

# Entomology Newsletter 2000

## Contents

Message from the Head .....	2
Faculty .....	4
Staff .....	10
Affiliates and Other Academics .....	11
UIUC Entomologists in the News .....	20
Department of Entomology on the World Wide Web .....	21
Off-Campus Colloquium Speakers .....	21
Ellis MacLeod Memorial Lecture .....	22
Entomology Graduate Student Association .....	23
Graduate Students.....	24
Recent Graduates .....	31
Awards and Recognition .....	32
The Insect Fear Film Festival .....	35
Insect Expo .....	37
Linnaean Games .....	37
Beekeeping Short Course .....	38
Entomology Alumni .....	38
Necrology .....	45
Departmental Donors .....	46

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# Message from the Head

FOR the first time since I've been department head, mercifully little of the news revolves around reorganization. The new integrative biology curriculum, as well as a proposal to begin a new program in Ecology and Evolutionary Biology, actually made it through the Faculty Senate, as did the administrative restructuring, which means that the School of Integrative Biology and the School of Molecular and Cellular Biology began their official existence in July 2000.

Part of reorganization is restructuring the undergraduate curriculum and one consequence of that restructuring is that there will no longer be any departmental course rubrics—all courses offered by the School of Integrative Biology will carry an "IB" rubric and all courses offered by the School of Molecular and Cellular Biology will carry a "MCB" rubric. The ENTOM rubric will be retained only for ENTOM 499, which is required for the entomology doctoral degree.

I'm not ecstatically happy about the loss of the rubric on general principles but this change is for the better in one respect—our department has a long and infuriating history of not receiving credit for teaching courses under the BIOL rubric and we have received assurances from the Division of Information Management that instructional units will, from this point on, be tracked by the principal instructor and accredited to the

home unit of that instructor. So, even with the loss of the rubric, we may actually be better off in terms of instructional unit/faculty teaching equivalent (IU/FTE) ratios, that kabbalistic number that has so much impact on deans and members of the Illinois Board of Higher Education.

Another part of reorganization is restaffing. Although our efforts last year to hire a molecular systematist were unsuccessful, we made up for it this year by hiring two—Jim Whitfield and Sydney Cameron. A nationwide search at the assistant or associate level identified three top candidates, two of whom, fortunately for us, happened to be married to each other.

Dr. Jim Whitfield is more than just a Hymenoptera systematist; he has demonstrated a single origin of polydnaviruses in braconid wasps, authored a widely cited review of the phylogeny and evolution of the host/parasitoid interaction in Hymenoptera, and provided comprehensive keys to the genera of all New World Microgastrinae, important biological control agents. Moreover, he has demonstrated the phylogenetic utility of the commonly used 16S mitochondrial RNA gene, analyzed patterns of variation that can lead to phylogenetically misleading biases, and used both nuclear and mitochondrial gene sequences to demonstrate a rapid early evolutionary radiation of the microgastrine wasps.



His international stature in insect molecular systematics is established beyond doubt. Current faculty members and affiliates with interests in Lepidoptera (hosts of his microgastrines), coevolution, and biological control enthusiastically await his arrival in August 2001.

Dr. Sydney Cameron has a long and distinguished record of achievement in the field of behavioral ecology and evolution. She has amassed an impressive publication record that includes papers in the top journals in the field, including *Nature* and the *Proceedings of the National Academy of Sciences*. Her expertise is in the application of phylogenetic theory and analysis to the study of social insect evolution and her main research focus is on the corbiculate bees of the family Apidae. Her interests in comparative chemical ecology of bees add depth to our program and her extensive experience conducting fieldwork throughout Central and South America (and elsewhere in the world) brings a new international dimension to the department.

A note: the addition of Drs. Whitfield and Cameron brings the total number of faculty to 10—a 25% increase in a single year. And with Dr. Cameron on our faculty, the proportion of female faculty members in the Department of Entomology will increase to 40%, a proportion that I would suggest could serve as a model for efforts to improve the status of women on campus, particularly in the sciences. Moreover, it's my educated guess that this is the highest proportion of women in the department since it all started 91 years ago.

In other faculty matters, Dr. Sam Beshers was reappointed as a visiting lecturer to teach BIOL 120 and taught ENTOM 301 for the second consecutive summer. Dr. Lee Solter taught insect pathology to 9 people (and Lee will continue to offer a Midwest Summer Institute in insect pathology, with students from such far-flung midwestern venues as Utah). Dr. Rob Wiedenmann taught biological control with the assistance of campus visitor Dr. Rami Kfir, Research Scientist, Plant Protection Research Institute, Pretoria, South Africa, whose visit was funded by the International Council. We also welcomed Dr. Kevin Johnson as a new affiliate; Dr. Johnson, recently hired at the Center for Biodiversity at the Illinois Natural History Survey, is interested in the systematics and coevolution of lice (among the very few groups of wingless insects) and their avian hosts (among the very few groups of winged vertebrates).

Probably the staffing change of greatest consequence to recent

alumni (*i.e.*, within the last two decades) is that, after 17 years, Dorothy Houchens, our administrative secretary extraordinaire, left our department for an administrative position with the Department of Agricultural and Consumer Economics, a department with more secretaries than we have faculty.

Dot's loyalty and tenacity have been a tremendous gift to our department.

Her phenomenal recall of past history, her ability to monitor current developments throughout the School, and her absolute familiarity with university rules and practices were a godsend that spared me as department head hours and hours of fruitless phone calls. Were I to describe in detail all of the things Dot has done for the department, it would probably sound like we were exploiting her. Nowhere in her contract, for example, did it specify that she has to fill in for the part-time insectary staff, going to the grocery store to buy 40 pounds of pork liver for the blow fly colony, or grabbing a dozen cockroaches from the rearing room to assist an undergraduate on a research project. I can't imagine that there are many secretaries on this campus who could be forced at gunpoint to do these things, much less volunteer to do them. Her contributions to the department have been innumerable—she was an integral factor in accounting for the strong



feelings of camaraderie and loyalty in this department and we all thank her profusely for her extraordinary term of service.

On the up side, however, to replace Dot we succeeded in hiring an old friend, Jackie Bowdry (*née* Smith). Former students from the early 1980s will remember Jackie; I remembered her especially for being the first secretary who could actually decipher my handwriting (which has been bad ever since fourth grade, when Mr. Parker made me stay in during recess to practice the spelling word “brick,” which he read and marked wrong as “buck.” Not that that incident was traumatic or anything...). Jackie has adjusted remarkably smoothly to our peculiarities—in fact, it's as if she never left! We hope she likes it here enough to stay 17 years, as her predecessor did!

For whatever it's worth, I'm in my ninth year of service as department head; this means I've been a department head longer than I was an undergraduate, a graduate student, a mandolin-player in a bluegrass band, a horse owner, and a member of the Jewish Vegetarians of America Society (I'm still Jewish and a vegetarian, but the Society seems to have folded). I won't say that it defines my existence but being the head of this particular department of entomology is an important part of my life. The Department of Entomology and its past and current members are a great source for me of pride, of friendship, and of inspiration. Thank you, everybody—you make it a pleasure! 🌸

# Faculty

## May Berenbaum



FOR me it's been 12 more months of alliterative same-old, same-old: swallow-tails, cytochrome P450s, and small

brown moths. Our geographic boundaries continue to expand. Although the work with Art Zangerl on chemical phenotype matching between wild parsnips and parsnip webworms remains localized in the Land of Lincoln (and now involves Illinois native Julie Cianfroga), other graduate students in the lab have traveled thousands of miles away from Illinois (kilometers, in publications) in pursuit of more exotic small brown depressariine moths.

Masters student Duane McKenna completed a circuit of six western states (Idaho, Oregon, Washington, California, Utah, and Nevada) searching for native *Depressaria* species and their *Lomatium* host-plants, to gather distributional, ecological, and phenological data in the hope of examining prospects for documenting cospeciation in this plant/insect interaction. In the process, he discovered two undescribed species; he proposed naming one of them after his wife and one, *D. mayartorum*, in honor of his two advisors. Regrettably, reviewers felt that there was insufficient material on which to base a new species description, so I guess I'll have to wait a little longer for my

shot at taxonomic immortality. (I have heard, though, that Dr. Tom Eisner, world-renowned chemical ecologist at Cornell, has proposed naming a chemical isolated from the sticky exudate of a pierid caterpillar after me. I hope the reviewers are supportive and that the chemical doesn't smell too bad).

Mark Carroll literally looked high and low for *Depressaria pastinacella* from British Columbia to New Mexico, in order to see whether carotenoid sequestration varies with altitude and latitude, as it might be expected to do if in fact the sequestered pigments protect against ultraviolet-mediated phototoxicity of hostplant furanocoumarins.

And Katy Lustofin and Terry Harrison bucked the trend, opting to stay in central Illinois for their work. Both bucked the taxonomic trend as well, working not with *Depressaria* but with *Agonopterix* species. Katy is trying to determine how *A. alstroemeriana* copes with the coniine in poison hemlock, and Terry is investigating a species complex of *Agonopterix* caterpillars on rutaceous shrubs in central Illinois. The new species that Terry found will be named for his wife (I guess I should have married a systematist if I really wanted to achieve taxonomic immortality).

Work on swallowtails in the lab is two-pronged (like their osmeteria). Work on cytochrome P450-mediated detoxification of host-plant allelochemicals continues, with Becca Petersen demonstrating differential tissue expression of *CYP6B1* in *Papilio polyxenes* and with Weimin Li finding 14 new furanocoumarin-inducible P450s in *P. canadensis* and *P. glaucus*.

The other work with *P. polyxenes* was done with undergraduate honors student Lydia Wraight, who undertook a summer project, inspired by a report from Cornell in 1999 that pollen from *Bt*-corn was toxic to monarch caterpillars; we were curious to see whether our local populations of black swallow-tails were at risk by living surrounded by a sea of *Bt* corn. Although in the laboratory corn pollen from some events was toxic, in the field we couldn't find any evidence of any impact of the events planted by local growers, despite our best efforts. We were relieved to find out our butterfly supply was not in immediate jeopardy (at least from *Bt* corn pollen) and published the findings in the *Proceedings of the National Academy of Science*. To our surprise, we found ourselves almost immediately in the midst of a media firestorm, with newspapers anxiously calling at all hours for quotations to mangle in print, industry representatives desperately trying to send film crews to shoot public relations footage, and environmentalists accusing us of abusing science and not caring about butterflies. Lydia's other project, describing a yellow eye color mutant in *Trichoplusia ni*, attracted a lot less attention but did give us an opportunity to contribute the name of a mutation to the literature (*bagheera*, after the yellow-eyed panther in Kipling's *Jungle Book*).

Xianchun Li continues to drag us to the brink of economic importance, investigating the connection between allelochemical and insecticide metabolism in the corn earworm, *Helicoverpa zea*; he has

found three P450s in this polyphagous species that are likely participants in the evolution of resistance to xenobiotics. The broad diet of this insect (variously called the cotton bollworm, tomato fruitworm, and false tobacco budworm) has meant that we've had to learn (or re-learn) and commit to memory the structures of many plant secondary compounds that actually aren't furanocoumarins.

On the home front, 10-year-old daughter Hannah continues to be a great source of joy, particularly as new interests develop. Right now, she enjoys piano lessons and synchronized swimming, and she has recently taken up ventriloquism. I'm especially pleased about the ventriloquism, because when I was about Hannah's age I was a ventriloquist, too. My husband Richard, though, doesn't believe me because he doubts that there was ever a time when my lips weren't moving.

I continue to combine business with pleasure and drag my incredibly tolerant family along on trips to places that are not traditional vacation spots. To illustrate, we spent spring break 1999 in Pullman, Washington, spring break 2000 in Vancouver, BC, Canada, and we're scheduled to spend spring break 2001 in Alberta, Canada. If this trend continues, we should be vacationing at the Kevo Subarctic Research Station in Finland by spring break 2005.

## Stewart Berlocher

THINGS remain exciting at the Berlocher's. Paul is 3 going on 3 and Austin is 8 going on 16. Sorry,



what did you say? Eh? My hearing seems to be going. It's so quiet in our house you could hear a Sherman tank

drop. Austin loves the Cub Scouts, and Paul loves Arthur. Things in the lab are productive, lots of new equipment and fun science. I continue working with Hugh on insect smelling. It's hard on your knees, though.

Life as an Urbana bozo is good—and we're not even part of Big Grove. (I expect Peter Price will say something about this latter statement). If an enchilada falls off the plate, is the comida the less? Regards to all my former students out there, and don't be strangers.

## Fred Delcomyn

IT'S amazing to think of all that can happen in a bit more than a year. On the administrative front, the School of Integrative Biology is now a full-fledged, official unit of the University of Illinois, comprising the departments of Animal Biology (formerly Ecology, Ethology, and Evolution), Entomology, and Plant Biology. We have been successful in attracting outstanding candidates to several positions we have had in the School, including Jim Whitfield and Sydney Cameron to the Department of Entomology. The next challenge is to get our new curriculum up and running.

On the research front, matters are also moving along. We had two



camera crews on campus to take shots of our robot during the last year. One group was doing a National Geographic special that is due to be aired in 2001. The other was led by an independent filmmaker from Germany who was doing a documentary on cockroaches(!). She had traveled all over the world interviewing researchers who study these insects and was fascinated with our particular application. That film is also to be finished in 2001; once complete, it could appear on German TV.

Meanwhile, our simulation has improved considerably. You can view it in action (as well as see clips of our robot standing and walking) on the web ([www.life.uiuc.edu/delcomyn](http://www.life.uiuc.edu/delcomyn)), at least if you don't have an old, slow modem.

At present we are working to develop a "controller" for the simulation that will allow it to walk over rugged terrain as well as over a smooth surface. The trick is to keep all the legs coordinated even while one or more legs is dealing with some unexpected environmental disturbance. We expect to learn important constraints on how locomotion is coordinated in real animals from our endeavors.

## Susan Fahrbach

CHANGE in lab personnel and research projects marked the last year. Sarah Farris and Chiou-Miin Wang successfully defended their theses and moved on; Kym Rosiak moved on without finishing her thesis, although she returned over the summer to finish her research and should complete her PhD this



coming spring; Beth Capaldi completed her postdoc and headed for a faculty position at Bucknell.

Joe Sullivan persists, and fortunately Rodrigo Velarde has joined us. Another graduate student, however, would be most welcome.

Beth finished in spectacular fashion, with a *Nature* paper on radar tracking of honey bees that led to global attention from the popular press. Hearing her interviewed on NPR was a real treat for me, an incurable public radio addict!

Research continues on the theme of nervous system development in insects, with an eye directed toward hormonal regulation of behavior. But our emphases have changed. We are now using *in situ* hybridization on brain sections to exploit the bee EST project that Gene Robinson has so ably instigated. In our *Manduca* work we have shifted to the study of the role of glial cells in neurometamorphosis. The glial cell work is a collaboration with a group at the University of Minnesota.

Another project is editing a section of a major new reference work on *Brain, Behavior, and Hormones* to be published by Academic Press in 2001. I'm working under the guidance of Don Pfaff at the Rockefeller University, my thesis adviser, proving that it is possible to go home again...

My oldest son, Abe, is now a teenager. He started at University Laboratory High School this fall, and we are pleased that at long last he has some homework. Nate is 3 and is proud to be in pre-K I. We

took our standard family vacation to the beach in Long Island this summer, but I was also happy to attend meetings in Italy and Hawaii.

Serving as Director of the Howard Hughes Program for Undergraduate Education in the Life Sciences has provided me with many moments of satisfaction (and we are proud to have obtained a large additional grant from the Illinois State Board of Education for our middle school outreach efforts), but it is very time-consuming and I spend some time each day diligently trying to identify my successor.

## Bettina Francis



IT has only been a year since the last newsletter and a year is not a very long time. I leave rapid moves to my sons:

Theo has just moved from Little Rock to Dallas, still in pursuit of the perfect journalist's beat, while Alex and Elaine are at the University of Hong Kong for the second of 3 years.

As a member of the campus Library Allocations Steering Committee, I am spending enormous amounts of time on the problem of how to allocate insufficient resources fairly among the over 40 departmental libraries at Illinois. This involves not only the usual number of meetings, but also 18 hearings to get input from library users about their views of library needs.

Meanwhile, I am continuing my long-term collaboration with Neil

Chernoff at USEPA on the molecular basis for the developmental toxicity of the herbicide nitrofen. We are in the process of characterizing clones obtained from our subtractive hybridization: among those 140 pieces of DNA we should find the gene or genes whose altered expression is the beginning of the complex cascade leading to nitrofen-induced malformations. Once we have likely candidates, we can find a student to continue this project more quickly. The work has some practical implications, since nitrofen-induced diaphragmatic hernias in rats have become the model system for the corresponding human birth defect—even though no one knows whether similar mechanisms are involved in the two species.

I am also working with Lane Rayburn of Crop Sciences on the effects (if any) of various chemicals present in food and water on the occurrence of DNA damage in mammals *in vivo*. This work is still very preliminary, but caffeine is giving some intriguing results.

The best news this year is that I may finally be able to move my lab! The moving date is not yet set, but certainly by next year's newsletter, I will be in Morrill Hall. It can't come too soon. Even my current view over Illini Grove does not compensate for the isolation from my colleagues, and I am very tired of trekking half a mile to attend faculty meetings or pick up mail. I also hope to be on sabbatical for the fall semester, writing a book on pesticide toxicology and spending time in the lab.

## Stanley Friedman



A note to tell you all that Frances and I are still alive and kicking. I do spend a little time at the department each

week, lunching with colleagues, and going to seminars, but I am to be found most days working on the great American novel. On the basis of the first 30 pages, my agent thinks it will outsell Garcia Marquez's last, but I am not at all sanguine. I'll tell you more in the next newsletter. Are you prepared to wait? In the meantime, be well and drop us a plot line if you are so inclined.

## Larry Hanks

WE have had a productive year in the Hanks' lab: John Tooker and Matt Ginzal have completed their MS degrees and are forging ahead with dissertation research (see their contributions for research interests) on research assistantships. Pete Reagel and Jodie Ellis will be wrapping up their MS theses by the end of winter. Rob Moore, however, will be a bit delayed in his academic progress while vacationing in Kuwait with the National Guard.

Emerson Lacey joined the lab since the last newsletter, and has completed one field season toward an MS. Even more recently, Ashley Bennett and Erin Grossman (an NRES student) have joined us,

and have colonized new office space on the fourth floor of Morrill.

Two undergrads are pursuing independent research projects in the lab: Ashley Walter and Vincent Pham (a Hughes Undergrad Research Fellow). We also appreciate the dedication of our undergrad research assistants, Magdalena Ruiz, Nick Rauter, Lori Kae Schwab, Eric Jackson, and Ellie Kron.

Together, we study ecological interrelationships between insects, their host plants, and natural enemies, with the goal of developing novel methods of managing pests in urban habitats. Of particular interest is conservation biological control in ornamental landscapes: minimizing pest problems by manipulating the diversity and abundance of plants in urban landscapes to foster populations of natural enemies.

Research projects in progress include: (1) enhancing biological control of evergreen bagworm with flowering forbs (Ellis, Walter); (2) dispersal behavior of evergreen

bagworm and avian predation (Moore); (3) conservation biological control of pine needle scale (Tooker, Reagel); (4) physical structure of urban habitats and resistance of trees to insect attack (Grossman); (5) tritrophic interactions in native prairie ecosystems (Tooker); (6) influence of urbanization on community structure of wood-boring beetles (Lacey); (7) spatial effects on community structure of wood-boring beetles (Pham, Ginzal); (8) plant stress and host plant preference in Asian longhorned beetle (Hanks); (9) host plant effects on aggregation and mate location in the red milkweed beetle (Reagel, Ginzal); (10) role of cuticular hydrocarbons in mate recognition of cerambycid beetles (Ginzal); (11) host plant relations and reproductive behavior of cerambycid beetles (Ginzal, Lacey); and (12) molecular genetics of Asian longhorned beetle: introduction, invasion, and spread in North America (Ginzal, Hanks, Ken Paige, Barry Williams).

## Hugh Robertson



THE past year has seen my laboratory focus even more on the molecular basis of insect olfaction, while reducing our efforts on *mariner* transposons. We've submitted a manuscript describing the lack of interactions between *mariners* from different subfamilies, so with at least 15 subfamilies of *mariners* there are lots of non-interacting transposons available for development as tools. Our remaining *mariner* project concerns the two members with several hundred copies each in the human genome, and a survey study of the eight different kinds revealed by the nematode genome sequences.

Our work on insect olfaction continues to involve primarily expressed sequence tag (EST) projects on various insect antennae, but primarily *Manduca sexta*. That project, now taken on by PhD student Harland Patch, has finally yielded the first olfactory receptor from a moth. We are working on expression and functional characterization to determine whether it might be a pheromone receptor, while continuing to pursue additional moth receptors. Meanwhile another PhD student, Karlene Ramsdell, has used EST approaches to discover numerous odorant-binding proteins (OBPs) expressed in the antennae of the corn root-worm, *Diabrotica virgifera*. In a collaboration with Stewart Berlocher we are also examining these OBPs in his tephritid flies. And the completion of the *Drosophila melano-*

*gaster* genome has revealed 37 members of this OBP family, which we are describing in a study of the molecular evolution of OBPs.

At home, my major efforts have been directed at re-siding our house, by reducing it to naked studs, insulating, sheathing, and re-siding with sealed redwood. This project has gotten completely out of control and now consumes every spare hour and all weekends. Having removed the soffits, fascia, and gutters, I finally drew the line at the roof, and now am struggling to get everything back in place for the winter.

My 14-year-old stepson, Gabriel, has moved in with us for the school year, so now we suddenly have a teenager around the house. Our 2-year-old daughter, Erica, has started at a cooperative nursery, so she's getting into the swing of early mornings too, so now I'm the only holdout for late nights and late mornings. We had a great month-long trip around Europe in the summer of 1999, and down the East Coast this past summer. I got 3 days of good windsurfing in Connecticut, New York, and Cape Haterras, while Erica enjoyed the warm beach in North Carolina, and Christina and Gabriel enjoyed visiting with cousins there.

## Gene E. Robinson



IN the last newsletter I was able to report on exciting travel taken in conjunction with my sabbatical.

This time, I'd like to tell you about another voyage, just

as exciting, but of an entirely different kind. To intensify my lab's efforts aimed at studying the molecular genetic underpinnings of division of labor in the honey bee colony, a few years ago I started looking to the Human Genome Project for inspiration. Are there, I asked, techniques spawned by the Human Genome Project that can be used to help identify genes involved in honey bee social behavior? Happily, the answer turned out to be yes! Even more happily, our department, and the University of Illinois as a whole, are ideal institutions from which to try and bring the power of genomics to bear on questions of social behavior, a new endeavor I call "sociogenomics."

Our first step was to be awarded a grant from the University's Critical Research Initiative program. With this grant, running from 1999 to 2001, we are able to identify the thousands of genes expressed in the bee brain. We are making both a physical repository of these genes and a computer database, available to the entire scientific community, with all of the gene sequences and information on which genes have known functions (based on their similarity to known genes from other organisms like fruit flies). This project benefits greatly from the expertise of two departmental colleagues, Hugh Robertson and Susan Fahrback, in molecular biology and neuroscience, respectively. All of the work is being done at our new state-of-the-art Keck Center for Comparative and Functional Genomics, which was created as a result of a proposal submitted to



the Keck Foundation by a campus-wide group of faculty that included several from our department. Thousands of bee genes have been isolated and identified already; this project promises to unearth a treasure trove of material that will aid us immeasurably in our efforts to understand the neurobiological, endocrine, and genetic bases of honey bee social behavior.

The Critical Research Initiatives grant also played a crucial role in successfully competing for a Burroughs Wellcome Innovation Award in Functional Genomics. This grant, running from 2000 to 2003, is enabling us to make bee gene chips, with which we can study how the expression of thousands of genes in the bee brain changes as a function of the different jobs that are performed in the beehive. The expectation is that careful analysis of the myriad patterns of gene expression that are detected will provide insights into how the genome dynamically modulates physiological pathways that are of special importance to division of labor. And because bee behavior is exquisitely sensitive to changes in the social environment, I also hope that results from this new research will also go beyond the beehive, and contribute to a more sophisticated understanding of how nature and nurture interact to influence behavior.

I know what you're thinking: Is Robinson such a nerd that his only travels in the past few years have been mental flights of fancy? No way! In fact, Susan Fahrbach and I participated in a small international workshop on "genes, brain, and behavior in honey bees" held

in one of the most idyllic spots imaginable: Bellagio, Italy, in a magnificently restored medieval villa overlooking Lake Como. The Bellagio Conference Center, owned and operated by the Rockefeller Foundation, is sort of like a Club Med for intellectuals. Artists and scholars of all stripes who come for short meetings or longer periods of residence are treated to outstanding facilities, sumptuous cuisine, and unforgettable scenery; just what is needed to help shape those next big thoughts. Are you wondering which voyage has been more enjoyable? I'll never tell.

## James Sternburg



SINCE my retirement in 1989 I have continued, at a rather reduced level, with departmental participation. I occasionally serve on doctoral prelim committees and master's exams. The past year has been especially rewarding, in that I have, with John Bouseman, co-authored a *Guide to the Butterflies of Illinois*. We have completed the manuscript, selected the photographs, and met many times with Charlie Warwick, the consulting editor. The book is expected to be available in December or soon thereafter. It will cover all the true butterflies of Illinois, but not the skippers. It will be published by the Illinois Natural History Survey, and printed by the University of Illinois Press. My other interests are, as usual, gardening, photogra-

phy, and keeping too many aquariums going.

## Gilbert Waldbauer



THE year 2000 has been good to me. My fourth book, *Millions of Monarchs, Bunches of Beetles, How Bugs Find Strength in Numbers*, was published by Harvard University Press in March. So far it's gotten good reviews. Those that most pleased me appeared in the *New York Times* and *The London Times*—real ego trips! I am trying to bring biology to nonprofessionals by being scientifically sound and informative but readily accessible by avoiding technical terms in as far as possible and doing my best to be interesting. My first book, *Insects Through the Seasons*, was published by Harvard in 1996, *The Handy Bug Answer Book* by Visible Ink Press in 1998, and *The Birder's Bug Book* by Harvard in 1998. Harvard has accepted my fifth book, which is about two-thirds written; the deadline for completion is the end of August 2001. It's about the diverse roles of insects in ecosystems, ranging from pollination and seed dispersal to breaking down dead plant and animal matter.

My retirement is very enjoyable. I keep busy with writing, but fit in quite a few trips to "birding hot spots" such as the Rio Grande Valley, southeastern Arizona, and Alaska. 🌿

# Staff

## Todd Fulton

I came to the department in 1988 to work in the insectary while pursuing a nursing degree. I have worked at Carle Clinic Pediatrics for 5 years and now work with Dr. Donna Beck, a pediatrician specializing in infectious disease, and still work part-time in the insectary.

I am married with four children. My wife, Vicky, is a nurse for Health Alliance. Chad is a paramedic, Andy attends Parkland College, Rachel is a senior at Mahomet-Seymour High School, and Kelly is 8.

## Jacqueline Bowdry

I guess you could say I'm the newest, yet oldest staff on the block. After a 10-year hiatus from the department, *I'm back*. I've found that some things have changed, but many of them have remained the same. I would like to thank Dorothy Houchens for having the utmost confidence in me, and convincing the department to ask me back home. The staff has been very supportive, and I thank them for that. I'm looking forward to a productive and prosperous year in the department.

## Dorothy Nadarski

IN January 1993, the Department of Entomology called and asked me

to work as an extra-help clerical for 2 weeks while the office staff worked registration at the Armory. Those 2 weeks have now stretched to 8 years. After 2 years as extra help, I was hired as a part-time secretary. Working with the faculty, staff, and a continuous stream of graduate students has been a very rewarding experience.

When I leave work in the early afternoon, I return to my job as "Mom" to two teenage daughters: Mary is 16, a sophomore in high school, and finally driving herself to and from softball practice and games; Kathy is 14 and takes jazz and hip-hop dance lessons. She is also looking forward to starting high school next fall. Both girls are in band; Mary plays drums and Kathy plays the alto saxophone, so we are looking forward to marching band season. My husband Bob stays busy as the General Manager for Worden-Martin Lincoln-Mercury-GMC in Champaign. In my spare time, I enjoy reading suspense novels and traveling.

## Tish Cundiff

I have been with the department since July 1996 and have gained new insights on the "world of bugs." With the help of co-workers, I received a crash course in pinning insects for my son's high school biology insect collection.

My husband Paul and I were



*Dottie, Jackie, and Tish*

married in June 1999. Shortly after our marriage, Paul left his job as Champaign County Deputy Coroner and returned to his former job as a Paramedic with Arrow Ambulance. He is also a volunteer firefighter in Mahomet, which takes him out at all hours every day of the year.

I have two children, Jaime, a sophomore at Illinois State University in Elementary Education, and Jeremy, a freshman at Mahomet-Seymour high school. I also have two stepchildren, Ashley and Cody, who are 11 years old. They live with their mother in Paxton. The family pet is a 5-year-old cat named Chewbacca (a.k.a. Chewy) with a definite attitude all her own!

In my spare time, I attend marching band competitions to watch my son perform, visit my daughter at ISU, and spend many hours at the fire station while hubby is fighting a fire or saving a life. I enjoy studying floor plans and designing homes, attending open houses, reading, and crafts. 🐾

# Affiliates and Other Academics

## James Appleby



I teach a course on insects and mites of trees, shrubs, and flowers in Natural Resources and Environmental Sciences.

I continue my studies of the life histories of economically important insects and mites of trees and shrubs. I enjoy land and underwater photography, scuba diving, swimming, model railroading, and water gardening.

## Edward J. Armbrust

I retired from the Illinois Natural History Survey on December 31, 2000.

## Samuel N. Beshers



MY current research focuses on the division of labor and colony organization in leaf-cutting ants in the genus *Atta*. My

*Atta* colonies have been growing, and they do like to cut leaves. They consume nearly as much as a small goat, and consequently I have been busy defoliating the town and the campus. In collaboration with Gene Robinson, and using a combination of experiments and computer simulations, I am studying these ants

to try to understand the behavioral rules of individual workers that result in organized and effective colony behavior.

This spring I will be teaching the evolution half of BIOL 120, now for the seventh time. This is challenging but fun, preaching to the class about the delights of organismal and evolutionary biology (especially of insects) before they become settled into more familiar and less rewarding career paths. I will also enjoy co-teaching animal behavior with Dr. Michelle Elekonich.

Last year was the second time that the department offered ENTOM 301, its introductory course, in the summer. I also taught it for the second time, this time bolstered by the insect expertise and steady presence of Mark Metz as TA. Summer is a great time for entomology; we had great field trips, great success collecting, and a chance to experiment with new lab exercises. Summer school also seems to attract some of the best students.

When not busy in Morrill Hall, I can usually be found chasing our golden retriever puppy around Urbana or hitting wiffle golf balls into my neighbors' yards.

## Guy Bloch

I was born and grew up in Israel. Following my graduation from high school, I



served for 4 years in the army. Next, I traveled for 3 years in North and South America and in eastern Asia. I returned to Israel to study at Tel Aviv University where I earned a BS in biology and a MS and PhD in zoology. For my master's thesis I explored quantitative genetics of insecticide resistance in whiteflies. In my PhD project, I combined sociobiology and physiology to explore mechanisms of regulation of reproduction in bumble bees. I was fascinated with the bee sociobiology, and in October 1997, I came to Illinois to work with Gene Robinson on genes, hormones, and social behavior in honey bees.

In my current research, I study how clock genes, hormones, and changes in behavioral rhythms influence division of labor, a key mechanism underlying social organization in bees.

I am married to Dorit and have three children: Aviv (8.5), Rotem (5), and Tal, who is almost 10-months-old.

## Ray Cloyd



MY research interests are in developing integrated pest management systems that limit insect and mite damage to horticultural crops. Current research is focused on understanding the interactions of soil-borne pests, including fungus gnats, with

their natural enemies under different watering regimes and growing medium. Research emphases are: insect-plant interactions; effects of plants on natural enemy foraging behavior; testing new pest control materials; and compatibility of pest control materials with biological control agents.

## Catherine Eastman



I am an associate professional scientist at the Illinois Natural History Survey and conduct research involving vegetable pest management, with emphasis on alternatives to pesticide use. Current projects include evaluation of possible pest management applications (for insect and weed management) of high-glucosinolate varieties of crucifers, such as broccoli, cabbage, and horseradish. In addition, I am working with horticulturists, plant breeders, weed specialists, and plant pathologists to address pest management and productivity problems that are affecting horseradish production. I am past chair of Section C (Biology, Ecology, and Behavior) of the Entomological Society of America. A transplant from the Deep South, I enjoy fall weather, companion animals, walking, gardening, and good books of all types.

## Michelle Elekonich

I am a research associate on a USDA-funded project working with Gene Robinson and Susan



Fahrbach. My research focuses on the role of early larval environment—both nutritional and hormonal—to modify

the rate of development of adult behavior in the honey bee. Along with this project, my collaboration with Guy Bloch has shown that honey bees experience a diurnal rhythm of juvenile hormone secretion. My collaboration with Dave Schulz has shown that the juvenile hormone levels characterizing foragers are not the result of the foraging experience but the hormone levels increase before the workers begin to perform foraging behaviors. I came to the department in 1997 after finishing my PhD in animal behavior in the Department of Psychology at the University of Washington-Seattle. In many ways, Champaign-Urbana resembles the place where I grew up—Toledo, OH.

## Michael Gray



I am a professor of agricultural entomology with a 75% extension and 25% research appointment. I received a BA from the University of Northern Iowa in biology (1977), and a MS (1982) and PhD (1986) from Iowa State University in entomology. I serve as the Extension IPM Coordinator for the College of ACES and as the spokesperson for this multidisciplinary outreach program. I advise producers throughout Illinois of potential economic insect infestations to

field and forage crops and offer management recommendations.

I serve biennially as the program coordinator for the *Crop Protection Technology Conference*. This annual conference held at the University of Illinois has an enrollment of approximately 1,000 participants who represent diverse cross-sections of the crop production and protection arenas. I also regularly contribute articles during the growing season to the UI Extension sponsored *Pest Management and Crop Development Bulletin*.

Although I have no formal teaching appointment, I frequently co-teach an extramural (off-campus) course, Crop Sciences 329, Fundamentals of Insect Pest Management, with Drs. Kevin Steffey and Susan Ratcliffe. I also guest lecture each semester for Crop Sciences 121, Principles of Field Crop Sciences.

My current research thrusts are focused on improving our understanding of mechanisms behind the collapse of crop rotation as a viable pest management strategy for the western corn rootworm. I serve as coordinator for the University's C-FAR Sentinel Research Project, which is focused on providing answers to this complex problem. This multi-year investigation requires the cooperation of 11 other scientists whose areas of expertise include modeling, behavior, ecology, meteorology, agricultural economics, and molecular biology.

Kevin Steffey and I will serve as co-chairs of the 2001 Entomological Society of America's national meeting in San Diego. We welcome suggestions for symposia and other meeting events.

## Michael E. Irwin



I received a BS from the University of California, Davis (1963) and a PhD from the University of California, Riverside (1971). My research focuses on biodiversity and the systematics and evolution of a family of flies: stiletto flies or the Therevidae. I am attempting to develop an understanding of the evolution of this family from the perspective of vicariant events, especially the breakup of Gondwanaland. Thus, biogeography weighs heavily in my research.

Stiletto flies are extremely important in the maintenance of ecological balances in natural ecosystems. They are voracious predators of underground insects, especially in sandy soils and in areas of high leaf litter. The larvae are long and extremely well-muscled, allowing them to “swim” through these substrates rapidly.

The research on stiletto flies has allowed me to explore the world in search of them. For instance, I took a 9-week expedition in late 1999 to three important evolutionary centers of these flies: South Africa, Madagascar, and Chile. This new material is allowing us to make marked progress in our investigations. You can view our website for a better understanding of these flies ([www.inhs.uiuc.edu/cee/therevid/](http://www.inhs.uiuc.edu/cee/therevid/)).

I currently have a grant from the National Science Foundation that will operate over the next 5 years. During this time, I expect that many of the problem areas of stiletto fly

systematics will be better resolved. The natural history and evolution of these flies, some 4000 species worldwide, should be better understood, and this should place the family in a position to contribute substantially to improved monitoring of environmental health, especially in Mediterranean and desert climates.

Although the study of stiletto flies is currently my main research activity, biodiversity is also something I am pursuing. Biodiversity studies involve the movement and distribution of insects between and within agricultural landscapes and the impact that biota has when it arrives in another system. My interests in biodiversity also center around our understanding how to gauge the health of an ecosystem or habitat. I am searching for biological indicators, those groups of organisms that can help interpret the state of a system. These bioindicators will be of real use for monitoring the degradation and/or improvement of specific habitats. For restoration efforts, it will be important to quantify the improvements being made once we know what bioindicators truly signify.

Three additional areas of study I have pursued in the past include plant virus epidemiology; migration of insects; and integrated pest management (IPM), especially related to problems in lesser-developed countries. Plant virus epidemiology has involved the relationship of aphid movement behavior to the role they play in spreading plant viruses. Insect migration has emphasized the aerial movement of aphids over hundreds of miles. International

IPM has involved helping lesser-developed countries initiate IPM programs.

## Michael Jeffords



I am a professional scientist and the public relations and education liaison for the Illinois Natural History Survey. For over 20 years I have conducted research on such topics as butterfly mimicry, soybean entomology, forest ecology and the gypsy moth, insect pathology, and biological control. In my current position, I take scientific information about the state and translate it into materials for a wide range of audiences, including curricular materials, educational activities, exhibits and presentations.

## Kevin Johnson

I received my PhD in the Department of Ecology, Evolution, and Behavior at the University of Minnesota in 1997. Working under Frank McKinney, I studied behavioral evolution in dabbling ducks using a phylogenetic approach. For this study, I received a NSF doctoral dissertation improvement grant. This work demonstrated the importance of environmental conditions on the evolution of behavioral traits. After my thesis I took a postdoctoral fellowship at the University of Utah in the Department of Biology under Dale Clayton. While in Utah, my focus shifted to the interaction between

birds and their ectoparasitic insects, specifically lice (Phthiraptera). I constructed phylogenies for doves and their lice to determine the degree of cospeciation. A unique aspect of this study is that I included two different groups of parasitic lice living on the same hosts. Differences in the underlying biology of these parasitic insects can be compared to differences in macroevolutionary patterns (cospeciation) to understand the interface between micro- and macroevolution.

In May 2000, I started as an assistant research scientist at the Illinois Natural History Survey. I plan to continue my work on the systematics and population genetics of avian lice and their hosts; I have received an Arnold O. Beckman research award from the University of Illinois to start a population genetic study of waterfowl lice. This work will focus on comparing the population genetic structure of different genera of lice living on the same hosts and relate this structure to underlying differences in mode of transmission.

## Gail Kampmeier



I am a research entomologist at the Illinois Natural History Survey. I designed a cross-platform systematics database system, called Mandala, for tracking specimens, taxonomic names, and scientific literature ([pheroceera.inhs.uiuc.edu/index.htm](http://pheroceera.inhs.uiuc.edu/index.htm)). Although the system was developed as part of a NSF partnership

for enhancing expertise in taxonomy grant to study the dipteran family Therevidae, it is being used by other scientists to track diverse organisms such as liverworts and aplacophorans. My other responsibilities include web design and maintenance for the therevid project ([www.inhs.uiuc.edu/cee/therevid/](http://www.inhs.uiuc.edu/cee/therevid/)) for NCR-148, the movement and dispersal of biota ([www.inhs.uiuc.edu/cee/movement/](http://www.inhs.uiuc.edu/cee/movement/)), and the Survey's Center for Economic Entomology ([www.inhs.uiuc.edu/cee/](http://www.inhs.uiuc.edu/cee/)). I am also active in the Entomological Society of America, serving as vice chair (1998-99) and chair (2000-01) of the Standing Committee on Membership; on the Strategic Planning Committee (2000-01); and organized a symposium for the 2000 joint annual meeting (JAM) of ESA in Montreal on scientific illustration. After stepping down as Secretary/Treasurer of NCR-148 (1985-2000), I was elected to chair that committee in 2002.

## Eli Levine



MY research continues to focus on the biology, field ecology, and pest-host relationships of insect pests of corn and soybeans, knowledge that must be acquired before these insects can be managed in a more ecologically sound manner. I continue to study the mechanisms for the prolonged diapause trait in northern corn rootworm eggs and the adaptation of western corn rootworms to lay their eggs in soybeans. These traits and adaptations are significant threats to crop rotation as a man-

agement tool for these pests. Bean pod mottle virus (BPMV) is a disease of soybeans in which the stems of infected plants remain green after the plant is mature. In addition to causing harvest problems, plants with BPMV are predisposed to other diseases, which lower seed quality. In late 1999 we discovered that some western corn rootworm beetles we collected in soybean fields contained this virus. We are conducting BPMV transmission tests to determine if western corn rootworms are capable of spreading this disease. If they can, this could be quite serious since western corn rootworm beetles can move quite far over the course of the growing season.

## Jim Nardi

IN graduate school, I began studying the cell interactions involved in formation of *Manduca* wing patterns. These studies led to my present investigations of neural pathfinding in the developing *Manduca* wing and the cell surface proteins involved in neural-substrate interactions. These proteins are expressed not only on wing cells during growth of axons and rearrangement of wing epidural cells but also at times when cells in other tissues are undergoing interactions and rearrangements. Each protein, therefore, appears to be multifunctional and used at different times in different tissues during the molding of an insect.



A few years ago, I began collaboration with Patrick Dowd and Robert Bartelt at the USDA station in Peoria to study the structure of a beetle gland that produces an aggregation pheromone. We were surprised to discover that the cells producing this pheromone turn out to be oenocytes. This was the first demonstration that oenocytes have been recruited for pheromone production. In the last year these pheromone studies have been extended to examining the production of pheromones by midgut cells of scolytid beetles in collaboration with Gary Blomquist at the University of Nevada.

In addition to our collaborative project dealing with the molecular and cellular basis of insect olfaction, Hugh Robertson and I have also been studying a novel surface protein that is not only very large and complex but that is also dynamically expressed in a variety of tissues. This protein, which we have named lacunin, has multiple domains that probably exert multiple effects on cell behavior. We have examined its role in remodeling of tissues during development and suspect that it also plays a pivotal role in the insect immune system. A grant from the USDA will enable us to investigate this possibility.

With Michael Kanost at Kansas State University, I have initiated a study of the cellular and molecular basis of the insect immune response known as encapsulation. We are investigating the involvement of five hemocyte surface proteins in the encapsulation of parasitoids.

## Robert Novak

I received a PhD in entomology from Illinois in 1976; an MS in biology, University of Utah (1971); and a BS in biology, University of Southern Colorado (1969). I am a professional scientist at the Illinois Natural History Survey; associate professor at both the Urbana-Champaign and Chicago campuses of Illinois, with affiliate appointments in Entomology, Natural Resources and Environmental Sciences, Institute of Environmental Studies, and School of Public Health; and Director, Medical Entomology Program, Illinois Natural History Survey. I previously was an NIH postdoctoral associate, University of Notre Dame, and a research scientist, Centers for Disease Control, Atlanta, GA, and San Juan, PR. I am a member of the American Mosquito Control Association, and served on the Scientific and Regulatory Committee (chair, 1992-93), Resolutions Committee, and *Aedes albopictus* Committee. I received an AMCA Presidential Citation, 1993, and was elected vice-president in 1994 and president in 1996. I am also a member of the Illinois Mosquito and Vector Control Association (president, vice-president, executive board), Entomological Society of America, Society of Vector Ecology, and the American Society of Tropical Medicine and Hygiene. I have served as a consultant for the World Health Organization, the Pan American Health Organization, USAID, and US Army. I have worked in 12 countries in Central

and South America, the Antilles, East and South Africa, and Europe.

My research interest is in medical veterinary entomology, especially the family Culicidae (mosquitoes) and the pathogens they transmit, as well as in urban/public health entomology. My laboratory has long-term field and laboratory investigations in mosquito ecology and genetics, insect pathology, toxicology and management, molecular and classical virology/bacteriology, and mosquito vector competence. Studies on other infectious pathogens of public health importance are also being investigated.

## Allan Ross

ALLAN has left his position in the Robinson Lab and has moved to San Diego, CA, where he joined his wife, who accepted an accounting position. They have taken up residence in a houseboat.

## Daniel Schneider

I am an aquatic ecologist who works on the population and community ecology of invertebrates in rivers, lakes, and wetlands. I am using metapopulation approaches to examine the zebra mussel in the connected waters of Lake Michigan and the Illinois River. In collaboration with Chris Rehmann in Civil Engineering, we are comparing water circulation patterns in the Illinois River and the tidal Hudson River to investigate the role of water circulation in dispersal of zebra mussel larvae and the implications for population structure.

I am also interested in the ecology of disturbances, particularly the effects of flooding and drying on aquatic insect communities in temporary ponds and floodplain pools, and the restoration of the Illinois River floodplain. I am working on the environmental history of the Illinois River, and have just completed an article on the politics of environmental transformation and its influence on the science of entomologist Stephen A. Forbes.

I am a faculty member in the Department of Urban and Regional Planning and a scientist at the Illinois Natural History Survey.

## Leellen (Lee) Solter



I am an insect pathologist at the Illinois Natural History Survey and am also an affiliate assistant professor with the Department of Natural Resources and Environmental Sciences and the Department of Entomology. I earned my MS degree from Montclair State University in New Jersey and my doctoral degree in entomology at Illinois. Although I work with several groups of insect pathogens including fungi and nematodes, my research primarily involves studies of microsporidia, which are single-celled, eukaryotic parasites of an as yet undetermined phylogenetic lineage. The majority of described species are pathogens of arthropods, especially insects, and they are obligate parasites. My research involves a variety of study

areas including classification, pathogenesis, host-parasite interactions, physiology, epizootiology, and manipulation of the pathogens as biological control agents. My particular interest is in the development and spread of microsporidia in host tissues and the immune responses of nontarget hosts. I have been studying the host specificity of several microsporidia in the aboriginal range of both the gypsy moth host and these pathogens (in Bulgaria and Slovakia, primarily), and am also looking at the variability between isolates from different host populations of one species or species complex. I taught insect pathology for Entomology in spring 2000 and look forward to the next great group of graduate and undergraduate students in a couple of years.

## Kevin L. Steffey



I am an extension specialist and professor of agricultural entomology in the Department of Crop Sciences at Illinois. I also have a zero-time appointment in the Illinois Natural History Survey. I received my BS in entomology from Purdue University (1972), my MS in entomology from the University of Missouri (1975), and my PhD in entomology from Iowa State University (1979). I came to Illinois in 1979 and have focused my educational and applied research programs on insect management in corn, alfalfa, and other field crops. My research focuses on management of corn

rootworms, European corn borers (including transgenic *Bt* corn), and alfalfa insects. In 2001, I will initiate applied research studies to help develop management strategies for an introduced pest of soybeans, the soybean aphid, *Aphis glycines*. I am author or co-author of 29 scientific publications, more than 25 invited publications (including 9 book chapters), and more than 175 extension publications. I am the executive editor of the weekly extension newsletter, *Pest Management & Crop Development Bulletin*. I have been active in the Entomological Society of America (ESA). I served on the Governing Board (1990-93), the Editorial Board for the *Journal of Economic Entomology* (1994-99), and am currently contributing editor of "Postmarked Extension USA" in *American Entomologist*. I was coordinating editor of ESA's 164-page *Handbook of Corn Insects*. I received the ESA's distinguished achievement award in extension in 1996, and served as president of the North Central Branch of ESA in 1997-98. I will serve as program co-chair for the ESA national meeting to be held in San Diego in 2001. In spring 1998, I was awarded one of three Paul A. Funk recognition awards, the most distinguished award given by the College of Agricultural, Consumer and Environmental Sciences.

## Dave Voegtlin



AFTER 20 years as an entomologist at the Illinois Natural History Survey I have come to the



conclusion that there are too many aphids and too little time to study them. My focus is on this insect family of which there are over 400 species known in Illinois. Although taxonomy is of primary interest, such biological aspects as host relationships, distribution, phenology, overwintering biology, and movement provide information in defining members of species complexes. On-going work is focused on the phenology and seasonal hosts of CMV vectors in southern Illinois. This work will provide a basis for integrated pest management strategies for specialty crops in areas susceptible to aphid-borne viruses.

The recent arrival of *Aphis glycines* the soybean aphid, in the Midwest will most likely change my life for the foreseeable future. Until the arrival of this Asian species there were no aphid species that colonized soybeans. It is a direct pest and a known vector of soybean diseases and has a complex life cycle that makes it of considerable interest in both applied and theoretical aspects.

Taxonomic interests continue to be the identity of aphids of Illinois as well as members of the genera *Cinara* and *Mindarus*. I am also working on a guide to the aphids of Costa Rica with hopeful completion in 2001.

## Kim Walden



**WITHIN** the department, I'm one of the few "natives" of this area, growing up and later residing in two

of the many small towns that dot the countryside surrounding Champaign-Urbana. I graduated from Millikin University, Decatur, IL, in December 1993 with a BS in biology. While fascinated by insects, I also wanted to incorporate molecular biology into my master's project, which I began in January 1994. I found the perfect balance in Dr. Hugh Robertson's lab addressing a controversial issue that coincided with Steven Spielberg's blockbuster film *Jurassic Park*.

Several scientific claims had been made that ancient DNA from amber-fossilized insects many millions of years old could be amplified by the polymerase chain reaction. If these claims were true, well-preserved fossils would become a treasure trove to molecular biologists and others for answering ecological and evolutionary questions. Because these results had not been replicated independently in other laboratories, most scientists remained skeptical.

I focused on one particular amber-fossilized insect, *Proplebeia dominicana*, a small bee that was reportedly a source for successful PCRs. After many attempts to extract DNA, amplify it with PCR primers to a multi-copy gene, and obtain sequence, I was only able to identify obvious contaminating sources of DNA. To date, the initial claim has not been replicated, and many fossil DNA hunters have turned their attention to much younger and more reliable sources of "ancient" DNA.

I finished my MS in December 1995, and I currently serve as Dr. Robertson's lab technician. Outside of the lab, I enjoy gardening

and watching ruby-throated hummingbirds visit my feeders. I decorate cakes as a joint hobby with my sister and spend time fishing with my husband during the summer. My hobbies have recently been put on hold as we have a new addition to the Walden family. Spencer Michael was born at 9:20 AM on November 16, 2000. He weighed 7 pounds 10 ounces and was 20 ½ inches long.

## Rick Weinzierl



I came to the University of Illinois in 1984 and was promoted to professor in Crop Sciences last year. I also received

the College of Agricultural, Consumer, and Environmental Sciences Spitzer Teaching Award last spring. My research focuses on integrated pest management in fruit and vegetable crops, and the majority of my work is devoted to extension education programs in fruit and vegetable insect management. For those of you who remember the two very young sons that accompanied me and my wife everywhere during their early years here, Aaron is now a freshman in Mechanical Engineering at Illinois, and Adam is about ready for a driver's license...time flies. My new graduate student, Kelly Cook (Crop Sciences), will be working on the seasonal patterns of transmission of Stewart's wilt by the corn flea beetle in sweet corn.

## Charlie Whitfield

BEFORE college I served 6 years in the Navy, most of this time aboard the nuclear-powered submarine USS Aspro. After leaving the Navy I attended the University of California at Davis, obtaining a BS in genetics in 1994. As an undergrad I spent 2 years working in the laboratory of Dr. Ken Burtis studying the molecular genetic mechanisms that underlie sex determination in the fruit fly *Drosophila melanogaster*. I then attended Stanford University where I obtained a PhD in 2000. In my thesis work I used the small soil nematode *Caenorhabditis elegans* as a model system to study receptor localization in epithelial cells during development. One significant result of this work was the molecular identification of the gene *lin-10*, which is evolutionarily conserved in *C. elegans* and humans and plays an important role in receptor localization in both epithelial cells and neurons.

In spring 2000 I began a postdoc with Dr. Gene Robinson. My project involves studying molecular genetic mechanisms that underlie social behavior in the honey bee *Apis mellifera*. Honey bees exhibit diverse and well-defined behaviors that depend on age, social environment, and inherited genetic factors. A new and powerful technology called DNA microarrays allows one to assay the expression levels of thousands or tens of thousands of genes simultaneously, and this technology can be applied to specific tissues like the brain of the honey bee. During my postdoc I will be applying DNA microarrays

and more traditional genetic mapping strategies to try to understand the relationship between genes, environment, and social behavior in the honey bee.

## Robert N. Wiedenmann



IN my laboratory at the Illinois Natural History Survey, we conduct basic and applied research on biological control of insects and weed pests, and on the biology of parasitic and predaceous insects. Currently, we are working on biological control of purple loosestrife, a wetland weed, using chrysomelid beetles. I still maintain a project looking at parasitic Hymenoptera that attack stem-boring Lepidoptera, and continue to be interested in the use of novel (non-coadapted) and ancestral (coadapted) host-parasite associations for biological control, as well as facultative phytophagy by predaceous Heteroptera. Some other projects include understanding the physiological and immunological interactions between several species of microgastrine braconid parasites of stemborers; impacts of garlic mustard on local flora (as background for the anticipated initiation of a project on biological control of garlic mustard); and impacts of purple loosestrife on nesting wetland birds.

## Ed Zaborski

IN September 1996, I joined the Illinois Natural History Survey as



an assistant professional scientist in the Center for Economic Entomology. In addition to being an affiliate of Entomol-

ogy, I have an adjunct appointment in the Department of Natural Resources and Environmental Sciences. I am a graduate of McGill University, Montreal, Canada, where I received my PhD in 1995. I conducted much of my doctoral research, and subsequent postdoctoral research, at Ohio State University's Ohio Agricultural Research Station, where I studied soil ecology in agroecosystems.

My research focuses on the ecology of soil invertebrates: their role in such ecosystem processes as decomposition and nutrient cycling; the influence of management and environmental factors on their community structure; and practical applications in agricultural and other managed systems. Current research includes an investigation of the influence of insecticides and *Bt*-endotoxin expression on soil invertebrate community structure and plant residue decomposition in corn cropping systems; greenhouse studies of fungus gnats, an important floriculture pest, and two of its soil-dwelling natural enemies, a predatory mite and an entomopathogenic nematode; a survey of Illinois earthworms; characterization of a nematode that parasitizes earthworms; and an effort to identify soil invertebrate indicators of soil quality. At present, I have one PhD student, Amy Chen, in NRES.

## Art Zangerl



THIS last year has included some digressions in my research. Don't worry, I'm still very actively pursuing questions about chemical co-evolution between wild parsnip and parsnip webworms, but a pair of applied entomological problems made their way into the lab last year. One of them has to do with the effects of feeding by western corn rootworms on soybeans and alfalfa in fields adjacent to corn. It appears that these beetles not only have taken to laying their eggs in soybean fields, wreaking havoc on crop rotation methods, they also feed to some degree in these fields. Our interest is in the consequences of this new behavior for the detoxification capabilities of these

insects. In particular we are examining the effects of feeding on different plants on cytochrome P450 metabolism and resistance to pesticides. My collaborators are Julie Cianfrogna (biology masters student), Richard Lampman (Natural History Survey), and May Berenbaum.

The other digression involves the controversy over *Bt* corn pollen and non-target effects on Lepidoptera. Because I work almost exclusively with leps and work in a county in which over 80% of the acreage is in row crops, I was naturally concerned when a Cornell study suggested that *Bt* corn pollen could kill monarchs outside of cornfields. I was further alarmed when I found out in spring 1999 that a *Bt* cornfield had been planted adjacent to my Phillips Tract study plots. In the interest of making the best of this worrisome turn of

events, we decided to study the effects of this technology on one of our stock study species, the black swallowtail. The study, coauthored with Lydia Wraight (our stellar entomology undergraduate), Mark Carroll (graduate student), and May Berenbaum, and published last spring in *PNAS*, turns out to be the first, and some would argue, the only, field study to be published thus far. The variety of *Bt* corn we studied happens to be far and away the most widely planted of the *Bt* varieties (over 95%), and we are happy to report that it had no discernible effects on growth or mortality of swallowtail larvae. In summer 2000, we completed a second field study on a corn variety that is known to have substantially more endotoxin in its pollen—stay tuned for results. 🌽

### Results of the Student Competition for the President's Prize National Entomological Society Meeting, Montreal, December 2000

#### Presentations

18 sessions, 190 students originally entered; 54 judges, 36 moderators and projectionists

#### Distribution of Winners (first place and honorable mention)

Canada	17
USA	49
UK	1
Azores	1

#### Display Presentations

16 sessions, 182 students originally entered; 48 judges

#### Institutions with More than One Winner (first place or honorable mention)

Simon Fraser University	5	Clemson University	2
University of Illinois	4	Cornell University	2
Kansas State University	4	Louisiana State University	2
University of Alberta	3	University of Minnesota	2
University of California-Davis	3	University of Nebraska	2
University of Kentucky	3	Ohio State University	2
Michigan State University	3	Penn State University	2
Universite du Quebec	3	Virginia Polytechnic Institute	2
University of California-Berkeley	2		

# UIUC Entomologists in the News

## May Berenbaum

*Washington Post*, Aug. 11, 1999,

quoted in “U-Md program buggy for insects.”

*Dallas Morning News*, June 21, 1999, quoted in “Science fare.”

*The New York Times Science*, June 6, 2000, “Type of biotech corn found to be safe to a butterfly species.”

*The Wall Street Journal*, June 6, 2000, “Study on corn should bolster bio-crop firms.”

*BBC News Online*, June 6, 2000, “Butterflies survive next to GM corn.”

*The News-Gazette* (Champaign, IL), March 13, 2000, “How sweet it is!”

*Chemistry and Engineering News*, Nov. 13, 2000, quoted in “Meet Tom and Jerry.”

*Science News*, Oct. 21, 2000, quoted in “Second bird genus shares dart-frog toxins.”

*Lawrence Journal-World*, “Books on insects creating a buzz.” ([www.ljworld.com](http://www.ljworld.com))

*Herald Sunday* (Marathon, FL), “Insect stories entertaining, informative.” ([www.seacoastonline.com](http://www.seacoastonline.com))

## Elizabeth Capaldi

*Nature*, vol. 403, Feb. 3, 2000, letter, “Ontogeny of orientation flight in the honey bee revealed by harmonic radar.”

National Public Radio, Feb. 2, 2000, talk show, “Entomologists attach transponders to bees in order to track their movements.”

*Daily Mall*, Feb. 3, 2000, quoted in “The knowledge: Just like a taxi driver, a bee has to learn the fastest way home.”

*USA Today*, Feb. 3, 2000, “Buzzing around to catch the flight back.”



Entomological Society of America Newsletter, March 2000, vol. 23, no. 3, “Reflectors on bees help scientists track insects’ training flights.”

## Fred Delcomyn

[www.newscientist.com](http://www.newscientist.com), Sept. 9, 2000, quote.

## Larry Hanks

*LAS News*, Summer 2000, “Living with the enemy.”

## Robert Novak

ABC News 20/20, “Out for blood,” aired July 2, 1999.

*The London Free Press*, Oct. 10, 1999, “Officials fear mosquitoes will spread virus.”

## Hugh Robertson

*Discover*, Dec. 1, 1999, quoted in “Transposons.”

## Gene Robinson

*New Scientist*, June 12, 1999, experiment cited in “Bee nice to me.”

*The News-Gazette*, Sept. 26, 1999, “Bees’ social skills set pros abuzz; life in UI’s South Farms beehives hums along.”

## Kevin Steffey

*ABC News.com*, Aug. 28, 2000, quoted in “Confusing the enemy.”

## Gilbert Waldbauer

*Herald Sunday*, quoted in “Insect stories entertaining, informative.” ([www.seacoastonline.com](http://www.seacoastonline.com))

*The New York Times*, Book Review, June 4, 2000, “It’s a Bug’s Life.”

*The New York Times*, Book Review, June 4, 2000, “Six Legs Good. Also Eight.”

*London Times*, August 4, 2000, “Let’s work together.”


## Arthur Zangerl

*St. Louis Post-Dispatch Online*, June 6, 2000, “Genetically modified corn doesn’t harm butterfly species, U of I study indicates.”



# The Department on the World Wide Web

THE department's web presence ([www.life.uiuc.edu/Entomology/home.html](http://www.life.uiuc.edu/Entomology/home.html)) was established by David Lampe in 1994. David is now an assistant professor at Duquesne University in Pittsburgh, PA. The role of webmeister then fell on Hugh Robertson and Ellen Green. In 1999, the web site was completely revamped by David Schulz, a graduate student in Gene Robinson's lab, in order to provide more information to prospective graduate students and other visitors.

The page connects to information about the department, faculty, affiliates and staff, the program of graduate study, course offerings, financial aid, and applications for admission. Links to the annual Insect Fear Film Festival and a set of 34 original insect drawings are highlighted on the home page, as are links to other parts of campus and the community, and to various other entomology-relevant sources on the web. 

## Colloquium Speakers

### Spring 2000

- Eric S. McCloud, University of Southern Indiana, "Spit happens: Differential induction of jasmonic acid and nicotine in *Nicotiana sylvestris*."
- Diane L. Byers, Illinois State University, "Do populations purge their genetic load? Potential ramifications for fragmented prairie species."
- Rufus Isaacs, Michigan State University, "The sensory and behavioral basis of host selection in a tiny generalist herbivore—How do whiteflies choose food?"
- James H. Hunt, University of Missouri-St. Louis, "Caste patterns and correlates of caste ontogeny in social wasps."
- David W. Onstad, University of Illinois at Urbana-Champaign, "Modeling evolution of resistance to crop rotation."
- Gary J. Blomquist, University of Nevada, "Endocrine regulation of pheromone production in bark beetles and houseflies."
- Pamela Geyer, University of Iowa, "Insulators: Chromosomal punctuation marks that define appropriate interactions between transcriptional regulatory elements."
- Rami Kfir, Plant Protection Institute, South Africa, "South Africa as the origin of diamondback moth?"
- Paul E. Hardin, University of Houston, "Feedback loop circuitry within the *Drosophila* circadian clock."
- Roman Rakitov, Illinois Natural History Survey, "Role of Malpighian tubule products in biology and evolution of leafhoppers (Hemiptera, Cicadellidae)."
- Robert J. O'Neil, Purdue University, "Life history and search strategies of predators in crops."
- Jerry A. Coyne, University of Chicago, "Intra- and interspecific sperm competition in *Drosophila*."

### Fall 2000

- Robin L. Cooper, University of Kentucky, "The non-genomic and genomic actions of 20-hydroxyecdysone in *Drosophila* and crustaceans during development."
- Rüdiger Wehner, University of Zürich, Switzerland, "Ant navigation: Mini brains-mega tasks-smart solutions. A multidisciplinary study in neurobiology."
- Hilary Reno, University of Illinois at Urbana-Champaign, "An ecological, molecular, and biochemical comparison of *Aedes triseriatus*, mosquito vector of LaCrosse virus and *Aedes hendersoni*."
- Robert F. Denno, University of Maryland, "Natural enemy versus host plant control of insect herbivores: Complex interactions and spatial variation."
- Hariet Hinz, Bioscience, Switzerland, "Can garlic-loving weevils cut the mustard?"
- Jarmila Kukalová-Peck, Carleton University, Canada, "Fossil insects and insect evolution."
- Marty A. Condon, Cornell College, Mount Vernon, IA, "Tropical trick or treat: Pumpkins, bats, and tephritid diversity."
- Marion O. Harris, North Dakota State University, "Host-plant relationships of the Hessian fly: The contribution of the adult female."
- Marianne Alleyne, University of Illinois at Urbana-Champaign, "Physiological factors determining suitability of braconid endoparasitoids for development in novel-association lepidopteran stemborers."
- Steve Wratten, Lincoln University, New Zealand, "Conservation biocontrol of pests—Managing the consequences at four trophic levels."
- Chung-I Wu, University of Chicago, "Molecular genetics of speciation."
- Kurt E. Redborg, Coe College, Cedar Rapids, IA, "The Mantispidae: A remarkably common family of Neuroptera."

# Ellis MacLeod Memorial Lecture

## Pulitzer Winner Gives Lectures on 3-day UI Visit

From *The News-Gazette*, October 18, 1999



EDWARD Wilson, one of the world's leading scientists and thinkers on mankind's place in the biological order, will visit the University of Illinois next week. Wilson, a Harvard University professor, will give two lectures and take part in a symposium during his 3-day visit.

Trained as an entomologist specializing in the ant kingdom, Wilson taught biology, zoology, and entomology at Harvard for many years starting in 1953.

He has studied animals in their natural settings—their behavior, social organization, and relationship with the environment—not only to learn about them but also to apply the findings to human behavior.

He received a Pulitzer Prize in general nonfiction in 1991 for his book, *The Ants*. It was the culmination of years of observation on social insects. His book *On Hu-*

*man Nature* earned the same prize in 1979. It used insights he had gained as an entomologist to offer thought on such human behaviors as altruism and aggression.

A *Newsweek* magazine article last year said Wilson had “spent decades floating seminal and sometimes incendiary ideas.”

In his latest book, *Consilience: The Unity of Knowledge*, Wilson argued that human affairs make sense only in the light of biology and other natural sciences. Wilson said philosophers, psychologists and other social scientists hurt their own work by ignoring those fields.

“As marvelous as our minds are, as spiritual as we are, nonetheless, we are organisms. We evolved biologically,” he said during a 1998 interview on *The NewsHour* with Jim Lehrer. “So what we really need is a more scientific understanding of human nature.”

Wilson will give the MacLeod Lecture at 7:30 pm on Monday, October 18, 1999, in the auditorium of Smith Music Hall, 805 S. Mathews Ave., U. He will speak on “The Diversity of Life.”

The late Ellis MacLeod was a UI entomology pro-

fessor and an important influence on Wilson's life and career. In his autobiography, *Naturalist*, Wilson said he acquired his first taste for entomology during expeditions in suburban Maryland with “his new best friend Ellis MacLeod.” As boys, they decided to devote their lives to entomology.

On Tuesday, Wilson will speak on “The Relation of Science to the Humanities” for the Richard G. and Carole J. Cline Symposium Lecture at 7:30 pm in the auditorium of the Beckman Institute, 405 N. Mathews Ave., U.

He will speak on biological influences on human behavior and their implications for social policy. He will also examine the role of political values in shaping political choices that will emerge from new developments in genetic engineering.

On Wednesday, Wilson will take part in the Cline Symposium discussion, “Can Science, Social Science and the Humanities Be Unified?” from 10:30 am to noon in the South Lounge of the Illini Union, 1401 W. Green St., U. UI faculty in political science, economics, English, psychology, and microbiology will also participate. 🌿



# Entomology Graduate Student Association

THE Entomology Graduate Students Association is a registered student organization at Illinois that brings together graduate students in the department. We meet a few times each semester to organize EGSA events (*i.e.*, the Insect Fear Film Festival and our roles in the Insect Expo), to work as a channel for communication between students and faculty, and to discuss social and community outreach events.

The Hanks' lab pulled a coup in this year's nominations with four of five officers emerging from that lab. Our fearless figurehead, President Emerson Lacey, likens himself to a cross between Jimmy Carter and Ulysses S. Grant. Secretary Jodie Ellis has a way with words; her accurate and downright hilarious meeting minutes and style report tells all. The financial genius of the operation, Treasurer John Tooker is also spearheading the movement to bring in a student-sponsored academic speaker. Our dedicated GSAC representative, Matt Ginzel is still waiting to ply his considerable skills. The honorable Chris Pierce is the sole officer from outside the Hanks' lab. As liaison between the faculty and the students, his reign has seen the change of the written prelude, a fiercely debated topic in EGSA meetings.

This group's mission is to lead the EGSA into the insect world of the 21st century, to give all stu-



*Joe Sullivan leads a group of children at the Insect Fear Film Festival through the waggle dance.*

dents a chance to participate, and to put on this year's Insect Fear Film Festival.

On the subject, the 17th annual IFFF went splendidly. A living bee hive, a waggle-dancing Joe Sullivan, the always popular insect petting zoo and cool big pinned bug display, and a grumpy Dan Haggerty fighting the killer bees delighted young and old alike. The IFFF is the time that the EGSA works the hardest and has the most fun. We organize the displays, design and sell the popular t-shirts, and keep the event running smoothly.

The 18th annual IFFF will feature beetles as the vehicles of fear. Two big feature productions headline the show. The blockbusters along with the luscious assortment of movie shorts and activities

promise that this year's fest will be the equal to those in the past.

What else does this new year have in store for EGSA? Will we achieve world domination, alleviate all pain and suffering in the world, a global mind shift on the cool nature of insects? We say yes to this (or at least yes to plentiful pizza at our meetings and maybe a field trip or two). So, Entomology grads—old and new—eclose, shed those protective cuticles, and emerge into the bright future of the EGSA. Our organization is as strong as the student commitment to it. With a strong commitment to the organization and to the students maybe, just maybe, you too will someday be an elected officer of our fine organization. 🐛

# Graduate Students

## Jesse Albertson

I am originally from North Dakota and received my BS in zoology from North Dakota State University. I then moved to Virginia and worked for the entomology department at the National Museum of Natural History in Washington, DC. My interests include the systematics, conservation, and biodiversity of treehoppers. I work with Chris Dietrich and am conducting a revision of the subfamily Nicomiinae. I enjoy reading and spending time with my husband.

## Marianne Alleyne

I am originally from the Netherlands. I received my BA in integrative biology from the University of California-Berkeley and my MS in entomology from the University of California-Riverside, where I worked with Dr. Nancy Beckage. I have been at Illinois since the summer of 1995 and finished my PhD with Robert Wiedenmann in fall 2000. The main focus of my research is on the physiological factors determining the suitability of pyralid stem borers for endoparasitoid development. I consider myself an insect physiologist studying the insect immune response, but my research is even more interesting since it may have



implications on how biological control programs should be designed. Vice versa, the area of biological control may guide us to some very interesting basic biological studies. I have enjoyed TA-ing (specifically insect physiology with Dr. Susan Fahrbach), giving guest lectures in physiology and biological control, serving as EGSA president, being involved in the organization of outreach events (such as the Insect Fear Film Festival and the Insect Expo), etc. Over the years, my association with the department and the Survey has enabled me to travel to various meetings and workshops all over the world, for which I am very grateful. My hobbies include travel, triathlons, NCAA basketball, *Law and Order*, and hanging out with Omar. For more information, please visit our web site ([www.inhs.uiuc.edu:3333/cee/wiedenlab](http://www.inhs.uiuc.edu:3333/cee/wiedenlab)) or e-mail me ([vanlaarh@uiuc.edu](mailto:vanlaarh@uiuc.edu)).

## Ashley Bennett



I am a first year graduate student and an Illinois native. I recently joined the lab of Larry Hanks where I look forward to designing a master's project that deals with ornamental landscaping and pest management. In May 2000, I graduated from Millikin University with a BS in biology. In my spare time, I enjoy scuba diving,

biking, and working out; my most recent challenge has been learning the game of golf.

## Mark Carroll



I am originally from Florida, where I received my BA from the New College of USF after completing an undergraduate thesis on ichthyotoxic compounds in red mangrove leaves. These interests in chemical ecology directed me to Illinois to work with May Berenbaum and Art Zangerl, who have indulged my varied interests in plant-insect interactions. In 1997, I completed my master's research on the use of host plant esters as olfactory cues by parsnip webworms.

My doctoral research examines how dietary carotenoids affect the physiology and behavior of insect herbivores under oxidative stresses presented by phototoxic plant secondary compounds and UV light. I have conveniently focused on the interaction between parsnips and parsnip webworms as my main model system, given the importance of phototoxic furanocoumarins in this interaction. Webworms that consume the carotenoid lutein show a greater behavioral tolerance of photoactivating UVA light and enhancement of their cytochrome P450 detoxification system. Whether these trends occur in other lepidopterans is not yet known. To provide a little ecological context for my work, I plan to make comparisons between webworms collected from populations under different UV light regimes in the montane



west. On a related note, maybe someday I will be able to tell you why lepidopteran testes are often bright red, orange, or yellow (hint: it's probably not aposematism).

In my personal life, I am happily pursuing a second childhood with my daughter Alyssa (age 4), who tells everyone that her dad makes silly caterpillar pies. When I'm not actively wearing the daddy or graduate student hat, I move around town by land (running), sea (swimming in a pool, as a substitute), or on my motorcycle (no exercise benefit whatsoever, but quite enjoyable).

## Sean A. Collins



MY interests lie in the behavior, ecology, and genetics of the social wasps, particularly those in the vespid subfamilies

Vespininae and Polistinae. The main focus of my work is an ongoing study on the genetic structure of the hornet, *Vespa crabro*. This insect was introduced to the US around 1850 at New York Harbor, probably on board a ship crossing the Atlantic from either the UK or Germany. In the period since then, it has managed to extend its range westward to Missouri. I strongly believe the source of the current North American population was a single queen (or at most 3), thus making this present population an excellent subject for an investigation of founder effects in eusocial hymenopterans. For this work, I am looking for variation using three independent classes of molecular markers, allozymes, mitochon-

drial DNA, and microsatellites in *V. crabro* collected throughout the US, and comparing rates of allelic variation to populations of *V. crabro* from western Europe (where the US subspecies, *V. crabro germana* is native) as well as to that of vespines native to North America (*Dolichovespula maculata*, *Vespula maculifrons*, and *Vl. squamosa*). I anticipate that this work will shed considerable light on our understanding of this magnificent insect (*V. crabro* is the largest social hymenopteran found in the US), as well as to our current understanding of the potential consequences, if any, of founder effects on haplodiploid organisms.

## Lesley Deem



I come from the rural hills of eastern Ohio. I received my BS in biology with certification in secondary education from Clarion University of Pennsylvania. I completed my master's thesis in 1993 on controlling adult corn rootworm beetles with semiochemical baits. I went to Pennsylvania for several years to raise Tamworth pigs, vegetables, and herbs. I returned to Illinois in 1998 to complete my doctoral degree. I will be finishing the thesis shortly. My areas of interest in entomology include IPM, biological control, forensic entomology, and insect natural history. My other interests are herb gardening, landscape and garden design (looking for the best native or ornamental plant for the location and application), quilting, and

fishing. I enjoy teaching biology, gardening, and entomology to classes, groups, and individuals, as well as participating in events such as Insect Expo and the insect fear film festival.

## Jodie Ellis



THIS is my third year in Larry Hanks' lab. My research interests are entered on conservation biological control of evergreen bagworm on arborvitae shrubs in an ornamental landscape setting. I am especially interested in integrating ecological methods of pest management into the design of urban landscapes, to reduce the need for pesticides. Going to grad school in entomology is always fun, but doing it in your forties is even better. Entomology has also become somewhat of a family affair, as my daughter (a senior here at Illinois) works on her own entomology project (vertebrate predation of bagworms). She also works as a technician in the Hanks lab. Fortunately, we get along unusually well unless it is very hot out and there's lots of physical labor for her to do.

My husband Steven is a systems analyst and currently not interested in entomology as a career. In our spare time, we enjoy our two dogs and taking weekend trips to over-looked places in the Midwest.

## Colin Favret

SOMEHOW, between my traveling, mountaineering, and opera



going, I managed to complete and deposit my master's thesis in May 2000. Now I am doubly blessed with my current occupations. First, I continue to work on my PhD, a systematic study of a group of aphids of the genus *Cinara* that live on pinyon pines. The goals of this project include a revision with morphometric species diagnosis and molecular phylogeny, and the addressing of several evolutionary questions. Second, I became the insect collection manager at the Illinois Natural History Survey. Being directly responsible for such an important research collection is an exciting and fulfilling challenge.

## Matthew Ginzel



I am a PhD candidate in Dr. Larry Hanks' lab. Last year, I received an MS in entomology from Illinois. My thesis examined mate location and recognition strategies of *Xylotrechus colonus*, a crepuscular longhorned beetle. I found that males and females are mutually attracted to host volatiles and once on the host they rely on contact pheromones to locate mates.

My current research is partially focused on mechanisms of prezygotic mating isolation in two closely related cerambycid species. These species are *Megacyllene caryae*, the hickory borer, and *M. robiniae*, the locust borer. I am interested in whether reproductive

strategy is a mere consequence of inheritance, or is shaped by selective forces related to the larval host condition. For the other portion of the dissertation, I am starting a population genetics project, with the help of Dr. Ken Paige, on the invasive Asian longhorned beetle. We have beetles from Chicago, New York, and a number of regions of China. By comparing variation in mtDNA sequences, I hope to determine the origin of the Chicago population.

During my free time, my wife Christine and I enjoy camping, swimming, and playing a variety of outdoor sports.

## Ellen Green



THIS summer I completed my doctoral degree in entomology in May Berenbaum's lab. My thesis examined the effects of nutrients and minerals on growth and detoxification in lepidopterans. I accepted a full-time position at Illinois as a laboratory teaching specialist for life sciences. I coordinate the first course in a required three-course series for biology majors. One of the perks of my job is working with terrific graduate teaching assistants from the Department of Entomology.

## Erin Grossman



I am a new addition to the Hanks' lab, a master's candidate in NRES. Originally, I am from Amboy, a

small town in northern Illinois near nothing. I graduated with a BS in forestry from the University of the South in 1998. (It's a small liberal arts college in Tennessee commonly referred to as Sewanee.) After graduation, I spent a couple of years as a utility forester with ComEd. I have now decided to come back to school and focus on plant-pest interactions.

In my free time, I like to travel (mostly to see family and friends), read, and knit afghans for all of my friends that keep getting married.

## Terry Harrison



I am an MS student in the lab of Dr. May Berenbaum. My research focuses on systematics of lower ditrysian moths in the superfamilies Yponomeutoidea and Gelechioidea. Current projects include a study of Rutaceae-feeding *Agonopterix* (Elachistidae) in Illinois, a world generic revision of Plutellidae, and co-authorship of the fascicle on Momphinae (Coleophoridae) for the *Moths of America North of Mexico* (MONA) series.

## Martin Hauser



IT has been more than 2 years since I left Germany and started my life here in the Midwest.

During this time, I finished nearly all of my courses and the requirements for the University. I also did a fair amount of

traveling and bug collecting, which was a bit more exciting. I have made “regular” trips to Germany to refresh my mother language and my taste buds. But more exciting, I visited Malaysia, Tunisia, South Africa, Bolivia, and Brazil collecting lots of insects, mainly flies for my research. Also these trips provided many new experiences with foreign cultures, foreign traffic, administration, and food. With the many bugs, I brought a lot of nice memories back from these trips. During two of my return trips to Germany, I hosted Kevin Holston and Sean Collins in June 2000 for some exciting hornet collecting in the wild heartland of Europe. Kevin and I will spend spring 2001 in North Carolina to study some molecular techniques with Prof. Brian Wiegemann.

## Jeff Heilveil



I am currently a doctoral student working with Dr. Leellen Solter. My primary research interests are the epizootiology of aquatic entomopathogens and host-pathogen interactions. I received my BS from the University of Michigan in 1997 and my MS from Illinois in 1999. When I'm not out observing population regulation mechanisms, I like to spend my spare time “researching” in the kitchen.

## Lauren Kent



I'M a first year grad (nymph?) in the department, and am currently in the Novak lab. Although almost everything about insects is intriguing, I'm interested in the mechanisms of insect-microbe interactions, particularly those concerning vector systems affecting humans.

If you don't already know, the East Coast is the best! I was born and raised in Connecticut. It's not clear what possessed me to come out here. I attended Washington University in St. Louis as an undergrad, was thoroughly challenged, and received my BA in biology. I had a great time, and for some reason, I stayed out here. (What I miss most are the beaches and hills). In my spare time (huh?), I enjoy sleeping and eating.

## Emerson Lacey



IN 1996 I received my BA from Southern Illinois University at Carbondale in biology (and one in creative writing in 1993). In 1998, I officially joined the department and in early 2000 joined the lab of Dr. Larry Hanks. I hope to receive my MS degree some time in 2001 and to continue doing research beyond that.

My research interests focus on wood-boring insects, especially beetles in the family Cerambycidae and their hymenopteran parasitoids. Of particular interest to me are the

chemical cues used by the beetles to find trees susceptible to attack and cues used by the parasitoids to find trees harboring hosts. I am also interested in the natural and anthropogenic effects that weaken and stress trees and lead to higher rates of attack by borers. Currently, I am investigating whether there is a difference in borer and parasitoid species diversity and abundance on sugar maple between urban and natural forests.

Outside of research, I have a teaching assistantship and am actively involved in the Entomology Graduate Student Association. My teaching assignment is the lab of ENTOM 301: Introduction to Entomology (fall '00) and the lab of ENTOM 313: Ecology of Disease Vectors (spring '01).

Studies, research, and teaching occupy most of my time but in my spare time I enjoy attending live music shows, cooking, camping, fishing, all-night games of Monopoly, and the Home Shopping Network.

## Weimin Li



I am from a southwestern province of China. After earning my BS in 1993, I spent most of my time studying cytochrome P450 monooxygenases, some important and fascinating detoxification enzymes. I got my MS from Shanghai Institute of Entomology, Chinese Academy of Sciences in 1996, because of my work on the biochemical mechanism of cytochrome P450-mediated insecticide resistance. I came to

Illinois to continue my education in 1997. I am working in Dr. May Berenbaum's lab, studying the interaction of insect herbivores and plants. My research focuses on the cytochrome P450s (detoxification enzymes) involved in the metabolism of swallowtail butterflies to furanocoumarins, potent plant defense compounds.

## Xianchun Li



I'M a PhD student in Dr. May Berenbaum's lab working on P450s responsible for allelochemical insecticide cross-resistance. I've been interested in biochemistry, molecular biology, and evolution of insecticide resistance in herbivorous insects. I have isolated several P450 genes or alleles, namely *CYP6B8*, *CYP6B27*, *CYP6B28*, *CYP6B8v2*, *CYP6B8v3*, and *CYP6B8v4*, from *Helicoverpa zea*. Although sharing high nucleotide and amino acid identity, these genes begin to diverge in terms of temporal, spatial, and induced expression patterns. But so far, it is not quite clear how these genes "work" together to defend the caterpillars against natural allelochemicals and synthetic insecticides.

## Katy Lustofin



**ORIGINALLY** from New York state, I became interested in chemical ecology through my participation in the Howard Hughes Undergraduate Research

Program. After receiving my BS in biology, I moved to California to attend graduate school in plant biology. Through one of my courses, I was introduced to entomology, which I quickly realized was much more exciting than plant biology. I received a master's degree from UC-Davis in 1998 and relocated to Champaign to work with Dr. Berenbaum.

I am something of an oddball in the Berenbaum lab, working not on wild parsnip, webworms, or swallowtails, but rather on poison hemlock and a small, green, and utterly wriggly caterpillar, *Agonopterix alstroemeriana*. With most of my coursework behind me (I have yet to take taxonomy) and no teaching duties, I am focusing on my research. I hope to be one of the first graduate students to take the new style of preliminary exams in January.

I recently got engaged to Jason Kirby, whom I met through a friend. My mother always advised me against dating within my field, and I guess I have heeded that advice, as Jason is an engineer. Our wedding date is set for September 2001.

## Cindy McDonnell



I am beginning my first year as a graduate student in Dr. May Berenbaum's lab. In 1999, I received my BA from Cornell University in biology. I recently finished a 6-month internship at the Bermuda Biological Station for Research where I

studied nitric oxide synthase activity in dinoflagellate symbionts. Although I miss the island lifestyle, it is not that bad being in Illinois, as it is originally home for me. I'm looking forward to pursuing my interest in chemically mediated insect-plant interactions, and I hope I find time for singing, photography, and tennis as well.

## Robert Moore

**CURRENTLY** stationed in Kuwait with the Illinois Army National Guard.

## Dmitri Novikov



I am a native of the Ukraine and graduated from Dnipropetrovsk State University, where I studied under the well known leafhopper specialist, V.N. Logvinenko. After graduating, I taught high school for a year and worked in private business rearing and exporting honey bee queens to Siberia. In 1998, I joined Chris Dietrich on a 3-year, NSF-sponsored inventory of the vascular plants and terrestrial arthropods of Kyrgyzstan, a former Soviet central Asian republic. For my master's thesis, I am compiling a list of the leafhoppers of Kyrgyz grasslands, describing new taxa, and using quantitative sample data to estimate insect diversity and examine its ecological correlates in central Asian grasslands.

## Harland Patch



I received my BS and MS from Virginia Commonwealth University in Richmond where I studied oviposition preference

in the black swallowtail butterfly, *Papilio polyxenes*. With *P. polyxenes* I was interested in the chemical and environmental cues female butterflies use to identify their host plants. At Illinois my interest in insect olfaction has continued but my research has focused on molecular mechanisms. With Hugh Robertson, I have been exploring the various proteins related to mate choice in *Manduca sexta*.

## Rebecca Petersen

I grew up in the former Canal Zone in the Republic of Panama. There, I worked at the Smithsonian Tropical Research Institute studying the phylogenetics of various marine and terrestrial invertebrates. I graduated from the University of Notre Dame with a BS in biology in 1996. I decided to stay in the Midwest and joined the Berenbaum lab and also work with Mary Schuler in Cell and Structural Biology. I investigated cytochrome P450-mediated metabolism of natural plant toxins in the black swallowtail for my master's thesis. For my doctorate, I am studying the transcriptional regulation of the P450 genes by their substrates.



When not slaving away in the lab, I enjoy reading, stitching, swimming, running, and getting together with my cronies on Wednesdays for *Law and Order* night.

## Christopher Pierce



A native of Illinois, I am married to a wonderful woman, Kelly, and am a second-year graduate student working on my doctoral dissertation. I received my BS in plant and soil science at Southern Illinois University-Carbondale and my MS in horticulture at Illinois. My master's thesis looked at the interactions between *Nosema pyrausta* and *Bacillus thuringiensis* subsp. *kurstaki* in the European corn borer, *Ostrinia nubilalis*. I am working with Dr. Michael Gray in Crop Sciences on the oviposition behavior of the new strain of western corn rootworm, *Diabrotica virgifera virgifera*, (WCR) in corn and soybeans. This has resulted in washing an unprecedented 1.5 tons of soil this year looking for WCR eggs. I am also looking at how corn and soybean phenology interacts with the behavior of the WCR and how the WCR interacts with different varieties of soybeans.

## Karlene Ramsdell



I'M a native of the greatest city in the world, Chicago. Living in east-central Illinois for a decade

has resulted in my becoming a born-again Democrat. Educational history begins in the distant past. After surviving in parochial grammar schools and public high schools I entered the school of hard knocks for a couple of decades—graduated summa cum laude. Decided to enter Northeastern Illinois University as a part-time student and graduated summa cum laude with a BS in chemistry and biology. (Why? Because double majors have more fun.) My life really changed at the University of Illinois where Ellis MacLeod introduced me to parasitoids. I received an MS in 1995 for working on sex ratio manipulation by a parasitoid wasp. My PhD work is on olfactory binding proteins under the capable direction of Hugh Robertson and Stewart Berlocher. My hobbies are manifold and include vegetable and wildlife gardening (with weeds as an integral part of the whole), growing cacti and succulents (the best apartment plants), fossil hunting (very rarely nowadays), and supervising Steve (the lion's share of free time is spent on this worthwhile activity).

## Peter Reagel



I received my BS in biology from Illinois in 1996, and I am now working with Larry Hanks. For my master's project I am looking at aggregation and mate location in the red milkweed beetle. I have found that aggregations are more likely to occur on milkweed plants with a greater number of large umbels. Male

beetles accumulate at aggregations with a female-biased sex ratio, but do not appear to be attracted by long-range cues. I am now studying the conservation biological control of pine needle scale. Along with watching insects, I enjoy reading mythology and walking.

## Hilary Reno



A MD/PhD student in the department, I completed my PhD thesis in October 2000, "A molecular, ecological, and biochemical comparison

of *Aedes triseriatus*, vector of LaCrosse virus, and its sibling species *Aedes hendersoni*." I examined the seasonal pattern of oviposition by these two mosquitoes in relation to the LaCrosse virus cycle. I also determined the variability in the internal transcribed spacer regions and used those sequences to develop a phylogeny of the *Triseriatus* group that supported the phylogeny based on morphology. Finally, my thesis characterized the salivary gland enzyme, apyrase (inhibits platelet aggregation), in *Aedes triseriatus*, *Aedes hendersoni*, and *Aedes aegypti*. Although my field seasons are officially over, I'm working on publications. I also keep busy as a third year medical student and trying to get some sleep. I plan on a residency in internal medicine and possibly a fellowship in infectious disease. Eventually I hope to practice, teach, and conduct research in infectious disease at an academic medical center.

## David Schulz



I am working on a PhD in Gene Robinson's lab. I received my BS in biology from Illinois in 1995, and stayed

to receive my MS in 1997. My primary research interest is the neurochemical regulation of behavior and division of labor of honey bees. On the side, I am interested in how colony environment affects the dynamics of division of labor, including how factors such as food shortage influence behavioral development and the size of the foraging force. I plan on finishing my PhD within a year, with postdoctoral interests in studying the neurophysiological basis for phenomena such as neuro-modulation that ultimately lead to behavioral regulation and flexibility. When not working in the field or slaving over a hot HPLC machine, I enjoy thinking about going cycling, hiking, and insect collecting...but in reality waste precious hours on the internet looking for nothing in particular (and usually finding it).

## John Tooker



I am working on my PhD under the supervision of Larry Hanks with whom I completed my MS degree last year on parasitoids (Aphelinidae) of pine needle scale (Diaspididae). For my dissertation, I am concentrating on some residents in the

remnant prairies of east central Illinois. I have been researching two species of gall wasps (Cynipidae) that feed in the stems of *Silphium* (Asteraceae) and their parasitoids (Eurytomidae). I want to understand the natural histories of these overlooked native insect species and use this system to answer some questions regarding parasitoid-mediated population control.

In my spare time, I enjoy being outdoors, exercising and relaxing. In the next year or so, I plan on marrying my fiancée before common law catches up with us.

## Rodrigo Velarde



I am originally from Cochabamba, a city in the central valleys of Bolivia. I started my undergraduate studies in Agronomy

at ITESM in Monterrey (Mexico), after taking an introductory entomology class I decided to pursue a career as an entomologist. I transferred to the University of Illinois in 1995, and obtained my BS in agricultural sciences in 1997. I continued graduate studies in natural resources under Dr. Robert Wiedenmann, working on the artificial induction of diapause in chrysomelids used as biological control agents. After finishing my MS, I started PhD studies in entomology. I am privileged to work under the guidance of not one, but two, advisors: Dr. Susan Fahrback and Dr. Gene Robinson. My project, still under development, will involve the study of the nuclear hormone receptors present in the

honey bee brain. I am also interested in the honey bee postembryonic development and division of labor.

## Jamie Zahniser



I am in my first year of graduate study here, and am originally from Pittsburgh, PA. I received my BS in biology from Penn

State University, where I became fascinated with nature, and particularly with bugs. After graduating, I had a potpourri of jobs, some biology-related, and some not. I've decided that biology and bugs are intrinsically more interesting than painting houses, so here I am at Illinois. I am most interested in systematics and phylogeny, and plan to do a systematic study for my master's thesis.

In my spare time, I enjoy listening to music, hiking and camping, watching movies, and brewing beer or an occasional batch of mead. 🍷

*From the Illient, 1933: Enthusiastic beekeeping student to curious friend: "I find the study of bees very interesting from the standpoint of morphology and life habits. Yes, and there is even romance among the bees. This little book I have been reading says that bees are very affectionate to the ones they like best."*

*Friend: "Where did you see that? I don't believe it."*

*Beekeeping student: "Here it is in this paragraph—it says that 'when the field bee returned to the hive after a hard day's work visiting flowers and carrying pollen, the nurse bee took its honey and nectar.'"*



*Susan Fahrback with Chou Miin Wang following graduation ceremonies in May 2000.*

# Recent Graduates

## Master of Science

### 1999

Matthew Ginzl. Mate location and recognition in *Xylotrechus colunus* F. (Coleoptera: Cerambycidae)

John Tooker. Natural enemy relations of pine needle scale (Homoptera: Diaspididae) in east central Illinois and the potential for conservation biological control.

Michael Slamecka. Two models to predict the first occurrence and predominance of *Culex pipiens* Linnaeus (Diptera: Culicidae) in east-central Illinois.

Jeff Heilveil. An investigation of the mechanism of transmission used by populations of *Cougourdella* sp. (Microsporidia: Cougourdellidae), a parasite of the trichopteran *Glossosoma nigrrior* (Glossosomatidae).

Rebecca Petersen. Expression of CYP6B1-CYP6B3 and furanocoumarin metabolism in different tissues of *Papilio polyxenes* (Lepidoptera: Papilionidae).

### 2000

Colin Favret. Migratory aphid habitat selection in agricultural and adjacent natural habitats.

Duane McKenna. Ecology, phylogeny, and host-usage of North American *Depressaria* (Lepidoptera: Elachistidae).

## Doctor of Philosophy

### 1999

Susan Ratcliffe. Assessment of parasitism of house fly and stable fly pupae (Diptera: Muscidae) by pteromalid (Hymenoptera: Pteromalidae) parasitoids using polymerase chain reaction (PCR).

### 2000

Sarah Farris. Post-embryonic development and adult plasticity on the mushroom bodies of the honey bee brain.

Ellen Green. Effects of nutrients and minerals on growth and detoxification in phytophagous insects.

Karen McClellan. Overwintering biology of *Culex pipiens* Linnaeus (Culicidae) in east-central Illinois.

Hilary Reno. An ecological, molecular, and biochemical comparison of *Aedes triseriatus* (Say), the vector of Lacrosse virus, with its sibling species, *Aedes hendersoni*.

Christine Wagener-Hulme. Biogenic amines and division of labor in the honey bee society.

Chiou Miin Wang. Characterization of novel neuronal antigens in the central nervous system of *Manduca sexta*.

Daniel Toma. Cloning and analysis of a honey bee (*Apis mellifera*) gene orthology and honey bee division of labor.

# Awards and Recognition

## Faculty

### National and International

May Berenbaum received the 2000 Silverstein-Simeone Award in Chemical Ecology from the International Society for Chemical Ecology at its annual meeting in Poços das Caldas, Brazil.

Michael Gray received the 1999 USDA-ARS Technology Transfer Award for Superior Efforts (Team Award with Kevin Steffey and selected other land grant scientists) in recognition of outstanding cooperative technology transfer efforts involved in implementation of the National Areawide IPM Program for corn rootworm.

Larry Hanks received the 2000 Entomological Society of America Award for Distinguished Achievement in Urban Entomology at the annual meeting, held in Montreal, Quebec, Canada.



Marcos Kogan, 2000 Founder's Award recipient, with Larry Hanks, recipient of the Award for Distinguished Achievement in Urban Entomology at the ESA meeting in Montreal.

Hugh Robertson was recognized February 19, 2000, as a Fellow of the American Association for the Advancement of Science during their annual meeting in Washington, DC.

In 2000, Gene Robinson received a Certificate of Distinction from the International Congress of Entomology in recognition of his outstanding contributions to entomology and society. Only three such Certificates have been presented—one of those was to ESA member and National Medal of Science winner E.O. Wilson in 1996.

Gene also was received a 2000 Innovation Award in Functional Genomics from the Burroughs Wellcome Fund.

Gil Waldbauer's *Millions of Monarchs* was awarded honorable mention in the biological science division of the Association of American Publishers Inc. 2000 Professional/Scholarly Publishing Division Annual Awards Competition.

### Campus

May Berenbaum received the Campus Award for Excellence in Public Service in 2000. She has been active in public service since coming to Illinois in 1980. According to colleagues who nominated her, Berenbaum has an

“extraordinary commitment to educating the public about complex issues in ecology and evolutionary biology.” She has frequently been



Susan Fahrbach with Chancellor Michael Aiken at the University Scholars recognition.

invited to participate in programs on insects, through local media and in area schools. She is widely known as the creator of the “Insect Fear Film Festival.” As one letter supporting her nomination pointed out, “Professor Berenbaum does not come ‘down’ from the ivory tower to greet her public, but instead lifts everyone she touches to a higher plane of scientific appreciation, be they students or impressionable young children.”

Susan Fahrbach was named a University Scholar. Fahrbach and her colleagues have succeeded in identifying neural as well as hormonal inputs regulating the fate of neurons in adult moths and in addition have characterized the intercellular signals initiating the degeneration of neurons. She has accomplished these research objectives by devising innovative experimental approaches and developing novel tools to allow her to pursue her studies including an *in vitro* system that accurately reproduces the selectivity and temporal patterning of neuronal death *in vivo*. Earlier this year, she collaborated with Gene Robinson in a project that employed harmonic radar techniques to characterize the



ontogeny of spatial learning in honey bees. Their work was published in *Nature* and received worldwide media attention. *Inside Illinois*, October 7, 2000.

Gene Robinson assumes the position of Director of the Neuroscience Program in January 2001.

Richard Weinzierl was the recipient of the 2000 John Clyde and Henrietta Downey Spittler Teaching Award.

Arthur Zangerl was the recipient of a College of LAS Academic Professional Award. Below is the nomination letter by May Berenbaum.

It is with a tremendous amount of pleasure that I nominate Dr. Arthur R. Zangerl for a 1999-2000 LAS Academic Professional Award. Art has nominally been a research associate in my laboratory for 16 years; in reality, he has been an intellectual partner, an invaluable asset to the School of Integrative Biology, and an outstanding citizen of the greater biology community.

I first met Art in 1983, after I had advertised in a School of Life Sciences' newsletter for a technician; Art, who had moved to Buffalo, NY, after completing his doctoral work in plant biology here at UIUC, applied for the technician job despite the fact that he had a PhD in hand (jobs in life science were scarce back then). He was so vastly superior to any other applicant that I hired him without a moment of hesitation.

After only a few weeks on the job, it was so abundantly clear that he was contributing so far above the level of technician that the position had to be upgraded to match his performance. Ever since then, Art's performance has exceeded all reasonable expectations for his position.

He is ostensibly a research associate in my laboratory—he is supported almost entirely on external grant funds, which

we work together to obtain. In reality, his contributions greatly exceed the boundaries of our laboratory on the second floor of Morrill Hall and are more on the level of a full-fledged faculty member.

The criteria for recognition with an LAS Academic Professional Award include work, personal, and professional contributions. In terms of work contributions, Art has without any doubt whatsoever advanced the mission of the Berenbaum lab. He is in every sense of the word a full collaborator with me, of equal status in terms of experimental design, statistical analysis, and publication preparations. This collaboration has been wildly successful, as attested to not only by the record of publication (we have over 40+ jointly authored papers, book chapters, and abstracts) but also by external recognition by peers (e.g., the Ecological Society of America recognized our work several years ago by conferring the Mercer Award for best paper by authors under 40).

Although the bulk of the work we do is collaborative, Art has, by working well beyond the 40 hour per week norm on his own initiative, maintained several independent research interests related to his early training in plant biology and has established a reputation for excellence (e.g., in induced responses and optimal defense theory) quite independent of mine (as reflected by his single-author publications and his papers published with collaborators outside of our lab).

He has demonstrated amazing intellectual flexibility over the years and has, by intensive retraining, acquired skills that have allowed our laboratory to pursue work in quantitative genetics, analytical phytochemistry, and molecular biology; he is a major factor in promoting the integrative research we have been able to pursue and for which we have gained recognition.

He is also a central full-status participant in a newly funded, six-investigator Critical Research Initiative campus grant on impacts of herbivory on photosynthesis and plant physiological ecology (which combines both his past and present expertise).

Unlike most people hired as research associates in a particular lab, however, Art has gone well beyond the pure research mission of a scientist funded by an

external grant. Despite the fact that there is utterly no requirement to do so, Art has voluntarily taught courses for several units within the School of Integrative Biology. He has, for example, served several times as instructor of record in Plant Biology 418, an advanced topic seminar for students in plant ecology, and has been enthusiastically reviewed by students for his efforts. During fall 1997, when the department found itself short-handed due to an unexpected faculty death, Art volunteered, with only two weeks' notice, to teach Biology 309, Ecological Genetics; I was able to use funds from the College to support his excellent teaching effort. He also regularly contributes guest lectures in a variety of courses offered within the School of Integrative Biology.

He serves as formal thesis committee member as well as prelim exam committee member for graduate students in three different SIB programs (entomology, plant biology, and ecology, ethology, and evolution) and as informal consultant on statistics and experimental design for the entire entomology department. He has provided guidance in the laboratory and field for countless undergraduates who have gained research experience in our laboratory and who have on several occasions graduated with honors as a consequence of that experience.

Art has succeeded in working well with faculty and students at all levels and at all ranks because he is so affable, easy-going, and positive. He can provide assistance as well as criticism constructively and is well known for his ability to work with all kinds of personalities (a talent honed,

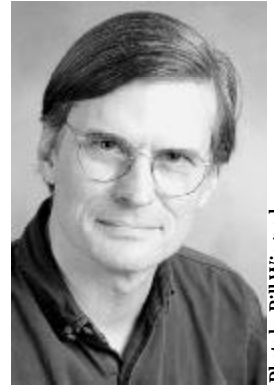


Photo by Bill Wiegand

perhaps, during his service as a member of the Urbana City Council for several years). The impact he has had on colleagues and students has been uniformly positive.

His boundless enthusiasm and inexhaustible energy have led him to participate to an extraordinary degree in extracurricular activities. On his own initiative, he designed, constructed, and delivered an outstanding exhibit on insect sounds to the Discovery Place Science Museum for children in downtown Champaign; he also designed and worked with graduate students to produce an exhibit on pheromonal communication that has been an unqualified success at the past four Insect Expos.

He was on hand to assist with the very first Insect Fear Film Festival 17 years ago and has helped through the years in countless ways, from running film projects to posting notices to working crowd control to manning exhibits.

He regularly attends the departmental colloquium and can be counted on to participate in after-seminar discussions and to serve as host for off-campus visiting speakers. It goes without saying that there are several full-fledged members of the entomology department faculty who do not participate to the extent that Art does in "extracurricular" activities.

Art's job description doesn't include these activities any more than does the job description of a full professor—yet he participates because of his love of science and his dedication to the discipline.

Professionally, Art has earned recognition due to the impact he has had on the field. Again, it is important to emphasize that this is recognition not of our joint efforts but of Art's own independent abilities and expertise. He has been invited to present seminars at universities and papers at professional meetings (including the very prestigious Gordon Conference on Plant-Herbivore Interactions) and he is routinely asked to review manuscripts for the key journals in the field and to review grants for the prin-

cipal federal funding agencies. Art served as a panel member for the Ecological and Evolutionary Physiology Program at the National Science Foundation; such an invitation is clearly acknowledgment of the independent expertise of an investigator and accrues to the reputation of the programs here at UIUC.

It is important to emphasize that Art has established his very substantial record of achievement under daunting circumstances. He is not a tenure-track faculty member with his own laboratory and with a guaranteed salary; he has for 16 years dealt with all of the uncertainty associated with working on a soft-money salary (during many less than propitious budget years for federal funding agencies).

Such an arrangement generally leads to insularity; few people are willing to jeopardize their own future by routinely expending time and energy that might otherwise be invested in enhancing their own record by assisting others whose work is unrelated to their own. Art has succeeded in insuring his own future while helping others because of his tremendous enthusiasm, his incredible drive, and his amazing intellect.

The School of Integrative Biology and the College of Liberal Arts and Sciences are extremely fortunate that Art does not live by the strict interpretation of his job description—he contributes to the very fullest extent of his remarkable ability. He is motivated by the love of science and not by the need for reward or recognition.

That he is so motivated, however, does not mean that he is undeserving of such reward and recognition. I know of no individual on the campus who has acted more professionally as an academic professional or who has enhanced the academic environment more substantively; I recommend him for this award with unreserved and wholehearted enthusiasm.

Sincerely, May Berenbaum

## Graduate Student Awards

2000 North Central Branch Graduate Scholarship Award: Dave Schulz

Francis M. and Harley M. Clark Research Support Grants: Sean Collins, Matthew Ginzel, Jeffrey Heilveil, Rebecca Petersen, Daniel Skirvin

On-Campus Dissertation Research Grants Fall 2000: John Tooker

Sigma Xi Research Grant: John Tooker

2000 President's Prize for 10-minute Oral Presentation, Entomological Society of America: Rebecca Petersen, first place; Yehuda Ben-Shahar, honorable mention

2000 President's Prize for Display Presentation, Entomological Society of America: Tim Mabry, first place (Crop Sciences); Silvia Rondon, honorable mention (Crop Sciences)

## Teaching

Incomplete List of Teachers Rated Excellent by their Students

### Fall 1999

Sean Collins  
Susan Fahrbach  
Matthew Ginzel  
Jeff Heilveil  
Peter Reagel  
Kym Rosiak

### Spring 2000

May Berenbaum  
Mark Carroll  
Sean Collins  
Susan Fahrbach  
Matthew Ginzel  
Ellen Green  
Jeffrey Heilveil  
John Tooker  
Kym Rosiak

# The Insect Fear Film Festival 17

February 26, 2000

FOR the seventeenth annual insect fear film festival, we had our usual share of national attention, not the least of which was from *National Geographic*, which sent a film crew to shoot the festival. *CBS Radio* in New York did an interview, and the *Wall Street Journal* even had an article on the festival on page 1 of the Thursday edition before the festival. And there was the usual share of out-of-town guests and festival faithful Nathan Schiff, who returned from Mississippi via Papua, New Guinea just in time.

This year, the focus was on bees on TV—bees in made-for-television movies, shorts, and advertisements. There is no species toward which humans feel greater ambivalence than *Apis mellifera*, the Western honey bee. On one hand, there's *Apis mellifera*, helper to humanity, industrious provider of honey and wax and pollinator extraordinaire. On the other, there's *Apis mellifera*, spawn of Satan, killer of mankind.

About 40 people die every year from the stings of Hymenoptera (how many are bees is hard to determine given that many people don't bother to differentiate bees from wasps once they've been stung). That's three times the number that die from snakebite, and everyone knows how unlovable snakes are.

So, they sting. This has evidently been enough to justify a slew of

TV movies like "The Savage Bees," "Terror Out of the Sky," "Deadly Invasion: The Killer Bee Nightmare," and "Killer Bees."

Moreover, an even more important reason for bees on TV, the reason that drives so much of television broadcasting, is that bees are cheap. They're reared commercially all over the US and a single hive can contain over 30,000 individuals.

Also bees can act, or at least be induced to behave in a predictable manner. Bees have been semi-domesticated since the time of the Pharaohs and, although they won't fetch your morning paper for you, they can be manipulated by light, chemicals, and temperature (unlike human actors, who may need financial incentives to behave on cue).

Hence, our program. We focused on this love-hate relationship that people have with the world's most adorable venomous creature. We've long had a tradition of showing B movies at the festival—this year we got literal about it as well as figurative.

First were bee commercials from the 1950s—Buffalo Bee, spokesman for Rice Honeys and



*Dave Schulz explaining some of the social aspects of bee hives.*

Wheat Honeys. No stings in evidence nor does the Honey Nut Cheerios bee possess a stinger. They're both male characters, and drones (male bees) don't have stingers. But they're not the ones making the honey that goes into Rice Honeys and Wheat Honeys and Honey Nut Cheerios, either.

Next, a series of Donald Duck cartoons featuring a drone known variously as Buzz-Buzz, Spike, Hector, and Claudius. Real male bees don't have stingers, but then, real ducks don't wear sailor hats. The pairing was popular—they made about five cartoons together, probably because Buzz-Buzz, who only made buzzing sounds, was one of few characters who could make Donald sound articulate. In "Honey Harvester," Donald tries to track down the source of Spike's honey—the car radiator (interestingly, in the days before antifreeze people put honey in their radiators).

The first feature was “ZZZZZ” (1964), incorrectly labeled on video box as “ZZZZZ.” It was an *Outer Limits* episode, broadcast January 27, 1964, and written by Meyer Dolinsky, who was inspired by a *Time* magazine report on an insect language analyzer. To make a long story short, the bees are plotting to interbreed with humans to commandeer human strength and lifespan and take over the world. Professor Ben Fields has developed a device to translate bee language (about 70% of what they say, are clichés like “DANGER DANGER!”) and a queen bee, transformed into a human female laboratory assistant, attempts to



Becca Petersen and Jodie Ellis with their IFFF t-shirts.

seduce the professor and murder his wife.

The second feature was “Terror Out of the Sky” (1978), the decidedly inferior sequel to “The Savage Bees” (originally “Return of the Savage Bees”), not a particularly good film to begin with. Jeanie Devereaux has flashbacks to when she stopped an invasion of killer

bees from South America by driving a VW into the Superdome in New Orleans. She’s still working for David (Ephraim Zimbalist, Jr.) at the National Bee Center and she’s involved with Nick (Dan Hagerty of “Grizzly Adams” fame). After a scientist dies from stings, David does his best to suppress the news. Jeanie confirms their identity as killer bees by morphometrics and Jeanie and David stop the shipment by racing to intercept the carrier, then stop for an interlude by the lake, with killer bees in the car. USDA threatens to cut off funding if there’s no full disclosure. But the other two shipments have gone out and it’s the 4th of July weekend. In 10 days, the strain will take over the entire hive. Eventually, all head for Merced, CA, to the Army base and borrow a car to find the missing queen, which they find along with a half million other bees at a 4th of July baseball game. To cut to the chase, an entomologist dangling from a helicopter attracts the swarm away from a schoolbus full of boy scouts and gets lowered into a missile testing facility, where the bees are eventually dispatched.

This film featured Norman Gary as Finley Dermott, a farmer—a small role but his contributions to the film greatly exceeded his time on screen. Dr. Gary was our special guest at the festival. He is an emeritus professor at the University of California-Davis, where he served as a faculty member in bee biology from 1962 to 1994. His research interests have been in the area of bee behavior, particularly underlying causes and mechanisms; he has

authored or co-authored over 100 publications on bees. Since 1966, he has been a consultant for legal, industrial, film, and television productions about bees—in other words, he’s known in the business as a bee wrangler (or, more precisely, *the* bee wrangler).

His ingenuity in developing methods to manipulate bees and their behavior has held him in good stead in this regard (he’s developed a way to narcotize queens to facilitate instrumental insemination, and developed vacuum devices for handling, tagging, counting, confining, and otherwise handling bees.) Whatever the methods are, they work—he once had one million bees released outdoors and under his control.

He’s a member of both Sigma Xi and the Screen Actors Guild. An abbreviated filmography includes “My Girl,” “Fried Green Tomatoes,” “Candyman,” “Beverly Hillbillies,” “Man of the House,” “X-Files,” “The Truth about Cats and Dogs,” “Leonard Part VI,” “Walk in the Clouds,” “Invasion of the Bee Girls,” and many others. He has appeared twice on the “Tonight Show” and has set at least two records in the Guinness Book of World Records (including largest bee beard). He took time to show some clips of his appearances and to let us in on some of his bee-handling secrets.

The final feature, “Wax, or the Discovery of Television Among the Bees,” (1991) is a movie by David Blair. The movie defies easy description. *New York Times* called it

a “surreal dreamscape as imagined by a cyberpunk novelist...a witty psychedelic cult favorite.” Local film critic and Illinois faculty member Richard Leskosky, when asked to place it in a genre, more succinctly called it “crap.” If it’s distinctive for any reason, it’s that, on May 22, 1993, it was the first film to be transmitted on the Internet (at 2 frames per second). It’s nominally about Jacob Maker, grandson of beekeeper and spiritualist cinematographer James “Hive” Maker; Jacob is also a beekeeper as well as a designer of gunsight displays at a flight simulator factory in Alamogordo, NM. His bees eventually drill a hole in his head and equip him with a crystal television that broadcasts supernatural images, controls his thoughts and actions, and projects him through time and space so that he ultimately ends up in Basra, Iraq. There’s a subtext about Mesopotamian bees and bee diseases. And another subtext about gypsum being the main ingredient in wallboard...

As usual, the festival wrapped up around midnight, having entertained over the course of 6 hours between 800 and 900 people, many of whom were heard to remark, upon being reminded of next year’s festival, “I’ll bee back...”

*John Acorn, the ‘Nature Nut’, does his tiger beetle impression for Hannah Leskosky.*



*Vanessa Block sporting insect tattoos at the Insect Expo.*

## Insect Expo 1999

THE 1999 Insect Expo was held at the University of Illinois Armory on Friday October 29, 1999. A special program was held at Foellinger Auditorium from 6:00 to 10:00 pm. The evening featured puppet shows, Insect Quiz Bowl, a special performance of Insect Theater, and a special guest appearance by John Acorn, star of *Animal Planet’s* “The Nature Nut.” Dan Capps and his insect collection returned to the Expo as well. Dan’s personal collection was recently featured at Disneyland’s Epcot Center.



## Linnaean Games

### UIUC Linnaean Team invades Minnesota

*by Christopher Pierce*

UNFORTUNATELY, we were not able to repeat what our predecessors from the Illinois Dream Team accomplished in 1998 and we did not see a return of El Niño in the year 2000 like Mark Carroll predicted in 1998.

Our team consisted of Sean Collins, Dave Schulz, Peter Reagel, and Christopher Pierce. Dr. Robert Wiedenmann was faculty advisor for our team. Also training for this knowledge decathlon were Becca Petersen, Mark Carroll, Marianne (M.) Alleyne, Colin Favret, and Matt Ginzler.

We believed that a few months of preparation could turn an anomaly into a team of true national champions. However, a close first round loss to Iowa State, 70-60, dashed our hopes and dreams of competing at the National ESA meeting in Montreal, Canada.

We did learn interesting things like coprophages eat “POOP” and that spiders typically have “8” eyes not “5.” We look forward to next year’s North Central Branch meetings where we hope to improve our competition skills.

# Entomology Alumni

Ria Barrido (MS 1999). I am the insecticide/fungicide technical manager and field trial coordinator at GROWMARK, Inc., Bloomington, IL. Home address: 1517 Country Lake Dr., Champaign, IL 61821; work address: 1701 Towanda Ave., Bloomington, IL 61701; email: [rbarrido@growmark.com](mailto:rbarrido@growmark.com).

Damayanti Buchori (also known as Dami). I finished my MS at Illinois in January 1989. I then moved to the Biology Department at Indiana University in the summer of 1989 and finished my PhD in 1993. Currently I am an academic staff member at the Department of Plant Pests and Diseases, Bogor Agricultural University. I have also been the Head of the Center for IPM, Bogor Agricultural University since April 1998. In addition to teaching and doing research (I am specializing on parasitoid ecology and biological control), I am also active in an environmental NGO (non governmental organization) in Indonesia. Most of my research is conducted at the Halimun National Park, the last remaining primary forest in Java. I try to be active in both environmental causes and also helping farmers to use alternative technologies for pest control (non-pesticides). I have 3 children (Dana, 12, Dini, 7, and Mayang, 4) and my husband works in the Computer Department, University of Indonesia.

Elizabeth A. (Beth) Capaldi. My current address: Department of

## Bee-keeping Short Course



GENE Robinson initiated the University of Illinois' Bees and Beekeeping Short Course in 1997.

The course is supported by the department, the School of Integrative Biology, the Center for Economic Entomology at the Illinois Natural History Survey, the Illinois Office of Outreach and Cooperative Extension, Dadant Inc., and Wellmark International.

It is staffed by members of Robinson's research group, colleagues from the department and other parts of campus, and outside specialists.

The course features lectures and workshops on many important topics for beginning and advanced

beekeepers including mite control, sting allergies, and queen rearing.

A unique feature of the course is the opportunity to learn about the exciting new research on honey as a nutraceutical performed here in the department by a research team led by May Berenbaum.

Another feature of the course is the opportunity for participants to join research teams and perform real experiments with honey bees as "citizen scientists."

Response to the course has been very enthusiastic; it will be offered for the fifth time this summer, with some participants coming back year after year. 🐝

Biology, Bucknell University,  
Lewisburg PA 17837; work phone:  
570/ 577-1430.

Joel Coats (PhD 1974). I am chair of the Department of Entomology at Iowa State University; I am also professor of entomology and toxicology. I recently received an award from the American Chemical Society for communication of chemistry to the public.

Randy Cohen (PhD 1987). I am an associate professor of biology at California State University, Northridge, still investigating the neurochemical control of feeding in insects. My wife Susan and I have three children, Rachel (15), Sarah (12), and Josh (10).

Eddy Cupp (PhD 1969). He received a 1999 LAS Alumni Achievement Award for outstanding professional achievement. Cupp is a professor at the Department of Entomology at Auburn University, where he's served as head for many years. He was a graduate student in the department 30 years ago, working with Dr. William Horsfall, who was at the time the most prominent and productive medical entomologist in the nation. Cupp is one of his many remarkable students who went on to become leaders in the field of medical entomology; Cupp is arguably the world's expert on the biology of medically important simuliid black flies, the diseases they vector, and the integrated management strategies for their control. Although his work is scholarly beyond reproach, its impact has extended well beyond the halls of academe; his thoroughgoing investigations into every



aspect of the life of these insects and his determination to find applications for his research have literally been life saving. Through his research, teaching, and service in medical entomology, Cupp has profoundly improved the quality of life in some of the poorest and neediest regions in the world.

His academic career began at Illinois with his thesis work on effects of thermal sensitivity as stress during embryogeny on the larval ~~and imaginal morphology of~~ *Aedes* mosquitoes, vectors of yellow fever and many other important arboviruses. For the early part of his career, he continued to focus on mosquitoes; he pursued this interest throughout his career and made several significant contributions to understanding vector-host associations in the Culicidae that are themselves worthy of recognition.

As an assistant professor at Cornell University, he developed an interest in Simuliidae, the black flies. Although black flies are conspicuous elements of the biting fly fauna, they are not significant vectors of human disease in upstate New York. But the expertise he acquired in the ecology and physiology of these insects led to invitations to evaluate programs for management of onchocerciasis (river blindness), a devastating parasitic infection vectored by these flies throughout Africa and in parts of Latin America. He has in the past quarter century devoted his career to conducting research on three continents on virtually every aspect of the biology of these organisms.

In doing so, he has achieved major breakthroughs in understanding their life histories, demography, systematics, vector-host interactions, and chemical

control. As a consequence, there is a very real chance that river blindness may be virtually eliminated throughout much of its range.

It is difficult, from the comfortable perspective of life in a wealthy, developed nation in the temperate zone, to appreciate the impact of eliminating a disease such as river blindness. This disease is caused by a parasitic filarial worm that takes up residence in human skin and in other tissues; when immature stages of the parasite infest the eye, serious lesions form that can lead to irreversible blindness. Until recently, millions of people, particularly in rural areas in Africa and in Mexico, Guatemala, Venezuela, and Colombia, suffered from onchocerciasis, or "river blindness;" in some communities, over 10% of the inhabitants became blind as a result of this infection. The resulting impact on local economies was, accordingly, devastating, with many of the principal wage-earners within families incapacitated. Traditional chemical methods of control, for various reasons (including inaccessibility of the vector, resistance to insecticide, and negative environmental impacts), proved unworkable. Cupp's use of an environmentally compatible drug aimed not at the vector but at the pathogen proved astonishingly effective.



Randy Cohen and Nathan Schiff, ESA 2000.



Diana Cox-Foster and Dennis Fielding, ESA 2000.

He continues to investigate this parasite-vector relationship and has developed a comprehensive strategy for management of both vector and pathogen, providing a model for management of arthropod-borne diseases throughout the underdeveloped world.

The LAS Alumni Achievement Award is given to an individual who has “demonstrated the values derived from a liberal arts and sciences education.” Cupp has demonstrated these values in a variety of ways—by rigorous application of the scientific method, by learning about and recognizing the value of other cultures, and by using knowledge to improve the lives of other people. He is an alumnus of whom we have every right to be proud and who has, in turn, earned our praise and our gratitude.

Bill Delaplane (PhD 1957). He was featured in *The News-Gazette* on September 19, 1999:

“Family built life around business: Champaign-Bill and Nancy Delaplane didn’t let a divorce get in the way of their business.

The Delaplans, who acquired Illini Pest Control in 1947, kept it running and turned it into even more of a family business.

One of their sons, Gary Delaplane, served as the company’s director of operations from 1987 until his death in 1994. And one of their daughters, Diana E. Delaplane, is general manager today.

Several of their 15 employees have been with the company for years. One of them, Joe Stoklosa, marked his 50th year with Illini Pest Control in August.

On Saturday, the company will mark its 60th anniversary with an employee picnic at Urbana’s Meadowbrook Park. On hand will be Bill Delaplane, 85, the company’s president, and Nancy Delaplane, 80, the vice president/secretary.

The Delaplans’ connection with the business dates back to 1942 when Bill Delaplane—then a University of Illinois graduate student in entomology—was offered a job as full-time manager for the firm.

The company, originally known as Illini Pest Control & Service, had been founded 3 years earlier by four entomologists on the faculty and staff of the UI and the Illinois Natural History Survey.

“The entomologists—C.L. Metcalf, Clyde Kearns, William McCauley and Dwight Powell—later became known for other professional contributions. “McCauley, for example, is credited with the idea for pest strips and flea collars. Kearns did some of the original research on the pesticide chlordane. And Metcalf was co-author of the textbook “Destructive and Useful Insects.” At Illini Pest Control, they employed UI students part time as pest control operators to give them practical experience.

Delaplane, a native of Wabash, Ind., came to the UI to get his doctorate in entomology after receiving

a bachelor’s degree from Purdue University and a master’s degree from the University of Missouri. Delaplane received a doctorate in entomology from the UI in 1957, and served as president of the Illinois Pest Control Association in 1962.”

David Denlinger (PhD 1967). I continue to chair the Department of Entomology at Ohio State University, teach insect physiology, and edit the *Journal of Insect Physiology*. I have a few too many meetings to attend, but I have a great group of colleagues with whom I enjoy working. Our lab continues to be interested in the regulation of diapause and cold hardiness, and periodically (usually in January or February) I disappear to Kenya to pursue my interests in tsetse fly reproductive physiology.

Jeff Gilardi. Current address: 1002 Greenwich Dr., Madison, WI 53711.

Tugrul Giray (PhD 1997). I received my BS in biology at Middle East Technical University in Ankara (1990). I arrived at the Department of Entomology at Illinois in the same year to do a MS thesis under the supervision of Dr. Gene E. Robinson. I was the first student to receive an MS (1993) and a PhD (1996-defense) from Gene’s bee lab. (He has been and continues to be a great mentor). I then went to the Smithsonian Tropical Research Institute in Panama for a 1-year postdoctoral fellowship with Mary Jane West-Eberhard and Dave Roubik. My study insects were orchid bees and paper wasps. My next postdoctoral position was at the laboratory of Dr. Lori Stevens in the Department of Biology at the University of Vermont. I applied the mechanistic study of insect





David Denlinger and Jack Petersen, ESA 2000.

behavior to the quantitative genetics model insect *Tribolium confusum*. In August 2000, I accepted my current position, assistant professor, in the Department of Biology, University of Puerto Rico, and turned back to bees (and to Clara's home country).

On the personal side, since the 1996 Newsletter, there have been wonderful developments. In 1996 I was engaged to Clara Lena Gonzalez. In 1997, we got married. On October 14, 2000, our daughter Deniz Yuisa was born. She is now just over 2 months of age and her weight has doubled to 12 pounds. If she goes at this rate she will soon pass her father (extrapolation can be tricky business).

Address: Department of Biology, University of Puerto Rico, PO Box 23360, San Juan, PR 00931; office phone: 787/ 764- 0000, or 764-2908; lab phone: 787/ 764-2907; e-mail: [tgiray@elk.uvm.edu](mailto:tgiray@elk.uvm.edu).

Angel Gonzalez (PhD 1988). I am an associate professor, Department of Crop Protection, University of Puerto Rico-Mayaguez.

Paul Gross (PhD Ecology 1985). My current position is associate professor, Department of Natural Sciences, National-Louis University, Evanston, IL 60201. e-mail: [pgro@evan1.nl.edu](mailto:pgro@evan1.nl.edu).

Carl Jones (former affiliate). He is head, Department of Entomology and Plant Pathology, University of Tennessee, Knoxville.

Phil Lewis (MS 1989, PhD 1997). I am a research entomologist with the USDA-ARS Weed Biological Control Program at Temple, TX.

Chuiying Li (MS 1993). Current address: Procter & Gamble Pharmaceuticals, HCRC Mailbox 1136, 8700 Mason Montgomery Rd., POB 8006, Mason, OH 45040-8006.

Edward Lisowski (defeated candidate for State Rep, 15<sup>th</sup> LD, position 2). Only about half the ballots have been counted, but I have 27.1% of the vote to 72.4% for my opponent. That ratio held throughout the evening, so I don't expect it to change much. I hoped do much better (*i.e.*, 40%) with support of labor and the Hispanic community and a strong democratic turnout for Gore. Now I can get back to thinking about insects.

We had snow in the mountain passes last night so *Boreus* and *Chionea* should be out by now. Last August I found near Yakima an ephridrid fly (*Lemnaphila scotlandae*) that as a larva feeds on duckweed. Wayne Mathis at the USNM confirmed that is the same species in the eastern US. My collections in Illinois had been the western-most localities until my Yakima collections according to Wayne. I think *L. scotlandae* can be found all across the US only no one has looked for it west of Illinois.

Bob Marquis. I was a postdoc in May Berenbaum's lab from 1986

to 1988. I am currently professor in the Department of Biology, University of Missouri-St. Louis, 8001 Natural Bridge Rd., St. Louis, MO 63121-4499. I study tritrophic interactions in oak trees and the partridge pea, *Chamaecrista fasciculata*.

Michael McGuire (PhD 1985). He was featured in the *Entomological Society of America Newsletter*, Feb. 2000, vol. 23, no. 2: "Biodegradable decoy reduces insecticide use: A biodegradable decoy that "fatally attracts" apple maggot flies or other insect pests has been patented by US Department of Agriculture (USDA) researchers and cooperators.

Hung in trees at the edge of orchards, the spherical decoy—coated with sugar, high fructose corn syrup, latex enamel paint and an insecticide—may provide an alternative to repeated chemical insecticide sprays.

USDA Agricultural Research Service (ARS) scientists at the National Center for Agricultural Utilization Research at Peoria, Illinois, researched the decoy with colleagues at the University of Massachusetts at Amherst; Michigan State University at East Lansing; and the Biotechnology Research and Development Corporation at Peoria.

The decoy is designed to suit insects' preferences for color, shape, size and surface texture. Apple mag-



Ralph and Carol (Hilfiber Pappas) Howard, ESA 2000.

got flies fall for an apple-size sphere painted black which, like a red apple, doesn't reflect ultraviolet light.

Preliminary field tests showed the decoy maintained 70% of its insect-killing power after 3 weeks in Massachusetts's orchards. And in other tests, a similar decoy protected apples as well as three applications of the commonly used insecticide azinphosmethyl.

Commercial manufacture and sales of the decoys containing registered pesticides for use in the United States would require approval by



Paul Ode and Claudio Gratton, ESA 2000.

the US Environmental Protection Agency.

Fruit Spheres Inc. of Macomb, Illinois, has agreed to produce decoys for large-scale tests on the apple maggot fly and related insects such as the blueberry maggot fly, the cherry fruit fly, and the walnut husk fly."

Bruce McPheron (MS Biology 1980, PhD 1987). From the Department of Entomology at Pennsylvania State University, he has joined the Office of Research and Graduate Education as an administrative fellow. In this new capacity, he will be assisting the office in the areas of

industry relationships and intellectual property management, and will also help with federal, state, and university accountability issues. He will be a significant improvement to the overall manpower of the office, working together with Dr. Paul Backman to help the Office be more responsive to faculty needs. McPheron will be working 50% time in the office while maintaining many of his research and teaching commitments.

McPheron has been a member of the faculty in the Department of Entomology since 1988, where he recently was promoted to professor. He has been active in research in the field of insect molecular ecology, focusing on questions in the evolution of species complexes, invasion biology, and insecticide resistance. Along with departmental colleagues, McPheron has revised and taught the undergraduate entomology service courses, and he also teaches graduate courses in the department. He is a member of the agroecosystems science faculty, the Intercollege Graduate Program in Genetics, and the Institute of Molecular Evolutionary Genetics.

He has served at the department and college levels, including the College Library and Curriculum and Instruction Committees and the Faculty Advisory Committee to the Dean.

McPheron earned his bachelor's degree in entomology from Ohio State University in 1976, followed by a master's degree in biology from the University of Illinois in 1980. From 1980 to 1983, he served as a County Extension Agent in Clermont County, Ohio, before returning to the University of Illinois for his doctoral studies, which were completed in 1987. He was a postdoctoral scholar at Louisiana

State University from 1987 to 1988.

Thomas Miller (research associate with Clyde Kearns, 1967-68). I was Bob Metcalf's graduate student at UCR. He sent me to Illinois, then followed me a year later. I found a house for him and Esther, then left for Glasgow on another postdoctoral. Illinois made me an offer in 1969, but I opted to accept one from Riverside. I think the campus hired Fred Delcomyn soon after, who had gone to Glasgow on a postdoctoral after I left. (We all seem to be following each other around).

I am a great fan of May Berenbaum. I wish we could clone her. I am also benefiting greatly from Hugh Robertson's research program, although he isn't aware of it. I have had good interactions with Fred Delcomyn, whose efforts on the internet are very much appreciated. Elaine Roberts at Colorado State University and I started an insect physiology online website to support teaching insect physiology ([lamar.colostate.edu/~insects/](http://lamar.colostate.edu/~insects/)).

We were joined by Shalom Applebaum, the famous physiological ecologist from Israel, who is heading that subtopic on the web site. We are in the process of loading up some of Fred Delcomyn's outstanding locomotion graphics on insects walking. They are terrific.

I was asked to join the editorial board of Henry Hagedorn's new exclusively online *Journal of Insect Science*. Henry will post that journal at the University of Arizona Library and have it freely available. I am also on the editorial board of the relatively new *Journal of Asia-Pacific Entomology* edited by the famous insect physiologist, K.S. Boo at Seoul National University in Korea.

We genetically altered the pink bollworm and are now applying for permits to release it for field gene flow studies. The permit process has been interesting in that it breaks new ground. We have the first permit to move a transgenic insect across state lines (from Riverside to Phoenix, AZ) to our collaborator, Dr. Robert T. Staten, Center Director of the USDA-APHIS Method Development Lab.

I am helping Steve Morris of Bristol University with the Second African Comparative Physiology meeting to be held in Botswana next August. This is an unusual meeting in that it is held at Chobe National Park in which wild animal viewing is scheduled into the meeting.

My wife, Soo-ok, and I attended the Brazil Entomology Congress and loved the visit to Iguassu Falls. On Nov. 5, Karel and Vera Slama arrived to spend 6 months with me studying the behavior of the insect circulatory system during eclosion bouts.

I had one of Marjorie Hoy's undergraduate students, Nicole Benda, work here for 3 months on our insect physiology web site, doing an outstanding job. Nicole, moved to Miami in early fall, but continues

to work on the web site from there.

Thomas E. Moore (BS 1951, MS 1952, PhD 1956). Although I am emeritus curator of insects and professor of biology, I am still active as a PI on a major federal grant administered here involving PI's at several additional institutions (Cornell, Princeton, McGill, UC- Berkeley). The aim is to discover basic properties of locomotion and of gait and orientation regulation in animals (particularly insects), and modeling those properties mathematically in order to incorporate them in robots and in steering insects such as large cockroaches to deliver environmental sensors to areas that are difficult or dangerous for humans access.

Together with senior postdoctoral fellow Erich Staudacher, I am also working on a small grant supported study comparing the sensory apparatus of the Madagascan cockroach *Gromphadorhina portentosa*, the European cricket *Gryllus bimaculatus*, and the Asian walkingstick *Carausius morosus*.

Tom Walker, University of Florida, and I are working on a web site to provide free access to all of the songs, identities, distributions, etc., of the crickets, katydids, and cicadas of North America north of Mexico that we have tape-recorded. We hope to have that site up and running in the first few months of the New Year.

Jonathan Neal (PhD 1983). I am an associate professor of entomology at



Chris Maier and Andy Chen, ESA 2000.

Purdue University. Mailing address: Purdue University, 1158 Smith Hall, West Lafayette, IN 47906-1158; e-mail: [bugman@entm.purdue.edu](mailto:bugman@entm.purdue.edu).

Herbert Nigg (PhD 1972) (NRC-ARS fellow 1972-74). He is a professor at the University of Florida. Mailing address: 700 Experiment Station Rd., Lake Alfred, FL 33850; phone: 863/ 956-1151; fax: 863/ 956-4631; e-mail: [hnn@lal.ufl.edu](mailto:hnn@lal.ufl.edu). He has one son, Herbert L. Nigg, PhD in chemical engineering at Illinois; one daughter, Karen M. Lane, DO Board Certified in Pediatrics; and two granddaughters, Charlotte Nigg and Megan Lane.

Matt O'Neal (MS 1998). Greetings from Michigan State University. After finishing a MS in 1998 that focused on the failure of crop rotation to protect corn from the western corn rootworm, I've taken that show to Michigan State University for a PhD. Working with co-advisors Doug Landis and Chris DiFonzo, I am investigate corn phenology's influence on rootworm movement out of corn and into soybean fields where they lay eggs and subsequently circumvent a corn-soybean rotation (for more of my crazy ideas on this, visit [www.msu.edu/~onealmt/](http://www.msu.edu/~onealmt/)). For the last 2 years, I've created a series of factsheets



Richard Allen and Gail Kampmeier, ESA 2000.

that explain this problem and offer Michigan growers advise on how to predict injury and estimate the threat to their fields using the thresholds developed at Illinois. As a result, I was rewarded the Gordon Guyer award for excellence in extension.

Besides school, Elaine Aubin and I were married during the summer of 2000 after an extraordinary (and long) courtship. Together, we quickly became r-strategists, entering into (foster) parenthood in December for a 13-year-old. Life, as we know it, will never be the same.

Other highlights to 2000: starting (and finishing) a 5k race, receiving a postcard from favorite author Richard Powers, honeymooning in the French Quarter and seeing friends and colleagues in Montreal.



Gene Kritsky and Carol (Anelli) Sheppard, ESA 2000.

Maya Patel (MS 1996). I'm having a lot of fun teaching in the Biology Department at Ithaca College. I fell into this job and am now an instructor. I mainly teach introductory biology, but as people leave for sabbatical or retirement, they assign their courses to me—plant ecology last year, genetics next year, etc. I've gotten to teach a lot of different things to a variety of students. In a

normal semester, when I'm teaching introductory biology for non-majors, most of my students are musicians, radio personalities, theater/film majors. This summer I taught "Insects and People"—it sort of sat on the books for the last 8 years or so, but nobody wanted to teach it. So, I picked it up and we used May's book, *Bugs in the System*. Current address: 313 Auburn St., Ithaca, NY 14850.

Craig Reid (PhD 1989). I hope this letter finds you in good health and spirits. It's been an interesting year. I finished doing a second season as a fight directing apprentice on *Martial Law* working with the Hong Kong action crew. Sadly the show was cancelled but the the experience was magnificent. If you are keen to look at yet another website, please check [www.lostimethemovie.com](http://www.lostimethemovie.com).

It's dedicated to a screenplay I wrote and created, which we shot in Hong Kong for 7 weeks. I also do the writing for the site. Love to hear your thoughts. Sil's research is going well, exciting discoveries on the horizon. Only problem with LA... too sunny. e-mail: [reiddrs@aol.com](mailto:reiddrs@aol.com).

Carol Sheppard. Hello, everyone! The Sheppards are still living in the sleepy town of Pullman, Washington, home of Washington State University. Steve is an associate professor in the Department of Entomology; he and his graduate students are busily working on controlling mites in honey bees and conducting evolutionary studies of the genus *Apis*. Carol (Cookie) Anelli Sheppard, assistant professor in the entomology, has been teaching several courses and is the 1999 recipient of the Marian E. Smith Faculty

Achievement Award, which recognizes excellence in teaching at the university level. Cookie attributes any teaching prowess she may possess to the outstanding instruction she received as a graduate student in entomology at Illinois. Steve and Cookie's son, Walter, now in the 7th grade, is still captivated by insects (despite his parent's concerns over his future employment) and spends his free time blowing his trombone, drawing, playing Gameboy, and occasionally feeding his pet leopard gecko, Leo.

Michael Slamecka (MS 1999). I accepted a position (May 2000) at Fordham University, Westchester County, north of New York City. The university is funding a program for mosquito surveillance and identification. I will be in charge of the program working with Drs. Richard Falco and Thomas Daniels who work on ticks and Lyme disease. e-mail: [slamecka@fordham.edu](mailto:slamecka@fordham.edu).

Robert Snetsinger (MS 1953, PhD 1960). I am involved in helping the general public establish butterfly gardens. This involves creating new butterfly friendly habitats and restoration of neglected waste areas. At the Hollidaysburg (PA) Veterans home (a Commonwealth assisted living facility), we teach the residents about butterflies so that they can share this special interest with the neighboring community. The young people come to see the live butterflies and learn about their life cycles in one section of our greenhouse. Adults come to learn about butterfly gardening and to purchase native plants grown by residents for their own gardens in another section of the greenhouse. The veterans present programs to schools on tagging migrating Monarch butterflies as a part of the Monarch



Cheryl Heinz with husband, ESA 2000.

Watch Research Program. They also release native butterflies at nursing homes where the residents are basically confined to their institutions ([www.missionbf.tripod.com/](http://www.missionbf.tripod.com/)).

Barbara Walton (PhD 1978). In 1998, I left the White House Science Office where I was a senior policy analyst for environment, and moved to North Carolina to join the US Environmental Protection Agency. The move was a happy one personally—Russ Christman and I married. It was also an exciting move professionally. I now work with EPA scientists and managers in ecology and human health disciplines on effects research in support of the nation's Clean Water Act and Safe Drinking Water Act. As an adjunct professor (Department of Environmental Science and Engineering) at nearby University of North Carolina, Chapel Hill, I'm able to maintain a link to the academic world. That link became stronger this fall when I began classes as a full-time graduate student in the Executive MBA program at UNC's Kenan-Flagler Business School (class of '02). e-mail: [Walton.barbarat@epa.gov](mailto:Walton.barbarat@epa.gov).

Lorne Wolfe (PhD Ecology 1990). I am an associate professor of biology at Georgia Southern University. My research areas are (1) the ecological genetics of plant invasions, and (2) the evolution of pollination syndromes in flowering plants. Bowing to the concerns of my ex-dissertation advisor, Dr. Berenbaum, I no longer play hockey or jump out of airplanes. ☹️

## Necrology

Ronald Meyer. Ronald H. Meyer, 70, of Sidney died at 11:15 pm Wednesday (October 25, 2000) at Carle Foundation Hospital, Urbana. Funeral services will be at 1:30 pm Sunday at New Covenant Fellowship, 124 W. White St., C. The Rev. Ron Simkins, the Rev. Jim Linder, and the Rev. Judson Chubbuch will officiate. Burial will be in Lynn Grove Cemetery, south of Sidney. Visitation will be from 6 to 8 pm Saturday at Freese Funeral Home, 202 W. Main St., Sidney.

Mr. Meyer was born December 30, 1929, in Sparta, a son of Floyd and Edith Hagan Meyer. He married Doris Parsell on December 23, 1951, in Jerseyville. She survives. Also surviving are three sons, Gary Meyer of Baine, Minn., Jan Meyer of Camargo, and Jeff Meyer of Villa Grove; a daughter Laura Ayers of Stafford, VA; two brothers, Lloyd Meyer of Denver and Frank Meyer of Colorado Springs, CO; three sisters, Ann Decker of West Lafayette, IN, Gloria Wiseman of Fort Myers, FL, and Joyce Hoffman of Springfield; and 12 grandchildren. He was preceded in death by a granddaughter.

Mr. Meyer graduated from the University of Illinois in 1951 and received a doctoral degree in entomology in 1954. He lettered in fencing at the UI.

He worked at the Natural History Survey, Champaign. Mr. Meyer was in the Army during the Korean War. He was a member of New Covenant Fellowship, Champaign, where he was active in a Bible study program and taught Sunday school for many years. He was also a member of the Illinois Horticulture Society and was an independent consultant for orchard growers. Mr. Meyer was most recently involved with the Farmer's Market in Urbana.

Memorial contributions may be made to the New Covenant Fellowship Building Fund, Champaign. *The News-Gazette, October 27, 2000*

George Sprugel. A private memorial service for George Sprugel Jr., 79, of 2710 S. First St., Champaign, will be held at his hometown of Williams, Iowa, on Wednesday at the Williams Cemetery. Renner-Wikoff Chapel, 1900 S. Philo Rd., Urbana, is in charge of local arrangements.

Mr. Sprugel died at 5:15 pm Friday (September 10, 1999) at Indiana University Hospital, Indianapolis. He was born September 26, 1919, in Boston, Mass., a son of George and Frances E. Sprugel. He married Catharine B. Cornwell on October 27, 1945, in Lyons, NY. She survives.

Also surviving are one son, Dr. Douglas G. Sprugel of Seattle; two grandchildren; two brothers, John E. Sprugel of Liberty, MO, and Dr. Charles W. Sprugel of Iowa Falls, Iowa; three sisters, Martha E. Thompson of Story City, Iowa, Frances M. Hollingsworth of Phoenix, and Alice P. Ose of Ames, Iowa.

Mr. Sprugel graduated from Williams High School in Williams,

Iowa, in 1937, and from Waldorf College, Forest City, Iowa, in 1939. He attended Iowa State University at Ames, Iowa, until called for active duty in the Navy in 1940.

He served at sea on a destroyer, a hydrographic survey ship, and motor torpedo boats. Mr. Sprugel also served in the MTB Squadrons Training Center in Rhode Island until detached for study at the US Naval War College.

Mr. Sprugel returned to Iowa State University and obtained bachelor's, master's and doctorate degrees in zoology and entomology in 1946, 1947, and 1950, respectively. He also served as assistant professor in the Department of Zoology and Entomology and as commander in the US Naval Reserve Organized Surface Battalion in Des Moines.

Mr. Sprugel was given a leave of absence at Iowa State University

when recalled to active duty for the Korean Conflict in April 1951 as assistant or acting head of the Biology Branch of the Office of Naval Research, Washington, DC.

Upon release to inactive duty in 1953, Mr. Sprugel became program director for environmental biology at the National Science Foundation, Washington, DC, a position he held until being appointed chief scientist of the National Park Service in 1964.

In 1966, Mr. Sprugel became chief of the Illinois State Natural History Survey at the University of Illinois and served until his retirement as chief emeritus in 1980. Mr. Sprugel served in a variety of advisory capacities to the government and nongovernment agencies, including the Atomic Energy Commission, the US Bureau of Land Management, the US Environmental Protection Agency, the US

National Park Service, the National Science Foundation, the Corps of Army Engineers, the National Aeronautic and Space Administration, and the National Academy of Sciences National Research Council.

He also was active in many national societies and served in several elective positions, including vice president for biology and fellow of the American Association for the Advancement of Science; vice president and president of the American Institute of Biological Sciences; vice president of the Ecological Society of America; secretary of the American Society of Zoologists; and treasurer of the American Water Resources Association.

Mr. Sprugel also enjoyed reading and gardening. 🌻

*The News-Gazette, Sept. 13, 1999*

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# 1933--First Entomology Newsletter Cover

# THE ILLIEN

ENTOMOLOGICAL NEWS

FROM THE UNIVERSITY OF ILLINOIS

WE MAKE OUR BOW!

We hope you will like THE ILLIEN, Illinois Entomology, of course.

The function is to furnish you with news of entomological work and entomological workers at the University of Illinois.

We have enjoyed your letters and news of your progress. We have felt guilty to keep them to ourselves. And so, we are broadcasting such items as we have.

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