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Safer Skies for All Who Fly

The wings of planes and of nature often compete for the same airspace at the same time. When that happens, collisions may occur that result in damage to aircraft and sometimes in injuries or even death to passengers and crew. The January 2009 emergency landing of Flight 1549 on the Hudson River dramatically demonstrated this hazard. To help reduce the risk of these potentially dangerous interactions, USDA APHIS Wildlife Services (WS) biologists provide airport operators across the Nation with advice and recommendations on how to keep runways and flight paths clear of wildlife.

Wildlife Services’ Airport Wildlife Hazards Program works closely with the military, the civil aviation industry, and the U.S. Department of Transportation’s Federal Aviation Administration (FAA) to reduce the safety risks and economic impacts to aviation caused by birds, mammals, and other wildlife.

Airports in the Eastern and Southeastern United States experience the greatest number of wildlife-aircraft collisions, but the problem exists nationwide. The FAA estimates that birds and other wildlife cause about $615 million in damage each year to civil aircraft at airports that served a total of 634 million commercial passengers and recorded 20.6 million commercial aircraft movements. The 317 general aviation (GA) airports where WS provided assistance recorded 10.6 million GA aircraft movements.

Airports face ecologically and legally complex issues in controlling wildlife hazards. Each airport presents unique geographic and environmental conditions requiring professional expertise in wildlife damage management. With more than 350 biologists trained in airport-wildlife management, WS provides

How USDA APHIS WS Helps

In fiscal year 2009, WS biologists provided assistance in reducing wildlife hazards at 822 airports located in 50 States, 3 territories, and 7 foreign countries. Altogether, they provided 173 staff-years of assistance at 612 civil airports, 120 civil-military joint-use facilities, and 90 military air bases. WS assisted Chad Shoultz: Purdue graduate and Airport Wildlife Specialist investigates for potential wildlife hazards

(Continued on page 2)
Entomology and the Taliban: Rehabilitating Plant Protection in Afghanistan

We all know more about Afghanistan today than we did 10 years ago. After decades of isolation and nearly 25 years of depredation, Afghanistan is taking steps to join the world community with agriculture as their economic foundation. Wheat and cereals are the traditional cash crops, but fruits like pomegranates, apricots, grapes, melons, and mulberries, and nuts such as pistachio, are locally important with potential export markets.

Kevin McNamara, a Peace Corps volunteer in Afghanistan in the 1970s and today a professor of economics at Purdue, got a call to advise the international donors a few months after the fall of the Taliban in 2002. The new permanent government set rebuilding their agricultural infrastructure including rehabilitating agricultural universities as a priority. This is where Purdue and Entomology got involved.

An assessment of needs and training for Afghan faculty who had been isolated for decades was the first task. Rick Foster traveled to Afghanistan in 2008 to review the plant protection curriculum of several Ag universities. He found faculty with only a modest level of training and experience, almost no infrastructure for teaching, research or extension in entomology. He recommended short-term and degree-related training for the most promising faculty as the best place to start.

Rick Foster and Chris Oseto began hosting and training Afghan faculty in 2007 and have continued in mentoring visiting faculty at Purdue, or delivering short-term training to faculty and students in Afghanistan. Rick taught pest identification and IPM in 2008 and 2009 in Kabul and Herat, and was joined by Chris in 2010 to teach insect collection, identification, and curation in Kabul. State-side, Rick Foster, Chris Oseto and Larry Murdock have trained National Guard troops from Indiana, Texas and Tennessee being deployed to Afghanistan to implement agricultural projects since 2009.

Where to next? Besides degree-related opportunities, we will continue working with Afghan universities to modernize their pest management training as part of a $32M USAID project. In addition, we received $14M from USAID/USAID to work with the agriculture ministry to develop a functional extension system, at least in some parts of the country, and another $2M from USDA to lay the groundwork for phytosanitary capabilities needed to participate in international agricultural trade.

Purdue Entomology’s reputation for excellence in international pest management is built on decades of experiences from around the world. Our present effort in Afghanistan builds on these experiences and recent initiatives to develop clean stock protocols for the nursery industry export market in Costa Rica, implement improved cowpea storage technology across West Africa, and improve leafy vegetable market chains in western Kenya. We have developed a unique capacity and reputation in international plant protection that will continue to provide Entomology with interesting challenges and truly worthy opportunities in some of the neediest countries in the world.

~Steve Yaninek~

Department News

New Staff

Beth York joined the department in August as the Main Office Receptionist and Secretary. Beth is a Purdue alum with a degree in Creative Writing. Beth and her husband, Larry live in West Point, Indiana and enjoy raising Shelties.

Ameya Gondhalekar recently joined Mike Scharf’s Lab as a postdoctoral associate. Ameya will be working in the area of cockroach insecticide resistance under industry grant support. Ameya recently completed his PhD degree at the University of Florida under the direction of Dr. Scharf (2007-2011), also in the area of cockroach resistance. Before coming to the U.S., Ameya earned his MS degree in Entomology from Mahatma Phule Krishi Vidyapeeth in India. Ameya is joined in West Lafayette by his wife Mithila Shukla who will be working with Banyan Biomarkers Inc. in the Purdue Research Park.

Annmarie Nagle is taking on the Emerald Ash Borer in her new position as Exotic Forest Pest Educator that began in September. She comes to us from Ohio State where she did her MS research in plant pathology on Sudden Oak Death. No stranger to insects, she did undergraduate research on assistance, drawing on its network of experienced staff and the research conducted at its National Wildlife Research Center (NWRC). When the Nation’s airports experience wildlife conflicts, the FAA recognizes that WS is available to assist.

WS offers technical and direct assistance. Technical, or informational assistance includes: consultations; hazard assessments; development of hazard management plans; and environmental assessments. The program trained more than 2,751 employees at 365 airports in wildlife hazards awareness, wildlife identification, and control methods. WS offers direct assistance with the two basic foundations of wildlife hazard management: habitat modification and wildlife dispersal. This includes conducting non-lethal dispersal activities, modifying habitats to make airfields less attractive to animals, and capturing and relocating wildlife. Lethal control may be used when imminent danger is observed or when other methods are ineffective or impractical.

The USDA APHIS National Wildlife Research Center conducts research on wildlife behavior, habitat management, new harassment methods, and the impact of activities near airports on bird–aircraft strikes. This research helps WS develop new integrated ways to minimize wildlife hazards at airports. All program activities comply with Federal and State laws, regulations, and policies.

WS maintains the National Wildlife Strike Database for the FAA, and compiles regularly published reports. Information covering 1990–2010 shows: a total of 109,085 reported wildlife strikes. Current studies suggest that only 39 percent of all strikes are reported to the system.

For more information on USDA APHIS WS activities at airports, call 765-494-6229 or visit the website <www.aphis.usda.gov/wildlife_damage/>.

~Judy Loven~
Dr. Ronnie Mills Bitner (MS ’70)

Dr. Bitner’s career demonstrates to all entomologists the rewards of high achievement and professionalism in Entomology available to our graduates who choose to follow unusual career paths as new ways to contribute to entomology develop. Dr. Bitner’s saga of service to Entomology began at Purdue. Professors Leland Chandler and John Osmun both played major parts in his subsequent successes. Dr. Osmun provided mentoring to the new student from Idaho and his young family; and Dr. Chandler was his major professor for the MS degree. These two mentors set the course for their pupil’s entire career. In Dr. Bitner’s own words, “Dr. Chandler’s teachings have allowed me to travel the world applying many of his classroom instructions to real practical applications!” His dissertation for the Purdue MS degree included an ecological study of bees, including research on a little leafcutting bee he found in Indiana. He later expanded his interest in this group of bees in his PhD dissertation pursued in Idaho.

In recent years, Dr. Bitner has made a dramatic addition to the roster of areas in which he excels - he is the owner of Bitner Vineyards, which is now considered one of the outstanding wineries of Idaho. This activity stemmed from his purchase in 1980 of property overlooking the scenic Snake River where he planned to build a home. The steep hillside below his home was filled with sagebrush and weeds at the time. A neighbor, who was involved in becoming the first winemaker in Idaho, suggested that the hillside was a world-class site for growing Chardonnay wine. A recent press release summed it up as follows: “Three decades later [Bitner] and his wife, Mary, can pour a glass of estate reserve Chardonnay to toast Bitner Vineyards as ....2009 Idaho Winery of the Year!” The label on each bottle of Bitner label wine is adorned with the little leafcutting bee that he found and worked on in Indiana.

As soon as his interests expanded to include vineyards, Dr. Bitner also applied his entomological expertise to grower-related viticulture projects. One of his projects is the development and use of degree-day models for grape insects of the area. An important and recurring research area is the use of ground covers to provide habitat for beneficial insects and pollinator reservoirs, with a focus on the blue orchard bee.

The Osmun Award ceremony will be Friday, October 21, 2011 following Dr. Bitner’s presentation, “Adventures of a Purdue Bee Biologist.”
Development Update

Purdue’s R.B. Stewart Society

Friends and alumni who support the Department of Entomology as part of their estate plan or with life income gift arrangements are recognized with membership in the R.B. Stewart Society.

The society is named after Robert Bruce Stewart for his commitment to higher education, his efforts on behalf of the University, and his expression of faith in the future of Purdue through his own gifts. For 36 years, R.B. served the University as its chief business officer, building a legacy for Purdue’s future through his financial genius.

To those who have included Purdue Entomology in their estate plans, a most sincere “thank-you!”

IRA Charitable Giving Option to Expire at Year End

IRA Charitable Rollover remains available as an option for our donors through the end of the year. Currently a donor can direct a distribution from an IRA to Purdue and support the Department of Entomology. Funds directed to charity are excluded from the donor’s income for federal tax purposes, and counts towards the annual required minimum distribution.

As currently written, this gift option will expire at the end of the year and is available only to friends and alumni who are age 70 1/2 or older.

The IRA Charitable Rollover features one simple step: The IRA owner instructs the IRA custodian to transfer a specific dollar amount directly to a charity. It is that simple. The IRA owner does not include the IRA distribution as income. And Purdue Entomology benefits immediately from the gift. A simple transfer with an instant impact!

For more information about the R.B. Stewart Society or to learn more about the IRA Charitable Rollover, please visit <http://www.purdue.edu/giving/>.

Friends of Entomology

The Honor Roll recognizes new gifts to the department January-June of 2011. Contributions to the John V. Osmun Chair in Urban Entomology are included.

Monarch Club ($1000 up)
Mr. Steve Good
Mr. Gary Bennett
Mr. & Mrs. Robert and Judy Dold
Mr. Vern Toblan

Honey Bee Club ($500-$999)
Dr. & Mrs. Eldon Orman
Anonymous

Firefly Club ($101-$499)
Dr. William J. Fischang
Dr. Michael D. Miesch
Dr. Peter E. Dunn
Ms. Carolyn Workman
Dr. Michael R. Kanost
Triple XXX Family Restaurant
Dr. Bruce F. Eldridge
Mr. Michael A. Weisburger
Dr. Ralph A. Killough
Mr. Stanley G. Gesell
Dr. Michael D. Culy
Dr. Eric Lee-Chien-Hsin Pang
Eli Lilly & Company Foundation, Inc. MGP
Dr. John K. Bready

Mayfly Club (up to $100)
Mr. Stanley G. Gesell
Mr. Fritz William Schumann
Mr. Christopher D. Harlow
Mrs. Karen McIntosh Bernhard
Dr. Robert N. Wiedenmann
Dr. John J. McHugh Jr.
Mr. Frederic Goldberg
Mr. Stephen Alex Dlugosz
Mr. Larry W. Bledsoe
Dr. Ronnie M. Bitner
Mr. George Thomas LaRocca
Dr. Wei Dai
M. G. Ferris
Dr. Harry B. Moore Jr.
Mrs. Mary C. Clark
Dr. Jesusa C. Legaspi
Mr. Jack E. Naugle

Outreach Update

4-H Workshops

In June, Chris Oseto led two workshops for 4-H youth from across Indiana. At the 4-H Career Round-Up Exploration Day workshop, Oseto presented a program to an audience of 30 junior high students. The second program, the PINE (Plant, Insects, Natural Resources and the Environment) Science Workshop, was geared towards an older audience, attended by 32 Indiana high school students in the fall.

These youngsters have participated in one or more years of 4-H in field crops, plant science, Junior Master Gardeners, Mission to Mars, and/or horticulture programs. There are specific goals appropriate to the ages of each group, but in general the workshops are designed to help participants uncover their interests and talents, provide an environment for career exploration, facilitate development of leadership skills and stimulate individual growth, while acquainting them with university faculty and staff and informing them about the educational opportunities available at Purdue University. These students learn how to navigate a university campus and the local community and to get a taste of what living in the dorms is really like.

Oseto welcomed the students to campus and engaged them in a series of discussions and hands-on activities taken from the soon to be released National 4-H curriculum entitled Teaming with Insects. This curriculum,
funded by a grant from the National 4-H Council and authored by professors Chris Oseto and Natalie Carroll, and contributors, Tim Gibb, Melissa Shepson, and Emily Shebish, includes activities for grades 6-8 and 9-12 with a Facilitator’s Guide for both. They include sections on careers in entomology, biodiversity, invasive species, integrated pest management, and forensic entomology.

The students created a hand lens from the Tools of the Trade section, and investigated what pieces and parts of insects can be found in everyday foods like raisins and marmalade from the What’s That Doing in My Food? activity. The curriculum is currently being printed and is slated for a fall 2011 release.

**Butterfly Encounter**

Approximately 306 butterflies fluttered by for the eighth annual Butterfly Encounter held on July 16th at Prophetstown State Park in Battle Ground, Indiana. The Butterfly Encounter was sponsored by Evonik Degussa Corporation – Tippecanoe Labs and the Department of Entomology. Two workshops were offered in the morning before the walks took place; a nature photography workshop offered by entomology alum, Gene White (MS ’96) and a program provided by Reni Winter of Winterhaven Wildflowers on incorporating native plants that attract butterflies into your garden.

Grad students, staff, and faculty volunteers were: Gladys Andino, Carmen Blubaugh, Joseph Braasch, Diego Echeverri-Garcia, Mahsa Fardisi (MS ’11), Gloria Giraldo, Serena Gross, Jesse Hotelling (BS ’03, MS ’06), Nicole Parker, Kapil Raje and his wife Tejal, Sarah Thompson, Faith Weeks, Scott Williams, Arwin Provonsha, Melissa Shepson and Jon Neal. It was noted on a number of post-event surveys that the Encounter offers a great opportunity for naturalists from the community to connect with individuals from the department to learn more about butterflies and other insects. Results may be viewed at: <http://extension.entm.purdue.edu/butterflycount/results.html>.

~Melissa Shepson~

### Entomology Students

#### Pi Chi Omega Scholarship

Adam Salyer received one of three Pi Chi Omega Scholarships awarded nationally for 2011 - 2012. Updates of Adam’s research will be published periodically in the organization’s newsletter.

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### College of Agriculture Scholarship Awards 2011 - 2012

- Elaina Grott, Mt. Prospect, IL
  - Don Schuder Memorial Scholarship
  - J. Kelly O’Neill and Margaret Richey O’Neill Memorial Scholarship

- Stephanie Hathaway, Noblesville, IN
  - Van Scoy Scholarship in Agriculture

- Melissa Keown, Flora, IN
  - Rex Hall Memorial Scholarship

- Emily Mrocksiewicz, Attica, IN
  - Van Scoy Scholarship in Agriculture

- Tyler Stewart, Loogootee, IN
  - J. Kelly O’Neill and Margaret Richey O’Neill Memorial Scholarship

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### New Graduate Students Fall 2011

**New Graduate Orientation Class Fall 2011:** (Front row, l-r) Ashley Kissick, PhD, Maryville, Tennessee; Carlos Quesada, MS, Olanohito, Honduras; Ulianova Vidal Gomez, PhD, Bogota, Colombia  (Middle row) Steve Yaninek; Carmen Blubaugh, PhD, Renssealaer, Indiana; Zachery Karl, PhD, Lakewood, Ohio; Yanlin Tian, PhD, Beijing, China; (Back row) Andres Sandoval-Mojica, PhD, Bogota, Colombia; Jessica Kelly, MS, Ellicott City, Maryland; Adam Witte, MS, Fort Wayne, Indiana; Steven Smith, MS, Bluffton, Indiana
From the Belly Button of the Americas
To West Lafayette, Indiana

I was born and raised in Honduras: Home of the Mayans, the picturesque forests of La Mosquitia and the paradise beaches of Roatan. Most people in Honduras, including my grandfather, are subsistence farmers. I always wanted to help farmers to best manage their crops, which is the main reason I became interested in agriculture. I earned my bachelor’s degree in agronomy in December of 2002 from Zamorano University, one of the preeminent agricultural schools in Latin America.

During my senior year at Zamorano I had the opportunity to be involved in various research projects in the department of crop protection. These projects explored alternative means to control insect pests of corn. In 2004 I came to the United States to work briefly as an intern/research assistant in the Ohio State University Department of Entomology with Dr. Luis Canas. While at Ohio State, I met Doug Richmond, who would later become my graduate adviser at Purdue. Working with Dr. Canas motivated me to further my education. I had heard from many Zamoranos that the agricultural program at Purdue was excellent and considered one of the best in the United States. When my current advisor at Purdue, Dr. Doug Richmond, encouraged me to apply to his program I did so with much enthusiasm. I applied and was accepted; it was one of the best decisions I have ever made.

I was a Master’s student in the Department of Entomology from 2005 through December, 2007. My Master’s research focused on evaluating different management programs for lawns. I also was active in extension, working with homeowners and growers, and the industry. In 2008, Dr. Richmond gave me the opportunity to continue on as his student and earn my Ph.D. Since then I have been studying the interactions between soil nutrients-plants-and insect pests to try to understand how mineral resources affect plant growth, metabolism and defenses against insect herbivory. I have had much assistance with my research from my committee members, including Dr. Jeff Volenec and Dr. Cale Bigelow from the agronomy department and Dr. Cliff Sadof from entomology.

My experience at Purdue has been very rewarding. The department graduate students, staff, and faculty, have been very supportive in my professional and personal development. I specially thank Dr. Richmond for all his support, patience and trust. I have been at Purdue for over six years and have good memories of my time here. I have made the best friends and had the opportunity to experience different cultures and get to know people from all over the world. I recently (September 2010) married a great guy, Nathan Kleczewski, who has been very supportive throughout my PhD degree. He is currently working as a postdoctoral researcher in plant pathology at Purdue and is a great inspiration in my life. We have a great dog, Bruno, a fat cat, Macgyver, and enough animal hair in our house to make several nice warm sweaters. Nathan vacuums every week, but these guys just keep synthesizing new hair. It’s like they have a stockpile hidden somewhere that we don’t know about!

I was offered a position at DuPont as a field development representative. Nathan and I will be moving to Delaware around April of next year to start our new life there. However, I will not forget the great friends, experiences, and opportunities Purdue has given me.

~Victoria Caceres~
Alumni News

James Wappes (BS’68) “While at Purdue I participated in a "work study" program and worked for Dr. B. Elwood Montgomery in his dragonfly diapause/photoperiod lab. It was behind Ag Hall in the second story of a small bldg. During the summer “Monty” hired an extra person to help feed his critters and in 1966 that person was Rebecca Kuckartz from West Lafayette (Klondike to be more exact). We have now been married for 45 years, have 2 daughters (Lisa, Austin, TX and Amanda, Lansdale, PA) and three grandsons. Monty got a kick out of telling folks how he’d been a match maker for more than dragonflies at his lab! What a delightful man he was and always with a smile on his face. Great memories!”

Jim serves as project leader for “A faunual survey of Bolivian Cerambicidae,” part of a cooperative agreement between the Florida State Collection of Arthropods, the Museo Noel Kempff Mecado, Santa Cruz de la Sierra, the United States National History Museum, the American Coleoptera Museum, and others.

He has helped Dr. Steven Lingafelter, USNM Curator, update the USNM Cerambycidae collection, especially the New World material. Jim says these are great trips as it is fantastic to work with one of the best cerambycid collections in the world, not to mention it being our National Collection.

Bob and Gerry Gallun. But perhaps top of the list is Dr. Osmun, who first invited us to come back to Purdue in 1970. We try to see him every time we come to Indiana.

Our Family: Jamie (Anderson) Carnell, lives and works as a Project Manager for the city of Seattle WA. Jason is an A & P mechanic working on helicopter engines for Turbomeca in Grand Prairie, TX. Wade is an A & P mechanic working for Delta Airlines in Detroit, MI. And Todd, our youngest, is an MBA in International Business and is living in Duncanville, TX. We have 6 grandchildren from 4 to 12 years old. Thera and I have been married now for 42 years and the count goes upward!”

Casey Butler (BS ’03, MS ’06) was selected to receive the 2011 John Henry Comstock Graduate Student Award. The award recognizes an outstanding graduate student in entomology in the Pacific Branch of the ESA. Casey is a PhD student in the Trumble Lab at the University of California, Riverside.

Ann Radavich (BS’03, MS’06) “I commissioned 4 ½ years ago as a first lieutenant. I was first assigned as an officer for a 13-man preventive medicine detachment. We were a tiny unit responsible for deploying into a war zone and ensuring that roughly 50,000 people stayed healthy—no small job! We make sure the water and food are safe, monitor air and soil for contamination, reduce chemical exposure and noise hazards, and consult on waste disposal. We also deal with feral animals, birds, rodents, snakes, and scorpions. We made quick friends with the Soldiers being “eaten alive” by sand flies, mosquitos, and biting midges on guard duty, and by helping the chow halls eliminate the filth flies that made dining a gastrointestinal adventure. Ticks, mites, fleas, lice, and bedbug calls came in from time to time, too.

After three years and a trip to Iraq, I moved to the DC area to work for the Public Health Command Region-North. I now help train small medical detachments just like the one I was part of. We evaluate IPM on bases, consult on large-scale rodent and insect problems, perform vector surveillance, and provide community awareness through outreach. I am always busy but there’s a lot of job satisfaction knowing that what we do in the Army is making a difference for the Soldiers in Iraq and Afghanistan.”

Kris Wyckhuys (PhD ’05) After a three-year position as scientific coordinator at a small horticulture research institute in Bogota, Colombia, Kris moved to CIAT (Colombia) in 2010 to initiate a position as Tropical Fruits IPM Specialist. Kris works on developing low-cost, environmentally-sound solutions for insect pest problems of a wide range of tropical fruits in the Latin America & Caribbean region. His primary focus is on crops that are cultivated by resource-poor, small-scale farmers and which have been vastly bypassed in current government-run agricultural research/extension programs.

In Memory

Robert L. Gallun (PhD ’60), 87, of Westminster Village in West Lafayette, died June 24, 2011. Mr. Gallun, professor emeritus, retired as a researcher after 35 years of service with the USDA in the areas of forestry and agriculture research. During the same time, he was an adjunct professor in the entomology department at Purdue. Surviving with his wife are one daughter, Christine Kitterman (Bill) of Romney, Indiana; and one son, Robert Craig Gallun (Lisa) of Denver, Colorado.
Calendar

October
21 John V. Osmun Award Presentation to Ronnie M. Bitner (MS ’70)

November
13 - 16 ESA, Reno, Nevada

January
10 - 12 Pest Management Conference, West Lafayette, Indiana

From the editor

With each issue of Entomology @ Purdue we keep you up to date on what’s happening in the Department of Entomology and with Alumni. Won’t you please take a moment to help keep us up to date with you?

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Please include your name, address, degree, major and year of graduation. Digital photos (.jpg or .tif) are preferred. Photos received by mail will be returned upon request.
To update your contact information online, go to: <www.purdueinsects.org>