

# BIOLOGY

VOLUME 8

LAFAYETTE

WINTER 2012-13

## HHMI GRANT WILL HELP PREPARE STUDENTS TO LEAD

With major support from the Howard Hughes Medical Institute, Lafayette will make its already strong biology program even more effective in preparing students to be leaders in science research and medicine.

A \$800,000 grant will enable Lafayette to expand the number of real-world research

**HHMI** experiences for students and increase

the diversity of students who study science. The funding also will support faculty and curriculum development.

“We are very grateful to the Howard Hughes Medical Institute. This support will significantly strengthen Lafayette’s ability to educate the next generation of researchers, educators, entrepreneurs, and leaders in biology and the life sciences,” said President **Daniel H. Weiss**.

“HHMI is investing in [Lafayette and other schools that were awarded grants] because they have shown they are superb incubators of new ideas and models that might be replicated by other institutions to improve how science is taught in college,” said Sean B. Carroll, HHMI’s vice president of science education.

David J. Asai, the institute’s director of precollege and undergraduate science education programs, said, “We are excited by this group of grantees because, together, we expect them to provide leadership in solving some of the important issues confronting science in the nation.”

The College plans to found a summer research program for students after their first year, increase on-campus and off-campus research programs for upper-level students, and provide additional opportunities for students to cultivate

(GRANT continued on page 2...)

## PROF. ANNA EDLUND MIXES RELIGION, ART, AND SCIENCE

A few months ago, **Anna Edlund** opened her email account and received two pleasant surprises. First, an audience with the Dalai Lama was scheduled for June. Second, she had been awarded a Fulbright grant.

Edlund is among four American biology professors who taught Western science and biology to Buddhist monks in India as guests of the Dalai Lama. In teams of two, the professors taught classes of 50 monks and several nuns for six hours a day through an interpreter. Edlund and her teaching partner focused on disease, the immune system, and epidemiology.

Edlund’s visit was organized by the Emory-Tibet Science Initiative, a partnership between Emory University and the Dalai Lama. After the biology professors departed, neuroscientists and physicists arrived to teach the same students.

Edlund then traveled to Stockholm, funded by a Fulbright grant, to study the art of a founding father of her field of pollen biology, Gunnar Erdtman (1897-1973), whose laboratory notes contain hundreds of drawings of pollen grains. For about three months, she worked at the Swedish Museum of Natural History, where Erdtman’s



Anna Edlund, assistant professor of biology, and Belinda Sibanda '11 in the greenhouse of Kunkel Hall.



Anna Edlund (right center) with her class in India.

papers are housed, conducting interviews with Erdtman’s students and colleagues.

Edlund is fascinated by scientific illustration and observational science. Her interest in Erdtman comes from his stylized drawings and the diagrammatic form, called a palynogram, that he devised to represent the most essential identifying features of a pollen grain. “He was like a caricaturist, catching the nature of each pollen grain in a few deft strokes,” she says.

In her lab classes at Lafayette, Edlund requires students to make meticulous illustrations of what they observe in journals. She has invited a professional scientific illustrator to instruct her biology students in observation and basic drawing.

Edlund hopes to create a fuller picture of how art training and sensibility influenced Erdtman’s science. After preparing an illustrated article on Erdtman’s palynograms, his contributions to pollen science, and the historical and personal context in which he worked, Edlund hopes to share her findings in a public lecture at the museum and to organize a historical session at the International Palynological Congress.

In her Fulbright application, Edlund described Erdtman as a polymath, skilled in (EDLUND continued on page 3...)

# BIOLOGY

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LAFAYETTE  
COLLEGE

## FROM THE DEPARTMENT HEAD

The Biology Program had another wonderful year. We maintained the ability to teach and conduct research at a level of breadth and depth that I believe puts us at the top of small liberal arts colleges in the country. In addition to teaching 27 different courses last year, biology faculty supervised 48 different students in numerous research projects, many culminating in presentations at scientific conferences and peer-reviewed publications.

Under the leadership of Provost Wendy Hill and Prof. Laurie Caslake, the College submitted a HHMI proposal which, I am happy to report, was funded (see "HHMI Grant Will Help Prepare Students to Lead in Research and Medicine," page 1). The overarching objective for the project is to encourage persistence of undergraduate students—particularly underrepresented minority students—in the sciences through an apprentice-based, interdisciplinary research program in biology. For this purpose, 20 first-year students will be selected each year to participate in the Science Horizons Program, and each year five of these students will receive support for three summers of research. Moreover, one half of the courses offered in biology will incorporate interdisciplinary modules,



and a new capstone course will culminate our program.

We wish Prof. Charles Holliday well in his semi-retirement (his research continues on and off campus), and welcome our newest faculty member, Prof. Mike Butler, who brings the exciting field of developmental plasticity to our teaching and research

program (see "Newest Member," page 5). We are sad to report that Paulette McKenna will retire at the end of this school year after 16 years of service to our department. At the same time, we are very happy that this will allow her to spend more time with her new granddaughter.

We look forward to contributing to the new Environmental Science and Environmental Studies majors and continuing our support of the Neuroscience and Biochemistry majors and the Health and Life Sciences and Biotechnology/Bioengineering minors. We also look forward to working with faculty in other departments and programs to incorporate interdisciplinary components in our courses and to offer Lafayette students innovative research experiences that span disciplines. ■

(...GRANT continued from page 1)

their mentoring skills. A key feature will be expanded opportunities for students to work closely with accomplished alumni.

Wendy L. Hill, provost, dean of the faculty, and Rappolt Professor of Neuroscience, played a key role in developing the project. "These activities will increase research opportunities for students, with an emphasis on interdisciplinary projects. They will also improve students' confidence in their research abilities, increasing the likelihood that they will pursue careers in the life sciences, and provide them with leadership skills that will benefit them in the future," she said.

In addition, through a new faculty and peer mentoring program, the College will support students, especially those from underrepresented backgrounds (including first-generation, low-income, and racial/ethnic minority students), in persisting in undergraduate studies and research. Lafayette

has found that participation in research correlates positively with persistence in science, technology, engineering, and math disciplines.

The initiatives integrate key components of Lafayette's strategic plan for improving the environment for undergraduate education, including support for the life sciences and biology, development of a more robust institutional framework for interdisciplinary teaching and learning, increasing the faculty by 20 percent, and enhancing diversity and inclusiveness.

The funding started in September 2012 and will run for four years. The project director is Robert A. Kurt. An associate professor in the Department of Biology, Kurt was named the inaugural Peter C.S. d'Aubermont, M.D. '73 Director of the College's interdisciplinary health and life sciences program last year. Chun Wai Liew, associate professor of computer

(GRANT continued on page 3...)



# FACULTY AND STAFF UPDATE



**PHIL AUERBACH**, technician III, completed 35 years of service in September 2011. An outstanding, skilled individual, he performs many complex, technical jobs in an exceedingly competent fashion and with unflappable good humor (amazing, given the department's demanding personalities!). The biology staff finds his service and contributions invaluable. We could never do it without him! His talents and contributions were recognized in 2012 when he was presented with the **Lafayette College Distinguished Service Award**. Congratulations, Phil!



**LAURIE CASLAKE**, associate professor, taught Molecular Genetics in the fall and Plagues, Progress, and Bioterrorism in the spring. She supervised four independent research students and three honors students.

One manuscript was published with a student as coauthor, and four students presented posters at the general meeting of American Society for Microbiology (ASM) in San Francisco. She served as academic adviser for 34 students and on the Honors Thesis Committee for four students. She also served on three College committees and presented "Polio Eradication: Is it Possible?" at Experience Lafayette. She was recently elected chair of ASM's Education Division.



**JAMES DEARWORTH**, associate professor, taught Comparative Vertebrate Anatomy and Anatomy of Vision and supervised five research students and two honors students in the fall. In the spring, he

taught Neuroanatomy and supervised two research students and two honors students. Four students were coauthors on abstracts presented at the EXCEL Summer Poster Symposium and at the third annual Lehigh Valley Society for Neuroscience Undergraduate Research Conference. Dearworth finished his second year as Neuroscience Program chair and coordinated the LEARN (Lafayette Alumni Research Network) Program, including a visit by **Peter Donovick '61** of the State University of New York at Binghamton. He served on search committees for the biology and chemistry departments, co-presented a brownbag on careers in the life sciences for junior biology majors, and hosted Mickey

Ariel of Saint Louis University School of Medicine speaking on "Illuminating the Brain's Control of Eye Movements."



**JOHN DRUMMOND**, general biology lab coordinator, taught eight sections of Biology 101 Laboratory in the fall and six sections of Biology 102 Laboratory in the spring. He supervised eight teaching

assistants (TAs) and eight teaching assistant assistants (TAAs) in the fall and six of each in the spring and served on an honors thesis committee. Drummond revamped an ecology field lab at Tobyhanna State Park, estimating the number of red-backed salamanders per half-acre. He conducted a Monarch Butterfly Day for 500 visitors at Hawk Mountain Sanctuary, Kempton, Pa., and was invited to speak at Hawk Mountain on monarch migration. He conducted an all-day monarch butterfly program for second-graders at Blue Mountain Elementary School East in Orwigsburg, Pa., chaired a session at the Lehigh Valley Ecology and Evolution Symposium, and attended the Monarch Biology and Conservation Meeting at the University of Minnesota.



**ANNA EDLUND**, assistant professor, taught Biology of Women (a First-Year Seminar) and Biological Pattern Formation in the fall and Developmental Biology in the spring. She mentored three

independent research students in the fall and eight in the spring. She is Principal Investigator on an NSF grant on pollen cell biology and serves on the steering committee for two separate NSF grants for Research Coordination Networks (RCNs). At the Mid-Atlantic Society for Developmental Biology Conference, she gave an invited research lecture and presented an abstract and poster with four research students. She presented research lectures at Swarthmore College and at the RCN 2011 Annual Meeting on Integrative Pollen Biology and a poster at the annual meeting of the American Society for Plant Biology in Minneapolis.



**BERNIE FRIED**, Kreider Professor Emeritus, continues to be an asset with his collegiality, productivity, and student mentoring. This year he published 12 manuscripts (seven with Lafayette

student coauthors). With **Joseph Sherma**,

Larkin Professor Emeritus of Chemistry, he co-edited a special issue of the *Journal of Liquid Chromatography & Related Technologies* on Thin Layer Chromatography. He was recently commissioned by Springer Publishing to do a "Monograph on Trematodes," coedited by Rafael Toledo, for publication late 2013.



**CHARLES HOLLIDAY**, professor emeritus, taught Human Physiology and Invertebrates and World Health in the fall and was academic adviser to 12 students. Following a leave in the spring, he conducted research

on the Lafayette population of cicada killer wasps in the summer. He and colleagues Joseph Coelho (Quincy University) and Jon Hastings (Northern Kentucky University) published two scientific papers on these wasps. Holliday belongs to the rival Entomological Society of America and American Entomological Society. In June he retired after 30 years of teaching (2296 students), doing research (mentored 130 student-semesters of research, mentored 21 honors students, published 51 papers/research notes/poster presentations), and grading a stack of blue-book short-essay exams eight meters tall at Lafayette since 1982. His new office/research space is in Pardee Hall.



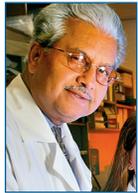
**ROBERT KURT**, associate professor, taught Immunology in the fall and A Modeling-Based Approach to Biology and Infectious Diseases in the spring. He supervised seven independent research

students in the fall and six in the spring. Two manuscripts were published with students as coauthors, and two research students presented their work at the Pennsylvania Academy of Science meeting. Kurt presented student research results at the 99th Annual Meeting of the American Association of Immunologists in Boston, served as an academic adviser to 13 students, and was awarded a three-year renewal for his NIH grant with his research students. He serves as the Peter C.S. d'Aubermont, M.D. '73 Director of the Health and Life Sciences Program and chair of IACUC.



**WAYNE LEIBEL**, Kreider Professor, taught Evolutionary Biology both semesters and Evolutionary Genetics in the spring. He gave a presentation at one professional meeting last

summer and published one article on cichlid fishes. He continued his work as associate editor/technical editor of the *Journal of the American Cichlid Association*, as chair of the Guy D. Jordan Endowment Fund of the American Cichlid Association (which administers small grants for cichlid research for graduate and postdoctoral students), and as editor of *Cichlid News*.



**SHYAMAL MAJUMDAR**, Kreider Professor Emeritus, supervised an independent research student, coauthored a book chapter and two abstracts with research students, and coedited a book. He was an invited participant and speaker at the 13th Annual Meeting of Society of Science and Environment in Calcutta and Third International Conference on Ecotoxicology and Environmental Sciences in Goa. He chaired a scientific session at each conference and was chair of the latter's International Advisory Committee. He served on the editorial boards of the journals *In Vitro: Cellular and Developmental Biology* and *Advances in Pharmacology and Toxicology* (India). He is a Fellow of the American Association for the Advancement of Science.



**PAULETTE MCKENNA**, department secretary for 16 years, supports and sustains the department in these and other valuable ways: She serves the department head in running the department, assists other biology faculty, manages the building, coordinates the purchase of equipment and supplies, and handles faculty scientific grant expenditures. She also oversees the departmental budget, makes arrangements for faculty to attend scientific conferences, handles invited speaker arrangements, and compiles the extensive documentation for our Annual Report. Moreover, she facilitates course field trips, monitors student hiring and contract submissions, controls student payrolls, and issues key requests for students working in the building. Last, but not least, she directs prospective students to appropriate faculty members and gives tours for potential students and parents.

**MANUEL OSPINA-GIRALDO**, assistant professor, taught General Biology in the fall and Molecular Genetics in the spring. He supervised two independent research students each semester and supervised five EXCEL



scholars (all funded by external grants) in the summer. Most of the student research conducted this year was presented at the American Phytopathological Society and the Pennsylvania Academy of Science meetings

in Honolulu and Allentown, respectively, and three manuscripts were published. These presentations resulted in three published abstracts. He served on the College's Enrollment Planning Committee, Biotechnology and Bioengineering Advisory Committee, and Institutional Review Board. He also advised 30 students. With funding from his two federal grants, Ospina-Giraldo supported the travel of his summer EXCEL students to attend the Bioinformatics Workshop at Virginia Tech.



**ELAINE REYNOLDS**, associate professor, taught Neurobiology and Aging and Age-related Disease in the fall and spring. She supervised seven students in research projects. Last summer, she supervised a

Nalven Scholar, two students in a collaborative project with Lehigh Valley hospital, and two students in collaboration with **Chun Wai Liew** and **Jeff Pfaffmann** of the computer science department. Reynolds published a paper with Liew in *BMC: Neural Systems and Circuits* and coauthored two poster presentations at the Society of Neuroscience meeting in Washington, D.C., and one at the Drosophila Research Conference in Chicago. She served as a member of the Civility Project and Mellon Arts Advisory Committee and as a participant in the Teagle Foundation diversity group. She reviewed grants for the SOMAS program and NSERCC and serves as president of the organization Faculty for Undergraduate Neuroscience.



**MEGAN ROTHENBERGER**, assistant professor, taught Conservation Biology and Environmental Issues in Aquatic Ecosystems in the fall and two sections of Biology 102 in the spring. She supervised

one honors student in biology and seven students in independent research projects. Two research students presented their work at the National Conference on Undergraduate Research in Ogden, Utah, and two others at the Pennsylvania Academy of Sciences meeting. An academic adviser to 13 students, Rothenberger served on honors thesis committees for

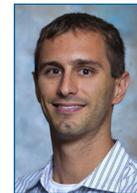
students in the departments of art, chemical and biomolecular engineering, and geology and environmental geosciences. She served as a member of the Sustainability Committee, Environmental Science Minor Advisory Committee, Environmental Initiative Steering Committee, and Student Appeals Committee.



**NANCY WATERS**, associate professor, mentored a Nalven Fellow, EXCEL Scholar, and Mellon Fellow during her 2011-12 sabbatical. All completed poster presentations in a local venue. She completed

work on four posters coauthored by seven students. Results of research on monarch butterfly ecology including three students moved into preparation for submission. After withstanding an auto accident on College Hill she was able to participate in the Howard Hughes proposal initiative, Health Professions workshop, and a biology search. She brought two manuscripts with three student co-authors nearly to completion, compiled an eight-poem compendium of poetry, and established a blog to open Interim 2012. She also reviewed NSF graduate fellowship proposals and manuscripts and accepted appointments as the Faculty Health Professions Adviser and co-chair of the Health Professions Advisory Committee. ■

## MEET OUR NEWEST MEMBER



**MIKE BUTLER** assistant professor, holds a Ph.D. from Arizona State University, M.S. from Boise State University, and B.A. from Bowdoin College. He has taught labs for introductory biology for

majors and non-majors, human physiology, and vertebrate zoology. He also co-designed and co-taught a graduate seminar, Scientific Teaching, exploring how to teach undergraduates most effectively. He will teach Human Physiology, Physiology of Extreme Animals, and General Biology. His research program will utilize field and laboratory techniques to explore animal behavior, animal coloration, and ecoimmunology, with a focus on birds. Elements of his research on mallard ducks and great-tailed grackles have been covered by *Science News*, *Discover Magazine*, *BBC Earth News*, *Discovery Channel Canada*, and other news outlets. ■

Thanks to those who keep us updated. We would love to know how you are, what you are up to, and ways you have used your biology knowledge in your careers or everyday life.

**CHRIS SANGIOVANNI '95** is now VP of Operational Support and Compliance with Menzies Aviation, Los Angeles. He is moving through his career as a lab technician into environmental safety in the airline industry. Chris now oversees safety, security, quality assurance, and training programs for the Americas region. He also manages the DOT drug and alcohol programs and de-icing programs for Menzies Aviation.

**DAN BILLS '97** (Harvard Dental School '01, University of Illinois-Chicago Orthodontics '04) was recently honored by selection to the Top 6 Dentists in New Jersey by the profession. For more information, visit <http://njmonthly.com/articles/topdoctors/smiling-faces.html>.

**REGINA LAMENDELLA '04** recently began as an assistant professor in the Department of Biology at Juniata College.

**SARAH SMITH '07** obtained her M.A. and teaching certification at Immaculata University in 2011 and is a biology teacher at Germantown Academy, Fort Washington, Pa.

**MICHAEL WERNER '07** recently began an M.D./Ph.D. program at the University of Pennsylvania.

**LAUREN GEORGE '08** received her medical degree from Drexel University in June and is a resident in internal medicine at the University of Maryland.

**JACKIE MARCHESI '09** left her position as an Environmental Analyst at CSC, Alexandria, Va., to enter the University of Delaware's graduate program in entomology and wildlife ecology.

**BRIDGET HILBIG '10** passed her doctoral qualifying exams and is a candidate for a Ph.D. at the University of California, Riverside, where she is working on seagrass invasions and wetland conservation.

**KAREN LESAGE '10** finally finished her training and is now a Physical Scientist/Forensic Examiner for

the Latent Print Operations Unit in the Justice Department.

**KATELYN SCOULAR '10** was accepted by a variety of schools, but Penn State was her favorite. She'll join the Ph.D. program in nutritional sciences there. Her adviser will be Dr. Shelly M. Nickols-Richardson, who has long studied bone metabolism but is now focusing on obesity and received a USDA grant to run an obesity intervention program for middle-school kids. Scoular will help with this project for her graduate assistantship. She will also complete the coursework necessary to obtain the Registered Dietician credential. She is excited to join a community where they have the faculty and facilities to ask some interesting questions about dietary interventions at the clinical level. "This is where I think I fit in along the spectrum of nutrition research, not out in basic research and not out in pure epidemiology, but somewhere in the middle at the clinical/translational level. Penn State feels like a great fit for me, and I could not be more excited!"

**COLLEEN KELLY '11** is working as a research technician in the lab of Dr. Norbert Perrimon in the Department of Genetics at Harvard Medical School.

**COLLEEN NETHERBY '11** entered her second year in the immunology Ph.D. program at Roswell Park Cancer Institute. Having finished her rotations, she recently joined Dr. Scott Abram's lab, where she will research tumor immunology with an emphasis on tumor escape mechanisms and potential mechanisms underlying apoptotic resistance in an ovarian cancer model.

**TORI POCIUS '11** entered the master's program in ecology at the University of Kansas, where she will continue working with her beloved monarch butterflies.

**ELIZABETH WALLACH '11** was accepted into the physician assistant program at Pace University-Lenox Hill Hospital, New York City. ■

## FISH GENUS NAMED IN HONOR OF JOHN H. CARUSO '69

Fish biologists have named a newly identified genus of fossil anglerfishes after **John H. Caruso '69**, professor of practice, ecology, and evolutionary biology at Tulane University.

Caruso, a biology graduate and assistant professor of biology at Lafayette from 1977 to 1983, is an ichthyologist and one of only two biologists in the world who have focused their



John Caruso '69

Paula Burch-Celentano

research on anglerfishes. The other, Theodore Pietsch of the University of Washington, and his coauthor, Giorgio Carnevale of the University of Toronto, gave Caruso's name to the genus in the March 2012 *Journal of Systematic Palaeontology*.

Caruso has been interested in the systematics of chaunacid and lophiid anglerfishes since the early 1970s. "I became interested in the lophiids [monkfishes] first because they were very poorly known and greatly in need of a revisionary study," he says.

Beside the new genus, Caruso has discovered and described seven new species of anglerfishes and a new species of giant snake eel.

"My most exciting discovery was a new species of deep-water lophiid anglerfish in the genus *Sladenia*," he says. "It was described in 1976 from the first specimens seen in nearly 70 years. At the time the entire genus was known from only two specimens from the Indian Ocean and Indo-West Pacific, each having been described as a distinct species. I am still working on that genus."

Caruso got research experience in parasitology with **Bernard Fried**, now Kreider Professor Emeritus of Biology. "He was a great teacher and an inspiring mentor, so even though I didn't want to pursue a career in parasitology, I found it fascinating and loved working with Bernie," he says.

"Having a genus named in your honor is a tremendous accomplishment," says Fried, with whom Caruso coauthored his first scientific article. Fellow scientists have named three organisms in honor of Fried, one of the world's foremost experts in parasitology, including *Echinostoma friedi* in 2000. ■

## KAREEMA GRAY '94 INVOLVED IN SOCIAL ISSUES AS PROFESSOR AND ACTIVIST

With both intellectual and practical expertise in the field of social work, **Kareema J. Gray '94** expresses her passion as a professor, adviser, researcher, and community leader.

As an assistant professor of social work and undergraduate program director for the Department of Social Work at Winthrop University in Rock Hill, S.C., Gray says her favorite course to teach is social policy, the study of actions that affect people and their access to goods and resources.

Gray, who received a master's and doctorate in social work from University of Georgia, focused her thesis research on African American social work history, particularly in Philadelphia during the Progressive Era. She explains that while new ideas for providing services and programs to help the growing poor populations in large cities were being implemented, they excluded African Americans. So, African Americans developed their own service delivery system.

"We have to understand history in order to fully understand the issues and social problems today," Gray says. "The problems that we are dealing with now in our society are more often than not the same ones in different forms. We can learn from mistakes and victories in the past."

A biology graduate, Gray was a member of the women's basketball team, conducted undergraduate research, and volunteered in the community. She continues to play basketball, although "I do not run as fast or jump as high," she says. "My love for the game has not changed. I think it has grown."

"Coach [Pat] Fisher was hard on us and pushed us to do more than we thought we could. I did not understand what she was doing then, but I do now," Gray says. "I do the same with my students. I tell them that I am going to push them and challenge them to do more than they think they are capable of, but I am also going to encourage them and support them along the way."

Gray conducted research on the cicada killer wasp with Professor Emeritus **Charles Holliday** and assisted **Wendy Hill**, provost, dean of the faculty, and Rappolt Professor of Neuroscience, on a project mapping calls from finches.

"Both experiences gave me a confidence that I don't think graduates from many other schools get. Even though I was not 100 percent sure of my career path, I was confident that whatever I chose, I was going to be prepared because of the solid foundation I was able to build at Lafayette."

Recently named a Woman of Achievement at Winthrop's Office of Multicultural Life celebration, Gray participated last year in a national conference call with First Lady Michelle Obama and Joshua DuBois, executive director of the White House office of faith-based neighborhood partnerships, to discuss the Joining Forces military family initiative.

Gray is involved in a pilot program to train, educate, and move homeless single mothers from poverty to self-sustainable, independent living, co-sponsored by the Department of Social Services in Mecklenburg County, N.C., the Housing Authority of Charlotte, N.C., and HOPE Charlotte. She is also part of a pilot program in Hays State Prison in Georgia to create a long-term peace initiative.

At Winthrop, Gray serves on the Cultural Events Committee, Diversity Team, and Faculty Advisory Committee on Intercollegiate Athletics. She also advises two student groups, Disciples on Campus and the student chapter of National Association of Black Social Workers.

A board member of HOPE Charlotte and The Youth Source in Rock Hill, Gray has also worked with Habitat for Humanity. She considers a week spent in Port Au Prince, Haiti, helping a community rebuild as her most remarkable experience.

"Our team built a road that was about a half-mile long using only buckets, shovels, rocks, and gravel! To have the honor of working side by side with such amazing people whose lives had been literally turned upside down, yet they remained so positive, moved my soul." ■



Kareema Gray '94 talks with students at Winthrop University.

## STUDENTS PRESENT RESEARCH AT PA. ACADEMY OF SCIENCE

Eight biology majors presented research papers with their faculty mentors at the 88th annual meeting of the Pennsylvania Academy of Science March 30-April 1 at Cedar Crest College.

**Amanda Balaban '12** presented with Kreider Professor Emeritus **Bernard Fried** on *Echinostoma caproni*, parasitic flatworms that can invade humans, domestic animals, and wildlife.

**Alicia Bartley '12** and **Christine Vrakas '13** worked with Associate Professor **Robert Kurt** on separate projects focusing on breast tumors in mice.

**Carolyn Cabrey '12** presented on harmful algal blooms in Raritan Bay, N.J., with Assistant Professor **Megan Rothenberger**.

**Jason Ewer '13** worked with Assistant Professor **Manuel Ospina-Giraldo** on *Phytophthora infestans*, the organism that caused the Irish Potato Famine.

**Shane Foye '12** presented with Rothenberger on the impact of beetles on purple loosestrife within Jacobsburg State Park, Wind Gap, Pa.

**Lauren Hinkel '14** and **Hannah Komar '13** worked on research on *Phytophthora sojae*, a plant pathogen that can damage soybean crops, with Ospina-Giraldo. ■

## BIOLOGY STUDENT AWARDS AND SCHOLARS

### WILLIS ROBERTS HUNT PRIZE

**Amanda Balaban '12**  
**Emma K. Flaherty '12**

### JOSEPH WATT KUEBLER JR. MEMORIAL PRIZE

**Kellyann Niotis '12**

### DR. LORRAINE MINEO TEACHING ASSISTANT AWARD

**Alyssa M. Leone '12**

### NALVEN SUMMER 2012 RESEARCH FELLOWSHIPS

**Blaine Caslin '13**  
**Alex Pong '13**  
**Elizabeth Rentschler '13**

## GOING GREEN?

Would you like to go green? Let us know and we'll add you to the list of alumni who will receive electronic copies of the newsletters instead of paper copies. ■

12/12-3K

## BIOLOGY AT LAFAYETTE: 1901-1915



**1901** Laboratory practice and experimentation as part of instruction in the sciences are greatly increased in accordance with the educational policy of President **Ethelbert Dudley Warfield** (1891-1914).

**1902** The Department of Biology, which had occupied cramped, temporary quarters in South College, moves into 10 rooms of the renovated Jenks Hall, with large new laboratories, a grand museum, and a vivarium with areas for live frogs, turtles, and other living specimens.

**1904** Professor **Alvin Davison** is becoming widely known as his health and hygiene textbooks are used in many Pennsylvania schools and his lab manual on mammalian anatomy meets with favor in many colleges. His demonstration of germs on public drinking cups, which are rarely washed, paves the way for the establishment of the Dixie Cup plant in Easton.



**1905** The first mention of evolution appears in a course description in vertebrate zoology stating that “the factors and methods of evolution” are included.

Before this point evolution is discussed but not formally, and there seems to be no opposition to the teaching of evolution in the biology department. However, in 1909 a professor of philosophy is dismissed for espousing evolution in his class.

**1908** Professor **Jacob Updegrave** resigns. For years he has been a practicing physician with a large practice but has continued with his college work on a part-time basis. After his resignation as physical director, he continues to give lectures in hygiene and demonstrations in bandaging for two years.

**1909** In the catalog, all biology classes are listed as electives that may be taken at any time prior to the second term of the senior year. The work of the second and third term of the senior year is designed for students expecting to enter the professions of teaching or medicine. The courses are mammalian anatomy, vertebrate zoology, general biology, bacteriology and health, physiology, embryology and histology preparation, sanitary biology, and botany.

**1910** Students are calling Jenks Hall “the cat lab” due to the mammalian anatomy class taught by Professor Davison (see 1904), where cats are the principal subjects of dissection. For the course, the students have to get their own specimens for dissection and inject them for preservation.

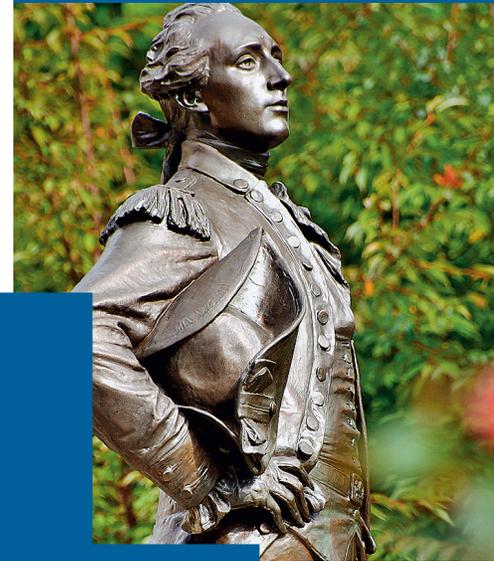
**1913** Many students go on to become distinguished professors throughout the country, including **J.B. Amberson**, who is widely known for his contributions in medical literature on tuberculosis and diseases of the chest. He becomes president of the National Tuberculosis and Health Association.

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**1915** Early in the summer Professor Davison suddenly dies. Through his teachings and writings he is perhaps more widely known

than any other member of the faculty. His unique and effective methods of teaching lead to an unusual number of students who become distinguished in the fields of anatomy and medicine. ■