Boiler Buzz

IN THIS ISSUE...

The Center for Urban and Industrial Pest Management Welcomes Dr. Barry Pittendrigh as the New Director

HOLLY FLETCHER-TIMMONS, NEWSLETTER EDITOR
DEPARTMENT OF ENTOMOLOGY




The Center for Urban and Industrial Pest Management was established in the Entomology Department to address the various needs of the pest control industry. It functions to provide training, educational resources, and research on pest biology, behavior, and management. In December of 1989, the Center for Urban and Industrial Pest Management was founded to further enhance the Entomology Department's ability to serve the needs of the pest management industry. The mission of the Center is to further the understanding of urban pest problems and to promote their solutions through research and education programs. The Center provides the foundation for expanding our knowledge of urban pests, developing environmentally sound technology for pest management, delivering technical information and training programs to urbanites and urban pest managers, and training scientists to undergird this process in the future. Thus, the Center enhances Purdue's contribution to the urban and industrial pest management community. The Department of Entomology has long been recognized for the significant research findings and educational opportunities that have been delivered to urban and industrial clientele for the management of pests that affect human health, property and food supplies. Faculty and staff have established programs in the areas of pest management in homes and other urban structures, food processing and handling industries, landscape horticulture, public health, and turf.

Dr. Gary Bennett served as the Center Director since its founding in 1989. Dr. Bennett retired in June of 2019.

Dr. Barry Pittendrigh, a former student of **Dr. Larry Murdock** and **Dr. Richard Shade** and a

CONTINUED ON PAGE 3 (OSMUN CHAIR)

From the Head Bug

Welcome Purdue Entomology Alums, Emeriti, Friends, and Supporters to our first of the re-launched Departmental Newsletter. It has been a few years since we put one together because we've been flat out handling the frantic pace of change that is affecting Purdue University in general and our department in particular.

So much has changed in the almost five years that I have had the privilege to lead this department. At the end of this semester Dr. Jeff Stuart will retire after 34 years with the department, and at that point more than half of the faculty who made up the department will have left. These include many well-earned retirements: Drs. Peter Dunn, Greg Hunt and Tom Turpin in 2017, Larry Murdock in 2018, Gary Bennett in 2019, Rick Foster, Chris Oseto and Jon Neal in 2020; to other opportunities: Drs Jenn Zaspel in 2017 and Trevor Stamper in 2020; and sadly, also the passing of Dr Virginia Ferris in 2017. As irreplaceable as the collective impact of those colleagues who've left is for our department, the renewal which we've experienced through bringing new professors on board across this time has been inspiring. We've been able to largely keep pace with new hires including Drs. Dieudonne Baributsa and John Couture in 2016, Laramy Enders in 2017, Brock Harpur, Laura Ingwell, Elizabeth Long and Aaron Smith in 2019, and Barry Pittendrigh in 2021. In so doing we've been able to renew our programs in stored products, vegetable entomology, bee genetics, systematics and urban entomology, while developing new ones in microbiomes, remote sensing, urban agriculture and pesticide genetics. In our last hire (Pittendrigh) we've also been able to fill the John V. Osmun Chair in Urban Entomology and bring to a successful close a long running fund raising program which so many of our alums contributed to.

This infusion of new faculty, and the staff, graduate students and postdocs which they have brought on board with them, has benefitted every one of our department's land-grant missions. Our undergraduate teaching has gone from strength to strength. A fully redesigned and modernized curriculum is drawing the largest enrollments in our Major since the 1970's, while our forensics and general entomology classes draw ever larger numbers of students from across campus to an appreciation of insects. Our extension programs continue to develop programs for new or underserved groups, including new crops like hemp, new production systems such as high tunnels or new grower groups such as urban and community gardeners. Novel means of communicating extension information such as through smart phone apps, social media and websites continues to reach the public in new ways, and the departments leadership in this realm proved to be very farsighted given the challenges presented over the past year by COVID. Our research enterprise has grown significantly, most notably in the near doubling of our graduate students and a huge increase in postdoctoral fellows working in our department. The skills of our new faculty have led to major new research areas through collaboration with existing faculty in the cutting-edge areas of insect microbiomes, digital agriculture and remote sensing. While the pace of change has at times been challenging, and we've had our growing pains, the department is in great health and poised to achieve great things in the coming years.

All this work to incorporate change and embrace flexibility served Entomology well in the past year as we, like all of you, faced down the challenge of COVID. From having just one online class prior to 2020, we rapidly developed capacity to teach online and now have the opportunity to incorporate more teaching modes as we move back to a more traditional on-campus student experience in Fall 2021. Our extension programs pivoted magnificently to online presentations developing many new programs including for K-12 students working from home to experience nature and biodiversity, through to pesticide safety training that our industry partners need to maintain their businesses. Through innovative scheduling and a strong safety ethic amongst students and faculty, we were able to minimize disruption to research programs and for most of us the summer 2020 field season was close to normal. While all of us felt the loss of time and personal contacts that the COVID shutdown and safety measure lead to, from discussions with colleagues around the US it could have been much, much worse and we are blessed with a flexible, creative and hard-working departmental community who could rise to this challenge.

The coming years will no doubt continue to bring challenges, opportunities and innovations, but I am confident our best work still lies ahead of us.

Stephen Cameron

CONTINUED FROM PAGE 1 (OSMUN CHAIR)

Purdue alum, accepted the position as Purdue's Osmun Endowed Chair which includes the role of Center Director. After earning his master's degree in entomology from Purdue and serving as an assistant and associate professor in the department from 2000-2008 (where he collaborated extensively with Drs. Bennett and Scharf), he spent the last 13 years in named and endowed professorships at Michigan State University and the University of Illinois. Pittendrigh's research has focused on insect pesticide resistance and global legume cropping systems. At the University of Illinois, he led a five-year endeavor to sequence and annotate the body louse genome. Over 13+ years, he worked to develop a multi-country integrated pest management program in West Africa with funding from USAID and the Bill and Melinda Gates Foundation. When at Michigan State University, he served as Director of the USAID Feed the Future Legume Systems Research Innovations Lab. He will continue this work (and his Directorship) with legume cropping systems at Purdue and his research focus will be primarily on pesticide resistance using his experience with insect genomics. Pittendrigh's arrival also brings a new program into the department called SAWBO – Scientific Animations Without Borders. As co-founder of the program (2011), he co-developed (with incoming faculty member, in Agricultural Sciences and Education Communication, Dr. Julia Bello-Bravo; SAWBO will primarily be housed in ASEC) educational videos delivering scientific information in simple and easy to understand animations. The vast library of videos has been translated into more than 200 languages and used in over 100 countries. The SAWBO videos have been used by many organizations globally including the likes of the World Health Organization, Food and Agriculture Organization of the United Nations, and USAID as well as other large and small non-government organizations. SAWBO videos are aired on television regularly in East and West Africa and have reached over 50 million people to date.

Along with Dr. Pittendrigh, the department welcomes several additional professionals and postdocs that have worked under him on his projects. **Dr. John Medendorp** has taken the role of Associate Director of the Center for Urban and Industrial Pest Management. He holds a PhD in Higher, Adult, and Lifelong education with a specialization in international development from Michigan State University. John has worked internationally for several NGO's over the last forty years in community development, leadership training, and agricultural education and training systems. He has served in various administrative posts for Latin American universities including chancellor of a three-campus university system. He also has served as Director of the Borlaug Higher Education for Agricultural Research and Development (BHEARD) program as well as Deputy Director for the Feed the Future Innovation Lab for Legumes Systems Research, Co-PI for the SAWBO-RAPID Scaling Program, and Organizational Capacity Development Lead for the Feed the Future Innovation Lab for Food Security Policy, Research, Capacity, and Influence. In these various roles, he has managed and supported capacity development projects for USAID and USDA in over 40 countries and in all of the Feed the Future target countries. John's research focuses on Agricultural Education and Training (AET) learning system development with a special interest in human capacity development, human capital accumulation, and human capital migration within and between knowledge systems. He conducted his dissertation research in China, analyzing motivation for return among foreign trained Chinese PhDs using an economic rational choice model. He has presented his research on AET learning system development and capacity building at academic conferences around the world and continues to do research on human and institutional capacity development in food and agriculture systems. He has authored two major studies on capacity development, one on the Ethiopian land administration sector and another on the Rwandan higher education sector, as well as several articles addressing learning systems.

Severina Adames serves as the SAWBO project manager and head of marketing and outreach and brings over 17 years of experience in organization, management and professional services to her position within the department as Editorial Assistant.

Dr. Weilin Sun has been working in Dr. Pittendrigh's lab since 2004 at Purdue. Since then he followed Dr. Pittendrigh to the University of Illinois and Michigan State University. Weilin has worked on genomics and pesticide resistance of body and head lice, drosophila, cowpea pests and spotted wing drosophila. Weilin also helped other students and scholars to utilized genomics analyzing tools, such qPCR and sequencing analyzing software CLC Genomics workbench. Weilin has participated in SAWBO programs such as script writing and data analysis. Weilin is happy to return to the Purdue community, he feels like he's returned home.

Dr. Anne Namatsi Lutomia, is an interdisciplinary postdoctoral researcher in the entomology department with Scientific Animation Without Borders (SAWBO). She holds a doctoral degree in Human Resource Development with a minor in Gender Studies from the University of Illinois at Urbana Champaign. Her current research interests span scientific collaboration, adult learning, mobile learning, and secondary effects of COVID-19. Her dissertation examined successes and challenges of a North-South scientific collaboration based in the US and Benin.

Coordination of the Programs of the Center will be administered by Pittendrigh. Under the umbrella of the Center are **Michael Scharf**, the O. Wayne Rollins/Orkin Endowed Professor in Urban Entomology; **Grzegorz Buczkowski**, Director of the Industrial Affiliates Program and **Ameya Gondhalekar**, Director of the Sponsored Research Program. Also associated with the Urban Center are **Doug Richmond**, Turf Pest Management; **Timothy Gibb**, who heads Purdue's Insect Diagnostic Laboratory; **Clifford Sadof**, Landscape Horticulture Pest Management; **Linda Mason**, Management of Pests of Foods; and **Cate Hill**, Vector Biology and Vector-Borne Diseases. The Annual Purdue Pest Management Conference, online and correspondence courses, and other educational programs for urban and industrial clientele groups continue to be expanded and built upon. The Center provides the mechanism to communicate the most up-to-date information and develop training programs that meet these needs. The international component of our Urban and Industrial Pest Management Program continues to be enhanced through exchanges of information and people.

see pages 6 & 7 for New Hire photos.

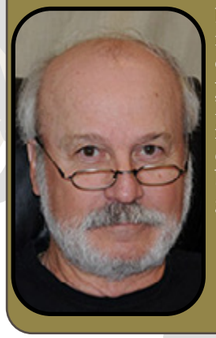
Best Wishes to our Department Retirees

Faculty

DR. PETER DUNN

Dr. Dunn retired in May of 2017 after 29 years of sevice. He specialized in insect physiology and biochemistry.

DR. LARRY MURDOCK

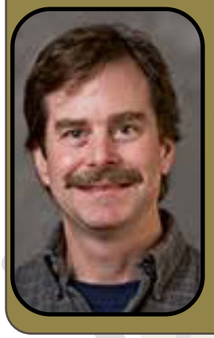


Dr. Murdock retired in July of 2018 after 40 years of service. He specialized in insect biochemistry and biology of stored grain pests.

DR. CHRISTIAN OSETO

Dr. Oseto retired in December of 2020 after 30 years of service. He specialized in teaching with insects.

DR. GREG HUNT



Dr. Hunt retired in May of 2017 after 23 years of sevice. He specialized in apiculture

DR. GARY BENNETT

Dr. Bennett retired in June of 2019 after 50 years of service. He specialized in urban entomology.

DR. RICK FOSTER

Dr. Foster retired in December of 2020 after 32 years of service. He specialized in pest management in vegetable and food crops.

DR. TOM TURPIN

Dr. Turpin retired in June of 2017 after 46 years of sevice. He specialized in teaching and outreach.

DR. JON NEAL

Dr. Neal retired in December of 2020 after 32 years of service. He specialized in insect toxicology and physiology.

Staff

JAMAL FAGHIHI

Jamal retired in July of 2018 after 36 years of service. He specilaized in nematode diagnositcs and control.

EILEEN LUKE

Eileen retired in May of 2019 after 37 years of service. She was Director of CERIS.

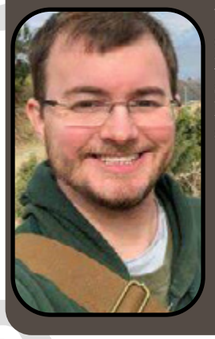
Not Pictured: Beth York - retired in January of 2019. Main Office Secretary.

Department Departures

DR. JEN ZASPEL

Dr. Zaspel left the department in 2017. She had been the Director of the Purdue Entomological Research Collection.

BRADLEY SMITH



Bradley left the department in 2020. He had served as the PICS Lab Manager.

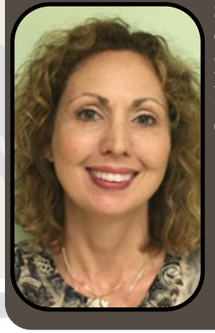
DR. TREVOR STAMPER

Dr. Stamper left the department in 2020. He had been the Forensic Science Program Director.

BEN PRICKEL

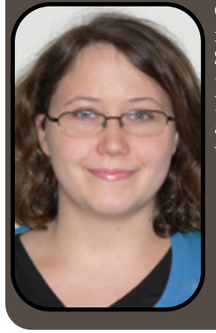
Ben departed in January of 2019. He had been the Web and Grapgic Designer for the department.

SHAWN GILLAN



Shawn departed in December of 2018, she had held the poistion of Business Office Clerk.

CARA FILA



Cara departed in July of 2017. She had been in the position of Business Office and Student Services Clerk.

Welcoming Our New Personnel!

Faculty

DR. LARAMY ENDERS

joined the Entomology Department Facultyin January of 2017 as Assistant Professor of Entomology specializing in Insect-Microbe Interactions and Applied Evolutionary Entomology.

DR. BROCK HARPUR

joined the Entomology Department Faculty in January of 2019 as Assistant Professor of Entomology specializing in Apiculture.

DR. LAURA INGWELL

joined the Entomology Department Faculty in August of 2019 as Assistant Professor of Entomology specializing in Protected Production Entomology.

DR. ELIZABETH LONG

joined the Entomology Department Faculty in August of 2019 as Assistant Professor of Entomology specializing in Horticulture Entomology.

DR. BARRY PITTENDRIGH

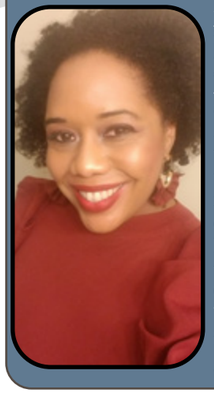
joined the Entomology Department Faculty in January of 2021 as Osmun Endowed Chair, he is a Professor of Entomology specializing insect pesticide resistance and global legume cropping systems. He will be stepping into the Director role of the Center for Urban and Industrial Pest Management

DR. AARON SMITH

joined the Entomology Department Faculty in August of 2019 as Assistant Professor of Entomology specializing in Insect Systematics.

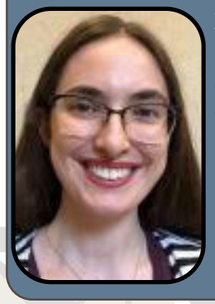
Staff

SEVERINA ADAMES



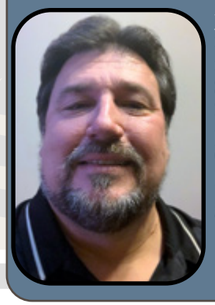
joined the Entomology Department in January of 2021 as Editorial Assistant. She will be working with Dr. Barry Pittendrigh on the SAWBO program as well within the Center for Urban and Industrial Pest Management.

DR. ELIZABETH BARNES



joined the Entomology Department in December of 2017 as Exotic Forest Pest Educator.

MARTIN DEUBLER



joined the Entomology Department's CERIS in Septmeber of 2018 and was promoted to CERIS Assistant Director in August of 2019.

MARY GREEN-SMITH

joined the Entomology Department's CERIS in May of 2017 as CERIS Program Manager.

DR. KRYSTAL HANS

joined the Entomology Department in January of 2019 as a Lecturer.

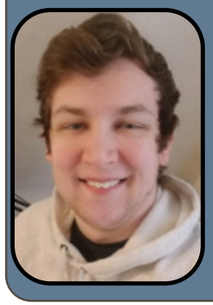
DR. JOHN MEDENDORP

joined the Entomology Department in February of 2021 as the Associate Director of the Urban Center.

AMANDA PIEGZA

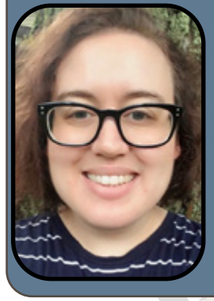
joined the Entomology Department in October of 2019 as CERIS Applications Developer.

BRANSEN SHIDLER



joined the Entomology Department in January of 2020 as Web and Graphic Designer.

MOLLY WEBER



joined the Entomology Department in November of 2018 as the Main Office and Student Services Secretary.

Not Pictured:
Tim Deppen - 12/19 CERIS Training & Project Coordinator

Post-Docs

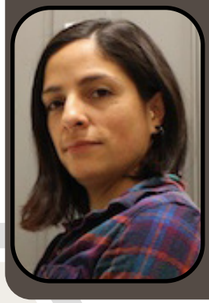
DR. HELENA AVILA ARIAS

joined the Entomology Department as a Post-Doc Research Associate in December of 2018. She is working in Dr. Doug Richmond's Soil Insect Ecology Lab.

DR. ALLISON BISTLINE-EAST

joined the Entomology Department as a Post-Doc Research Associate in September of 2019. She is working in Dr. Ian Kaplan's Insect Ecology Lab.

DR. JENNIFER GIRON DUQUE



joined the Entomology Department as a Post-Doc Research Associate in August of 2020. She is working in Dr. Aaron Smith's Biodiversity Lab.

DR. MACKENZIE KJELDGAARD

joined the Entomology Department as a Post-Doc Research Associate in November of 2020. She is working in Dr. Laramy Enders' Microbiome Lab.

DR. ASHLEY LEACH

joined the Entomology Department as a Post-Doc Research Associate in May of 2019. She is working in Dr. Ian Kaplan's Insect Ecology Lab.

DR. SEB SHEPARD

joined the Entomology Department as a Post-Doc Research Associate in May of 2018. He is working in Dr. Christian Krupke's Field Crops Entomology Lab.

DR. CHRIS SMALLWOOD

joined the Entomology Department as a Post-Doc Research Associate in August of 2020. He is working in Dr. Matt Ginzel's Forest Entomology Lab.

DR. VISANT VIJAY

joined the Entomology Department as a Post-Doc Research Associate in September of 2019. He is working in Dr. Stephen Cameron's Invertebrate Phylogenetics and Genomics Lab.

Not Pictured:
Nicholas Dowdy - 9/20
Maria Murgia - 8/19
Weilin Sun - 3/21

A Virtual First - The 85th Annual Purdue Pest Management Conference

HOLLY FLETCHER-TIMMONS
SENIOR EVENT COORDINATOR,
DEPARTMENT OF ENTOMOLOGY

When the Industry Planning Committee met last June, the conference planning process was already looking quite different. For the first time, the planning meeting was conducted remotely. At that time, communities were still in a very shuttered state, most of us working from home and quite unsure about the next few months to come – much less the winter ahead of us. The committee members, which consist of representatives from surrounding states, small and large business owners, vendors, industry-focused media outlets, The Office of the Indiana State Chemist, Purdue Pesticide Programs, USDA APHIS Wildlife, University of Illinois Extension, and faculty, staff and students of the Center for Urban and Industrial Pest Management connected through the Zoom platform to discuss the upcoming conference program, and just how the conference materials would, or could, be delivered.

Thinking ahead to the potential challenges, we agreed upon a virtual format although at the time, our exposure to virtual conferencing was very limited. We also approached program building with more structure than usual. In the past, it had been a brain-storming session that produced many topics and speaker ideas – more than we could fit on the program. This time we narrowed it down to what would get attendees "the biggest bang for their buck" and modeled the content around Continuing Education Credits (CCHs). Once the content was tentatively in place, our meeting adjourned.

Then the real work began. Working with Melissa Gulick at Purdue Conferences, we explored options for web hosting of the event. I attended seminars and explored different event platforms. Eventually, we chose to go with an event platform called Whova.com. The platform was highly customizable and had many automated features. There was an agenda where links to the presentations and live sessions were organized in a very straightforward fashion, an exhibit hall, featured sponsor section, message boards, a social community page, chat boxes within the presentation views, a speaker bio section, gaming capabilities and more. Some of the major concerns that were brought up by the planning committee in regard to virtual meetings were the possibility of poor connectivity and the danger of losing the speaker's live feed, as well as the challenges many of our attendees would face in performing the technical aspects of using their own devices to access the event. With this in mind and the legal requirements put forth by the state regulatory offices that would (or would not) approve the conference for CCHs, I devised a structure that would qualify our talks for credits while preserving the talk content, ensuring delivery, and making it as easy to access as possible.

Once the platform was decided upon, I went to work breaking down our usual in-person event to fit into the platform format. The speakers would produce a video of their talk in advance. The talks would then be launched as per our event program and each 1 – 2 hour talk would be followed by a 1-hour live question and answer session with the speaker(s). Due to anticipated Zoom fatigue, the programming was reduced per day by spreading it out and holding no sessions in the evening. The traditional conference setup is over three days with evening sessions on Monday and Tuesday nights. Instead, the event was arranged to layout over four days in the same format each day: a 2-hour session followed by a 1-hour live Q&A session, then a 1-hour session and Q&A, and finally, one more set. This made for four hours of required programming between 8 am – 2 pm EST (Wednesday had one concurrent session).

Working with a video production company out of Indianapolis called Rent-a-Bit, we devised a strategy to offer speakers two different filming options. For the more experienced speakers, we had them record their presentations using their own equipment. For the less experienced, we offered a video kit that was delivered through the mail which included detailed instructions. Technical support was provided through Rent-a-Bit, with online and by-phone assistance. One speaker used the support team to walk him through his entire recording, while another filmed and edited and uploaded his entire presentation without any assistance. Rent-a-Bit set up a file transfer site online for submission of all the videos where they reviewed them, added title and closing screens and communicated with the speakers to make any edits they wanted.

The Live sessions were organized to run up to one hour after the end of each presentation. The sessions were set up through Zoom and administered by Ed Dunn and his team in Purdue ITaP Video and Multimedia Production Services. Prior to the event, Ed ran rehearsal sessions for the speakers and moderators so they could check that their equipment was working properly and familiarize themselves with the Zoom platform. During the event, Ed or one of this staff sat in on all the live sessions to answer technical questions and ensure that the sessions ran smoothly.

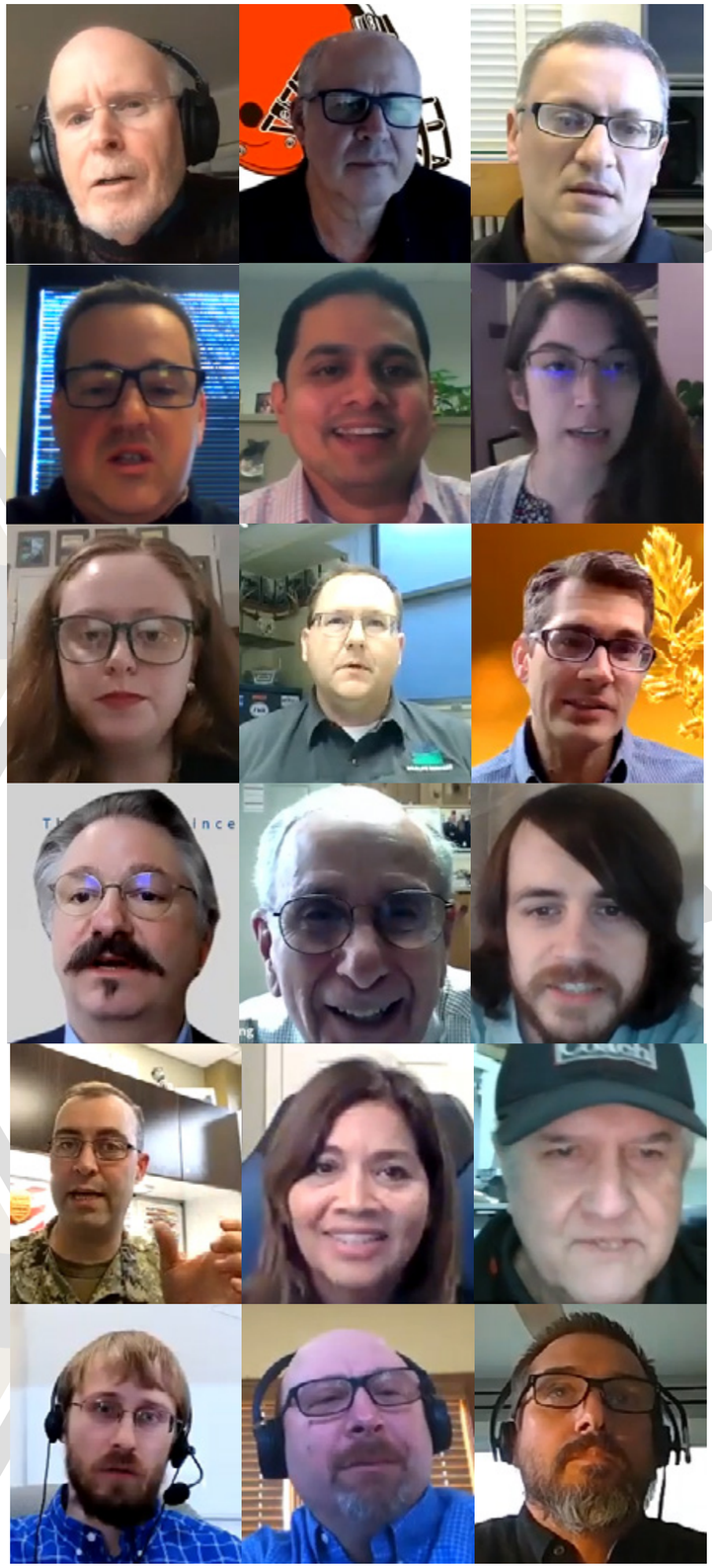
CCH credits were requested based on the pre-recorded presentations. The live sessions were optional and did not qualify for credit. With the unpredictability of connectivity, the videos would remain available for viewing and credit through the conference week's end. Access was restricted at 11:59 pm of Saturday, January 16th. Attendees were provided with a set of links (one was assigned to each presentation) for each day for which they were registered. Through Qualtrics, we set up small surveys for each talk that were password restricted. Each video had a closing screen that provided a code number for the talk. Attendees then used the link for the talk they attended and entered the code number to access the survey. The survey collected their contact information which is what was used to provide to state agencies to award CCH credits to the attendees.

The planning process was very different from the traditional in-person event, especially in the timing of deadlines. Despite the differences in planning, the virtual event ran similarly to the in-person event: smooth and steady. During the event, Cecelia Foley and Madison Gits, two Urban grad students, helped to monitor the recorded and live sessions where they answered questions in chat boxes. Mat Dittmann, the pest conference graduate student assistant, offered assistance as well as technical support by phone to several attendees who were struggling with their devices and services. The Whova team was also available for attendees who had more complicated problems. Melissa Gulick and Kaitlyn Floyd in Conferences dealt with registration issues and mid-event newcomers.

Each new aspect of the event required training and support. Continuing Education Credit approval was granted from 41 states which was much more than expected (usually 47-48 states approve). The live sessions turned out to be very informative and enjoyable. Many speakers questioned the one-hour time slot but almost every Q&A ran the entire hour. It was the most positively commented upon aspect of the event. Our speakers were top-notch and all did a fine job of navigating our process to deliver their presentations. With individual sessions for each talk, there was a need for more moderators than usual; many signed on at the last minute including former students Aaron Ashbrook and Adam Salyer as well as Dr. Ameya Gondhalekar. Reception of the virtual conference has been overwhelmingly positive. So much so that we plan to integrate the virtual format with the in-person format for future conferences to offer our content to a wider audience.

A big thanks goes out to everyone who participated and helped make this event, which we entered into with many unknowns, a huge success.

To see the program and speakers visit the conference website at: https://extension.entm.purdue.edu/urbanconference/program.php



Screenshots from Live Q&A Sessions. Row 1: Dr. Bobby Corrigan (speaker), Gene White (speaker), Dr. Grezesiek Buczkowski (speaker). Row 2: Brad Harbison (moderator), Dr. Ameya Gondhalekar (moderator), Amy Cross (speaker). Row 3: Ashley Amidon (speaker), Lee Humburg (moderator), Mark VanderWerp (speaker). Row 4: Mark "Shep" Sheperdigian (moderator), Rich Kammerling (speaker), Dr. Aaron Ashbrook (moderator). Row 5: Dr. Adam Salyer (moderator), Sylvia Kenmuir (speaker), Jeff McGovern (speaker) Row 6: Dr. Zach DeVries (speaker), Dr. Mike Scharf (speaker), and Jay Kelley (speaker).

Congratulations are in Order!

Promotions

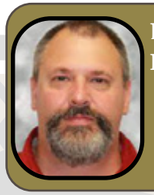
HOLLY FLETCHER-TIMMONS
Senior Event Coordinator,
July 2019

DR. JEFF HOLLAND
Full Professor,
August 2017

RACHEL MOORE
CERIS Programmer/ Analyst,
January 2021

DR. AMEYA GONDHALEKAR
Research Associate Professor,
July 2020

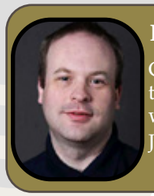
DR. IAN KAPLAN
Full Professor,
January 2019



DR. DOUG RICHMOND
Full Professor,
August 2017

MIKE HILL
CERIS Director,
October 2019

DAVID MCCLURE
CERIS Programmer/ Analyst,
January 2021



PRESTON WILEY
CERIS Manager Systems Support & Network Security,
June, 2017

Not Pictured:
Mark Fisher - 4/18 CERIS Programmer/Analyst

AMANDA WILSON
Academic Advisor,
January 2021

Awards

2020 Crown Leadership Award

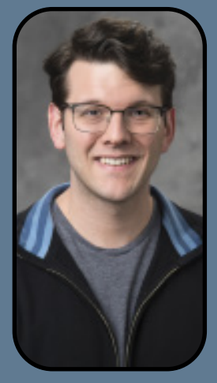
DR. GRZESIEK BUCZKOWSKI

Dr. Buczkowski was awarded this highly prestigious, lifetime achievement award sponsored by the Syngenta Group and presented by PCT Magazine in August of 2020.

Read more about this award here: http://crownleadership.pctonline.com/page/grzegorzbuczkowski/

USDA NIFA CARE Grant

DR. BROCK HARPUR



Dr. Harpur was awarded this grant for his proposal titled: Which bees are best: Testing the performance of commonly available honey bee stocks for Midwestern and Northeastern beekeeper. January 2020.

Read more about this grant here: https://www.wishtv.com/news/inside-indiana-business/purdue-professor-receives-usda-beekeeping-grant/

University of Minnesota, NCR SARE Grant

DR. LAURA INGWELL

Dr. Ingwell's Lab was awarded two grants from the University of Minnesota for her proposal: Improving two spotted spider mite management in high tunnel cucumber production; and to Catherine Terrell (MS student) for Utilizing black soldier fly larvae on urban farms for compost. Both September 2020.

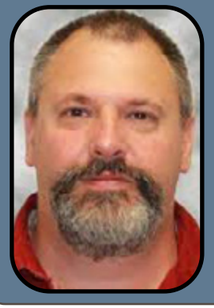
Read more about these grants here: https://northcentral.sare.org/news/ncr-sare-announces-2020-research-and-education-graduate-student-and-professional-development-awards/

Indiana State Department of Agriculture Specialty Crop Block Grant

DR. ELIZABETH LONG & DR. DOUG RICHMOND

Drs. Long and Richmond (pictured below) were awarded a Specialty Crop Block Grant from the Indiana State Department of Agriculture to develop best management practices for the Asiatic garden beetle in commercial mint production. September 2020.

Excellence in Extension Award, American Society of Agronomy

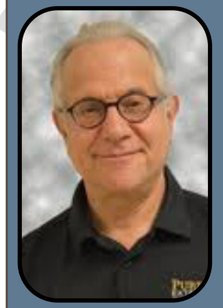


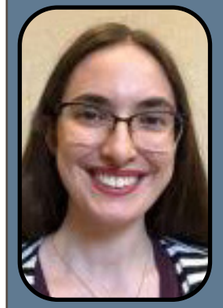
DR. DOUG RICHMOND

Dr. Richmond received this award from the University of Minnesota for his collaboration on Weed, Insect, and Disease Control for Turfgrass Producers, 1st edition. Published by Turfgrass Producers International. pp. 109. September 2020.

Outstanding Educational Materials Award, American Society of Horticulture Science

DR. CLIFF SADOF & DR. ELIZABETH BARNES





Drs Sadof and Barnes received this team award for their work on the The Purdue Landscape Report (PLR) which provides science-based, timely information for Midwest landscapes. Articles and supporting photos are created by members of the Purdue Landscape Report Team which consists of Purdue Extension Specialists and Diagnosticians in disciplines including Horticulture, Entomology, Plant Pathology, Urban Forestry and Turf Science. This information is intended to benefit commercial growers, garden centers, landscapers, arborists, and others who want to keep up with current landscape issues. Other team memers include: Kyle Daniel, Rosie Lerner, Tom Creswell, Janna Beckerman, John Bonkowski, Lindsey Purcell, Gail Ruhl, Todd Abrahamson, Lori Jolly-Brown and Kirby Kalbaugh.

Visit the website here: https://www.purduelandscapereport.org/

2020 W. K. Kellogg Foundation Community Engagement Scholarship Award

PURDUE IMPROVED CROP STORAGE (PICS)

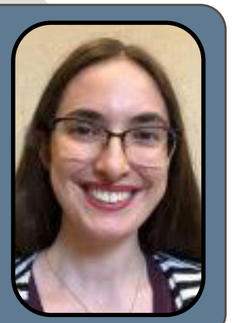
Dr. Dieudonne Baributsa is the PI of the PICS program which was selected as an "Exemplary Project" on the criteria of making exemplary strides to become more closely and productively engaged with communities through their teaching/learning, discovery, and service activities. September 2020.

Read more here: https://engagementscholarship.org/grants-awards/kellogg-award/2020

CONTINUED ON PAGE 12 (AWARDS)

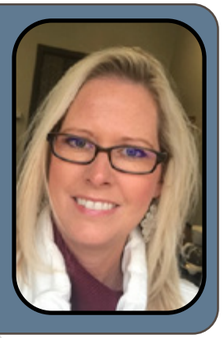
CONTINUED FROM PAGE 11 (AWARDS)

2020 ECOLOGICAL SOCIETY OF AMERICA COMMUNICATION & ENGAGEMENT SECTION'S SCIENCE COMMUNICATION POSTER AWARD



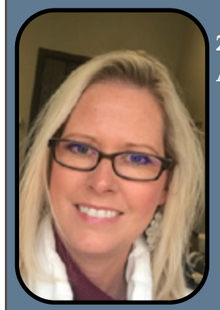
DR. ELIZABETH BARNES

OUTSTANDING SERVICE TO STUDENTS IN ENTOMOLOGY DECEMBER, 2020

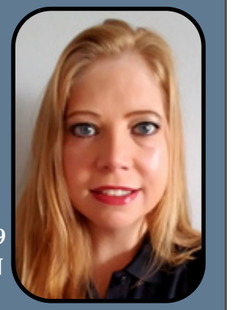


AMANDA WILSON

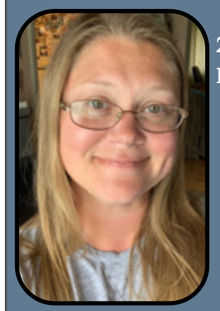
OUTSTANDING SERVICE AWARD



2020
AMANDA WILSON



2019
MARDELLE LORTON

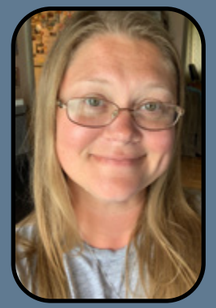


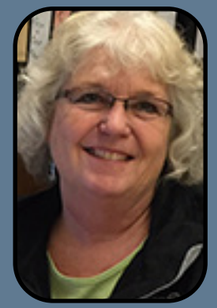
2018
HOLLY FLETCHER-TIMMONS

2017
MIKE HILL

COVID HERO AWARD DECEMBER, 2020

HOLLY FLETCHER-TIMMONS & TAMMY LUCK





Staff News

Krispn Given in addition to several other well-known honey bee researchers co-authored the book Honey Bee Medicine for the Veterinary Practitioner. The book covers many aspects of Apiculture. This book is written for veterinarian practitioners, veterinary students, veterinary technicians, scientist, and apiarist. Beekeepers are now dependent on their local veterinarians to write them a prescription for antibiotics if needed. Certain bacterial diseases that are treated with antibiotics include European foul brood (EFB). These will require a veterinary feed directive. Drugs that are needed through a (VFD) can be purchased from licensed distributors. This book creates an opportunity to build a better relationship between beekeepers and veterinarians in the future!

https://onlinelibrary.wiley.com/doi/abs/10.1002/9781119583417.ch29
https://www.google.com/books/edition/Honey_Bee_Medicine_for_the_Veterinary_Pr/1v0VEAAAQBAJ?hl=en&gbpv=1&dq=krispn+given&pg=PA363&printsec=frontcover

2017 John V. Osmun Alumni Professional Achievement Award in Entomology

Dr. Alberto Fereres

Dr. Alberto Fereres is the 2017 recipient of the John V. Osmun Alumni Professional Achievement Award in Entomology. Dr. Fereres received his BS in Agricultural Engineering with a focus on Entomology from the Polytechnic University of Madrid (ETSIA) in 1983, and his MS in Entomology from Purdue (1987). After returning to ETSIA he completed his PhD in 1987. Between his BS and MS, Alberto worked as a researcher for Shell Agrichemicals and obtained a two-year fellowship from the Spanish National Institute of Agricultural Sciences (INIA). Alberto returned to the US in 1989 to study transmission of aphid vectored viruses with Dr. Thomas Perring at the University of California in Riverside.

Dr. Fereres launched his research career at the National Institute of Agricultural Sciences in Madrid, Spain (1988-1990) where he served as a Researcher. He then moved to the Center of Environmental Sciences, Institute of Agricultural Sciences (ICA) and Spanish Research Council (CCMA-CSIC) in Madrid where he has served in various research and administrative positions up to the present. These include Researcher (1990-1999), Principle Researcher (1999-2005), Vice Director (1991-2001) and Director (2006-2011). Dr. Fereres also served as a visiting scientist during his 1997 sabbatical leave at the University of Illinois. He voluntarily stepped down from his administrative positions in 2011 to be the team leader of the "Insect Vectors of Plant Pathogens" at CSIC.

Alberto has been awarded in excess of forty competitive grants from governmental agencies for his studies, mostly in the areas of plant virus epidemiology, vector behavior, and virus management in cropping systems, even though the breadth of his research agenda and grants far exceeds the bounds of these topics. Knowledge generated from this support has put Alberto and his lab in the national (Spain) and international spotlights for high achievement and innovation in the area of plant virus epidemiology as it meshes with ecology, behavior, and the environment.

2017 Coordinating Board for the John V. Osmun Alumni Professional Achievement Award in Entomology

Rick Foster, Chair
Paul Cammer (MS '74, PhD '85)
Michael Garvey
Ameya Gondhalekar
Ian Kaplan
Christian Oseto
Arwin Provonsha
Trevor Stamper
Bob Waltz (MS '82, PhD '86)
(Date signifies Purdue graduate)

2018 John V. Osmun Alumni Professional Achievement Award in Entomology

Dr. Robert "Bobby" Corrigan

Dr. Robert “Bobby” Corrigan is the 2018 recipient of the John V. Osmun Alumni Professional Achievement Award in Entomology. Dr. Corrigan received his AA degree in Pest Control from the State University of New York Farmingdale in 1972, and his B.S., M.S., and PhD degrees in Entomology (Urban/Industrial Pest Management) from Purdue University in 1977, 1980, and 1996, respectively. He worked for the Urban Pest Management Program at Purdue from 1981 until 1997, when he left to establish his own company, RMC Pest Management Consulting, which he continues to this day. Since 2003, he has also served as a Senior Research Scientist for Pest Control Services in the New York City Department of Health.

Dr. Corrigan is widely known as one of the world’s leading experts in rodent control. His pioneering research in the behavior of urban rodents has revolutionized rodent pest management, all while working to further restrict rodenticide labels to reduce impacts on human health and the environment. Dr. Corrigan has published over 160 technical articles and has authored or co-authored 2 books and 4 book chapters. He has lectured in 46 states and 12 countries. In 2005, he received the EPA’s IPM award for his novel approaches to pest control and food safety.

For all of his achievements, Dr. Corrigan is known for conducting himself in a humble and professional manner. While at Purdue, he often taught students how to make an effective presentation, even though that was not part of his job. He is proud to be a Boilermaker, often injecting something in his presentations about Purdue. Dr. Corrigan frequently returns to Purdue to speak at the Purdue Pest Control Conference, where he is one of the most popular speakers.

2018 Coordinating Board for the John V. Osmun Alumni Professional Achievement Award in Entomology
Rick Foster, Chair
Paul Cammer (MS ’74, PhD ’85)
Mathew Dittmann
Ameya Gondhalekar
Ian Kaplan
Trevor Stamper
Bob Waltz (MS ’82, PhD ’86)
(Date signifies Purdue graduate)

2019 John V. Osmun Alumni Professional Achievement Award in Entomology

Stoy Hedges

Mr. Stoy Hedges is the 2019 recipient of the John V. Osmun Alumni Professional Achievement Award in Entomology. A native of Mooresville, IN, Mr. Hedges received his B.S. degree in Entomology (Urban/Industrial Pest Management) from Purdue University in 1981. He started work in the Pest Management industry even before graduating from Purdue, starting with Mooresville Pest Control in 1979. Following graduation and up through 2014, he worked in a variety of technical manager/specialist roles with Pest Management firms across the Midwest and Southern USA, concluding with a highly successful 24 year stint with Terminix as their senior technical professional Entomologist. Since 2014 he has run his own successful company, Stoy Pest Consulting.

Mr. Hedges’ impact on the field of Pest Management has been immense through roles as a conference educator (including a 26 year continuous stint presenting at the Purdue Pest Management Conference) and author of first-of-a-kind field manuals for pest control technicians. He has served as the editorial director for the last three editions of the Mallis Handbook of Pest Control (the 1600 pg. industry ‘bible’) and written over a hundred articles for Pest Control Technology and Service Technician Magazine, which are peak industry publications. For these and other contributions to industry leadership, he has received many awards including the 1997 PCT Magazine Professional of the Year, 2000 PCT Magazine “25 Most Influential Persons in the Pest Control Industry” and in 2013 was elected to the Pest Management Hall of Fame.

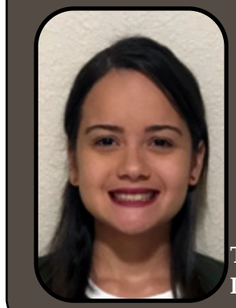
Across his long career in the Pest Management industry, Mr. Hedges is known as a perpetually friendly, helpful and mentoring professional and as an industry educator he has few peers. Stoy is an ambassador for Purdue University and the Department of Entomology, wearing the Purdue pride gear wherever he goes.

2019 Selection Committee for the John V. Osmun Alumni Professional Achievement Award in Entomology
Stephen Cameron, Chair
Paul Cammer (MS ‘74, PhD ‘85)
Mathew Dittmann
Ameya Gondhalekar
Ian Kaplan
Christian Oseto
Trevor Stamper
Bob Waltz (MS ‘82, PhD ‘86)
(Date signifies Purdue graduate)

Entomology Student Awards

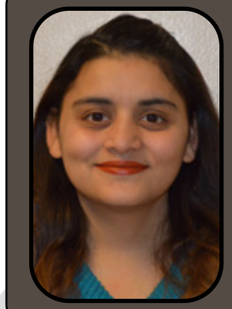
BILSLAND FELLOWSHIP
JANUARY, 2020

SUDIP GAIRE



CARVER FELLOWSHIP
AUGUST, 2020

TEOMIE RIVERA-MIRANDA

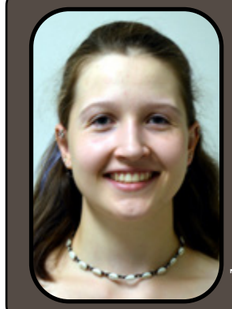


PI CHI OMEGA NORM EHMANN AWARD
MAY, 2020

RAJANI SAPKOTA

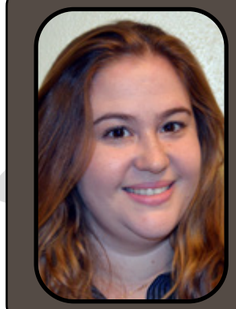
OUTSTANDING ENTOMOLOGY STUDENT SERVICE AWARD
DECEMBER, 2020

WADIH GHANEM



OUTSTANDING MS STUDENT IN ENTOMOLOGY
DECEMBER, 2020

TAYLOR NELSON



OUTSTANDING PHD STUDENT IN ENTOMOLOGY
DECEMBER, 2020

RAQUEL PERON

Student Spotlight

MARIAN RODRIGUEZ-SOTO

As an undergraduate in agricultural sciences at the University of Puerto Rico – Mayaguez Campus, Marian Rodriguez-Soto enrolled in the Natural Resource Career Track (NRCT) program, which led her to two internships. The first, with a nonprofit organization that managed a butterfly sanctuary program, was her first experience with insects. "My job was to take care of the butterflies but also the people that visited," she says. The second internship took her to a USDA lab in Beltsville, Maryland, where she studied the coffee berry borer and learned to do research. Rodriguez-Soto, who grew up in the small town of Maunabo on the southeastern coast of Puerto Rico, didn't realize that entomology was even an academic option, but the combination of internship experiences convinced her to pursue a career in the field. Through the Summer Research Opportunities Program (SROP), a Big Ten Academic Alliance program to encourage underrepresented students to pursue graduate study and research careers, she spent eight weeks at Purdue researching the hairy fungus beetle. "I liked the Department of Entomology and contacted many different professors to talk about research programs," she says. Among her faculty contacts was Douglas Richmond, professor of turfgrass entomology and applied ecology. When Rodriguez-Soto returned to Purdue in June 2018 as a master's student, Richmond became her co-advisor with Laramy Enders, assistant professor of entomology.

THE RESEARCH

"In the Soil Insect Ecology Lab we focus on turfgrass pests, and I work with billbugs," Rodriguez-Soto says. The larvae of these grass-feeding weevils damage turf. "Billbug" is a common name for many different species, each with a different seasonal biology — distinct timing, populations and number of generations throughout the year. The larvae of the different species look the same, however, so Rodriguez-Soto is using DNA barcoding to tell species apart and track their populations through one growing season in one region of the United States. "This is important to turfgrass growers," she says. Knowing when a certain larvae will be present allows the growers to target a particular life stage in the pest at a specific time and prevents the potentially ineffective prophylactic use of insecticides.

OPPORTUNITIES

Rodriguez-Soto seizes every opportunity to present her research, determined to build her English fluency and confidence. That could mean attending an entomology conference, talking with growers at a turfgrass field day or meeting members of the landscape industry. "Since I got here through SROP, I also felt the need to give back to the office that brought me here," she says. Through the Office of Graduate Diversity Initiatives, she works with the Louis Stokes Alliance for Minority Participation, a program to increase the number of students in STEM bachelor's degree programs, especially from underrepresented groups.

FUTURE PLANS

Rodriguez-Soto will finish her program in December and is keeping her options open. While she would like to work in entomology extension, preferably in the Midwest, she also is considering pursuing a PhD. In her spare time, she enjoys spending time outdoors. At pitch-in dinners with her fellow graduate students, Rodriguez-Soto is always in charge of dessert, with flan as her specialty.

"What I really like about this research is that we are using genetic tools usually related to basic science in an applied way to understand the seasonal biology of this insect."

—Marian Rodriguez-Soto

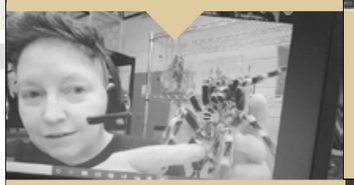
https://ag.purdue.edu/arge/Pages/Spotlight-Rodriguez-Soto.aspx

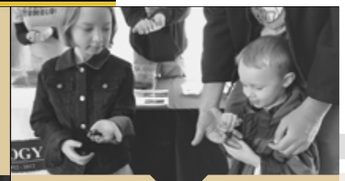
ENTOMOLOGY OUTREACH 2020

EFFECTS OF A PANDEMIC

COMPARED TO 2019:

1,700%
INCREASE IN DIGITAL PROGRAM DELIVERY





72% **DECREASE** IN CONTACTS AT LARGE OFF-CAMPUS EVENTS

640%
INCREASE IN TEACHERS REACHED VIA PROFESSIONAL DEVELOPMENT PROGRAMS

44% **DECREASE** IN OUTREACH PROGRAM REQUESTS

200%
INCREASE IN 4H PROGRAMS

57% **DECREASE** IN BUG BARN VISITS

PURDUE EXTENSION

1. Total Digital Programs in 2019 =1; 2020 Digital Programs N=18
2. Total Teachers reached via Professional Development Programs 2019 =12; 2020 Teachers in Professional Development Programs =89
3. Total 4H Programs in 2019 =1; 2020 4H Programs =3
4. Total students reached via Large Off-Campus Events in 2019 =8168; 2020 Students reached in Off-Campus Public Events =230. Does not include Bug Bowl; University closed March 16 in 2020.
5. Total 2019 Program Requests N=71;2020 Program Requests N=43
6. Total Students visiting Bug Barn in 2019 =183; 2020 Bug Barn Visits N=89

Read more here: https://ag.purdue.edu/stories/education-is-multidimensional-how-agriculture-staff-and-students-are-reaching-grades-pk-12-during-a-pandemic/

Remembering the Life and Legacy of Virginia Ferris

The College of Agriculture mourns the loss of Professor of Nematology Virginia Ferris, who passed away on August 14. "In her more than 50 years in the Department of Entomology, she was one of the world's leading experts on the soybean cyst nematode, a destructive plant parasite that has cost producers millions of dollars in crop damage," said Karen Plaut, interim dean of the College of Agriculture. "She also had a significant influence on the department's teaching, research, extension, and culture."

BLAZING A TRAIL

In the early part of her career, Virginia Ferris conducted research under a microscope, often from the spare bedroom in her home. Her passion for science never waned, and as the first woman appointed to the Purdue Agriculture faculty, Ferris helped pave the way for women in agriculture as research methods simultaneously advanced.

"Even after the advent of molecular methods, you had to grow large numbers of nematodes to find the molecular sequence you wanted," she said in an earlier interview. "Discoveries in molecular biology now make it possible to get vast amounts of DNA out of a single nematode." Though Ferris' later research no longer required observation of the tiny worms—just extraction of their DNA—she kept the microscope, a device that she had been fascinated with in her youth. "When you compare what scientists find at the molecular level today with conclusions they based solely on microscope observations back then, many of their early conclusions still hold true today," she said in the interview.

After years of research that combined traditional science methods and advances made possible by genomics, Ferris, along with fellow researchers who included her husband, the late John Ferris, Jamal Faghihi, and Rick Vierling, identified genes in soybeans that provided resistance to the cyst nematode, a pest that has cost farmers millions in crop losses. The Purdue-patented technology, licensed as CystX®, is now commercially available in many soybean varieties. The research earned the group the 2001 Purdue Agriculture Team Award, which honors the achievements of faculty and staff who collaborate on interdisciplinary teams.

Ferris' groundbreaking research was one more step in a groundbreaking career.

Ferris' passion for science began early in life. After high school, she packed her bags and a consuming interest in biology and left small-town Kansas for Wellesley College on the East Coast. At the all-women's college, she found a competitive academic environment, female professors to serve as role models, and the self-confidence to more than hold her own when she entered Cornell University as the only female incoming graduate student in plant pathology.

Her years at Cornell shaped both her professional and personal life. She earned a Ph.D. in plant pathology, joined the Cornell faculty as an assistant professor, and began research in nematology. It was there that she met and married John Ferris, her colleague, major collaborator, and best friend until his death in 2000.

The couple left New York for the Midwest in 1956. "I used my last month's paycheck from Cornell to buy a microscope," Ferris said in the interview. It was difficult for women to obtain faculty positions, particularly in the conservative Midwest, so she set up a home lab and did research as a freelance consultant, first in Illinois and then in West Lafayette, when John joined the Purdue entomology faculty in 1958.

"Nematology was a young science," Ferris noted in the interview. "I grew up right along with it." She worked tirelessly, conducting research, editing professional journals, lecturing, and networking with other scientists. With their two children in tow, the Ferrises traveled extensively, collecting different species of nematodes, often processing soil samples in hotel bathrooms. She was already one of the foremost experts on nematodes when she was appointed to the Purdue Agriculture faculty in 1965.

MENTORING OTHERS—IN THE LAB AND ON CAMPUS

By 1974, she was a full professor in the Department of Entomology, having already added associate professor, assistant dean of the graduate school, and assistant provost to her résumé. By then she'd also been president of the Society of Nematologists, associate editor of the Journal of Nematology, and recipient of the Helen B. Schleman Gold Medallion Award, annually bestowed by Purdue's Mortar Board chapter to a faculty or staff member for contributions to Purdue, especially in the promotion and advancement of women students and women's issues.

"Few careers with which I have been made aware share the breadth of reach and stretch of scholarship demonstrated by the career of Dr. Virginia Ferris," said Robert Walz, Indiana's state chemist and seed commissioner, and a former colleague and student of Ferris. "She exemplified the authority of a respected academic pedagogue with high professional expectations of her students," he wrote in a letter recommending her for the Purdue Agricultural Alumni Association 2017 Certificate of Distinction.

Ferris spoke often about the role of women in science and academia. Some of her listeners "find the stories hard to believe," she said in an interview this year for the Certificate of Distinction. "Women have proven themselves — there's no question about it." And Virginia Ferris paved the way for many of them by proving herself through her scientific achievements and dedication to the pursuit of research excellence.

https://ag.purdue.edu/envision/remembering-virginia-ferris/

Alumni News

Dr. Robert (Bob) Anderson, (MS, 1966; PhD, 1968) sends regards to friends of the period. After nearly 40 years in academia (Biological Sciences, Idaho State University), I retired in 2007, and remain engaged with Cricket Science, a small enterprise started in 1991 and continuing today as an on-line venture. I am fortunately still healthy, married to the same Marianne I married on April 1, 1967 in West Lafayette, and soon will be 8 decades old (young?). I've enjoyed meeting many past and present Purdue entmology students and faculty at annual meetings of the ESA, where I exhibited annually as Cricket Science until 2017 (Denver). The 2021 Conference will be convening again in Denver, and 'though I won't be hosting an exhibit, I hope to see others of Purdue's extended entomology family at the conference this year.

Anderson's booth at ESA

John Burton was a regular colleague and '60s Purdue grad who attended these meetings without fail, and I caught him waving a hearty hello to "chag" (after Chagas and a nickname he applied to me…) at the 2017 Denver ESA Conference as he approached the Cricket Science booth. Greetings, John; hope to see you and others again in Denver October 31-Nov. 3, 2021!

John Burton

Dr. Mike Merchant (MS, 1984) retired from Texas AgriLife Extension Service after 31 years, and moved to Bellingham, WA. He and his wife Heather are enjoying the change of scenery and learning new plants and insects of the Pacific NW.

Read more here: https://citybugs.tamu.edu/2020/09/19/dr-mike-merchant-retires-after-30-years-with-extension/

Dr. Mark Shelton (MS, 1980) and my wife, Kathleen (Purdue Entomology 1979) have been enjoying time with our 3 granddaughters and traveling, gardening, and in my case, fly fishing. We have 3 adult kids, all married, living in Ojai, CA, Seattle, WA, and Boulder, CO. I became president of our local fly-fishing club in January, so am busy with that. Also enjoy being a Rotarian and regular volunteer at our local food bank. I retired last June after 5 years of part-time teaching and 33 years full-time teaching/administration before that. Now I teach entomology to my granddaughters and people of all ages through our fly-fishing club. We enjoyed the recent entomology reunion zoom with Tom & Chris Turpin, Larry Bledsoe and others.

Charlie Agnew (BS, 1978) retired from Cook Medical of Bloomington, Indiana on December 31, 2020 after 30 years. He and his wife Donna plan to remain in West Lafayette to enjoy retirement and help look after their two young grandchildren.

Our condolences to Harry Moore (MS, 1955) whose wife, Nancy, passed away on August 29, 2020 after a long illness.

https://www.legacy.com/obituaries/newsobserver/obituary.aspx?n=nancy-berryman-moore&pid=196741430&fhid=6292

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Help us show the world what it means to be a Boilermaker on Purdue Day of Giving!

Give yourself a reminder for April 28th, and help support the Department of Entomology! Thanks in advance for your support! To contribute visit: https://goo.gl/KDnXrV

PURDUE DAY OF GIVING 04|28|21

Calendar 2021

April

12 ***DIGITAL BUG BOWL***

28 ***PURDUE DAY OF GIVING***

October

1 ***OSMUN AWARD PRESENTATION***

From the editor

With each issue of **Boiler Buzz** we keep you up to date on what's happening in the Department of Entomolgy and with Alumni. Please take a moment to let us know any of your own updates.

Holly Fletcher-Timmons - Editor, **Boiler Buzz**
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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:
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