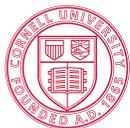


CORNELL ENTOMOLOGY

NEWSLETTER 2011. Vol 2, Issue 1.

GENEVA & ITHACA, DEPARTMENT NEWSLETTER



Cornell University
College of Agriculture and Life Sciences
Department of Entomology

Greetings From Cornell Entomology Department!

Moving into the future with clear goals and high expectations. On July 1, 2010 the two Cornell Entomology Departments (on the Ithaca and Geneva campuses), each with more than a century of proud history, were merged into a single academic and administrative unit with a presence on both campuses. Although there have been challenges over the last several months, the merger is working very well, thanks to the excellent faculty and staff on both campuses.

As a first step to plotting our collective future, we have been engaged in an important process of writing our strategic plan for 2011-2015. Our goal is simple: Be the best Entomology Department in the country. However, accomplishing this will not be instantaneous or easy (there is some great competition out there!). Our strategic plan details how we will need to move forward to improve our research, teaching, extension and outreach activities. We have a very talented group of faculty and staff, and I am convinced we can achieve the goals set out in the plan. I am very appreciative of all the great work everyone did on the strategic plan, especially Angela Douglas, Brian Nault, Greg Loeb and Laura Harrington, who were the architects of this blueprint for our future. Dave Soderlund (Associate Chair) and I will be working hard over the next five years to make sure the strategic plan is implemented and our goals met.

It has been another busy and productive year in the department, as you will see throughout the pages of the newsletter. Professor Laura Harrington's course on Plagues and People was selected to be featured as a University Common Course (page 4). Some of Professor Bryan Danforth's research was published in PNAS (page 3), and Professor Tony Shelton served on a National Academy of Sciences committee on greening disease (page 8). Professor Angela Douglas held a UPLC workshop and an all day Diptera symposium (page 6). Our graduate and undergraduate programs remain very strong, and our faculty, staff, students and alumni continue to bring in numerous awards and honors.

We hope that you enjoy reading about our activities for the last year. As always, we hope to see you at the Cornell Mixer at this year's ESA meeting in Reno (November 13-16). Also, we would love to hear from you and learn what new and exciting things you are doing. Finally, please remember to stop by and visit us on either campus the next time you have an opportunity. We appreciate the generous support that our alumni have provided in the past and encourage you to consider the opportunities to give that are listed on page 5.

Jeff Scott, Department Chair

In This Issue

Undergraduate Publications - 2010	2
Research on Bees and Bee Biodiversity at Cornell	2
Jugate Update	3
What happened at the Siege of Caffa in 1346?	4
Opportunities to Give	5
Sarkaria Institute, Insect Physiology & Toxicology	6
Entomology Department Spreads its Wings in Many Outreach Directions	7
Undergraduate Club	7
The Cornell Insect Collection	8
Awards and Honors	8
Undergraduate study in Entomology in the new millenium	9
Student Focus 2011	9
2011 Calendar	12
We Want to Hear From You	12



A cleptoparasitic bee in the family Apidae, *Thyreus splendidulus* (Photo credit: Nico Vereecken)

Undergraduate Publications - 2010

(Undergraduate co-authors are indicated in bold)

Denemark, E. and Losey, J., 2010. Causes and consequences of ladybug washups in the Finger Lakes region of New York State (Coleoptera: Coccinellidae). *Entomologica Americana*, 116:78-88.

Hardstone, M.C., **Huang, X.**, Harrington, L.C. and Scott, J.G. 2010. Differences in development, glycogen and lipid content associated with cytochrome P450-mediated permethrin resistance in *Culex pipiens quinquefasciatus* (Diptera: Culicidae). *J. Med. Entomol.* 47: 188-198.

López-Uribe, M.M., **Green, A.N.**, Ramírez, S.R., Bodganowicz, S.M. and Danforth, B.N. (2011). Isolation and cross-species characterization of polymorphic microsatellites for the orchid bee *Eulaema meriana* (Hymenoptera: Apidae: Euglossini). *Conservation Genetic Resources* 3:21-23.

Park, M.G., **Orr, M.C.**, and Danforth, B.N. (2010). The role of native bees in apple pollination. *New York State Fruit Quarterly* 18: 21-25.

Pimentel, D., Whitecraft, M., Scott, Z. R., **Zhao, L, Satkiewicz, P., Scott, T. J., Phillips, J., Szirmak, D.**, Singh, G., Gonzalez, D.O., and Moe, T. L. 2010. Will Limited Land, Water, and Energy Control Human Population Numbers in the Future? *Human Ecology*, 38: 599-611.

Author: Professor Cole Gilbert

Research on Bees and Bee Biodiversity at Cornell

Since the first reports of colony collapse disorder (CCD) in January, 2007, and the publication of the National Academy of Sciences *Status of Pollinators in North America* report, pollinators have been under increasing scrutiny by conservation biologists, ecologists, the news media, and the general public. My laboratory has had a long-term focus on bees, bee diversity, and bee evolution, but the recent interest in native bees as crop pollinators has allowed us to go in new directions that merge systematic and phylogenetic studies with broader issues in pollination biology and bee biodiversity.

First, my lab is now involved in a major effort to document the native bee diversity in apple orchards in central New York in order to understand the contribution that native bees make to commercial apple pollination. Initially our project was funded by Federal Formula Funds from Cornell Cooperative Extension and the Cornell University Agricultural Experiment Station, and we were recently awarded a four-year USDA-AFRI grant. Our initial studies have documented over 80 species of native bees in apple orchards and experiments by graduate student Mia Park have demonstrated that native bees are more effective pollinators, on a per-visit basis, than honey bees.

Second, through a collaborative NSF grant with 10 other major insect collections across the US, we are using specimen-level data from the Cornell University Insect Collection (CUIC) to document the geographic distributions, flight times, host-plant and habitat preferences of native bees in the US. The CUIC bee collection provides an unparalleled record of bee distributional data over the last 150 years and our project will make these data publically available through the Discover Life website. These kinds of data are now crucially important for documenting changes in bee distributions over time and for documenting the impact of climate change on bee/plant interactions. This project is spearheaded by Dr. Jason Gibbs, a recent post-doc in the lab.

Third, ongoing work by graduate student Margarita Lopez-Uribe has focused on the evolutionary processes that promote genetic structure in natural populations of solitary bees. Margarita's studies make heavy use of new genomic methods to understanding the role of landscape, geographic and climatic changes in shaping the population genetic structure of native solitary bees, some of which are important crop pollinators.



Andrena crataegi (Andrenidae), an important pollinator of early spring fruit trees (Photo credit: Phil Huntley-Franck)

Continued on Page 3

Bees Continued

Finally, a number of projects in the lab continue to develop a better understanding of bee phylogeny and evolutionary history. Sophie Cardinal (post-doc in the lab) recently published a comprehensive phylogeny for the bee family Apidae (PNAS, 107: 16207 [2010]). Her phylogeny provides new insights into the evolutionary history of brood parasitic bees by demonstrating that the majority of apid brood parasites had a single, ancient origin. Jessica Litman (grad student), Christophe Praz (former post-doc) and colleagues at the USDA (Terry Griswold) and South African National Collection (Connal Eardley), and I are also working on developing a well-resolved phylogeny for the family Megachilidae, the leaf-cutter bees. Our results suggest that the earliest branches of megachilid phylogeny show divergences consistent with the breakup of Gondwanaland over 100 million years ago.

The projects listed above all share a common focus on bee biodiversity. Bees are an enormously diverse group, with over 20,000 known species and varied life histories. From tropical orchid bees to southern African oil collecting bees, we continue to discover new reasons to document and examine bee diversity both ecologically, evolutionarily, and phylogenetically. For more information on my lab, please see our new lab website: <http://www.danforthlab.entomology.cornell.edu/>

Author: Professor Bryan Danforth

Jugatae Update

It has been a busy and exciting year for the graduate students in Jugatae. Our great group of students has been published in many periodicals and won numerous awards at conferences. We have also invested a great amount of time to make important contributions to both the department by improving social relations among the entomology students as well as bringing awareness of entomology to the Ithaca community.

We continued the great tradition of Insectapalooza with one of the most successful events to date. The Jugatae graduate students teamed up with their labs to create successful and interactive displays. In addition to these great contributions many went above and beyond to help with the planning, participation in, and support of the event to ensure its success.

We also initiated a new display at Insectapalooza dubbed the 'Jugatae Booth' thanks to the hard work and dedication of Masanori Seto. The 'Jugatae Booth', consisted of contributions from many graduate students that included poster presentations and live demonstrations. This year's theme for the all new booth was, "The ins and outs of common bugs", with topics from lawn pests, to insect pinning, to beneficial insects.

This year we also invited a very interesting seminar speaker. Dr. Sherah VanLaerhoven was nominated by the graduate student body to come talk about forensic entomology. Sherah shared a lot about the history of forensic entomology and how the addition of more ecological based scientists in the field are reshaping the practices of forensic entomologists.

Beyond our passion for our studies and our hard work to contribute to the department, graduate students also know how to kick back. This year Jugatae participated again in the intramural sports of volleyball and soccer and got together for a few social events, such as a celebration of Oktoberfest. All in all, it has been a good year for Jugatae and hopefully next year will be just as fun and productive.

Author: Susan Villarreal, graduate student



What happened at the Siege of Caffa in 1346?

Why was DDT touted as a cure for insomnia during WWII?

What makes an effective bioterrorism agent and how are these agents categorized by the US government? (*answers below*)

All of these questions and more are addressed in the course “Plagues and People” (ENTOM 2100) which explores the pathogens and parasites that have caused human epidemics through history. Diseases have impacted human suffering, society, art and culture since the emergence of *Homo sapiens* to the present day. In turn human behavior, culture, society and politics have shaped disease epidemics. Cornell students have an opportunity to explore the world of plagues in this course which takes a closer look at the diseases that have had the greatest impact on human culture and expression.

The course is divided into several modules. In the past these have included; “The Biology of a Plague”; “Killer Flu Pandemics”; “The Black Death”; “Typhus: War and Fever”; “Break-bone Fever”; “Agents of Bioterror”; and “Typhoid Mary and Other Famous/Infamous People”. Several active learning projects are included to allow Cornell students the opportunity to learn about plagues in a variety of ways. These creative classroom activities help students gain a richer understanding of the social and cultural aspects of disease. Students also have an opportunity to explore their interpretations of disease outbreaks through individual projects using their own forms of creative expression. In the past these projects have included painting, creative writing, website development and creation of video games.

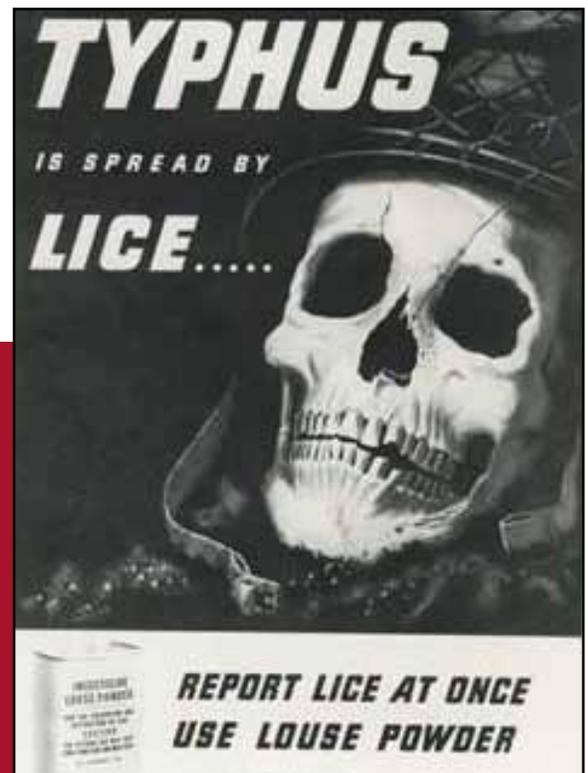
One common plague students study in this class is the Black Death. The Black Death led to major changes in art and expression including the emergence of the “Grim Reaper”. A movement in art called the “Danse Macabre” (the Dance of Death) also emerged during this time in which skeletons and decaying corpses were depicted with living people in daily life. The images were inclusive, depicting all classes of people from the Pope to poor beggars. They served as a reminder of the fragility of life and how death unites us all. The Black Death also had a major impact on history, leading to the birth of the Renaissance and capitalism, improvements in medicine, and decline of the feudal system.

Plagues and People attracts students from a broad range of backgrounds. In 2009, more than 14 different Cornell majors were represented. These students bring their own unique perspectives to class discussions which adds to the richness of the class experience for all. While not all of the units include arthropod-borne infections, aspects of basic arthropod biology are included in many units where relevant. This gives many students an opportunity to learn about the fascinating biology of insects for the first time. No matter what the students’ interests or background,

Continued on Page 5



A “Dance of Death” woodcut by Hans Holbien the Younger (1497-1543).



WWII Typhus poster. Cornell students read about the impact of typhus on Napoleon’s Army and how it ultimately led to their defeat.

Siege of Caffa Continued

one of the major goals of *Plagues and People* is to educate the next generation of citizens who are aware of the impact disease has and will have on society.

Plagues and People will be offered again in the fall of 2011. This time it will be featured as a University Common Course with the goal of providing Cornell students with a shared cross-disciplinary learning experience. A special lecture entitled "1918 Influenza and Other Pandemics: What is Next?" will be featured during the 2011 freshman orientation to introduce the course and the topic of influenza. The lecture will feature a theme from the New Student Reading Project Book, *Homer and Langley* by E. L. Doctorow.



CDC's Dr. Terrence Tumpey looks at a vial containing the reconstructed 1918 influenza virus. Dr. Tumpey recreated the virus in 2005 in an effort to understand what made it so deadly. *Plagues and People* students have debated the merits and danger of recreating such deadly pathogens. (credit: James Gathany, Public Health Image Library)

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ANSWERS:

1. During the *Siege of Caffa* (today known as Feodosija, a port city in the Ukraine) the Tartars, who were at war with Christian merchants, were overtaken by a strange illness and catapulted their infected corpses over the Caffa city walls. Surviving Christian merchants fled to Mediterranean and European ports inadvertently carrying the Black Death into Europe;
2. DDT was so effective against the human body louse that many people treated with the insecticide were, for the first time, able to sleep at night without the irritating scratching that results from louse infestation. Most people aren't aware that up until the 1940's a large majority of people lived with body lice infestations;
3. The most effective biological agents are those that can be readily transmitted from person-to-person, cause high mortality rates, have the greatest potential impact on the public health system often requiring specialized public health responses, and cause significant public panic. The US government uses category A, B and C for bioterror agents. Category A includes the most dangerous agents such as small pox and anthrax.

Author: Professor Laura Harrington

Opportunities to Give

- **PINNED!** - Purchase new collection equipment for that infamous Introductory Entomology Lab Collection - \$2000
- **PICK UP THE TAB** - Meet your friends at the Cornell Mixer at the Entomological Society of America Annual meeting in Reno in 2011, and sponsor the event. - \$3,000
- **HOW I SPENT MY SUMMER VACATION** - Support an Undergraduate Summer Intern with a gift of \$4000. If you are interested in establishing an endowment for support of Undergraduate Summer Interns please contact Jeff Scott.
- **BUGS-R-US** - Sponsor Insectapalooza 2011. The department's one day open house is the premier science outreach event for the College of Agriculture and Life Sciences - \$4500.
- **PAY THE RENT** - Gifts of any size to the Entomology Excellence Fund to help us support graduate students are welcome. If you are interested in establishing an endowment for support of graduate training please contact Jeff Scott.

Please contact Jeff Scott (JGS5@cornell.edu) if you would like more information or to discuss other giving opportunities.

2010 has been a busy year for the Sarkaria Institute for research and student training. Our research through the year has had a strong genetic and genomic flavor. Ping Wang's laboratory has used two independent genetic methods to identify the mechanism of cabbage looper resistance to plants bearing the dual Bt-toxins (Cry1Ac and Cry2Ab). Jeff Scott and researchers have identified overexpression of CYP9M10 as the gene responsible for insecticide resistance in the southern house mosquito. Angela Douglas and her laboratory have participated in the genome project for the pea aphid (*Acyrtosiphon pisum*), culminating in 2010 with the publication of the annotated genome sequence by the International Aphid Genomics Consortium. The genome sequence is transforming aphid research, enabling us all to investigate the molecular basis of aphid biology, including identifying targets for novel aphid pest management strategies.

This year's Patton Lecturer was Professor Serap Aksoy, Professor and Head of the Division of Epidemiology of Microbial Diseases at Yale University. Professor Aksoy is a medical entomologist, with particular expertise on the transmission of the trypanosome that causes sleeping sickness by the tsetse fly *Glossina*. The annual Patton Lecture is held in honor of Dr. Robert L. Patton (1914-2008), who was on the faculty of the Department of Entomology for many years.

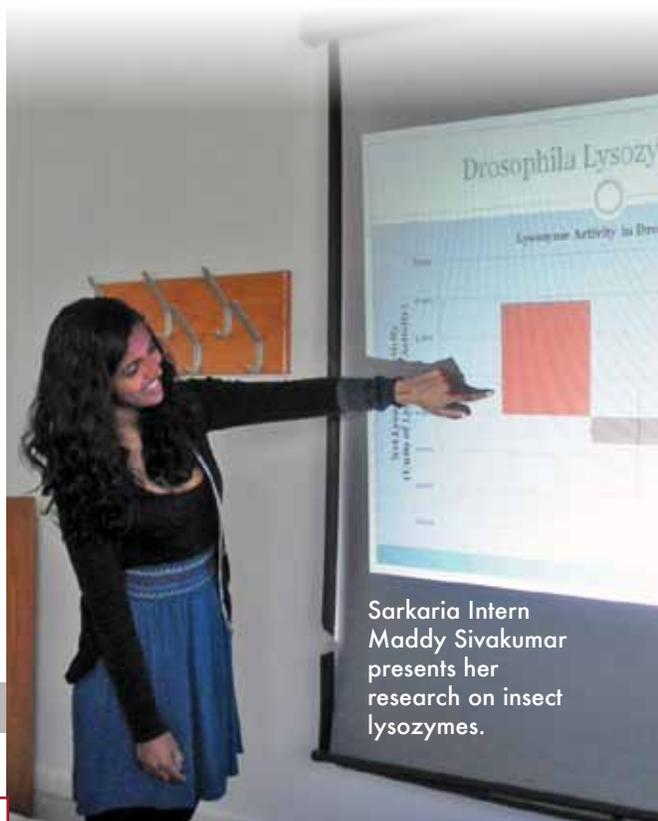
An exciting innovation for 2010 was research internships, offering four undergraduate students the opportunity to conduct independent research projects over their summer vacation. The four students were: Douglas Cassidy, who investigated candidate genes determining Bt resistance in the cabbage looper, *Trichoplusia ni*, with Dr Ping Wang; Maddy Sivakumar, who studied lysozyme enzymes in aphids, with Dr Angela Douglas; Cathy Su, whose research concerned the determinants of pyrethroid resistance in Colorado potato beetle, *Leptinotarsa decemlineata*, with Dr Jeff Scott; and Richard Yeom who worked with Dr Brian Lazzaro on the immune defenses of *Drosophila melanogaster*. All benefited greatly from this scheme. As Douglas Cassidy observed, "Overall, I had a wonderful experience taking part in this project. There is the thrill of investigating the unknown and trying to be the one to discover the answer."

Our graduate students continue to benefit from their association with the Sarkaria Institute. Frank Rinkevich (Fellow 2008), Xiaozhao Song (Fellow 2008) and Eric van Fleet (Fellow in 2009-2010) all reported their research to the 2010 Annual Meeting of the Entomology Society of America, and Eric's poster on the role of the aphid phenoloxidase in immunological defense was awarded the President's prize. Adam Wong (Fellow in 2009) was selected to present his research on the gut microbiota of *Drosophila melanogaster* to the 3rd International Conference on Beneficial Microorganisms.

The Sarkaria Institute organized two workshops for training of graduate students and researchers in 2010. Diptera Day, held in March, offered a forum for colleagues, researchers and students to discuss their research on all things dipteran. More than 50 people attended, including colleagues and students from several other departments, as well as people from the universities at Rochester, Binghamton and Buffalo. In August 2010, Professor Douglas organized a workshop on Metabolite and Nutrient Analysis, in collaboration with Waters Corp. With three colleagues from Waters, we ran a seminar and hands-on demonstration of UPLC (ultra-performance liquid chromatography), together with a demonstration of other methods to assay nutrients in insects. In all, 21 graduate students and researchers from across the campus participated in the workshop. One colleague came all the way from Rochester University for the day.

More information about the activities in the Sarkaria Institute of Insect Physiology and Toxicology is available at <http://www.sarkaria-institute.org/> We thank Drs. Daljit S. and Elaine Sarkaria for their great generosity.

Author: Professor Angela Douglas



Sarkaria Intern Maddy Sivakumar presents her research on insect lysozymes.

Newly Merged Entomology Department Spreads its Wings in Many Outreach Directions

With the merger of the Ithaca and Geneva departments last July, comes a renewed commitment to strengthening the department's community outreach and increasing our visibility to public audiences that do not have the chance to work with us at the academic, professional or commercial levels. Although the kind of image we present to the non-Entomology world has many sides, it might best be described simply as showing "why insects matter and what makes them worth studying". The department now has an Extension & Outreach Committee that oversees the activities involved in delivering this message, and a number of these have already taken place or are actively ongoing.

Insectapalooza, the department's signature open house event, had its annual installment on October 23, 2010. A steady stream of approximately 3000 visitors made their way around Comstock Hall to be amazed at the Arthropod Zoo, delight in The Butterfly Room, play the Pollination or Lost Ladybug Games, and interact with dozens of displays showcasing insect diversity, genetics, medical and crop impacts, among other topics. This increasingly popular event continues to fire the imagination and interest of children (and their parents), some from great distances, wanting to experience the nonstop immersion into the insect world on display here.



Another innovative development following the merger has been the establishment of a number of Extension/Outreach Assistantships available for support of graduate students in the department, who undertake various extension or outreach-oriented projects that are distinct from their degree research programs but are designed to promote the mission of the department or CALS. In addition to helping organize and oversee the Insectapalooza open house, the activities these EA/OA students have elected include updating insect display boxes in the Barton and Comstock foyers, developing new displays for the Arthropod Museum, and most notably, organizing insect Show & Tell presentations to area schools and other community groups. Several Geneva-based EA/OA students hosted 14 students plus their parents at the Ontario County 4-H Ag Careers Day in February. In March, they combined with other graduate students to participate in the Geneva Family & School Association Science Night, where they demonstrated hissing cockroaches, lady beetles feeding on aphids, and conducted an "Entomological Etymology" instruction session to help de-mystify the process of insect identification for the more than 400 participants.

Future efforts will add such activities as development of a department outreach web portal and producing or revising fact sheets about important insect pests. Please contact Jeff Scott (JGS5@cornell.edu) if you would like more information or to discuss other giving opportunities.

Author: Professor Art Agnello

Undergraduate Club

Snodgrass and Wigglesworth (see picture from one trip below) is doing better than ever, with membership and interest continuing to grow! We continue having weekly meetings (which include presentations by faculty and students), organizing camping trips, and holding tons of collecting expeditions. Besides these fun activities, Snodgrass and Wigglesworth conducted some outreach events in elementary schools around Ithaca and helped organize and staff many events at Insectapalooza 2010 such as Pondering Insects, The Insect Zoo, The Cockroach Races, and The Butterfly Room. The club also went on its annual road-trip, this time to Boston, to view Harvard University's Museum of Comparative Zoology and get a behind-the-scenes view of their entomology collection. While in Boston we had a chance to visit the Aquarium! The club also has many exhilarating plans for 2011, including a few spring time camping trips, our end of the year barbeque, numerous collecting trips, and maybe even another road trip.

Author: Michael Garvey, undergraduate student



New Book

Congratulations to Angela Douglas who published her most recent book, "The Symbiotic Habit" (Princeton University Press) in 2010.

News from the Cornell Insect Collection

The Cornell University Insect Collection recently established a renovated and much updated website: <http://cuic.entomology.cornell.edu/>. We wanted a totally new look and high functionality, so we tapped the J.C. Bradley Fund for the Advancement of Insect Taxonomy to commission a new design from Ancient Wisdom Productions, a local commercial website design company. They took our ideas and came up with an exciting new look. They also listened to our needs regarding the necessity that we be able to promptly update the type database, present timely information on the state of the insect collection and its curation, and add news items concerning our personnel, their field activities and publications. Please check out the website and wander around its various pages. It's like we have a new home, though virtual, which shows off the many important contributions that Cornell entomologists have made to the CUIC since our founding in John Comstock's McGraw Hall chimesmaster's room.

Authors: Professors Jim Liebherr, Bryan Danforth, and Rick Hoebeke, Senior Extension Associate

Awards and Honors

Faculty

Laura Harrington won the Cornell University Provost's Award.

Jim Liebherr was the Eastern Branch Nominee for ESA Distinguished Achievement Award in Teaching.

Greg Loeb was awarded the NYS IPM, Excellence-in-IPM Award.

Harvey Reissig is currently President of the Eastern Branch of ESA.

Jeff Scott is currently President of the Physiology, Biochemistry and Toxicology section of ESA.

Tony Shelton was elected Fellow of the Entomological Society of America, and served on the National Academy of Sciences Committee on the Strategic Planning Committee for the Florida Citrus Industry: Addressing Citrus Greening Disease.

Ping Wang was appointed as Associate Director of the Tang Cornell-China Scholars Program.

Students

Anthony Auletta ('10) won the Paul Schreurs Memorial Award for academic excellence and research, and was selected for Entomology's Outstanding Undergraduate Teaching Award.

Lauren Cator received Honorable Mention for the American Society for Tropical Medicine Young Investigator Award, and was selected as Outstanding Graduate Teaching Assistant.

Gaylord A. Desurmont (PhD '10) won the Entomological Society of America's John Henry Comstock Award.

Sarah Jandricic was awarded a grant in the USDA Northeast Sustainable Agriculture Research & Education graduate student competition.

Punita Juneja was selected as Outstanding Graduate Teaching Assistant.

Doo Hyung Lee won the George Gyrisco Award, the Paul J. Chapman Graduate Student Fellowship, and won 2nd place in the Poster Presentation competition for the Joint International Organization for Biological Control Nearctic and Neotropic Regional Sections meeting in Niagara Falls, Canada.

Margarita Lopez Uribe was recently awarded a grant from The Explorers Club - Exploration Fund.

Erin Morris received second place for her oral presentation at the annual Society for Invertebrate Pathology meeting in Trabzon, Turkey.

Michael Orr was selected for Entomology's Outstanding Undergraduate Teaching Award.

Mia Park, Sam Ramsey, Sarah Braun, Doo Hyung Lee, and Eric VanFleet won awards for their student paper or poster presentations at ESA in December.

Masanori Seto received the Michael G. Villani Graduate Student Research Award.

Adam Wong's poster was selected for presentation at the 3rd American Society of Microbiology Conference on Beneficial Microbes.

Eric Yip won the 2nd place best student oral presentation in behavior and ecology at the International Congress of Arachnology in Seidlice Poland in July.

Alumni

Akito Kawahara ('02) won the Entomological Society of America's John Henry Comstock Award.

Undergraduate study in Entomology in the new millenium

We continue to have wonderful undergraduate students majoring in Entomology and the number is growing. Ten years ago the five year average for graduation class size was 3.6. The mean for the past five years has been 7.8 per year and we expect to graduate 12 students this May. The growth in the program is very welcome and I suspect that it has several sources. First, we have instituted efforts around recruiting new students that have paid off. We aggressively pursue prospective students who show interest in the program. We encourage them to come to Ithaca for a visit. When they do come we show them a good time and make sure they have a lunch with several of the SnodWiggs, who are our best ambassadors (more about that on page 7). For the past several years, we have also had a high school student or two visit and help us with Insectapalooza. When they see the student involvement in that great event, they know they're at the right place and they're hooked. Second, as other universities close out their undergraduate entomology programs, those prospective students who are really interested in Entomology, as opposed to simply Biology, will gravitate to Cornell. I call this the "last program standing" scenario. Finally, almost half of our 43 current Entomology majors have a second major. Many of them started in Entomology and added another major, such as Plant Science. The presence of our students in those other courses has led to reciprocal double majoring with many plant folks adding Entomology as their second major. The other students begin by hanging out with the SnodWiggs, then taking an Entomology course or two and then adding the major. We will continue looking for ways to reach out to more high school students interested in getting a broad education in biology and a deep training in Entomology. If you know of any prospective students passionate about bugs, who are looking to go to college with other like minded folks, please direct them to our website <http://www.entomology.cornell.edu/cals/entomology/undergraduate-program/index.cfm> or have them contact me or our student services representative, Ms. Alicia Caswell [amd33@cornell.edu]

Author: Professor Cole Gilbert, Director of Undergraduate Studies

Student Focus 2011

Undergraduate Seniors

John Cho

I am going to graduate school to study social insect behavior because I like social hymenopterans. I currently do research in Tom Seeley's lab.

Keith Ciccaglione

Keith is a senior from Cold Spring, NY. He anticipates graduating in May.

Andrew Debevec

Graduating in 2011 with a degree in Entomology and Biological Sciences wasn't on the horizon for Andrew when he entered Cornell. But as a former Computer Science major, Andrew has combined his interests in computational biology and entomology through his work as a student in the Danforth Lab and during a summer in an REU program. He has also been a Cornell Tradition Fellow for all 4 years of his undergraduate career and is currently serving as president of the professional chemistry fraternity, Alpha Chi Sigma. He will be attending University of Illinois at Urbana-Champaign next year to pursue a masters degree in Entomology.

Sean Griffin

Sean is a senior from Ithaca, NY. He anticipates graduating in May.

James Kopco

Jamie Kopco is an Entomology and Natural Resources double major. In addition to regular classwork, he is an active member of Snodgrass and Wigglesworth Undergraduate Entomology Club and the Cornell student subunit of the American Fisheries Society. He has done research on the impacts of invasion by European frogbit under the guidance of Dr. Lars Rudstam and on predation on ladybugs during washup events and implications of food limitation to ladybugs with Dr. John Losey. He tends to spend his free time swimming in Teagle Hall, collecting insects, camping, and fishing. While immediate post-graduation plans are still in progress, Jamie hopes to ultimately continue with research, with a focus on aquatic insects and ecosystems.

Continued on Page 10

Student Focus Continued

Carolyn LaRow

I joined the Entomology Major in the Fall of my Junior year after taking Alien Empire: The Bizarre Biology of Bugs and looking at the diversity of course offerings in the Entomology Department. I have always been interested in insects and I am so grateful that Cornell has such a wonderful Entomology Department. I will graduate in May 2011 with a double major in Biological Sciences and Entomology. I am currently working on my Honors Thesis in Dr. Linda Rayor's Lab looking at prey requirements and standard metabolic rate of social and solitary species of Australian huntsman spiders. I am curious whether a depressed metabolic rate may be a physiological adaptation to sociality in carnivores. I spent Summer 2010 as a Cornell Hughes Scholar conducting research on this issue. I have also done radio telemetry and data analysis as part of the Cornell Integrated Deer Management Study led by Dr. Paul Curtis in the Natural Resources Department. I worked as a Wildlife Technician for the program in the Summer and Fall of 2009. On campus, I am involved in the Cornell Wildlife Society, Snodgrass and Wigglesworth, and Alpha Chi Omega Sorority where I served as Secretary. I served as Vice-President of the Pre-vet Society and I am involved in Student Assembly as a member of the Environmental Committee.

Peter Meng

Peter Meng is a senior from Rochester, Minnesota graduating in May 2011 with majors in Biology and Entomology. For the past two years, he has studied proteins associated with neurodegeneration in the lab of Fenghua Hu. He is also the editor-in-chief of Cornell Health International's magazine, The Salubrium. After graduation, he plans to pursue graduate studies in medical entomology or chemical ecology.

Elena Olsen

I have been working in Jennifer Thaler's lab as a Rawlings Presidential Research Scholar since freshman year and am studying tri-trophic interactions between *Manduca sexta*, tomato, and the omnivorous predator, *Podisus maculiventris*. I am a dual major in Entomology and Plant Science and am an active member of both the Entomology Club (secretary 2008, Vice President 2009) and the Horticulture Club.

Jeffry Petracca

Jeffry is a senior from Huntington State, NY. He anticipates graduating in May.

Samuel Ramsey

Since the age of 7, I've been enthralled by predatory insects and insect defensive mechanisms. I'm really excited to be on track to be an entomologist! I hope to be a research professor one day studying praying mantids and predatory beetles but I'm involved with a lot of other activities and organizations too. I sing in a band and in a choir and I work closely with Campus Crusade for Christ. I also work to organize weekly interactive discussions about the intersection of science and faith. Right now the people who shout the loudest about this subject are the ones who say the two shouldn't or can't coexist but there are a lot of professors on campus who disagree and they attend biweekly as guest speakers. I can't remember ever being bored at this school...I'm not sure it's possible!

Chris Roh

Chris is a senior from Glenview, IL. He anticipates graduating in May.

Avery Russell

I am a senior in the Entomology and Plant Science majors. Currently I am working in Dr. Cole Gilbert's lab where I am studying the morphology, physiology, and evolution of a leg mechanosensory organ in flies. I am also interested in plant-insect interactions and especially chemical ecology. I have found evolutionary coevolution, convergence, and modification in general to be quite fascinating and it is always a pleasure to learn and discuss the processes of evolution. I am currently a member of the undergraduate entomology club as well as the archery club. I have applied to graduate school in the hopes of eventually becoming a professor. I plan to remain active in research as well as teach.

Yang Zhang

Yang is a senior from Forest Hills, NY. He anticipates graduating in May.

Graduate Students (recent or soon to be graduating)

Sarah Braun

Sarah Braun will graduate in May 2011 with a Ph.D. from Cornell's Entomology Department where she has been studying the role played by fungus gnats, *Bradysia impatiens*, in the transmission of root rot diseases of floriculture crops. During her time at Cornell, she has served as Secretary for the Entomology Graduate Student Organization, Jugatae, and as a graduate student representative

Continued on Page 11

Student Focus Continued

on the Department's Curriculum and Teaching Committee. In addition to her academic work, she has been actively involved in public education and outreach. She has volunteered at Insectapalooza and Expanding Your Horizons Conference events. She has also served as a Judge for 4H Entomology Collections in Tompkins County, NY and has been an active participant in the Boyce Thompson Institute for Plant Research Outreach Program. This year, Sarah was chosen by the Graduate School to serve as one of four student tour guides for new and prospective graduate students, and in this capacity she has been able to share her enthusiasm for Cornell's academic programs and her experiences in the Entomology Department at Cornell.

Stuart Campbell

Stuart originally comes from Vancouver, BC (Canada). He did his BSc at Simon Fraser University, and followed that with an MSc at SFU studying bark beetle chemical ecology. At Cornell he has been studying the chemical and evolutionary ecology of insect-plant interactions. His thesis focuses on how variation in the mating systems of host plants has influenced their chemical defenses against various Coleoptera and Lepidoptera. This involves studies of ecological inbreeding depression in the locally native horsenettle (*Solanum carolinense*), and studies of the defences of self-incompatible and compatible species of the nightshade family, including wild species of petunia, tobacco, potato and tomato. In his spare time he also conducted studies on the pollination-related defences of Colombian groundcherry, the behavior of a subsocial Pyralid, and on how plant uptake of atmospheric reactive nitrogen influences insects. He also enjoyed: being a teaching assistant with Chemical Ecology, Insect Ecology, Introductory Entomology, and Introductory Biology; volunteering in the Comstock Library; organizing workshops with the Cornell Center for Learning and Teaching and the Cornell Biogeochemistry and Environmental Biocomplexity group; being a treasurer with Jugatae; and twice coordinating the Jugatae Seminar.

Lauren Cator

Lauren Cator will be graduating with her Ph.D. in May 2011. She studied for her degree under Dr. Laura Harrington. Lauren's dissertation focused on the role of acoustic interaction in the mating behavior of mosquitoes. She is thankful for the support from her lab group. Portions of Lauren's field work were made possible by grants from both the Rawlins and Griswold Endowments.

Punita Juneja

Punita completed her Ph.D. (major professor Brian Lazzaro) in January 2011. The topic of her doctoral research was the short term evolution of the immune response of *Drosophila melanogaster*. She has moved on to a postdoctoral research position in the laboratory of Frank Jiggins at the University of Cambridge, where she studies the genetics of mosquito-filarial worm interactions.

Doo Hyung Lee

I have been working on my Ph.D. research since 2006 with guidance from Jan Nyrop, John Sanderson, and Jennifer Thaler. My research has been focused on better understanding tri-trophic interactions of whiteflies in greenhouse systems and applying this knowledge into pest management tactics such as habitat manipulation and biological control. More specifically, the study has explored how whiteflies change their host selection behaviors under predation risks and how these non-consumptive predator effects can be explored to enhance trap cropping efficacy. I would like to continue to study insect pest ecology with a practical insight to use the knowledge for developing sustainable management strategies.

Jessica Litman

My research has focused on the phylogeny and biogeography of Fideliini, a unique tribe of bees belonging to the family Megachilidae. Fideliini is comprised of two genera: the genus *Fidelia*, found only in the deserts of southern Africa and Morocco; and the genus *Neofidelia*, confined to the deserts of northern Chile. This ostensibly relictual distribution is suggestive of an ancient continental vicariance between Africa and South America. Phylogenetic analyses of multiple gene loci indicate that *Fidelia* and *Neofidelia* constitute the most ancient lineages of extant Megachilidae but that the two genera together do not form a monophyletic group; divergence dating analyses suggest an origin for both genera of over 100 million years. Our results not only support a Gondwanan origin for Megachilidae but also reveal clues about the biology and behavior of ancestral megachilids.



Sarah Braun



Stuart Campbell



Lauren Cator



Punita Juneja



Doo Hyung Lee



Jessica Litman



Cornell University
 College of Agriculture and Life Sciences
 Department of Entomology

Lisa Westcott
 Cornell University
 College of Agriculture and Life Sciences
 Department of Entomology
 2130 Comstock Hall
 Ithaca, NY 14853

We want to hear from you!	
2011 Calendar	<p>Do you have any news to share? Send your information to Ms. Lisa Westcott, Department of Entomology, 2130 Comstock Hall, Cornell University, Ithaca, NY 14853 or by email to LEW1@cornell.edu.</p> <p>Name: _____ Graduation Year: _____ Degree: _____ Advisor/Major Professor: _____ Email Address: _____ Phone: _____ Current Position: _____ News you would like to share: _____</p> <p>November 14, 2011 Cornell Mixer at the ESA meetings Reno, NV (November 13-16, 2011)</p> <p>October 29, 2011 Insectapalooza Cornell University, Ithaca, NY</p> <p>June 9-12, 2011 Reunion Cornell University, Ithaca, NY</p> <p>May 29, 2011 Commencement Cornell University, Ithaca, NY</p>
Editorial Board	
Obituaries We are deeply saddened to report the passing of the following alumni	
Art Agnello Alicia Caswell Charlie Linn Brian Nault	Linda Rayer John Sanderson Jeff Scott Lisa Westcott
Julius Hoffman (M.S. '47, Ph.D. '49) died in Michigan on April 14, 2010 at the age of 90. In 1942, the beginning of WWII he enlisted in the U.S. Navy and was commissioned as an Ensign. He served for four years, participating in three invasions as a landing craft officer and received the Purple Heart Award. After 30 years of United States Naval Reserve Service, he retired as a captain in 1979. He went to Michigan State University in 1949 as an Assistant Professor in the Entomology Department. He became an Assistant Dean in the College of Natural Science in 1962 and continued there until his retirement in 1986.	