



# IOWA STATE UNIVERSITY

## Department of Entomology

### January 2004 Newsletter For Alumni and Friends

## Entomology and Origami

Yong-Lak Park, native of South Korea, came to the United States for graduate education and cultural exchange. He succeeded in both! Yong-Lak, a recent doctoral graduate from the Department of Entomology, began folding paper (i.e., origami, “ori-” =paper; “-gami” =to fold) insects not long after he arrived in our department. He wanted to share his talent with the department and the community, so with the help of the Entomology Graduate Student Organization (EGSO) and many others, an insect origami exhibit was constructed in April. The exhibit was a big success!

One show was for Iowa State University’s annual VEISHEA festival. In our multimedia classroom in Science II, insect behavior, systematics, taxonomy, and evolutionary principles were displayed via origami, and Yong-Lak gave a “how-to” presentation for many visitors. Because of the popularity of the exhibit at VEISHEA, we were invited to display our exhibit at Reiman Gardens in Ames. The exhibit, *A Paper Bug’s Life*, included 33 insects created by Yong-Lak along with approximately 1,800 paper butterflies and 550 paper drag-



“Circling.”



onflies created by members of the Entomology Graduate Student Organization and their families. The success and potential impact of these exhibits were amazing. The exhibits lead to six interviews by various media (newspapers, TV, and university communications). The exhibit at Reiman Gardens, originally scheduled for 2 weeks, was extended for another week halfway through the show, during which approximately 4,492 people visited the gardens. Additionally, Reiman Gardens invited the graduate students to participate in their annual “Butterfly Festival” by arranging insect origami workshops. Patti Anderson led this effort in August, with assistance from Jeff and Katie Bradshaw,



Emily-Jean Fuerst, Maisha Rudison, Tyasning Nusawardani, Zhiyan Liu, and Sara Erickson, with two workshops where 35 visitors of Reiman Gardens learned how to fold paper butterflies, dragonflies, and flowers.

Information, photographs, and Quicktime video relevant to the insect origami exhibits can be found on the department's Web site at <http://www.ent.iastate.edu/origami>. With financial assistance from the College of Agriculture, framed displays from the exhibits will be hung in Science II, Insectary building, Genetics Building, and Reiman Gardens for public viewing. Additionally, this entire process inspired an article by Yong-Lak Park and Jeff Bradshaw on insect origami that was published in the winter 2003 issue of *American Entomologist*.

The EGSO has agreed to donate an insect origami creation for the "Mostly Entomological" auction (see article on page 9).

Jeff Bradshaw



Some examples from the exhibition *A Paper Bug's Life* at the Reiman Gardens Conservatory Complex. The exhibit ran from April 22 to late May 2003, featuring the work of Yong-Lak Park and the Department of Entomology's intrepid graduate students.



# From the Chair's Perspective

The Department of Entomology enjoyed considerable progress in 2003. We are excited to announce that we have hired an assistant professor to focus on pest management in soybean, essentially taking on the responsibilities that Larry Pedigo had until his retirement 2 years ago. Dr. Matt O'Neal will be arriving in March to begin his new research and teaching appointment. Matt is a native of Illinois and completed his B.S. and M.S. at the University of Illinois, the latter degree under the guidance of ISU alum Mike Gray. Matt completed his Ph.D. at Michigan State University and stayed on for a post doc. He also served for 2.5 years in the Peace Corps, teaching high school biology and chemistry in Ghana. Hopefully, you will get a chance to meet Matt at an ESA meeting or when you visit ISU. Matt will be setting up shop in the office and laboratory formerly used by Dr. Pedigo, on the upper level of the Insectary. This past summer, two of our faculty moved east: Dr. John Obrycki to the University of Kentucky to serve as department chair, and Dr. Tom Baker to Penn State. We advertised for replacements, in biocontrol and chemical ecology, but the College of Ag has placed them on hold due to budgetary constraints.



*John Obrycki and Tom Baker.*

In January of 2003, we welcomed Sue Jones as the account clerk for the department. Sue had previous experience keeping the books at the ISU Foundation and at the University



*Joel Coats*

Bookstore. Her expertise has been very helpful this year. Kelly Kyle continues to serve very ably as the head secretary, in charge of almost everything, and Jane Punke still provides sterling service as the extension secretary.

The department's facilities are being upgraded in the three primary buildings. In the Insectary, rooms 110 and 111 have been renovated and have become the Department of Entomology Administrative Offices, right next to the Extension Office. Room 20 has been converted from a rearing room to an analytical laboratory, and plans have been made for renovation of three graduate student offices and an insect molecular biology laboratory. In the Genetics Laboratory, The USDA-ARS group has renovated a large room to create high-quality space for 12 grad students or post docs. The Christina Reiman Butterfly Wing at the Reiman horticultural gardens, south of the football stadium, enjoyed a stellar first year of operation. Dr. Greg Courtney was instrumental in the design and construction phases, as well as the programming and personnel. Dr. Mary Harris and Nathan Brockman, the entomologists on staff, continue to make it a magical destination in Ames. Our Insect Zoo, housed on the 4th floor of Science II, continues to be a special outreach and recruiting arm of the department, under the leadership of Nanette Heginger. The new School IPM Program developed by Dr. Mark Shour also has received recognition and is making a real impact on how schools address pest control. John VanDyk completed his Ph.D. and is continuing to serve the department well

*Continued on page 4*



## Aphids of Mass Destruction

The soybean aphid, *Aphis glycines*, was first detected in Iowa in August 2001 and reached its most destructive levels this past summer. Across northern Iowa, populations frequently consisted of several thousand aphids per soybean plant. Aerial and ground applicators sprayed fields from late July to early September in an attempt to protect soybean yields. Nineteen aerial applicators from Iowa stated that they collectively sprayed 734,000 acres for soybean aphids (and this number does not include planes that came in from neighboring states). Several chemical industry representatives estimated that the total acreage sprayed in Iowa could easily have reached 3 to 4 million acres. Yield loss from this insect was extremely variable. Replicated insecticide trials from the Northeast Iowa Research and Demonstration Farm in Nashua showed losses of 7–8.5 bushels per acre. Reports from growers

and agribusiness personnel frequently quote losses of 8–13 bushels per acre and occasionally losses as high as 18 bushels per acre. Iowa Ag Statistics stated in January that soybean yield was down 16 bushels (or 32%) from last year's yield; the lowest recent production on record since the flood of 1993. Soybean aphid was a major contributor to this substantial yield loss in 2003.



Marlin E. Rice

### *Chair's Perspective, continued*

in myriad aspects of information technology, from developing new Web-based courses and Web pages to exploration of new angles for management of entomological information. One teaching highlight was the development of a new course in forensic entomology, created and taught by Dr. Ken Holscher.

2003 was "The Year of Insect Origami" at ISU; the Entomology Graduate Student Organization immersed themselves in insect origami, following the lead of Yong-Lak Park, who provided much of the technical expertise and artistic design. Major displays and workshops at VEISHEA, the Reiman Gardens, and the national ESA meeting provided an intriguing blend of science and art. Four major pieces created by the graduate students are being framed for display in our department.

We were saddened recently by the passing of Dr. Harry Stockdale, who served as chairman of the department for 10 years (1982–1992). He was on the faculty for 31 years, and

we have enjoyed seeing him annually at the Paul Dahm Memorial Lecture and the Tiny Gunderson Memorial Lecture.

This year several outstanding students and post docs left Iowa State to accept employment in the profession. A similar number of excellent new candidates were accepted into the department, and enrollment has held steady, with about 35 graduate students and 15 undergraduate majors. Our Undergraduate Entomology Scholarship Fund is being built up from donations by alumni to improve our capability to recruit more undergraduates.

We had visits from a number of former students and staff this past year. We always enjoy the chance to hear about your activities and accomplishments or to see you when you come to Ames or at the ESA meetings. We're wishing you a happy and prosperous 2004.

Joel Coats, Chair



## After Hours: Musical Talent in the Entomology Department

Ever wondered what entomologists do after hours? We caught up with some of the musicians among us.

For the past 37 years, Jim Oleson, agricultural specialist with Jon Tollefson's research group, has performed as a professional trombonist in various groups, including small four- to six-piece combos, large dance/jazz bands, the Waterloo Symphony Orchestra, and for 20+ years with his wife in their band The Oleson Duo. Jim's wife, Frankee, plays keyboards and flute, and Jim plays either trombone, electric bass, or keyboards. They have provided music for numerous wedding



*Frankee and Jim Oleson make up the Oleson Duo.*

wedding receptions and dances (including a backyard wedding ceremony); private parties in homes, hotels, and restaurants; and even the Hilton Coliseum. After college, Jim fulfilled his military obligation as an Army bandsman, performing and touring, first with the 5th Army Band, Chicago, IL, and then with the United States Military Academy Band, West Point, NY.



*Tom Baker is second from right.*

Tom Baker played keyboards and sang lead and harmony vocals in several bands in the Ames/Des Moines Iowa area for the past 8 years, including No Frills (blues), Broken Bow (country), and most recently, Shelley & the Sidewinders (new country/old rock n' roll). Tom was the leader of the latter band for more than 5 years, which opened for several national acts, including Blackhawk, Ricky Van Shelton, Charlie Daniels, Sara Evans, Joe Nichols and Dr. Hook.



*Jeff Bradshaw (front, to right of drum), a graduate student, plays the drums for High Society Big Band. Larry Pedigo (second row, second from right) plays tenor sax and clarinet and is the musical director for the band. They practice once a week and have gigs about once a month. The gigs range from weddings and receptions to casinos and country clubs. High Society Big Band has five trumpets, three to four trombones, five saxophones, bass, piano, drums, and a vocalist. Learn more about them online at <http://www.highsocietybigband.com/>.*



# West Nile Virus Update

West Nile fever and the more serious West Nile meningo encephalitis held the attention of Iowans again in 2003. ISU entomologists were an integral part of a statewide collaborative effort to keep track of mosquitoes and the viruses they carry. The project, funded by the Iowa Department of Public Health and the Centers for Disease Control, monitored adult mosquito populations, virus activity in mosquitoes, virus transmission to sentinel chickens, and human cases of encephalitis. The project involved 12 Iowa cities and counties. As a side note, 2003 marked the 35th year this project has monitored mosquitoes and mosquito-borne viruses in Iowa.

There was a three-fold increase in the number of human cases (141) and twice the number of deaths (4) caused by West Nile virus (WNV) this year. To keep track of this deadly virus, we collected 151,649 mosquitoes in New Jersey light traps. Almost 8,000 of these were *Culex* mosquitoes. Another 142,000 were either *Aedes* or *Ochlerotatus*. These two genera include mosquitoes we normally think of as nuisance species.

We collected and tested 12,500 *Culex* specimens for virus isolation with battery-operated CDC light traps. These *Culex* mosquitoes were grouped into 304 pools ranging from

1 to 64 mosquitoes. Each pool was made up of mosquitoes of the same species collected in the same location on the same day. Twenty-seven of the 304 pools tested positive. Two pools of *Culex*

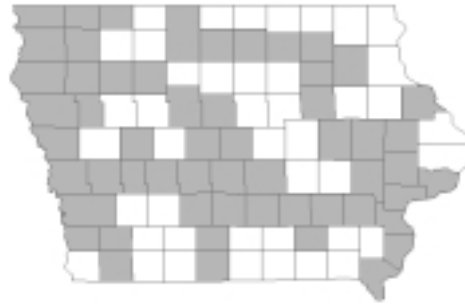
*erraticus*, 16 pools of *Culex pipiens*, and 9 pools of *Culex tarsalis* were positive for WNV. One pool of *Cx. pipiens* collected in Carroll County was positive for St. Louis encephalitis virus. There was virus activity statewide, with Carroll, Cerro Cordo, Marshalltown, Scott, and Woodbury counties having positive pools. The cities of Dubuque, Des Moines, and Council Bluffs also had positive pools. The first WNV isolate

was obtained from mosquitoes collected on August 12. We continued to isolate WNV from mosquitoes until September 17.

All nine of the sentinel chickens in Woodbury (Sioux City) County seroconverted for WNV, indicating the extent of WNV activity in western Iowa. We continue to study West Nile virus in the laboratory as we look at the vector competence of several species of mosquitoes common in Iowa. We also are also looking at the effect of WNV on animals such as cotton-tail rabbits and field mice.

We are now enjoying the winter and the brief respite from mosquitoes and West Nile virus.

Wayne Rowley



Counties where human cases occurred, including five deaths. For more detail see [http://idph.state.ia.us/eedo/cade\\_content/WNV\\_Summary.htm](http://idph.state.ia.us/eedo/cade_content/WNV_Summary.htm)

## Did you know?

The state appropriations for Iowa State University have been cut by \$78.4 million since FY01, amounting to a 29% cut. The Department of Entomology has lost two faculty positions. The department currently has 12 faculty and has two positions frozen.



## Jurenka Laboratory Publishes Two Papers in *Proceedings of the National Academy of Sciences USA*

In 2003, the Jurenka laboratory published two papers in *Proceedings of the National Academy of Sciences USA*. The first paper, entitled “Sex pheromone biosynthetic pathway for disparlure in the gypsy moth, *Lymantria dispar*,” was an international collaborative effort.

The research started several years ago with a collaboration with Mitko Subchev of Sophia, Bulgaria. Mitko came to the Jurenka laboratory for 2 months during the summer. They started by demonstrating that the precursor to the pheromone is found in the hemolymph, suggesting that it is produced elsewhere and transported to the pheromone gland. After conducting labeling experiments in which Mitko injected several hundred gypsy moths and analysis by mass spectrometry, they were able to deduce intermediate steps. To complete the work, another grant, funded by a US-Spain Science & Technology program, was obtained in collaboration with Gemma Fabriàs of Barcelona, Spain. Jurenka traveled to both Sofia and Barcelona to conduct some of the research. This analysis showed for the first time that indeed the female gypsy moth is producing the (+)-stereoisomer of the pheromone.

Further research will identify the enzyme responsible for making the (+)-isomer, which could then be used to biosynthesize pure pheromone to be used in monitoring and disruption treatments. The gypsy moth is slowly spreading westward and will be in Iowa soon.

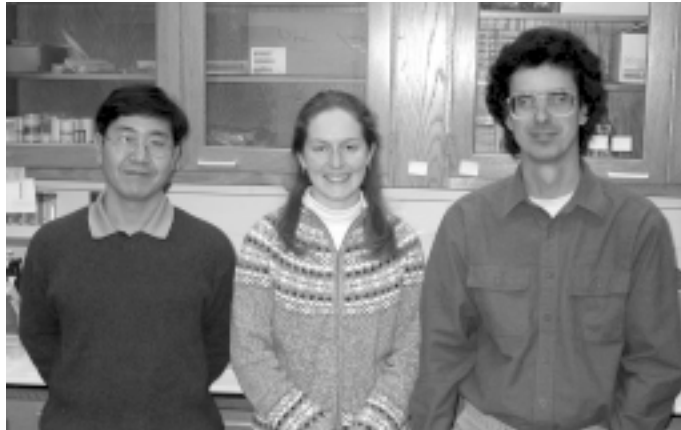
The second paper is entitled “Identification of a G protein-coupled receptor for pheromone biosynthesis activating neuropeptide from pheromone glands of the moth, *Helicoverpa zea*.”

Although this research on pheromone biosynthesis activating neuropeptide (PBAN) was started several years ago in collaboration with Ada Rafaeli of Israel, it was not until after the *Drosophila melanogaster* genome was sequenced and genes annotated that significant progress was made. It was noted that three *Drosophila* gene products were similar to a receptor in mammals for the peptide neuromedin U. The Jurenka laboratory immediately bought some neuromedin U and determined that it stimulates pheromone production in moths, indicating that the receptors in mammals and insects are similar.

Man Yeon Choi, a postdoctoral research associate, used polymerase chain reaction to obtain a sequence from *H. zea* that was similar to the neuromedin U receptors. After several months, the entire sequence was obtained.

To demonstrate that the sequenced gene was indeed the recep-

tor, a functional assay was required. The best functional assay for peptide receptors is to express the gene in cell culture and to show that it binds PBAN at low nanomolar concentrations. Man Yeon expressed the receptor gene in insect cells and then Emily-Jean Fuerst, who had just joined the Jurenka laboratory as an M.S. student, developed a calcium imaging assay that she used to demonstrate that the peptide PBAN activates the cells with an effective concentration of 25 nM. This research was the first identification of a peptide receptor in *H. zea*. Further research will map the binding site to develop antagonists that could effectively prevent females from attracting males.



Man Yeon Choi, Emily-Jean Fuerst, and Russ Jurenka.



## Fred Clute Memorial Entomology Fund

The Fred Clute Memorial Entomology Fund has been established in memory of Fred N. Clute who was born in 1932 near Lathrop, MO. He graduated from Plattsburg, MO, high school and served in the U.S. Air Force from 1952 to 1960. He then settled with his family in Kansas City and worked for Evans Orchard Supply Company for 5 years before joining Rhodes Chemical Company in 1966. Fred spent most of his 36 years with Rhodes educating, training, providing

customer service and support, solving problems, and helping in many ways to assist customers, noncustomers, suppliers, and competitors. His greatest satisfaction was in sharing his experiences, knowledge, and wisdom with others. Fred received many awards from the state pest control associations throughout the Midwest. He attended the Purdue Pest Control conference 18 times.

*Continued on page 9*

---

### ***Opportunities to Give: to the Department of Entomology***

With the ongoing budget constraints at Iowa State University, the Department of Entomology is increasingly dependent upon the generosity of alumni and friends. To support the department, please fill out this page and return it with your check or money order (made out to ISU Foundation) to the Department of Entomology, Iowa State University, 110 Insectary, Ames, IA 50011.

Name:

Address:

My support this year is in the amount of \_\_\_\_\_

Please designate my gift to the area(s) in the amount(s) shown below:

\_\_\_\_\_ ***Entomology Alumni Scholarship Fund*** for undergraduate scholarships

\_\_\_\_\_ ***Fred Clute Memorial Entomology Fund*** for general support for the Department of Entomology

\_\_\_\_\_ ***Entomology Memorial Fund*** for various expenses including student travel and awards

\_\_\_\_\_ ***Entomology General Account***

\_\_\_\_\_ ***Other***

For more information about these funds, please contact us at the departmental address above or call (515) 294-7400. For more information about other gift designations, please contact

O. Richard Bundy, III  
Executive Director of Development–The College of Agriculture  
ISU Foundation  
310 Curtiss Hall  
Ames, IA 50011  
Tel: (515) 294-9088  
E-mail: rbundy@iastate.edu





*Entomology Fund, continued*

The pest control industry lost a dear friend and business associate on September 17, 2002, when Fred passed away. To honor his memory, endowed funds bearing his name have been established at the universities of Illinois,

Missouri, Nebraska, and at Kansas State and Iowa State universities. The funds at Iowa State University are for general support for the Department of Entomology.

**“Mostly Entomological” Auction to Raise Funds for Entomology Alumni Scholarship Fund**

From November 8 to 29, 2004, there will be an online auction of “mostly entomological” items to raise funds for the Entomology Alumni Scholarship Fund. Currently, we are just over halfway to our goal of \$15,000 for an endowment for this fund. The auction will go online November 8, and bidding will end at 5 p.m. on November 29. Items will be shipped in time for the holidays.

Alumni and friends can help with this auction in two ways. First, if you have items to donate, please send them to Dr. Bryony Bonning, Department of Entomology, Iowa State University, 418 Science II, Ames, IA 50011, along with an estimate of the value of

each item. If you wish to claim the donation as a charitable gift, you may want to obtain an independent appraisal of the value of the item. Donors who want to receive gift credit through the ISU Foundation for their gift will need to provide the Foundation with a copy of the statement of value.

Second, place bids! You will be contributing to a good cause. The auction Web site will be linked to the Department of Entomology home page at <http://www.ent.iastate.edu/> from November 8 to 29. Those who purchase items through the auction can claim the portion of their purchase that exceeds the fair market value of the gift as a charitable deduction.

**New Course Studies Risks of Crop Bioterrorism to Iowa Agriculture**

Jon Tollefson and Forrest Nutter, Department of Plant Pathology, cotaught a new graduate course called Issues Related to Crop Bioterrorism and Food Security in colloquium format this fall. The course included the study of microorganisms and insect pests that can directly affect the health and productivity of crops. Students developed a list of criteria to rank the importance of biotic pathogens and insect pests that could threaten Iowa agriculture and prepared a prioritized list of pathogens and pests that most threaten the food security and economic stability of Iowa agriculture. As part of the course, speakers were invited from science, industry, and government. Speakers included Alan K. Dowdy, Assistant Director, USDA-APHIS-Plant Protection and Quarantine, Center for Plant Health Science and Technology,

Raleigh, NC, who spoke on “Arthropods and Plant Biosecurity.” Class projects covered a range of topics, such as how easy are potential pathogens and pests to smuggle and introduce into this country, how easily can they be produced, their reproductive capacity, toxin-producing ability, and their impact on state, national, or international markets. The course was sponsored by the Iowa State University College of Agriculture, the departments of Plant Pathology and Entomology, Institute for Food Safety and Security, Plant Sciences Institute, Interdepartmental Graduate Program in Microbiology, Biosafety Initiative for Genetically Modified Agricultural Products, and Pioneer Hi-Bred International Inc.

Bryony Bonning

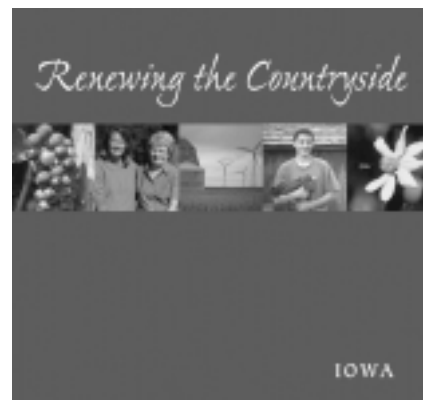


## A Selection of Faculty Activities within the Department

### Jerry DeWitt (Professor)

Jerry DeWitt returned early 2003 to the Department after having spent a “temporary” (3-year) second stint in extension administration here on campus. His current duties span across departmental lines from his office in Agronomy as he coordinates the Extension IPM Program, the Pesticide Applicator Training Program, and the Extension Sustainable Agriculture Program. In addition, he has been spending 1 week per month in Washington, DC, assisting USDA–CSREES with the national Sustainable Agriculture Research and Education program. These activities keep Jerry traveling across the country. His interests remain in alternative pest management strategies, IPM, and organic agriculture. Jerry has been involved in the production of two

books recently that cover sustainable agriculture, producers, and communities across Iowa and the nation.



He was coauthor and photographer for *People Sustaining the Land* (2002) and senior photographer for *Renewing the Countryside-Iowa* (2003).

### Donald Lewis (Professor)

After 26 years of working with cockroaches, ants, fleas, and assorted vermin as Extension Urban Entomologist, Donald Lewis was appar-



ently equipped for university administration work and since January 6, 2003, has been the Interim Director for Agriculture and Natural Resources Extension. This position, overseeing all Ag and Natural Resource off-campus extension activities, was previously held by entomology faculty members Jerry DeWitt (1985–1994 and 2000–2003) and Wendy

Wintersteen (1995–2000). Donald’s new temporary home is in 109 Curtiss Hall (Tel: 515-294-7801). Extension Urban entomology responsibilities are currently being handled by Ken Holscher, Mark Shour, and Laura Jesse (with a little assistance from Donald, who is struggling to remember what entomology he used to know while dealing with budget cuts, myriad reports, and other administrivia).

Donald continues as professor-in-charge of the Iowa State University Master Gardener Program. He has taught entomology classes for the Master Gardener program since it began in 1977. As leader of the program, he works with James Romer, Iowa Master Gardener coordinator, and local coordinators, campus faculty, and staff to develop new materials, curricula, and projects to develop the premier outreach effort of ISU Extension and College of Agriculture.

**Did you know?**  
Entomology faculty receive funding from National Science Foundation, U.S. Department of Agriculture, National Institutes of Health, Defense Advanced Research Projects Agency, and the U.S. Air Force-Department of Defense, Environmental Protection Agency, and the U.S.-Israel Binational Agricultural Research and Development Fund.



## ***A Selection of Faculty Activities within the Department***

### **John VanDyk (Adjunct Instructor and Systems Analyst)**

John VanDyk sits behind three monitors in an office containing computer parts of all shapes and sizes. PCs and Macs in various stages of disassembly cover the floor. But there is method to the madness. “We reuse everything we can,” says John. He points to a coverless PC on the



floor. “We’re combining the memory and the good video card from this box with the hard drive and motherboard from another. It’ll be a good graduate student computer!”

John’s mission is to keep the department’s network and computers running smoothly. “The computers in our department should be fast, stable, and secure,” he says. “When that happens the department can concentrate on entomology,

not on fighting with computers.” Every computer in the department runs virus protection software that is updated nightly from a central server. A tape backup system ensures that valuable data are safe in the event of a hard drive crash. This diligence paid off when a Microsoft Windows security flaw disabled huge numbers of computers in fall 2003. Computers in the entomology department were unscathed.

But computer support is only part of John’s job. He teaches the popular Insects and Society course (Entomology 211) on the Web and maintains the 7,000-page departmental Web site, which received 3.1 million hits in October. John is particularly fond of the software he’s written to manage the Web site by using a metadata approach. He also uses it to manage the ESA-North Central Branch Web site. The software was recently adopted by the Australian government to track legal documents.

“The world of information technology is rapidly changing,” says John, who learns an average of one new computer language a year. “In entomology, we need to use the best new technologies to become more efficient and more effective.”

### **Patents Awarded to Department Members in 2003**

Tom Baker, John Obrycki, and Junwei Zhu. Attractants of beneficial insects. U.S. patent No. 6,562,332.

Tom Baker, Junwei Zhu, and Kye Chung Park. Fruit fly attractant compositions. U.S. Patent No. 6,543,181.

Bryony C. Bonning and Robert L. Harrison. Basement membrane-degrading proteases as insect toxins and methods for use of same. U.S. Patent No. 6,673,340.

Joel Coats, Chris Peterson, Rong Tsao, Aimee Egger, and Greg Tylka. Compounds related to natural sources and their use as biopesticides. U.S. Patent No. 6,545,043.



## **Tollefson Receives Fulbright Senior Specialist Award**

**Jon Tollefson**, leader of the Corn Insect Research Project at Iowa State University, specializes in managing corn rootworm species in field corn. In 1992, the western corn rootworm was first discovered in Europe infesting corn near Belgrade, Serbia. Since then, it has spread throughout Europe and is now in France and the United Kingdom. Tollefson attended a meeting in 1996 in Croatia that focused on this new insect threat and became friends with a Croatian researcher. They are cooperating on a 2-year study to evaluate Croatian corn germplasm for rootworm resistance. In 2003, Tollefson took his expertise to Croatia. He received a Fulbright Senior Specialists Award to spend 2 weeks at the University of J.J. Strossmayer in Osijek, working with agriculture faculty there on steps Croatian growers can take to manage western corn rootworm.

Applying an insecticide is the usual response when rootworms reach high levels in U.S. corn-

fields. But the cost of insecticides is too high for most Croatian growers, who generally produce just 15 to 20 acres. During Tollefson's 2 weeks in Croatia, he met with growers and was interviewed by the media, spread-

ing a message of crop rotation to control western corn rootworm. The Fulbright Senior Specialists Program offers grants to U.S. faculty and professionals who can share their expertise at academic institutions in 140 countries around the world. The program's purpose is to increase mutual understanding between the people of the United States and people in other countries.



## **Rice, Tollefson Honored for Poster**

**Marlin Rice**, Eileen Cullen, Christina DiFonzo, Kenneth Ostlie, Kevin Steffey, **Jon Tollefson**, and Robert Wright received a Certificate of

Excellence for a poster displayed in Section E (Regulatory and Extension Entomology) at the annual meeting of the Entomological Society of America, held in Ohio in October. The poster was entitled "Transgenic Corn for Rootworm Control: Implementing IRM and IPM with Uniform Scouting Procedures."

## **Shour Recognized as Outstanding New Professional**

**Mark Shour**, Extension Program Specialist, received the 2003 Professional and Scientific Outstanding New Professional Award. This award recognizes a P&S staff member who has demonstrated outstanding accomplishments unusually early in his or her professional career at Iowa State University. Mark has shared his knowledge of insects and pest management with the public through pesticide education programs, newspaper articles, newsletters, satellite training programs, and classroom teaching. He

developed the School Integrated Pest Management pilot program for Iowa's school districts, helping school district personnel better understand pest problems.





## Tom Sappington Joins Corn Insects and Crop Genetics Research Unit

Tom Sappington is a research entomologist with the USDA-ARS. He transferred to the Corn Insects and Crop Genetics Research Unit in January 2003. Shortly after arriving in Ames, he joined the faculty in the Department of Entomology as collaborator. This recent move represents



is the third time that Tom has live in Ames. He did his undergraduate studies at Central Missouri State University, where he was a classmate with Marlin Rice

in the Department of Biology. Both Tom and Marlin worked in Bill Peck's laboratory, helping to curate his arachnid collection. Tom did his M.S. studies here at ISU from 1979 to 1982, working under Bill Showers on methods of sampling adult European corn borers.

After leaving ISU the first time, Tom was hired as district manager for Crop Pro-Tech, a private crop consulting service, working out of DeKalb, IL. In 1984, he began his Ph.D. studies at the University of Kansas in Lawrence, under the supervision of Orley (Chip) Taylor, investigating the role of pheromone variability in the courtship behavior of the alfalfa caterpillar. He showed that white and orange female morphs prefer different pheromone blends of courting males, and thereby documented a rare example of disruptive sexual selection. In 1989, Tom returned to ISU as a post doc to study the migration behavior of black cutworm, again under the guidance of Bill Showers.

Tom took a post doc at Michigan State University, later becoming a visiting assistant professor, under Alexander Raikhel in 1992 to pick up molecular biology skills. He cloned the first insect vitellogenin receptor (vitellogenin is

the major yolk protein of most animals) and demonstrated the evolutionary relatedness of vitellogenins across many animal taxa.

In 1998, Tom joined USDA-ARS as a research entomologist in Weslaco, TX, where he served as lead scientist for the cotton insects group from 1999 to 2003, investigating boll weevil ecology, dispersal, and population genetics. He led a multidisciplinary research effort that demonstrated that boll weevils cannot survive the ginning or baling processes. This research led to renegotiation of several trade treaties removing requirements for fumigating exported cotton bales, and the U.S. cotton industry is now saving about \$6.5 million annually.

Tom took advantage of a chance to transfer to Ames and is now conducting research on European corn borer behavior, ecology, and molecular ecology. He also is studying the population genetics of western corn rootworm and is organizing an international consortium of scientists who are engaged in rootworm genetics research with the goal of coordinating related activities. Kyung Seok Kim, post doc, and Brendon Reardon, graduate student, work in Tom's laboratory.

Tom is married to Cynthia Lidtke, a former technician in Larry Pedigo's laboratory and a graduate of ISU's entomology program. Cynthia organized the first Insect Horror Film Festival at ISU in the early 1990s. They have 5 children, four of whom are in college, with the youngest a sophomore at Ames High School. Tom's outside interests include writing, history, bird-watching, chess, singing, and teaching adult Sunday School classes at Collegiate Methodist.

### Did you know?

The first entomology course at Iowa State University was taught in 1880 by Herbert Osborn.



## Student Awards 2003



*Laura Jesse received the Department of Entomology Henry and Sylvia Richardson Research Incentive Grant for 2003. Laura received \$2,500 for research costs associated with the project entitled "Comparative Studies of Insect Herbivores of Purple Loosetrife in the U.S. and Europe." Students write research proposals to compete for this grant.*



*The Department of Entomology Herbert Osborn Awardees for Professional Performance 2003 were Emily-Jean Fuerst, at right (M.S. category) and Patti Anderson, above (Ph.D. category).*

**Bryan Clark** won first place and **Keri Henderson** won second place in the student poster competition for their posters entitled "Development of Bioassays for Analysis of Transgenic Corn (*Zea mays*) Expressing Bt Toxin" and "Fate of <sup>14</sup>C-Atrazine and <sup>14</sup>C-Metolachlor and Metabolites in Vegetated and Unvegetated Soil Systems," respectively, at the Ozark-Prairie Chapter Regional Meeting of the Society of Environmental Toxicology and Chemistry, held in St. Louis, MO, in August. **Keri Henderson** also was runner-up in the student poster competition at the American Chemical Society 226th National Meeting, Agrochemical Division, held in New York, NY, in September for the same poster

**Keri Henderson** will be awarded the American Chemical Society Agrochemical Division Young Scientist Research Recognition Award. This award will be presented in March 2004 at the 227th National Meeting in Anaheim, CA. The title of Keri's research proposal was "Mass Balance of Atrazine and Metolachlor in Phytoremediated Soil Systems."





*The Entomology Student Award for Outstanding Service was presented to Amanda Jacobson in December 2003. This award is presented in recognition of service at Veishea and the Insect Horror Film Festival and for work with the Insect Zoo. Amanda will graduate in May with two B.S. degrees (biology and entomology) and has been accepted into graduate school to work with Greg Courtney for an M.S. degree.*

**Emily-Jean Fuerst** won first place in the student competition for her poster in Section B. (Physiology, Biochemistry, Toxicology, and Molecular Biology) at the national ESA meeting in November. The poster was entitled “Development of a Fluorescence Assay for Receptor Characterization: The Identification of a G Protein-Coupled

Receptor for Pheromone Biosynthesis Activating Neuropeptide from Pheromone Glands of the Moth *Helicoverpa zea*” and described research that was published this year in the *Proceedings of the National Academy of Sciences USA* (see article on page 7).

**Megan O’Rourke** was runner up for her ESA poster in section Cd, Behavior and Ecology. The poster was entitled “Carabid Activity-Density in a Two- and Four-Year Crop Rotation System in Iowa.”

**Yong-Lak Park** won first place and **Patti Anderson** won second place at the North Central ESA meeting, both in section Cd, Behavior and Ecology. The presentations were entitled “Field Distribution and Effects of Bt Corn Anthers on Monarch Butterfly Larvae” and “Corn Rootworms in Space and Time,” respectively.

The Department’s Linnaean Games team, consisting of **Patti Anderson**, **Jeff Bradshaw**, **Emily-Jean Fuerst**, and **Yong-Lak Park**, won runner up at the North Central ESA meeting. The award was \$500 for the team, team and personal plaques, and the opportunity to compete at the National Linnaean Games. The team lost in the Nationals in the first round, in double overtime.

## 2003 Seminar Series Featured 7 Outside Speakers

The department seminars and lectures committee coordinated visits by seven outside speakers during 2003.

**Dr. Sarjeet Gill**, Department of Cell Biology and Neuroscience, University of California, Riverside. Paul A. Dahm Memorial Lecture in Entomology.

Mode of Action of *Bacillus thuringiensis* Toxins  
**Mr. Steven Kutcher**, Freelance Entomologist, Arcadia, California. EGSO speaker.

Inside Hollywood: A Bug’s Perspective

**Dr. Mike Kanost**, Department of Biochemistry, Kansas State University, Manhattan.

Hemolymph Proteases and Protease Inhibitors in Insect Immune Responses

**Dr. Rollie Clem**, Division of Biology, Kansas State University, Manhattan. The Role of Apoptosis in Defense against Baculovirus Infection in Larval Lepidoptera

**Dr. Saskia Hogenhout**, Department of Entomology, The Ohio State University, Wooster. Rhabdovirus Host Range: A Bug’s View

**Dr. Conrad Labandeira**, Department of Paleobiology, National Museum of Natural History, Smithsonian Institution, Washington, DC. Plant-Insect Associations in Deep Time: Paleozoic Patterns and the Initial Launching of Herbivory

**Dr. Kurt Redborg**, Department of Biology, Coe College, Cedar Rapids. Mantispid in Iowa



## News from Alumni

**Thanks for your efforts** in coordinating the Department of Entomology newsletter. Even though it has been several years since I have even been back in Ames, and much longer still since I was a graduate student there in the early 1960s, it is nice to learn about current activities of faculty and students and to see some familiar names.

Although I've been retired from the University of Kentucky since September 2001, I'm still doing some entomology. Recently, I received a draft of a manuscript from work I helped with last spring on the Mare Reproductive Loss Syndrome that turned out to be an insect-related problem. In addition, I'm still trying to get a delinquent graduate student finished. However, these are only a part of the overall enjoyment of spending more time with the kids and grandkids, doing a fair amount of sawdust production with side results of furniture and other wood pieces, and volunteer work in construction. The North Carolina winter weather is somewhat milder than Kentucky and definitely milder than Iowa and Minnesota!

Again, thanks for your efforts and those of your team. I wish you well.

Doug Dahlman (ISU 1963, 1965)

**I really enjoyed the newsletter** I received last year. Lots has changed since I was there in 1968–1972 as Pedigo's first research associate (Ph.D., 1973). It was good to get the updates. One of those Did you Know? facts brought to mind that two ISU alumni were concurrently ESA Branch presidents in 2001–2002: Jon Tollefson in the North Central Branch and me in the Southeastern Branch. I have been active in the Southeastern Branch for more than 28 years and have seen other ISU alumni serve the branch as president (A. N. Sparks, Sr., Ph.D., mid-1960s, was president 1977–1978; G. J. Musick, M.S., mid-1960s, was president 1984–1985; and Bob Lynch, Ph.D., 1972, was president 1993–1994). I think that Dr. Tom Brindley was their major professor. I have been a participant of the

regional soybean insect project S-74 (now S-1010), and we have a major component with the soybean aphid and virus transmission.

Gary L. Lentz, Associate Professor  
Department of Entomology & Plant Pathology  
West Tennessee Experiment Station

**Thanks for keeping me on your list** for the department newsletter. I enjoyed looking through the January 2003 edition. I was, by the way, one of the last undergraduate advisees of the late Dr. Jean Laffoon back in the 1960s, and for 1 year a USDA graduate research assistant under Dr. Tom Brindley in the early 1970s. I've wonderful memories of that period of my life, and I appreciate being kept apprised of the department's doings through the newsletter.

Although fate has since taken my career into nonentomological circumstances (I am in charge of preparing science teachers from within the Division of Science here at Minot State), over the years I've kept up avocationally with my love of "the leps." Also, I'm curious to learn if any of the many butterfly specimens I donated during my residence there have survived the years. I gave the department a long (unprepared) series, for example, of the now-endangered bog copper, *Lycaena (Epidemia) epixanthe* (Lycaenidae), from Burnett County, Wisconsin. Given conservation status of this little species, the specimens may now be of some value.

Ronald Alan Royer  
Professor in the Division of Science  
Minot State University, North Dakota

*Dr. Greg Courtney replies that the many specimens donated by Dr. Royer are in active use as part of the museum collection. There are more than 25 specimens of Epidemia epixanthe.*

Dr. Royer enclosed a brochure about a book that he has written entitled *Butterflies of North Dakota State: An Atlas and Guide*. This book is available from the Minot State University bookstore (Tel: 1-800-777-0750).





## Stockdale, Former Entomology Department Chair, Dies

Harold “Harry” James Stockdale, Professor Emeritus and former Departmental Chair, passed away Monday December 29, 2003, in Ames, IA. Services were held at Bethesda Lutheran Church in Ames on January 2, 2004, and were attended by family members and a host of coworkers,



friends, Ames community representatives, and others who Harry touched in his lifetime. Internment was in Aplington, IA.

Harold was born in his beloved Butler County at Austinville on December 3, 1931. At time of his death, he was 72. His long-time

service to Iowans and Iowa State University started in 1957 as a fly and mosquito “scout” for the city of Ames. His interest in entomology brought him to Iowa State University where he received his B.S., M.S., and Ph.D. (1960). Those who influenced his future work were such notable entomologists as E. S. Raun, Harold “Tiny” Gunderson, and H. M. Harris. Harry joined ISU and served as an extension entomologist working primarily in livestock and stored grain pest management programs, and then in

field crops. He traveled the state and was respected and appreciated for his effective, practical approaches, and teaching style to Iowa growers based upon his experience and work on his own family farm for many years in Butler County. Harold led the Extension Entomology unit at ISU from 1971 to 1982 and then served his last 10 years as Department Chair, retiring in 1992.

Harry is survived by his wife, Arliss, of Ames, son Clay (and Deb) of Davenport, and son-in-law Lee Miller of Story City. Also surviving are stepsons Darren (and Tamara) Anderson of Minneapolis and Kevin (and Susan) Anderson of Ames. Two brothers Vernon and Marvin, of Iowa, also survive. Harry was blessed with four grandchildren. He was preceded in death by his first wife, Dahlia, and one daughter, Marla J. Miller.

Harry was filled with life and lived it to its fullest. His genuine warmth and concern was expressed to all. He heartily enjoyed his fishing, boating, golf, and ISU sports. He will especially be remembered by all of his acquaintances and coworkers in extension. Harry welcomed all new coworkers with respect and an attitude of open partnership. He “shared the glory” and nurtured all of us through our early careers. He provided much to us, and to ISU, agriculture, and the citizens of Iowa.

Jerry DeWitt

### Did you know?

In 1975, the Department of Zoology and Entomology was separated into the departments of Animal Ecology, Entomology, and Zoology and Genetics. In 2003, the departments of Animal Ecology, Zoology and Genetics, Botany, and Forestry were reorganized into three new departments: Ecology, Evolution and Organismal Biology (EEOB); Genetics, Development and Cell Biology (GDCB); and Natural Resource Ecology and Management (NREM).



## In Memorium: Elaine G. Weaver

Elaine Weaver, who worked at Iowa State University for 17 years, and as accountant for the Department of Entomology for nine years, died of cancer on March 10, 2003, at the Israel Family Hospice House in Ames. She was 61. Elaine was born April 14, 1941, on a farm south of Garner, IA. She graduated from Klemme High School in 1958 and continued her education at Hamilton Business College in Mason City. She married Egon Weaver in 1960 and they lived in Garner, Mason City, Watertown, and for 34 years, in Boone. They also lived in South Dakota. Before joining Iowa State University, Elaine worked at the Hancock County Extension Office in Garner, Carleton Stewart Music Company in Mason City, J.C. Peterson Clothiers in Boone, and Whyte Tire Company in Boone. She was

also an organist at various churches, the last being First Baptist Church in Boone, for 30 years. Elaine enjoyed her family, friends, music, and traveling and was a member of Memorial Lutheran Church in Ames. She is survived by her husband, children Kent and Heather, and three grandchildren. Elaine is missed by the department. Her positive outlook was remarkable even when her days were numbered.



Bryony Bonning

## Entomology Alum Killed in Automobile Accident in Louisiana

Professor Michael Perich, 46, was killed in a one-car accident on I-12 on October 12, 2003. He is survived by his wife, Bunni, and daughter



Sara. At the time of his death, Dr. Perich was a Professor and Medical Entomologist in the Department of Entomology at Louisiana State University. He also was an Adjunct Professor in the Entomology Department at Iowa State. Dr. Perich was a frequent guest lecturer in Dr.

Rowley's medical entomology course and a dedicated ISU fan and supporter. Several of Dr.

Rowley's graduate students worked with Dr. Perich in tropical regions. Michael received a B.S. degree in entomology at Iowa State University. He earned his M.S. and Ph.D., both in entomology, at Oklahoma State University. Much of Dr. Perich's career was spent studying insects of medical importance at Walter Reed Research Institute of Medical Science in Washington, DC. He was responsible for studying the biology and control of insects affecting the health of military personnel. His research took him to countries throughout the world, including Kenya, Thailand, Costa Rico, and Peru. Dr. Perich will be missed by the many students whose lives he touched and by his friends in the entomology community.

Wayne Rowley

### Keep in Touch!

If you have information to share with friends and alumni of the ISU Department of Entomology, let us know! Items could include job changes, honors and awards, and personal notes. Send to Dr. Bryony Bonning, Department of Entomology, Iowa State University, 418 Science II, Ames, IA 50011-3222; Fax: 515-294-5957; e-mail: [bbonning@iastate.edu](mailto:bbonning@iastate.edu).

*ISU Entomology Newsletter for Alumni and Friends* is produced by the entomology faculty and staff at Iowa State University. Editor: Dr. Julie Todd; layout: Dr. John VanDyk. This newsletter and previous issues are online at <http://www.ent.iastate.edu/alumni>.



## Very Hungry Hike draws nearly 200

Nearly 200 people came to the Insect Zoo's Second Annual Halloween Hike in October. Based on Eric Carle's book *The Very Hungry Caterpillar*, our "Very Hungry Hike" featured a costumed caterpillar searching for food along a



*The hungry caterpillar feasts on strawberries.*

luminary-lit wooded trail. With help from the visiting children and families, the hungry caterpillar ate her way through metamorphosis and emerged as a beautiful butterfly.

Inside, kids and parents enjoyed visiting the butterfly flight house, making origami insects, and observing and holding a variety of arthropods from the zoo.

The Insect Zoo staff appreciated all the help and support the entomology graduate and undergraduate students offered, as well as the encouragement from the department.

Keep checking our Web site for new and exciting information for children and educators, and take a look at our Insect Zoo Web Store (<http://www.ent.iastate.edu/store>) where you can purchase live or display insects for your home or school.

Nanette Heginger  
Educational Program Coordinator  
for the Insect Zoo

## One-Year Anniversary of Christina Reiman Butterfly Wing

November 3, 2003, marked the 1-year anniversary of the opening of the Christina Reiman Butterfly Wing at Reiman Gardens. Membership to the Gardens is now at 2,215 households, whereas a year ago it was 304. This increase of more than 700% in membership tells a story of what has happened this last year. A familiar line from a movie filmed in Iowa keeps running through my head: "If you build it, they will come." Well, we built it, they came, and brought all of their friends! During our first year, the Butterfly Wing had more than 110,000 visitors.

More than 34,000 butterflies were released in the wing during the past year to maintain our goal of 800 butterflies in flight at any time. We trained 197 volunteers to serve as docents, who welcomed visitors, answered questions, and monitored visitor activity in the Butterfly Wing.



Last year was officially the "Year of the Butterfly" at the Gardens, and Ed Moran did a spectacular job designing plantings and incorporating an abundance of nectar-producing plants to attract our butterflies. Those who visited the Gardens in August saw clouds of butterflies flying among these flowerbeds. Milkweed, the host plant for monarch caterpillars, was included among the nectar plants. Visitors in late summer saw numerous monarch chrysalides developing throughout the gardens, and the adults that

emerged from those chrysalides are undoubtedly now in Mexico for the winter.

Mary Harris  
Christina Reiman Butterfly Wing Curator



## Scenes from the ISU Alumni Mixer at the 2003 ESA Annual Meeting



Above: (L-R, front) Elsie Burbano (Iowa State), Gretchen Schultz (Iowa State), Megan O'Rourke (Iowa State), (back) Emily-Jean Fuerst (Iowa State), Rayda Krell (University of California, Riverside), Patti Anderson (Iowa State).

Bloew: (L-R) Ted Wilson (University of Missouri), Rachel Binning (Pioneer Hi-Bred, Johnston, IA), Jeff Bradshaw (Iowa State), Elsie Burbano (Iowa State), Wilmar Morjan (Monsanto Co., Waterman, IL).



Below: (L-R) Joseph Munyaneza (USDA, Yakima, WA), Carlos Bogran (Texas A&M University), David Shapiro-Ilan (USDA, Byron, GA).



Above: (L-R) Phil Mulder (Oklahoma State University), Paula Davis (Pioneer Hi-Bred, Johnston, IA), Mike Gray (University of Illinois)

Below: (L-R) David Coyle (USDA, Ellenton, SC), Tim Nowatzki (Pioneer Hi-Bred, Johnston, IA), Steve Lefko (Pioneer Hi-Bred, Newark, DE), Lamar Buckelew (Bayer CropScience, Research Triangle Park, NC)



Above: (L-R) Ron Hammond (The Ohio State University), Joe Funderburk (University of Florida), Matt O'Neal (currently Michigan State University, soon to join Iowa State University)

