Manley and Moore named AAAS Fellows

Nancy Manley and Allen Moore have been named Fellows of the American Association for the Advancement of Science, an honor bestowed upon them by their peers for “scientifically or socially distinguished efforts to advance science or its applications.”

These two faculty members of the Franklin College of Arts and Sciences, department of genetics, are among 702 new AAAS Fellows who will be presented with an official certificate.

see Fellows page 5

Bewick named Alton Fellow

The 2012 Kirby and Jan Alton Graduate Fellowship was awarded by the Graduate Affairs Committee to Emily Bewick in recognition of her diligent research, successful grant-writing, service, and academic excellence.

Advised by Kelly Dyer, Emily examines variation in female mating behavior and population genetics in the North American fruit fly Drosophila subquinaria. Her project, “The genetics of female preference in Drosophila subquinaria,” was awarded a NSF Doctoral Bewick

Robin Hightower Graduate Support Fund established

This year the Department of Genetics lost one of their earliest alumnae, Dr. Robin Hightower. Robin earned her PhD in Genetics working with Richard Meager in 1985. After leaving UGA, Robin worked as a scientist in academic and industry positions and taught at North Carolina community colleges.

In 2011, Robin decided she wanted to give back to where she earned her degree and wanted to support future generations of UGA genetics students. In 2012, the Robin Hightower Genetics Graduate Support fund was established and awarded to two outstanding young women, Louisa Staton in the Chang lab, and Christine Ewers in the Wares lab.

Louisa’s dissertation focuses on understanding the evolution of geographic range limits in southeastern endemic plant species. It is an integrative project combining the use of ecological niche models (computer models for predicting suitable habitat based on past, current, and future environmental variables), phylogenetics, reciprocal transplant studies to understand the degree of local adaptation and habitat specialization, and population genetics.

“The Hightower award has made the population genetics and genotyping component of my project possible,” said Louisa. “Without this money, I would be unable to assess levels of gene flow and historical population sizes among populations of two species of plants that I work on in the Polygonella genus. These data will make the difference between a powerful study on the dynamics affecting geographic range expansion (and limitation), and a study that is only able to make conjectures about the nature of dynamics within and among populations that are geographically restricted or widespread. I am thankful for this funding, and excited to be able to tell a compelling story about geographic range limits in the plant genus Polygonella.”

To put her research in context, Christine explains “mating systems in plants have been studied extensively because of their curious diversity. Studies on animals are historically less common but show that in plants and animals alike, androdioecy, the simultaneous occurrence of hermaphrodites and males in a population, is generally very rare. This is in concordance with theory; androdioecy can only evolve under a very restricted set of fitness conditions. Despite harsh constraints on the evolutionary stability of androdioecy,
This academic year has been an extremely productive one for the graduate students in the Department of Genetics. We commend them for their recent accomplishments in their research, teaching, and outreach. Their academic and community involvements are numerous and diverse, so here we list a sampling of graduate student activities.

The Genetics Graduate Student Association (GGSA) represents our graduate students at faculty and graduate school meetings. The GGSA also plans social events and organizes new graduate student recruitment. This year, our GGSA molecular and population co-chairs were Madhhumati Mukherjee and Jessica Hoffman, respectively. Katie Bockrath served as treasurer, Lindsey Johnston was our communications officer, Christine Ewers took the position of social chair, and Ranjani Namasingram maintained the GGSA website as our webmaster. Jenna Hamlin and Kerin Bentley planned and oversaw this year’s annual recruitment for new graduate students (who will enter in the Fall 2013 semester). Our student-invited speakers this year were Trudy Mackay, who studies environmental and genetic determinants of quantitative trait variation, and Steve Palumbi, whose work focuses on marine ecology and evolution.

We congratulate the students who successfully defended their dissertations since last spring: Joel Farkas and Jenna Oberstaller in the summer; Katie Bowden and Eileen Roy Zokan in the fall, and Kris Mussar and Marly Richter-Roche this spring. We are excited for them to continue their scientific careers, and we will certainly watch for them to achieve great things in the future. While these students have or will be moving on soon, we welcome the ten new first-year graduate students who joined the department this year. Nick Arthur, Nick Batora, Kyle Benowitz, Caitlin Conn, Dan Frailey, Joe Groom, Katie Pieper, Mary Rougeau, Ashley Snouffer, and Jonathan Walsh are all finishing their first-year rotations now and are choosing labs for the development of their dissertation projects.

Graduate students in the Department of Genetics have earned numerous awards this year for their excellence in research and in teaching. The recipients of the 2012–2013 National Institutes of Health Training Grant are Jenna Hamlin, Christine Hartman, Jessica Hoffman, Rodney Jarvis, Jen Olmstead, and Cheryl Pinzone. Additional awards and fellowships were distributed to our students based on their research accomplishments. Cheryl Pinzone and Sarah Sander were awarded the 2012 Linton and June Bishop Graduate Fellowship, and Emily Peeden Bewick was awarded the 2012 Kirby and Jan Alton Graduate Fellowship. Louisa Carter and Christine Ewers each received the 2012 Hightower Award for their research. Alexandra Mihala was given the 2012 Mote Graduate Support Fund for Biomedical Research for her work on limb development. Louisa Carter and Sarah Sander each earned a 2012 Innovative and Interdisciplinary Research Grant. Louisa Carter additionally received the 2012 Botanical Society of America Graduate Student Research Award. The Graduate School bestowed on Emily Bewick a 2013 Doctoral Dissertation Completion Award, and the National Science Foundation Doctoral Dissertation Improvement Grant was given to Cheryl Pinzone and to Sarah Sander this year. Sarah Sander also received a...
news | Undergraduate Program

I know that spring semester is about to end because the entire campus is covered with pollen. But it’s hard to believe it’s been a year since the last time I wrote about what our outstanding students have accomplished.

Last year we had a lovely ceremony for our graduating majors and their families. Our guest speaker was Dr. Richard Shimkets, who gave a riveting talk about his very interesting journey in life since he graduated from UGA. Shimkets received a BS in Genetics in 1993 and then earned his PhD in Genetics at Yale University Medical School. From 1997 to 2005 Shimkets was VP of drug discovery and scientific development at Curagen Corporation and since 2010 has been president and CEO of Abeome, a biotechnology company located here in Athens. In addition to his science expertise, in 1991 he founded Jewelz.com, an international gem and jewelry manufacturing and distribution firm, and has owned and operated a cafe and wine store in Hartwell as well as a wholesale bakery. With the perfect balance of humor and seriousness, Shimkets delivered important messages about life and career.

Also at last year’s ceremony, we recognized Daniel Piqué with the Outstanding Undergraduate Award. This annual award is given to a senior major based on excellence in academics, research and leadership, and is in honor of Dr. Cynthia Kenyon, another distinguished alumnus of UGA and the genetics program. Daniel will soon begin a combined MD/PhD program but has spent the last year in a prestigious post-baccalaureate traineeship at the NIH. We currently are in the process of reviewing nominations of a number of equally talented seniors for this award, which will be announced at the 2013 graduation ceremony. As usual, many of our majors have been very active in a variety of research activities. Majors who took part in summer 2012 research programs were Andrea Walens (Georgia Health Sciences University’s STAR program), Phillip Ogea (CURO Summer Fellowship), Kelsey Montgomery (NSF REU for field work in the Florida Keys), Benjamin Rohde (USDA Agricultural Research Services’ Southeastern Poultry Research Lab internship), and Drexel Neumann (Amgen Scholars Program at Washington University). Drexel was a co-author of a paper from his summer research. 2012 grads who were co-authors of papers published during the last year are Catherine Debban, Erin Giglio, Simon Lopez, and Rakia Nasir. This spring, nine majors gave presentations at conferences. Philip Grayeski, Katherine Korunes, Alyse Ragauskas, Kyungmin Ko, Krista Ritchie, Devon Humphries, Jennifer Pallansch, and Spencer Mitchell all gave presentations at the CURO Symposium. Katharine Korunes gave a poster at the 27th National Conference for Undergraduate Research.

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head’s note

I find it shocking that I am nearing the end of my second year as head of Genetics. Somehow it doesn’t feel that long, but when I look back over the year I realize that it has been quite busy, with quite a few changes. The economic climate continues to be our biggest challenge. While it makes my job easier if I don’t have to decide on raises, salary stagnation continues to frustrate everyone at the University. Grant funding is down across the United States, and although the Genetics faculty continues to attract significant grant funds, we are beginning to feel the pinch as well. So far we are keeping up, but there are worrying signs on the horizon. No one wants the bad economy to continue, but of course there is always a time lag in getting back to where we were unless the government intervenes and stimulates research again. Given that that seems unlikely, I am cheered by the fact that donations to Genetics are up. I am very grateful to everyone who is able to contribute financially to Genetics, as this is a behavior that is truly altruistic. Donations provide us with breathing room, flexibility, and simply make it possible to maintain the high quality of our department.

One of the goals I set when I arrived at UGA was to attract funding for a named professorship to honor Wyatt Anderson. It seemed fitting to me that one of the founding members and the first head of the Department of Genetics, and a former dean of the Franklin College of Arts and Sciences, should be recognized with a named chair. The Wyatt Anderson Professorship in Evolutionary Genetics sounds about right, don’t you think? We have made good progress in funding this position, but still have quite a ways to go. The University is starting a big capital campaign and I hope that we can piggyback onto this to fully fund this professorship. Wyatt affected many people during his tenure.
Bishop Fellows named

The Linton and June Bishop Graduate Fellowship is awarded by the Graduate Affairs Committee to two senior students who have shown exceptional progress, independence, and creativity in their research. The 2012 co-awardees were Cheryl Pinzone of the Dyer lab and Sarah Sander of the Hall lab. Cheryl studies how genetic variation is maintained in the presence of a selfish genetic element that spreads rapidly despite a cost to the inclusive fitness of the host in Drosophila, and Sarah studies signal evolution in fireflies.

“I am extremely grateful for being selected to receive a Linton and June Bishop Graduate Fellowship,” says Cheryl Pinzone. “Since accepting this award, both my research and professional development have benefitted. For instance, I was able to expand the fieldwork activities of my dissertation project, which lead to the discovery of an invasive species in the Great Smoky Mountains National Park, and to alert the proper authorities for the protection of several plant species, especially dogwoods, which are already being threatened by fungal pathogens. In addition, this award has enhanced my professional development by allowing me to attend and present my research at the Genetics Society of America’s national conference. This opportunity helped me to improve my research communication, to advance understanding in the field of genetics, and to establish valuable professional collaborations. I deeply appreciate the Bishops’ support of the department, as it has provided the means for the betterment of my research in genetics.”

As a Bishop Fellow,” Sarah says, “I was able to spend almost two months in the field collecting specimens and data for my dissertation research on signal evolution in fireflies. The preliminary data I collected on firefly signal variation across the Eastern US enabled me to compose a successful NSF Doctoral Dissertation Improvement Grant this past fall. I was able to network with other scientists during my fieldwork travel, and as a result received my first invitation to speak to the general public about my research at the Pennsylvania Audubon Society’s end-of-year banquet next summer. I hope this is the first of many chances I will have to combine research and public outreach in the course of my career. I am truly grateful for the opportunities for scientific and professional development that this fellowship has opened up for me.”

The fellowship is made possible by an endowment established by a generous gift from Dr. Linton and Mrs. June Bishop.

Grad...from page 2

Genetics Graduate Student Association Travel Award. We congratulate all of these outstanding award-winning students who have received recognition for their hard work.

Genetics graduate students have also earned awards for excellence in teaching this year. Elizabeth Lucht was given the 2013 Excellence in Teaching Award and the 2013 Outstanding Teaching Award. She was also selected to participate in the 2012 – 2013 Future Faculty Program here at the University of Georgia. Additionally, Louisa Carter, Paul Griffith, and Elizabeth Lucht all earned the 2013 CTL Outstanding Teaching Assistant Award.

In addition to teaching, community outreach is a top priority for graduate students in the department. This year, several students volunteered as judges in the Georgia Science and Engineering Fair and in the Georgia Junior Science and Humanities Symposium. These science competitions are held yearly on the University of Georgia campus, and participants include middle and high school students with an interest in scientific research. Graduate students in our department also have been traveling to a nearby school in order to enrich science education there. Joe Groom and Matt Volny visit Hilsman Middle School and regularly interact with the students in the seventh grade agriscience class. Finally, Sarah Sander continues to participate in “The Ecotones,” which is an a capella group that uses music to spread ecological awareness and promote sustainability.

The graduate students in the Department of Genetics are dedicated to research, education, and outreach. Their commitments to scientific inquiry and to reaching the non-scientific community are readily apparent. In the future, our students will impact the world through their discoveries and their leadership. We look forward to the 2013 – 2014 academic year and all of the student accomplishments that it will bring.

Caitlin Conn

Alton...from page 1

Dissertation Improvement Grant in 2011.

In addition to her research, Emily has organized for the last two years a “Best in Genetics” award for the Georgia State Science Fair, where she has served as a judge, and she also has served as a science outreach volunteer at Hilsman Middle School and at Cedar Shoals High School.

Emily’s ultimate goal is to join the faculty of a liberal arts college. In the short term, she plans to finish her dissertation in spring 2014 and apply for postdoctoral positions.
and a gold and blue (representing science and engineering, respectively) rosette pin on Feb. 16 at the AAAS Fellows Forum during the 2013 AAAS annual meeting in Boston, Mass.

“Election as Fellows of the AAAS places these faculty in an elite corps of internationally recognized scientists, and we should all take great pride in their successes,” said Franklin College Dean Alan T. Dorsey. “Not only have they excelled as researchers, but they are all inspiring teachers and scientific ambassadors.”

Nancy R. Manley, professor of genetics, was recognized for distinguished contributions to research on mammalian organ development of thymus and parathyroid, and for distinguished service to teaching and the promotion of biological sciences.

Allen J. Moore, professor and head of genetics, was recognized for distinguished contributions to the field of evolution, particularly for theoretical and empirical studies of the importance of indirect genetic effects in social behavior.

The tradition of AAAS Fellows began in 1874. Currently, members can be considered for the rank of fellow by the steering groups of the association’s 24 sections, by any three fellows who are current AAAS members (so long as two of the three sponsors are not affiliated with the nominee’s institution) or by the AAAS chief executive officer. Each steering group then reviews the nominations of individuals within its respective section and a final list is forwarded to the AAAS Council, which votes on the aggregate list.

The American Association for the Advancement of Science is the world’s largest general scientific society, and publisher of the journal Science as well as the journal Science Signaling. The Society’s fall meeting is the world’s largest general scientific meeting, with more than 20,000 attendees. The AAAS Fellows Forum is an annual event that recognizes the excellence of its Fellows.
of our graduate program. Joining us has been Chris Spruill (accountant), Danielle Hanes (administrative associate, Manley lab), Beverly Ford (administrative specialist, with oversight of the undergraduate program), Cecily Hill (senior accountant) and, in May, Rachel Burns in the new position of grants coordinator (also supporting the head of department – who really needs support). We welcome all of the new faces and wish all the best to those who have retired or moved on to new challenges. The remaining staff continues to provide outstanding service, and I thank them all.

Undergraduates in the department continue to contribute to the vibrant atmosphere for teaching and research, as is evident in the undergraduate news column on page 3. Our undergraduates do amazing work, and I know that one of the most satisfying parts of my job is exposing undergraduates to research in behavior genetics by providing them with a hands-on experience working on our latest pursuits.

Our graduate students also continue to excel. Liza Luct received the 2013 Outstanding Teaching Award from the Graduate School, and Liza, Louisa Carter and Paul Griffith received the Center for Teaching and Learning Outstanding Teaching Assistant Award. Two students received Doctoral Dissertation Improvement Awards from NSF – Cheryl Pinzone and Sarah Sander. In awards from our department, in 2012 we initiated the Hightower Award funded by the Hightowers and now in memory of Robin Hightower who sadly passed away this year. Christine Ewers and Louisa Carter were our inaugural recipients. Sarah Sander

see head’s on page 7

Several genetics majors have received awards for the upcoming academic year. Andrea Walens, Phillip Ogea, and Katherine Korunes have been accepted into prestigious summer research programs. Andrea and Phillip will conduct biomedical research at Memorial Sloan-Kettering Cancer Center and in the Amgen Scholars Program at Columbia University, respectively, while Katherine will receive training in bioinformatics and computational molecular biology at the University of Wyoming. Devon Humphreys received a travel award to present his research at the Evolution 2013 meeting in Snowbird, Utah. Megan Chesne, Mary Douthit, Emily Fawcett, Austin Garner, Matthew Robert Kent, Jenna Pallansch, and Alyse Ragauskas have been funded by CURO to pursue summer research at UGA. Most notably, Phillip Grayeski has been awarded a Barry M. Goldwater Scholarship for 2013, which is considered the most prestigious undergraduate science honor in the U.S. We are very proud to note that since its inception in 2001, eight of the 30 UGA students to receive Goldwater scholarships have been genetics majors.

Last, but certainly not least, I want to thank Susan White for her 10 years of fantastic work for our majors and advisors. Although Susan has taken on other responsibilities, it’s great to know that she’s staying in the department.

Mary Bedell, for the Undergraduate Affairs Committee

We proudly recognize alumni and friends who have supported our academic programs from March 31, 2012 to March 31, 2013. We are grateful for the generosity of all of our donors. If your name is listed incorrectly or is missing, please e-mail whites@uga.edu so that we may properly acknowledge your generosity. To make a gift to the department, please refer to the gift form on page 7.

Charles and Gwen Aquadro
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Yau-Lun Kuo and Yeh-Lin Teresa Yang
and Cheryl Pinzone were awarded the Linton and June Bishop Graduate Fellowships, and Emily Peeden Bewick was awarded the Jan and Kirby Alton Graduate Fellowship.

The faculty continues to be recognized for both outstanding teaching and research. Recognition from UGA came to Dave Hall, who was awarded the Sandy Beaver Excellence in Teaching Award, and Norris Armstrong who was awarded the General Sandy Beaver Teaching Professorship from Franklin College. It is appropriate that these two now co-teach GENE 3200, Genetics. Mary Bedell was inducted into the UGA Teaching Academy and was named a 2012 Senior Teaching Fellow by the Center for Teaching and Learning. Sidney Kushner was awarded the Lamar Dodd Creative Research Award. Nancy Manley was awarded the Graduate School Outstanding Mentoring Award, for her mentoring of graduate students. Nationally, Nancy and I were named Fellows of the American Association for the Advancement of Science this year. Dave Hall was promoted to associate professor with tenure, and Rodney Mauricio was promoted to professor in recognition of all of the contributions they make to teaching and research. Finally, an adjunct faculty member, Mike Strand in Entomology, was named a Regents Professor in 2013 joining Andrew Patterson who was named a Regents Professor in 2012.

Alongside the changes in our staff, two new faculty members joined the department. Melissa Davis, who studies epigenetics and cancer and teaches in the new medical school, joined the department as an assistant professor in August 2012. Jonathan Eggenschwiler, who studies development and neurogenetics, joined us as an assistant professor from Princeton University in September. We are delighted to continue to grow our faculty and hope to be adding several new positions in the coming years.

Finally, I regret to announce that Daniel Promislow is moving to the University of Washington in Seattle. While Daniel will retain an adjunct appointment with us, we will miss his leadership. It was Daniel who contacted me about the head of department position, and I have known Daniel for many years and I will miss our interactions. We wish him all the best and every success.

As I wrote a year ago, I remain excited about the possibilities and the future. I hope and expect to continue to grow as a department. Regardless, I thank our supporters, students, staff and faculty for making the Department of Genetics the force that it is. We will continue to pursue excellence in research, teaching, and service to the best of our ability as is befitting our departmental tradition, regardless of the fiscal climate.

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If you would like to make a pledge gift, please contact Ros Raley at rraley@franklin.uga.edu or (706) 542-3581.
Awards * Honors

Norris Armstrong  Franklin College General Sandy Beaver Teaching Professorship
Mary Bedell  2012 CTL Senior Teaching Fellow
               UGA Teaching Academy induction
Emily Bewick  2013 UGA Dissertation Completion Award
Louisa Carter  2012 Innovative and Interdisciplinary Research Grant
               2013 CTL Outstanding Teaching Assistant Award
Caitlin Conn  2013 NSF Graduate Research Fellowship
Megan DeBarry  Best Poster prize, 2012 ThymUS International Conference
Phillip Grayeski  2013 Barry M. Goldwater Scholarship
Paul Griffith  2013 CTL Outstanding Teaching Assistant Award
Dave Hall  Franklin College Sandy Beaver Excellence in Teaching Award
               Promotion to associate professor with tenure
Katharine Korunes  Abstract presentation, NCUR 2013
Sidney Kushner  Lamar Dodd Creative Research Award
Eddie Mae Lay  10-year Franklin College Staff Service Award, May 2012
Liza Lucht  2012 Future Faculty Award
               2013 Excellence in Teaching Award
               2013 CTL Outstanding Teaching Assistant Award
Allen Moore  Fellow, AAAS
Judith Mank  Franklin College of Arts & Sciences Outstanding Alumni Award
Nancy Manley  Fellow, AAAS
               Graduate School Outstanding Mentoring Award
Rodney Mauricio  Promotion to professor
Alex Mihala  2012 Mote Graduate Support Fund for Biomedical Research
Drexel Neumann  Who’s Who Among Students in America’s Universities & Colleges
Cheryl Pinzone  2013 NSF Doctoral Dissertation Improvement Grant
Sarah Sander  2013 NSF Doctoral Dissertation Improvement Grant
               2012 Innovative and Interdisciplinary Research Grant

Hightower...from page 1

more than 30 species of thoracic barnacles exhibit androdioecy and it evolved several times from hermaphroditism. How can this be?” asks Christine. “I aim to answer this question in the androdioecious acorn barnacle *Chelonibia* using field collections, common garden experiments and molecular techniques. *Chelonibia* only settles on marine animals, especially sea turtles, blue and horseshoe crabs. This life history trait may have been important for the evolution of androdioecy in *Chelonibia*.”

“The Hightower fund gave me the opportunity to collect and examine close to 2000 barnacles from these three very different host species,” Christine said. “The data gave first insight into the natural range of sex ratios, potential mechanisms for sex determination and life history of *Chelonibia*. It informed the next steps of my project and even allowed me to purchase some equipment for upcoming research. I am very thankful for receiving the Hightower award, as it brought me one step closer to understanding how males can exist in a hermaphroditic system.”

Fellows...from page 5

*Science Translational Medicine* and *Science Signaling*, AAAS was founded in 1848 and includes 261 affiliated societies and academies of science, serving 10 million individuals.

Condensed from original article by James Hataway, January 14, 2013, Columns.uga.edu