initiative	215 • Jacob Hanna, Renee J. Chosed Ruthenium Complex KP1019 and Its Effects on <i>Saccharomyces cerevisiae</i>
3:00 PM	<b>BREAK</b>				
3:30 PM	175 • Eric F. Duncan, Paula C. Jackson Comparison of Diurnal Water Use in the Native Riparian Tree Species, American Sycamore, <i>Platanus occidentalis</i> (L.), and Black Willow, <i>Salix nigra</i> (Marshall), and the Potential Implications for Riparian Restoration Efforts and Ecology	187 • Melissa D. Caspary, James Rickard Population Dynamics of the Rare Relict Trillium ( <i>Trillium reliquum</i> )	198 • Adrian K. O. Hayes, Elliott P. Gibbs, Melissa A. Pilgrim Interspecific Variation in Nocturnal Calling Activity of Anurans Influenced Call Survey Estimates of Species Occurrence in the Piedmont Region of South Carolina	206 • Peter Schafran, Joe Keenan, Marcus Jones, Jay Bolin, Lytton Musselman Germination and Development of Hazel Dodder <i>Cuscuta coryli</i> (Convolvulaceae)	216 • Rebekah L. Robinson, Claudia Y. Alvarado, Mario Johnson, Scott C. Mateer, Ron E. Garner, Traci L. Ness Construction of a Single Nucleotide Polymorphism in the Human TLR4 Gene
3:45	176 • Scott A. Abl, Laura E.	188 • Avery A. Olearczyk	199 • Alyssa A. Hoekstra, Vincent	207 • Krystal T. Payne, Emily L.	217 • D'angleau Newsome, Nick

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PM	<b>DeWald</b> Multi-Severity Fire Effects in Xeric Oak-Pine Communities Following Small Fires in the Great Smoky Mountains National Park	Fire's Impact on Den Creation for <i>Petaurus australis</i> In <i>Eucalyptus grandis</i> Trees	<b>A. Cobb</b> Thermal Ecology of the Timber Rattlesnake ( <i>Crotalus horridus</i> ) in Middle Tennessee	<b>Gillespie</b> Using Herbarium Informatics to Revise County Based Distributions of the Ericaceae (Heather) Family Throughout West Virginia	<b>Ragsdale</b> Investigating the Role of <i>Hif-1</i> in Resisting Infection by <i>Staphylococcus aureus</i> in <i>Caenorhabditis elegans</i>
4:00 PM	<b>177 • Nathan M. Sedghi, Frank P. Day</b> Blue Carbon in Coastal Freshwater Marshes on the Barrier Islands of Virginia: Belowground Carbon Pools	<b>189 • Shannon E. Pittman, Ranjan Muthukrishnan, Natalie M. West, Adam S. Davis, Nicholas R. Jordan, James D. Forester</b> Mitigating the Invasive Spread of an Exotic Biofuel Crop, <i>Miscanthus × giganteus</i>	<b>200 • Soraya M. Bartol, Ian K. Bartol, Ashley L. Lavender</b> Assessment of Sea Turtle Hearing: Pros and Cons of Electrophysiological and Behavioral Techniques	<b>208 • Herrick H. K. Brown, Kate F. Boyd, Henry M. Fulmer</b> A Bicentennial Observation of Henry William Ravenel 1814-2014	<b>218 • Taylor Brown, Nick Ragsdale</b> Measurement of Adenine Nucleotides in <i>Caenorhabditis elegans</i> With and Without <i>Staphylococcus aureus</i> Infection
4:15 PM	<b>178 • Elizabeth D. Evans, Safaa H. Al-Hamdani, Benjamin Blair</b> Physiological Responses of Roselle ( <i>Hibiscus sabdariffa</i> ) to Drought Stress and Determination of Antioxidant and Nutrient Content	<b>190 • Ryan Walsh, Thomas Hancock, Patrick Amico</b> The Effects of Beach Nourishment on Surfzone Fishes and Macroinvertebrates of Bald Head Island, NC (USA)	<b>201 • Matthew K. Gaylord, Glenn R. Parsons</b> Functional Morphology of the Hammerhead Shark Cephalofoil: An Assessment of the Hydrodynamic Lift Hypothesis Using Computational Fluid Dynamics	<b>209 • Herrick H. K. Brown</b> Henry William Ravenel: Exchanges, Expeditions, Extirpation and Extinction	<b>219 • Justin Hughes, Nick Ragsdale</b> Potentially Protective Effect of Caffeine in <i>Caenorhabditis elegans</i> Treated With 6-Hydroxydopamine
4:30 PM	<b>179 • Austen C. Stoelting, Safaa H. Al-Hamdani, Mustafa Morsy</b> Selected Physiological Responses of Tomato Plant to Drought and High Temperature as Influenced by Symbiotic Interaction With <i>Curvularia</i> Virus and <i>Curvularia protuberata</i> Fungus	<b>191 • Matthew J. Heard, Katherine F. Smith, Kelsey J. Ripp, Melanie Berger, Jane Chen, Justin Dittmeier, Maggie Goter, Stephen T. McGarvey, Elizabeth Ryan</b> Threats From Disease Increase as Species Move Closer to Extinction			<b>220 • Simone M. Dixon, Victoria L. Turgeon</b> Relative Gene Expression of Protease-Activated Receptor-1 (PAR-1) Mrna in Rat Schwann Cells Following Receptor Activation
4:45 PM	<b>180 • Thomas E. Hancock, William K. Smith</b>				<b>221 • Maria Martino, Nick Ragsdale</b>

Time	<b>Ecosystem / Landscape Ecology</b> <b>Wadsworth</b> <b>Moderator: J. Thomas</b>	<b>Conservation Biology</b> <b>Croft</b> <b>Moderator: J. Storm</b>	<b>Herpetology &amp; Ichthyology</b> <b>Daniel Morgan A&amp;B</b> <b>Moderator: S. Bartol</b>	<b>Floristics &amp; Systematics</b> <b>Azalea B</b> <b>Moderator: E. Gillespie</b>	<b>Genetics / Cell / Molecular Biology</b> <b>Dogwood</b> <b>Moderator: J. Talley</b>
	Barrier Island Dune Vegetation in the Southeastern United States: Future Survival at the Land-Sea Interface				Role of Beta Oxidation in the Immunological Response to <i>Staphylococcus aureus</i> in <i>Caenorhabditis elegans</i>
7:00-9:30 PM	<b>ASB AWARDS BANQUET</b> <b>Heritage Ballroom (Ticket Required)</b>				

## Posters • Heritage Ballroom

#	Poster Title	Authors
P1	Non-Specialized Herbivory in <i>Megacopta cribraria</i> Adults and Its Possible Implications	<b>Riley Z. Tunnell<sup>1</sup>, David A. Johnson<sup>2</sup></b> <sup>1</sup> Judson College, Marion, AL; <sup>2</sup> Samford University, Birmingham, AL
P2	Resource Partitioning Between Phenotypes of <i>Peromyscus</i> in Ohio	<b>Stephen J. Zumdick, Richard S. Phillips, Alec VanDyke</b> Wittenberg University Dept of Biology
P3	Preliminary Investigation of Camphor Seed Dispersal: The Role of American Robins	<b>E. Natasha Vanderhoff, Jennifer Brehm</b> Dept of Biology & Marine Science, Jacksonville University, Jacksonville FL
P4	Bat Community and Habitat Response to Prescribed Fire and Canopy Reduction in Tennessee Hardwood Forests	<b>Maxwell R. Cox, Emma V. Willcox</b> Dept of Forestry, Wildlife, and Fisheries, University of Tennessee, Knoxville, TN
P5	Effects of Forest Succession on Land Snails of South Carolina	<b>Elizabeth C. Ray, Matthew J. Heard</b> Dept of Biology, Winthrop University, Rock Hill, SC
P6	Changes in Community Structure of Two Exotic Invasive Bivalves in Lake Erie	<b>Sarah Rawlins, Ann M. Stoeckmann</b> Dept of Biology, Francis Marion University, Florence, SC
P7	Evaluation of Individual Identification Methods for Spotted Salamanders ( <i>Ambystoma maculatum</i> )	<b>Benjamin E. Hardie, F. Whitner Chase, Maximilian M. Kern, Leigh Anne Harden, Shannon E. Pittman, Michael E. Dorcas</b> Dept of Biology, Davidson College, Davidson, NC
P8	Natural History of Eastern Box Turtles ( <i>Terrapene carolina carolina</i> ) in North Carolina: A Study Based on Citizen Science	<b>Grayam R. Sailor-Tynes, Maximilian M. Kern, Michael E. Dorcas</b> Dept of Biology, Davidson College, Davidson, NC

#	Poster Title	Authors
P9	Diet of Rafinesque's Big-Eared Bat ( <i>Corynorhinus rafinesquii</i> ) in West-Central Louisiana	<b>Beau B. Gregory<sup>1</sup>, John O. Whitaker, Jr.<sup>2</sup>, Gregory D. Hartman<sup>3</sup></b> <sup>1</sup> Louisiana Natural Heritage Program, Louisiana Dept of Wildlife and Fisheries, Lake Charles, LA; <sup>2</sup> Dept of Biology, Indiana State University, Terre Haute, IN; <sup>3</sup> Dept of Biology, Gordon State College, Barnesville, GA
P10	Bioacoustic Monitoring of American Crow ( <i>Corvus brachyrhynchos</i> ) Activity Patterns on the Campus of Francis Marion University	<b>Morgan Soulantikas, Jeff Steinmetz, Paul Zwiers, Travis Knowles</b> Biology Dept, Francis Marion University, Florence, SC
P11	Abundance of Carnivorous Mammals in Urban Greenways and Rural Forests	<b>Joseph M. Morrissey, Samantha L. Poarch, Jonathan J. Storm</b> Division of Natural Sciences and Engineering; <sup>2</sup> University of South Carolina Upstate; <sup>3</sup> Spartanburg, SC
P12	Storage Effects on Pine Rockland Grass Seed Viability and Germination	<b>Lauren K. Childress, Lisa M. Krueger</b> Biological Sciences, University of Tennessee at Martin, Martin, TN
P13	Invasive Epigeic Earthworms Implicated in the Decline of the Endangered <i>Sisyrinchium dichotomum</i> (Iridaceae)	<b>Abigail E. Gwinn, Douglas A. Rayner</b> Dept of Biology, Wofford College, Spartanburg, SC
P14	Revegetation of an Urban Riparian Zone: Species Richness and Population Dynamics	<b>Maitlyn E. Mullen, Jessica L. Fleming, Lawrence J. Davenport, Kristin A. Bakkegard, Elizabeth G. Dobbins</b> Dept of Biological and Environmental Sciences, Samford University, Birmingham, AL
P15	The Potential Pollinators of Schweinitz Sunflower ( <i>Helianthus schweinitzii</i> ), Asteraceae	<b>Zachary Masters<sup>1</sup>, Kunsiri Chaw Grubbs<sup>2</sup></b> <sup>1</sup> Biology Dept, Winthrop University Rock Hill, SC; <sup>2</sup> Biology Dept, Winthrop University Rock Hill, SC
P16	The First Tests of Blight-Resistance in Backcross Hybrid American Chestnuts ( <i>Castanea dentata</i> ) in Georgia: An Assessment of Leaf, Stem, and Bud Traits	<b>Samuel Watkins, Theron Kantelis, N. Royce Dingley, Patrick Felch, Martin L. Cipollini</b> Dept of Biology, Berry College, Mount Berry, GA.



## Posters • Heritage Ballroom

#	Poster Title	Authors
P17	Bat Activity Increases With Increased Barometric Pressure and Temperature During Autumn in Georgia	<b>Michael J. Bender, Gregory D. Hartman</b> Dept of Biology, Gordon State College, Barnesville, GA
P18	A Record of Ecological/Anthropological Change From Bat Guano Deposits in Fern Cave, Jackson County-Alabama	<b>Kelsey B. Ortiz<sup>1</sup>, Joshua W. Campbell<sup>1</sup>, Matthew N. Waters<sup>2</sup>, Frederick Rich<sup>3</sup></b> <sup>1</sup> High Point University; <sup>2</sup> Valdosta State University; <sup>3</sup> Georgia Southern University
P19	Landscape Heterogeneity of Airborne Hg (Mixed Dissolved, Particulate and Vaporous) and a Sampling of Total Hg Concentration in Macro-Invertebrates Within Rockingham Co., VA	<b>Brian Schwenk, Dean Cocking</b> Dept of Biology, James Madison University, Harrisonburg, VA
P20	Short Term Effects From a Late Season Freeze on White Oak ( <i>Quercus alba</i> L.) Acorn Production in the Southeastern Coastal Plain	<b>Walt Thompson<sup>1</sup>, Jennie Haskell<sup>1</sup>, Doug Aubrey<sup>2</sup></b> <sup>1</sup> USDA Forest Service-Savannah River, New Ellenton, SC; <sup>2</sup> Georgia Southern University, Statesboro, GA
P21	Botanical Inventory, Synthesis, and Habitat Modeling of Winyah Bay and the Lower Waccamaw Watershed, Georgetown County, SC	<b>Marvin E. Brown</b> School of the Earth, Ocean, and Environment. University of South Carolina, Columbia SC
P22	Contributions of Macroscopic Charcoal to the Carbon Stock in a Southeastern Longleaf Pine Ecosystem	<b>Amanda M. Keasberry<sup>1</sup>, Arvind Bhuta<sup>2</sup>, Justin L. Hart<sup>1</sup></b> <sup>1</sup> Dept of Geography, The University of Alabama, Tuscaloosa, AL; <sup>2</sup> Geography Dept, Virginia Polytechnic Institute and State University, Blacksburg, VA
P23	Influence of Gap-Phase Disturbance on Development and Succession in a Southern Appalachian <i>Quercus-Pinus</i> Forest	<b>Thomas A. Weber<sup>1</sup>, Justin L. Hart<sup>1</sup>, Callie J. Schweitzer<sup>2</sup>, Daniel C. Dey<sup>2</sup></b> <sup>1</sup> University of Alabama; <sup>2</sup> USDA Forest Service
P24	Understanding the Role of Climate Factors in the Establishment of Introduced Fish Populations	<b>Kody Fox, Rob Hopkins</b> Dept of Biology, University of Rio Grande, Rio Grande, OH

#	Poster Title	Authors
P25	Effects of Regional Cloud Patterns on Microclimate and Shoot-Level Photosynthetic Gas Exchange in <i>Picea engelmannii</i> and <i>Abies lasiocarpa</i> At Treeline, Medicine Bow Mountains, Wyoming, USA	<b>David K. Cook, Jasmine N. Jordan, Alyssa A. Heisler, Charlene N. Miller, Junior Neal, Nicole M. Hughes</b> Dept of Biology, High Point University, High Point, NC
P26	How Lepidopteran Larval Spiracles are Really Made: The Lamellae	<b>Alina Suedbeck, Tom J. Fink</b> Biology Dept, East Carolina University, Greenville, NC
P27	Seasonal Surveillance of Adult Mosquitoes in a Renovated Residential Park	<b>William H. Dees<sup>1</sup>, Caleb M. Ardizzone<sup>1</sup>, Jill Hightower<sup>2</sup>, Taylor P. Wood<sup>1</sup>, Alan M. J. Shudes<sup>1</sup>, Terry L. Sylvester<sup>1</sup></b> <sup>1</sup> Dept of Biology and Health Sciences, McNeese State University, Lake Charles, LA; <sup>2</sup> Calcasieu Parish Mosquito and Rodent Control Dept, Lake Charles, LA
P28	Pollinating and Beneficial Insects Within Four Treatments of Switchgrass and Pine	<b>Taylor E. Patzwahl<sup>1</sup>, Joshua W. Campbell<sup>1</sup>, James Martin<sup>2</sup></b> <sup>1</sup> High Point University; <sup>2</sup> Mississippi State University
P29	Genetic Variation Corroborates Subspecific Delimitation in the Namib Fog-Basking Beetle, <i>Onymacris unguicularis</i> (Tenebrionidae, Coleoptera)	<b>Rachel Pollard<sup>1</sup>, Trip Lamb<sup>1</sup>, Jason E. Bond<sup>2</sup></b> <sup>1</sup> Dept of Biology, East Carolina University, Greenville, NC; <sup>2</sup> Dept of Biological Sciences, Auburn University, AL
P30	Patterns of Development in Florida Opisthobranchs (Mollusca: Opisthobranchia: Gastropoda)	<b>Deirdre Gonsalves-Jackson, Andrea L. Rodriguez</b> Virginia Wesleyan College
P31	The Effect of Extracts and Freshly-Cut Parts From Louisiana Native Plants on <i>Aedes aegypti</i> Mosquitoes	<b>William H. Dees<sup>1</sup>, Adam D. Richard<sup>1</sup>, Jesse P. Dupre<sup>1</sup>, Sawyer M. McMicken<sup>2</sup>, Caleb M. Ardizzone<sup>1</sup>, Omar E. Christian<sup>2</sup>, Cecilia W. Richmond<sup>3</sup>, Jill Hightower<sup>4</sup>, Janet R. Woolman<sup>3</sup></b> <sup>1</sup> Dept of Biology and Health Sciences, <sup>2</sup> Dept of Chemistry and Physics, <sup>3</sup> Louisiana Environmental Research Center: McNeese State University, Lake Charles, LA; <sup>4</sup> Calcasieu Parish Mosquito and Rodent Control Dept, Lake Charles, LA

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P32	The Effect of Louisiana Native Plant Extracts on Ovipositing <i>Aedes aegypti</i> Mosquitoes	<b>William H. Dees<sup>1</sup>, Jesse P. Dupre<sup>1</sup>, Adam D. Richard<sup>1</sup>, Sawyer M. McMicken<sup>2</sup>, Caleb M. Ardizzone<sup>1</sup>, Omar E. Christian<sup>2</sup>, Cecilia W. Richmond<sup>3</sup>, Jill Hightower<sup>4</sup>, Janet R. Woolman<sup>3</sup></b> <sup>1</sup> Dept of Biology and Health Sciences, McNeese State University, Lake Charles, LA; <sup>2</sup> Dept of Chemistry and Physics, McNeese State University, Lake Charles, LA; <sup>3</sup> Louisiana Environmental Research Center, McNeese State University, Lake Charles, LA; <sup>4</sup> Calcasieu Parish Mosquito and Rodent Control Dept, Lake Charles, LA
P33	Phonoresponses of Female Moths With Two-Celled Ears to Different Acoustic Signals Emitted by Sympatric Insect Species	<b>Orlando Benavides, Raquel Casado, Rosario Rodriguez, Gretert Montano, Frank Coro</b> School of Science, Miami Dade , Miami FL
P34	The Relationship Between Achilles Tendon Dimensions, Gait Transition Speed and Sprint Speed in Humans	<b>Michelle R. Kelley, Jennifer A. Hancock</b> Dept of Biology and Environmental Science, Marietta College, Marietta, OH
P35	The Relationship Between Achilles Tendon Dimensions and Vertical Jumping in Humans	<b>Brea N. Buckley, Jennifer A. Hancock</b> Dept of Biology and Environmental Science, Marietta College, Marietta, OH
P36	Getting Into Shape: Morphometric Analysis of Floral Symmetry Variation in Goodeniaceae	<b>John F. Menz<sup>1</sup>, Andrew G. Gardner<sup>1</sup>, Kelly A. Shepherd<sup>2</sup>, Spencer Willis, Rachel S. Jabaily<sup>1</sup></b> <sup>1</sup> Dept of Biology, Rhodes College, Memphis, TN; <sup>2</sup> Western Australian Herbarium- Dept of Parks and Wildlife, Kensington, Western Australia, Australia
P37	Facultative Parthenogenesis in North American Pitviper Snakes in the Wild	<b>Charles F. Smith, Catherine Eason</b> Dept of Biology, Wofford College, Spartanburg, SC
P38	Spectral Characteristics of Hatchling Chinese Blue-Breasted Quail ( <i>Coturnix chinensis</i> ) Vocalizations	<b>Edward D. Mills</b> Dept of Biology; <sup>2</sup> Wingate University; <sup>3</sup> Wingate; <sup>4</sup> NC
P39	The Vascular Flora of William B. Umstead State Park	<b>Charles L. Kimmel<sup>1</sup>, Alexander Krings<sup>1</sup>, Jon Stucky<sup>1</sup>, David Crouse<sup>2</sup></b> <sup>1</sup> Plant and Microbial Biology, <sup>2</sup> Soil Science: North Carolina State University, Raleigh, NC

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P40	Populational Investigation of Spider-Lilies Distributed in the Atlantic Coastal Plain	<b>Amanda Garrison, Gerald L. Smith</b> Biology Dept, High Point University, High Point, NC
P41	A Floristic Survey of Smith Creek Restoration Area, Rockingham County, Virginia	<b>Allison N. Welborn, Conley K. McMullen</b> Dept of Biology, James Madison University, Harrisonburg, VA
P42	The Vascular Flora of the Eno River Diabase Sill Plant Preserve (Durham County, North Carolina)	<b>Casie L. Reed, Alexander Krings, David L. Lindbo, Jon M. Stucky</b> North Carolina State University, Raleigh, NC
P43	Documenting the Diversity of the Fall-Line Sandhill Flora Using Plant DNA Barcodes	<b>Scott D. Silvis<sup>1</sup>, Kevin Burgess<sup>1</sup>, Julie Ballenger<sup>1</sup>, Michele Elmore<sup>2</sup></b> <sup>1</sup> Dept of Biology, Columbus State University, Columbus, GA; <sup>2</sup> The Nature Conservancy, Ft. Benning, GA
P44	Guide to the Vascular Flora of Buxton Woods (Dare County, North Carolina)	<b>Amanda Faucette<sup>1</sup>, Alexander Krings<sup>1</sup>, David L. Lindbo<sup>2</sup>, Jon M. Stucky<sup>1</sup></b> <sup>1</sup> Plant and Microbial Biology, NC State University, Raleigh, NC; <sup>2</sup> Soil Science, NC State University, Raleigh, NC
P45	Interisland Biogeography of the Endemic Hawaiian Genus <i>Nototrichium</i> (Amaranthaceae)	<b>Amanda M. Thornton<sup>1</sup>, Ross A. McCauley<sup>2</sup>, J. Christopher Havran<sup>1</sup></b> <sup>1</sup> Dept of Biological Sciences, Campbell University, Buies Creek, NC; <sup>2</sup> Dept of Biology, Fort Lewis College, Durango, CO
P46	Digitization of Specimens in the Louisiana State University Herbarium: Progress and Potential of on-Line Databases	<b>Jennifer S. Kluse, Lowell E. Urbatsch, Yalma L. Vargas-Rodriguez</b> Dept of Biological Sciences, Louisiana State University, Baton Rouge, LA
P47	Biomonitoring of Freshwater Invertebrates in Lake Hollingsworth	<b>Molly Klinepeter, Rachel Schomaker, Gabriel Herrick, Celina Bellanceau</b> Dept of Biology, Florida Southern College, Lakeland, FL
P48	Diatom Biodiversity of North Branch Pawpaw Creek, a Stream Near Reelfoot Lake, Northwest Tennessee	<b>Michael W. Beasley, Jennifer L. Greenwood</b> Dept of Biological Sciences, University of Tennessee at Martin, Martin, TN
P49	Palatable Species of Amphibians are More Heavily Impacted by Visual and Chemical Cues of Predatory Fish	<b>Jonathan Brink, Eddie Barnett, Nicholas Stacy, Alex Collier, Brett Larson</b> Armstrong Atlantic State University

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<b>P50</b>	Exploring the Impacts of Urbanization on Stream Food Webs: Does Urbanization Affect Periphyton Abundance and Composition?	<b>Katharine Horning<sup>1</sup>, Troy Mutchler<sup>2</sup>, William Ensign<sup>3</sup></b> <sup>1</sup> Kennesaw State University; <sup>2</sup> Kennesaw State University; <sup>3</sup> Kennesaw State University
<b>P51</b>	Univariate and Multivariate Assessment of Habitat Preferences of Stream Fishes	<b>Casey Quade, Beth Drobinski, William Ensign</b> Dept of Biology and Physics, Kennesaw State University, Kennesaw, GA
<b>P52</b>	Bioaccumulation of Total Mercury in Wilson Snipe ( <i>Gallinago delicata</i> ) From Alabama	<b>Lindsay J. Brooks<sup>1</sup>, Joshua W. Campbell<sup>1</sup>, Julie W. Murphy<sup>2</sup></b> <sup>1</sup> High Point University; <sup>2</sup> Coastal Carolina University
<b>P53</b>	The Effects of Water Quality, Habitat and Land Use on the Biodiversity of Stream Macroinvertebrates in South Georgia	<b>Somuayiro N. Nwokike, Rebecca L. Tucker, Benjamin C. Webster, Matthew N. Waters, Gretchen K. Bielmyer</b> Dept of Biology, Valdosta State University, Valdosta, GA
<b>P54</b>	The Abundance and Decomposition of Coarse Particulate Organic Matter in Man-Made Ponds in Central Virginia	<b>Leanna R. Tacik, Annie Choi, Andreas N. Gregoriou, Carly Martin, Kaitlyn D. Peters, Kenneth Fortino</b> Biological and Environmental Sciences, Longwood University, Farmville, VA
<b>P55</b>	Experimentation Reveals How Brook Trout Adapt Body Coloration to Match Substrate Conditions and Social Hierarchies	<b>Charles R. Watt, Corey A. Swanson, Dillon A. Miller, Alaina C. Esposito, Christine L. May</b> Dept of Biology, James Madison University, Harrisonburg, VA
<b>P56</b>	Assessment of Heavy Metal Contamination in the Biota of Four Rivers With Varying Degrees of Human Impact	<b>Pratikumar P. Patel, Christina G. Duckworth, Erika L. Schumacher, Gretchen K. Bielmyer, Mattew N. Waters</b> Biology Dept, Valdosta State University, Valdosta, GA
<b>P57</b>	Effect of Total Suspended Solids on the Foraging Capacity of the Stream Snail, <i>Pleurocera canaliculata</i>	<b>Autumn B. Forschler-Turner<sup>1</sup>, Terry D. Richardson</b> <sup>1</sup> Dept of Biology, University of North Alabama, Florence, AL
<b>P58</b>	An Analysis of Differentially Expressed Genes in the Context of Cochlear Malfunction in Charcot-Marie Tooth Syndrome	<b>Manuel B. Bernal Mejia, Tonya C. Carver, Margaret Kovach</b> Biological and Environmental Sciences, University of Tennessee at Chattanooga, Chattanooga, TN

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P59	Identification of Conotoxin Genes From the Cone Snail <i>Conus pennaceus</i>	<b>Timothy Tedder, Timothy E. Shannon</b> Dept of Biology, Francis Marion University, Florence, South Carolina
P60	Effect of Grape Seed Extract in Fruit Fly <i>Drosophila</i> Huntington's Disease Model	<b>Breanna Willeford, Sierra Willeford, Duncan Perry, Tianyi Wu, Fang Ju Lin</b> Dept of Biology, Coastal Carolina University, Conway, SC
P61	Effects of Crude Extracts Taken From <i>Phytolacca americana</i> on Differentiated PC12 Cells	<b>Gregory S. Barrett, Diana B. Ivankovic, Donna R. Weinbrenner</b>
P62	Rosehip Extracts Prevent Glioblastoma Cell Proliferation by Regulating Retinoblastoma Phosphorylation	<b>Ombeni M. Idassi<sup>1</sup>, Patrice Cagle<sup>1</sup>, Ipek Goktepe<sup>3</sup>, Patrick Martin<sup>1</sup>, Radiah Minor<sup>2</sup></b> <sup>1</sup> Biology, <sup>2</sup> Animal Sciences, <sup>3</sup> Family & Consumer Sciences: North Carolina Agricultural and Technical State University, Greensboro, NC
P63	Haplotype Diversity Analysis of Black Crappie, <i>Pomoxis nigromaculatus</i> (Family Centrarchidae), Inhabiting Two Floridian Lakes	<b>Jamal Shuja<sup>1</sup>, Shirley A. Vas<sup>1</sup>, Vanessa Yanes<sup>1</sup>, Michael Erwin</b> <sup>1</sup> School of Science and Technology Georgia Gwinnett College
P64	Illumina Sequencing of Fungi Associated With Manganese Oxide Deposits in Karst Systems	<b>Bryan T. Zorn<sup>1</sup>, Cara M. Santelli<sup>2</sup>, Sarah K. Carmichael<sup>3</sup>, Chuck P. Pepe-Ranney<sup>4</sup>, Leah-Anne Roble<sup>5</sup>, Mary-Jane Carmichael<sup>6</sup>, Suzanna L. Bräuer<sup>1</sup></b> <sup>1</sup> Biology Dept, Appalachian State University, Boone, NC; <sup>2</sup> Mineral Sciences, Smithsonian Institution, Washington, DC; <sup>3</sup> Geology Dept, Appalachian State University; <sup>4</sup> Crop and Soil Sciences, Cornell University, Ithaca, NY; <sup>5</sup> Geology Dept, University of Maryland, College Park, MD; <sup>6</sup> Biology Dept, Wake Forest University, Winston-Salem, NC
P65	Investigation of the Molecular Basis of Split Hand-Foot Malformation in a Family by Whole Exome Sequencing (WES)	<b>C. Ronnie Funk<sup>1</sup>, Melanie May<sup>2</sup>, Anna Blenda<sup>1</sup>, Charles E. Schwartz<sup>2</sup></b> <sup>1</sup> Dept of Biology, Erskine College, Due West, SC; <sup>2</sup> Center for Molecular Studies, Greenwood Genetic Center, Greenwood, SC
P66	Further Characterization of Mab 2C11 (Eosinophilic Granular Cell) in Intestinal Tissue of Fish From Saluda Shoals Park, Columbia, South Carolina	<b>Sarah Brown, Marlee B. Marsh</b> Columbia College

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<b>P67</b>	Immunohistologic Examination of Host-Parasite Relationships in Gill Tissue of Teleosts From Saluda Shoals Park, Columbia, South Carolina	<b>Martha Molina-Sanchez, Marlee B. Marsh</b> Columbia College
<b>P68</b>	Spatial Delineation of Monoclonal Genotypes in the Seagrasses <i>Thalassia testudinum</i> and <i>Halodule wrightii</i> In the Gulf of Mexico's Florida and Alabama Coastlines	<b>Whitney Smith, B. Carolina Gallango-Bruns, Troy Mutchler, Thomas McElroy</b> Kennesaw State University
<b>P69</b>	Scat Composition of Coyotes in Carolina Sandhills National Wildlife Refuge, South Carolina	<b>Amy Herbert, Kristen Oliver, Jennifer S. Borgo</b> Coker College, Hartsville, SC
<b>P70</b>	The Effects of Mountaintop Removal Mining and Valley Fills on Stream Salamander Communities	<b>Brenee' L. Muncy, Christopher D. Barton, Steven J. Price</b> Dept of Forestry, University of Kentucky, Lexington, KY
<b>P71</b>	The Short Term Effects of Laurel Wilt on Native and Non-Native Coastal Plant Species	<b>Joel M. Gramling, Zachary J. Brownlee</b> Dept of Biology, The Citadel, Charleston, SC
<b>P72</b>	An Investigation of Possible Mechanisms Behind the Behavioral Responses of <i>Aphaenogaster carolinensis</i> to Other Ant Species	<b>Trent D. Smith, Timothy O. Menzel</b> Dept of Natural Science, Piedmont College, Demorest, Georgia
<b>P73</b>	Genetic and Non-Genetic Factors Influence Development and Behavior of Red-Eyed Treefrogs	<b>Megan E. Gibbons<sup>1</sup>, Karen M. Warkentin<sup>2</sup>, Jennifer Stynoski<sup>3</sup></b> <sup>1</sup> Birmingham-Southern College; <sup>2</sup> Boston University; <sup>3</sup> Organization for Tropical Studies
<b>P74</b>	Preliminary Genetic Evidence of Hybridization in a Sympatric Population of Southern and Northern Cricket Frogs	<b>Nick W. Spalsbury, Jim Welch, Richard Phillips</b> Wittenberg University
<b>P75</b>	Bacterial Growth Inhibition of the Uropygial Glands Secretions of Passerines in South Carolina	<b>Kristen Oliver<sup>1</sup>, Jennifer S. Borgo<sup>1</sup>, Rebecca Heiss<sup>2</sup></b> <sup>1</sup> Coker College, Hartsville, SC; <sup>2</sup> South Carolina Governor's School for Science and Mathematics, Hartsville, SC

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P76	A Study on the Seed Germination Ecology and Seedling Survivorship of the Endangered Cream Gentian <i>Gentiana flavida</i>	<b>John F. Darling, Alanna M. Wentworth, Lauren A. Ballou, Sophia Almammary, Christopher A. Adams</b> Dept of Biology, Berea College, Berea, KY
P77	New County Records of Bats From West-Central Georgia	<b>Gregory D. Hartman, Michael J. Bender</b> Dept of Biology, Gordon State College, Barnesville, GA
P78	<i>In Vitro</i> Seed Germination and Development of <i>Calopogon pallidus</i> (Orchidaceae) From Virginia	<b>Peter Schafran<sup>1</sup>, Joseph Keenan<sup>1</sup>, Marcus Jones<sup>2</sup>, Lytton Musselman<sup>1</sup></b> <sup>1</sup> Dept of Biological Sciences, <sup>2</sup> Kaplan Orchid Conservatory: Old Dominion University, Norfolk, VA
P79	Effects of Open Pollination, Selfing, Inbreeding, and Outbreeding Treatments on Seed Set and Viability in <i>Spiraea virginiana</i> Britton (Virginia Spiraea), an Endangered Rose	<b>Kristin Emery, Jennifer Rhode Ward, H. David Clarke</b> Biology Dept, The University of North Carolina at Asheville, Asheville, NC
P80	Arbuscular Mycorrhizal Fungal Colonization in the Black Willow ( <i>Salix nigra</i> ) and American Sycamore ( <i>Platanus occidentalis</i> )	<b>Joshua F. Hashemi, Paula C. Jackson</b> Dept of Biology and Physics, Kennesaw State University, Kennesaw, GA
P81	Effects of Climate Patterns on White-Tailed Deer ( <i>Odocoileus virginianus</i> ) Antlers on Quantico Marine Corp Base	<b>Matthew Dye, Tamara Johnstone-Yellin, Timothy Kreps, Tim Stamps, John Rohm</b> Bridgewater College; <sup>2</sup> Bridgewater College; <sup>3</sup> Bridgewater College; <sup>4</sup> Quantico NREA; <sup>5</sup> Quantico NREA
P82	Effects of Agricultural Practice on Mammal Diversity	<b>Susie C. Masecar, Amanda J. Chunco</b> Environmental Studies, Elon University, Elon, NC
P83	Potential Use of Shrimp Biofloc Solids as an Alternative Fertilizer in Coastal Salt Marsh Plant Nursery Production	<b>Heather M. Joesting<sup>1</sup>, Patrick D. Biber<sup>2</sup></b> <sup>1</sup> Dept of Biology, Armstrong Atlantic State University, Savannah, GA; <sup>2</sup> Gulf Coast Research Laboratory, University of Southern Mississippi, Ocean Springs, MS



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P84	Factors Affecting Detection Probability of Spotted Salamanders ( <i>Ambystoma maculatum</i> )	<b>Kristen S. Gillespy, Emily S. Rademacher, Maximilian M. Kern, Leigh Anne Harden, Shannon E. Pittman, Michael E. Dorcas</b> Dept of Biology, Davidson College, Davidson, NC
P85	How Do Light Availability and Soil Characteristics Affect Growth and Reproduction of <i>Platanthera integrilabia</i> (White Fringeless Orchid)?	<b>Gregory Raymond, Jennifer Boyd</b> University of Tennessee at Chattanooga
P86	The Role of Soil and Landscape Factors in Chinese Privet ( <i>Ligustru sinense</i> ) Invasion in the Appalachian Piedmont	<b>T. Shearman<sup>1</sup>, P. Ma<sup>1</sup>, J. Nankaya<sup>1</sup>, H. Valdetero<sup>1</sup>, S. Hart<sup>1</sup>, H. Yun<sup>1</sup>, D. Hagan<sup>1</sup>, E. Mikhailova<sup>1</sup>, W. Bridges<sup>2</sup></b> <sup>1</sup> School of Agricultural, Forest, and Environmental Sciences, <sup>2</sup> Mathematical Sciences: Clemson University, SC
P87	Invasive Plant Species Distribution and Abundance in Tennessee Army National Guard Volunteer Training Sites; From Ground Surveys to Geographic Information System Layers	<b>Leslie Russo, Callie Montgomery, Danny Hoover, Jared Odell, Gregory Raymond, Jennifer Boyd</b> University of Tennessee at Chattanooga
P88	Disturbance Gives Rise to Biodiversity Along the River Margins of the Mobile-Tensaw Delta	<b>Brian L. McPherson</b> University of South Alabama Dept of Biology
P89	Under the Radar and on the Move: <i>Ficaria verna</i> A Threat to the Southeast's Riparian Areas	<b>Jane K. Marlow<sup>1</sup>, John B. Nelson<sup>2</sup></b> <sup>1</sup> SC Native Plant Society and www.NameThatPlant.net; <sup>2</sup> A. C. Moore Herbarium, Dept of Biological Sciences, University of South Carolina, Columbia, SC
P90	Potential Impact of Emerald Ash Borer on Forest Composition in Alabama	<b>Charles A. T. Jackson, Justin L. Hart</b> Dept of Geography, University of Alabama, Tuscaloosa, AL
P91	Pre-European Settlement Forest Composition and Structure of the Alabama Fall Line Hills	<b>Lauren E. Cox, Justin L. Hart, Michael K. Steinberg</b> Dept of Geography, University of Alabama, Tuscaloosa, AL

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P92	Intermediate-Scale Wind Disturbance Affecting the Development and Succession of Southern Appalachian <i>Quercus</i> Stands	<b>Stephen D. White<sup>1</sup>, Justin L. Hart<sup>1</sup>, Callie J. Schweitzer<sup>2</sup>, Daniel C. Dey<sup>3</sup></b> <sup>1</sup> Dept of Geography, University of Alabama, Tuscaloosa, AL; <sup>2</sup> Southern Research Station, USDA Forest Service, Normal, AL; <sup>3</sup> Northern Research Station, USDA Forest Service, Columbia, MO
P93	Leaf Anatomy of <i>Planchonella sandwicensis</i> on the Islands of Hawai'i	<b>Rachel L. Craven, Paradise I. Flowers, J. Christopher Havran</b> Dept of Biological Sciences, Campbell University, Buies Creek, NC
P94	Pollinator and Beneficial Insect Abundance and Diversity in Four Different Biofuel Treatments	<b>Haley Hegedus<sup>1</sup>, Joshua W. Campbell<sup>1</sup>, James Martin<sup>2</sup></b> <sup>1</sup> High Point University; <sup>2</sup> Mississippi State University
P95	Small-Scale Habitat Preferences of Ground Beetles (Coleoptera: Carabidae) and Responses to Vegetative Regrowth After Kudzu Removal	<b>Lucas D. Hetherington, Haley E. Clevenger, Wade B. Worthen</b> Biology Dept, Furman University, Greenville, SC.
P96	Interspecific Variation in Ovipositor Morphology Among Cosmetid Harvestmen (Arachnida, Laniatores, Gonyleptoidea)	<b>Eric A. Walker, Victor R. Townsend, Jr.</b> Dept of Biology, Virginia Wesleyan College, Norfolk, VA
P97	The Distribution of Dragonfly Larvae in a South Carolina Stream: Relationships With Sediment Type, Body Size, and the Presence of Other Larvae	<b>H. Joseph Horacek, Wade B. Worthen</b> Biology Dept, Furman University, Greenville, SC.
P98	A Preliminary Analysis of Quantifying Endemic <i>Beauveria bassiana</i> (Balsamo) Vuillemin in Kudzu Patch Soils Where <i>Megacopta cribraria</i> Populations Reside	<b>Monica Henry<sup>1</sup>, Laci Gunthorpe<sup>1</sup>, Kadie Britt<sup>1</sup>, Zachary Slifer<sup>1</sup>, Erika A. Scocco<sup>1</sup>, Wayne A. Gardner<sup>2</sup></b> <sup>1</sup> Dept of Biology, Wingate University, Wingate, NC; <sup>2</sup> Dept of Entomology, University of Georgia, Griffin, GA
P99	Corn Earworm Saliva Induces Herbivore Defense Gene Expression in Corn	<b>Brittany D. Harry<sup>1</sup>, Flor Acevedo<sup>2</sup>, Michelle Peiffer<sup>2</sup>, Shan Jin<sup>2</sup>, Ketia Shumaker<sup>1</sup>, Dawn S. Luthe<sup>2</sup>, Gary Felton<sup>2</sup></b> <sup>1</sup> University of West Alabama; <sup>2</sup> Pennsylvania State University
P100	Hydrocarbons Involved in Chemosensory Systems of the Parasitoid Wasp, <i>Dasymutilla occidentalis</i>	<b>Deep Sangani, Bradley Vaughn, John Moeller, Caleb Arrington</b> Biological and Chemical Sciences, Wofford College, SC

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P102	A Comparison of the Width of the Achilles Tendon in Athletes and Non-Athletes	<b>Andrew J. Fitzgerald, Jennifer A. Hancock</b> Dept of Biology and Environmental Science, Marietta College, Marietta, OH
P103	Genetic Variability and Gender Specialization in <i>Passiflora incarnata</i>	<b>Vanessa Y. Rubio, Cynthia C. Bennington</b> Dept of Biology, Stetson University, DeLand, FL
P104	Genetic Structure and Phylogeography of Great Basin Populations of the Stonefly <i>Hesperoperla pacifica</i> Using Novel Nuclear Loci	<b>John R. Massey<sup>1</sup>, Miranda Camp<sup>1</sup>, Allyson M. Fenwick<sup>1</sup>, Andrew L. Sheldon<sup>2</sup>, Alicia S. Schultheis<sup>1</sup></b> <sup>1</sup> Dept of Biology, Stetson University, DeLand, FL; <sup>2</sup> Professor Emeritus, University of Montana
P105	Phylogenetic Studies Reveal the Evolutionary History of the Structure of 5S Ribosomal RNA	<b>Fengjie Sun<sup>1</sup>, Gustavo Caetano-Anollés<sup>2</sup></b> <sup>1</sup> School of Science and Technology, Georgia Gwinnett College, Lawrenceville, GA; <sup>2</sup> Dept of Crop Science, University of Illinois at Urbana-Champaign, Urbana, IL
P106	Phylogenetic Investigation of Selected <i>Habranthus</i> Species, Native Southeastern U.S. <i>Zephyranthes</i> Species and Selected Mexican <i>Zephyranthes</i> Species	<b>Alex Hart, Gerald L. Smith</b> Biology Dept, High Point University, High Point, NC
P107	A Bryofloristic Investigation of the Limestone Hills Region of South Alabama and Mississippi	<b>Holly Bell, Sarah Marie Noble</b> Dept of Natural Sciences, University of Mobile, Mobile, AL
P108	The Vascular Flora of Bullock County, Alabama	<b>Bailee Dykes, Alvin Diamond, Michael Woods</b> Dept of Biological and Environmental Sciences, Troy University, Troy, AL
P109	Dispersal Modes and Areas of Origin of Invasive Species in an Old Growth Urban Forest	<b>Alexander D. DeGenova, Andrew G. Gardner, Rachel S. Jabaily</b> Dept of Biology, Rhodes College, Memphis, TN

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P110	Coefficient of Conservatism Rankings for the Flora of Georgia: Wetland Indicator Species	<b>Wendy B. Zomlefer<sup>1</sup>, Linda G. Chafin<sup>2</sup>, J. Richard Carter<sup>3</sup>, David E. Giannasi<sup>1</sup>, Cristin Walters<sup>1</sup></b> <sup>1</sup> Dept of Plant Biology, University of Georgia, Athens, GA; <sup>2</sup> State Botanical Garden of Georgia, University of Georgia, Athens, GA; <sup>3</sup> Dept of Biology, Valdosta State University, Valdosta, GA
P111	Incipient Speciation in <i>Hydatica</i> Necker	<b>Laary Cushman<sup>1</sup>, Patrick McMillan<sup>1</sup>, Kathy Mathews<sup>2</sup></b> <sup>1</sup> Dept of Plant and Environmental Sciences, Clemson University, Clemson, SC; <sup>2</sup> Dept of Biology, Western Carolina University, Cullowhee, NC
P112	Phylogeographic Analysis of the American Beech ( <i>Fagus grandifolia</i> )	<b>Penny A. Carroll, Ashley B. Morris</b> Dept of Biology and Program of Molecular Biosciences, Middle Tennessee State University, Murfreesboro, TN
P113	Digitization of the Valdosta State University Herbarium: Undergraduate Student Perspectives	<b>Jessica M. Bartek, Amy M. Vardeman, Richard Carter</b> Biology Dept, Valdosta State University, Valdosta, GA
P114	Distinguishing <i>Adiantopsis alata</i> from <i>A. radiata</i> Through Isolation and Amplification of Genomic DNA	<b>Thomas G. Ludwig, Melanie A. Link-Perez</b> Dept of Biology, Armstrong Atlantic State University, Savannah, GA
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P117	Urbanization and Gut Length in <i>Campostoma oligolepis</i>	<b>Michael Schooling, William Ensign</b> Dept of Biology and Physics, Kennesaw State University, Kennesaw, GA
P118	Habitat Distribution and Ecology of Dragonfly and Damselfly Naiads	<b>Rachel Schomaker, Molly Klinepeter, Celina Bellanceau, Gabriel Herrick</b> Biology Dept, Florida Southern College, Lakeland, FL

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P120	Epiphytic Algal Community Structure in Response to Watershed Land Use and Environmental Stressors in Four South Georgia Streams	<b>Codie Picariello, Elizabeth Tuttle, Matthew N. Waters, Gretchen K. Bielmyer</b> Dept of Biology, Valdosta State University, Valdosta, GA
P121	Efficacy of Rock Vanes at Reducing Local Erosion in an Urban Stream in Jefferson County, AL	<b>Elizabeth G. Dobbins, Kristin A. Bakkegard</b> Dept of Biological and Environmental Sciences, Samford University, Birmingham, AL.
P122	The Impacts of Watershed Land Use and Environmental Factors on Sediment Transport and Light Attenuation in Four Streams in South Georgia	<b>Cliff H. Crummey, James T. Ragan, Matthew N. Waters, Gretchen K. Bielmyer</b> Biology Dept, Valdosta State University, Valdosta, GA
P123	Extracellular Enzyme Activity of Plant Litter-Associated Microorganisms Depends on Dissolved Inorganic Nutrient Availability	<b>Christian R. Barrett, Timothy Burns, Vladislav Gulis</b> Dept of Biology, Coastal Carolina University, Conway, SC
P124	The Impact of Urbanization on Water Quality in Four Rivers With Varying Degrees of Anthropogenic Disturbance	<b>Charlie R. Wiggins, Aundrea N. Duncan, Amber N. Blocker, Gretchen K. Bielmyer, Matthew N. Waters</b> Biology Dept, Valdosta State University, Valdosta, GA
P125	Influence of Small Dams on Leaf Decomposition and Invertebrate Communities in Western North Carolina Streams	<b>Elyse Russing, L. M. Siefferman, M. D. Madritch, Michael Gangloff</b> Dept of Biology, Appalachian State University, Boone, NC
P126	Characterizing the Effects of Electronic Cigarettes: The Development of a Vaping Study	<b>Catherine W. Bennett, Karen K. Bernd</b> Dept of Biology, Davidson College, Davidson, NC

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P127	Relative Gene Expression of Mortality Factor 4-Like 2 <i>Rattus norvegicus</i> Schwann Cells Following Activation of Protease Activated Receptor-1	<b>Amber Brown</b> Biology, Furman University, Greenville, SC.
P128	Anticarcinogenic Properties of Extracts Derived From the <i>Clusia rosea</i> Tree Tested on Rat Derived Pheochromocytoma (PC12), ASPC-1 Pancreatic Cancer Cell Line and AGS Gastric Adenocarcinoma Cell Line	<b>Zachary C. Perdun, Katey M. Robinson, Diana Ivankovic, Donna Weinbrenner</b> Dept of Biology, Anderson University, Anderson, SC
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P130	The Effects of Ascorbic Acid on <i>Drosophila melanogaster</i> Susceptibility to Permethrin and Suppression of Cytochrome P450 Activity	<b>Brianna L. Taylor, Naomi Jackson, Benjamin J. Thornton</b> Biology and Allied Health, Southern Adventist University, Collegedale, TN
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P132	Why Did You Die? A Post-Mortem Analysis of Avian Tissues	<b>Donna A. Goodenow, Patricia A. Koplus, Jeffrey Thomas</b> Biology Dept, Queens University, Charlotte, NC
P133	Longterm Chemotactic Ability of <i>Caenorhabditis elegans</i> Following Treatment With 6-Hydroxydopamine	<b>Zara Latif, Dora Geving, Nick Ragsdale</b> Belmont University
P134	Using Mab M24-2 (A Fish Lysozyme) to Examine the Host-Parasite Relationships in Livers of Fish From Saluda Shoals Park, Columbia, SC	<b>Shannon Theobald, Marlee B. Marsh</b> Columbia College
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P140	Preliminary Results From a Herpetofauna Survey at Santee National Wildlife Refuge	<b>Marvin E. Brown<sup>1</sup>, David R. Cann<sup>1</sup>, Jessica L. Deer<sup>2</sup>, Eran S. Kilpatrick<sup>3</sup></b> <sup>1</sup> University of South Carolina Columbia, Dept of Biological Sciences; <sup>2</sup> University of South Carolina Aiken, Dept of Biology and Geology; <sup>3</sup> University of South Carolina Salkehatchie, Division of Mathematics and Science
P141	Using Morphometrics to Distinguish Between Two Slimy Salamander Species in Central Alabama ( <i>Plethodon glutinosus</i> , <i>Plethodon mississippi</i> )	<b>Austin H. Patton<sup>1</sup>, Kristin A. Bakkegard<sup>2</sup></b> <sup>1</sup> Dept of Biology, Warren Wilson College, Asheville, NC; <sup>2</sup> Dept of Biological and Environmental Sciences, Samford University, Birmingham, AL
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P143	Sampling Amphibians and Reptiles in Southeastern Tennessee: Lessons Learned and Implications for Conservation and Management	<b>George W. Szarka III<sup>1</sup>, Thomas P. Wilson</b> <sup>1</sup> Environmental Science, University of Tn Chattanooga, Chattanooga TN

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P152	Spermatid Morphological Changes During Spermiogenesis Within the Southern Bunchgrass Lizard, <i>Sceloporus aeneus</i>	<b>Lauren G. Arona, Kevin M. Gribbins</b> Biology Dept, Wittenberg University, Springfield, Ohio



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<b>P157</b>	Disinfecting Properties of Vegetable Juices Against MRSA and <i>Staphylococcus aureus</i>	<b>Alec L. Perry, Dinene L. Crater</b> Dept of Biology
<b>P158</b>	Essential Oils and Their Components Inhibit the Growth of MRSA	<b>Olivia V. Fletcher, Dinene L. Crater</b>
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P203	Lessons Learned From Three Years of the Math/Science Student Preparation and Retention (SPARC) Collaborative	<b>Holly Boettger-Tong<sup>1</sup>, Vivia L. Fowler<sup>2</sup>, Gareth Jones<sup>3</sup>, Brooke Bennett-Day<sup>4</sup></b> <sup>1</sup> Dept of Biology, <sup>2</sup> Provost and Vice President for Academic Affairs, <sup>3</sup> Director of Student Success, <sup>4</sup> Dept of Psychology: Wesleyan College, Macon GA

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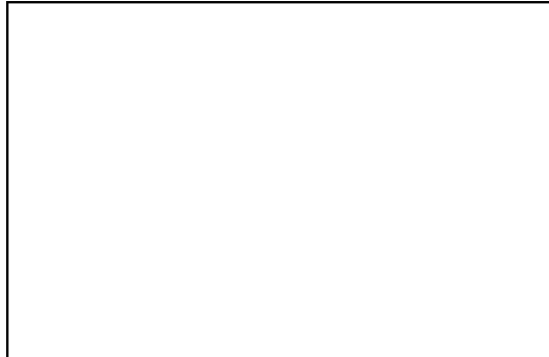
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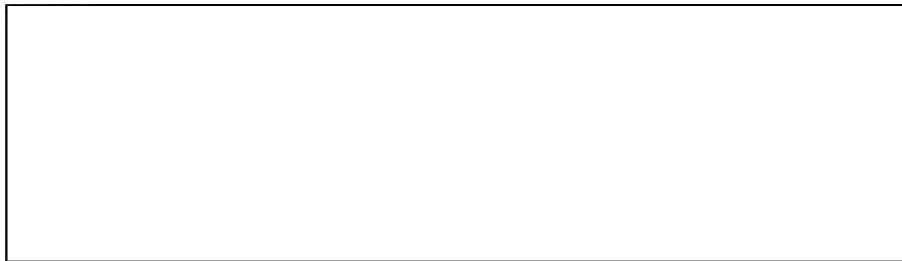
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# Southeastern Naturalist

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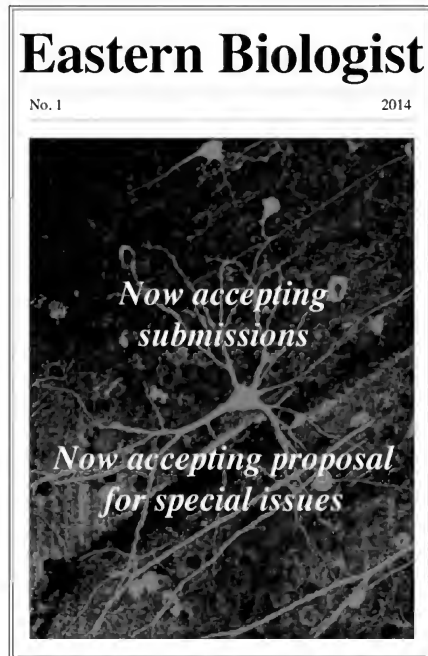
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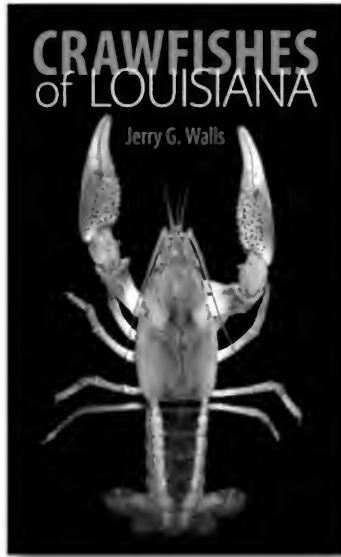


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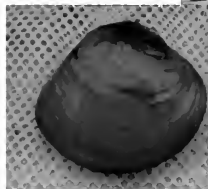
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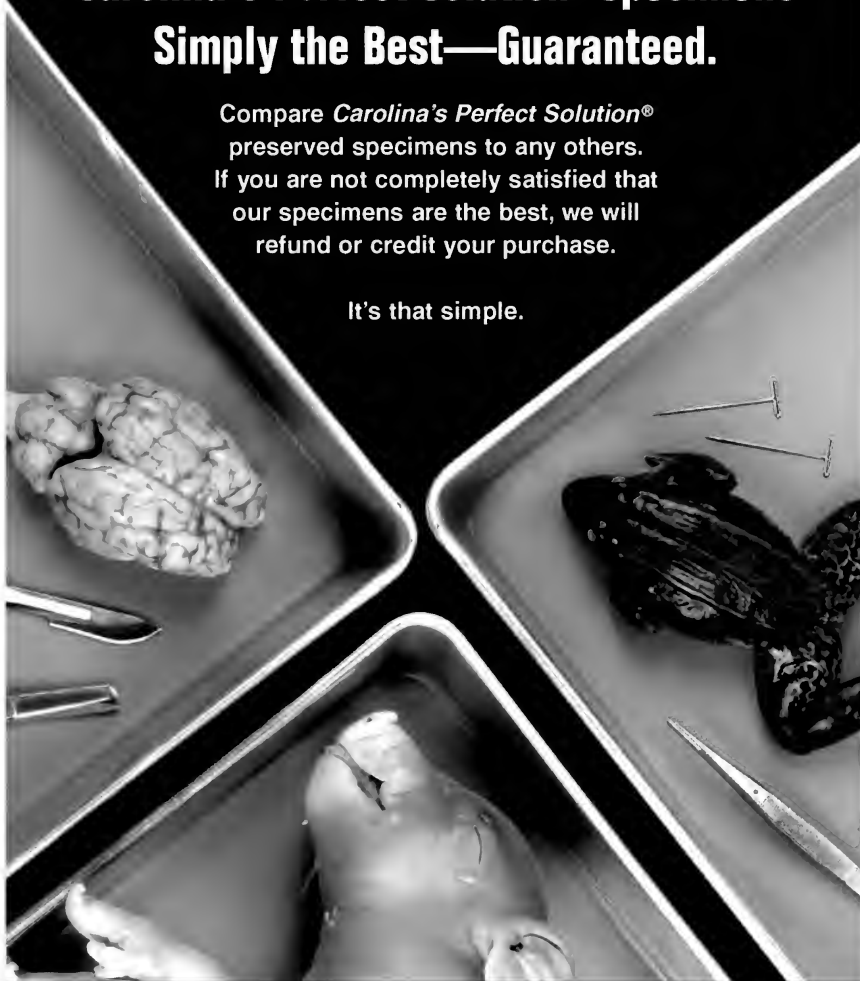
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