SUMMER 2021 VOL.01, NO. 1

CONNECTIONS

Department of Entomology and Plant Pathology Newsletter

Greetings from your Department of Entomology and Plant Pathology

The last few years have seen a lot of changes in your former department. The biggest has been the merger of two formerly independent programs into one academic unit. What has this meant for the department? Well, we still maintain separate graduate programs in entomology and plant pathology. Going forward, we will adopt our course curricula to take advantage of some overlap in the disciplines and the needs of students in both programs. Most importantly, we continue to serve the citizens of Arkansas, conduct high-quality research, and have the pleasure of teaching some of the very best students in our disciplines. I was recently named as Department Head for the new ENPL department, which followed several years of interim leadership in both former departments.

The faculty, staff and students are to be commended for stepping up and working to make the new department a success.

Although there have been challenges because of the merger, the opportunities and new ideas that have emerged far outweigh any concerns about loss of identity. Rather than a dilution within either discipline, it seems clear to me that a strong synergism has materialized. Robust collaborations between entomologists and pathologists have already developed. Departmental programs centered in Cooperative Extension, the Bumpers College, and the Ag Experiment Station continue to work together to get the job done. We anticipate important growth with new faculty hires in the coming year, which will only intensify our outputs and performance.

As alumni, former members, and friends of our department, we welcome your input and questions. Feel free to reach out any time if you want to share information or discuss what is going on here in the department.

Best wishes,

Ken Korth
Professor and Department Head
kkorth@uark.edu

IN THIS ISSUE

Ken Korth

DIVISION OF AGRICULTURE RESEARCH & EXTENSION University of Arkansas System
UNIVERSITY OF ARKANSAS Dale Bumpers College of Agricultural, Food & Life Sciences Entomology & Plant Pathology

Congratulations

Recent Graduates from ENPL

The Department of Entomology and Plant Pathology graduates from Spring 2019 to Summer 2021

Summer 2021:

Kelsey Cline. M.S. ENTO
Faculty Advisor: Ashley Dowling
Thesis: Systematics of Eastern North American *Podothrombium* (Parasitengona: Podothrombiidae

Roshani Sharma Acharya. Ph.D. ENTO
Faculty Advisor: Neelendra Joshi
Thesis: Establishment of Pollinator Habitat within a Livestock Pasture Ecosystem

Stephen Robertson. Ph.D. ENTO
Faculty Advisor: Ashley Dowling
Thesis: Nocturnal Pollination in Fruit Agriculture

Kathryn Haydon. Ph.D. PLPA
Faculty Advisor: Ken Korth
Rice from Paddy to Pantry to Plate: Mitigating Rice Blast Disease with Saponins of Medicago, Improving Shelf Life with CRISPR, and Exploring Global Cuisine through Text Analysis

Spring 2021:

Haylee Campbell. M.S. ENTO
Faculty Advisor: Kelly Loftin
Thesis: Survey of Ticks and Tick-borne Pathogens Associated with Feral Swine (*Sus scrofa*) in Arkansas

Hillary Fischer. Ph.D. ENTO
Faculty Advisor: Fiona Goggin
Thesis: The Influence of Singlet Oxygen and Loss of Function of Fatty Acid Desaturase 7 in the Chloroplast on Aphid Resistance in *Arabidopsis thaliana*

Ava Wait. M.S. PLPA
Faculty Advisor: Ioannis Tzanetakis
Thesis: Characterization, Incidence, and Epidemiology of Two Novel Strawberry Rhabdoviruses

Fall 2020:

Cullen Shaffer. M.S. PLPA
Faculty Advisor: Ioannis Tzanetakis
Thesis: The virome of peony and the population structure of its most prominent viruses

Summer 2020:

Ali Abed Ali. Ph.D. CEMB
Faculty Advisor: Burt Bluhm
Thesis: Introducing an Indigenous Non-Toxigenic *Aspergillus flavus* Strain Isolated From Iraqi Corn Grains as a Bio-Control Agent to Reduce Aflatoxin Contamination in Corn Grains

Fakhir Eraheem Hameed Al Shuwaili. Ph.D. CEMB
Faculty Advisor: Burt Bluhm
Taxonomic and Genetic Diversity, and Pathogenicity of *Diaporthe* Species Associated with Soybean

Congratulations cont.

Recent Graduates from ENPL

Nawaraj Dulal. M.S. PLPA
Faculty Advisor: Martin Egan
Thesis: Dissecting the Cellular Control of Septin Organization in a Global Cereal Killer

Laura Ortega. M.S. PLPA
Faculty Advisor: Clemencia Rojas
Thesis: Parallel strategies to control Bacterial Panicle Blight of rice

Spring 2020:
Austin Goldsmith. M.S. ENTO
Faculty Advisor: Kelly Loftin
Thesis: The Discovery of *Metarhizium anisopliae* (Metchnikoff) Sorokin Isolates from Arkansas and their Pathogenicity to *Amblyomma americanum* L.

Fall 2019:
Catalina Rodriguez-Puerto. M.S. PLPA
Faculty Advisor: Clemencia Rojas
Thesis: Pseudomonas syringae pathogenesis: a tale of two effectors

McKayla Patterson. M.S. PLPA
Faculty Advisor: Terry Spurlock
Thesis: Use of Aerial Imagery and Novel Experimental Design to Determine the Distribution of Foliar Diseases on Soybean and Improve Efficiency of Product Testing

Tracy Hawk. M.S. PLPA
Faculty Advisor: Travis Faske
Thesis: The effect of seed-applied fluopyram on *Meloidoygne incognita* root penetration and development in cotton and soybean

Summer 2019:
Marcio Zaccaron. Ph.D. PLPA
Faculty Advisor: John Rupe
Thesis: Studies on Pathogenesis of the Diseases Caused by *Macrophomina phaseolina* and *Phomopsis longicolla* on Soybean

Spring 2019:
Layton McCullars. M.S. ENTO
Faculty Advisor: Gus Lorenz
Thesis: The Impact of Fall Armyworm, *Spodoptera frugiperda* (J.E. Smith), Feeding and Mechanical Defoliation on Growth and Yield of Rice, *Oryza sativa* (L.)

Justin Bailey. M.S. PLPA
Faculty Advisor: Terry Spurlock
Thesis: Factors Influencing the Spatial Distribution of Southern rust in Corn

Katie Wilkinson. M.S. PLPA
Faculty Advisor: Clemencia Rojas
Thesis: Mining for biological control agents against *B. glumae*, the causal agent of bacterial panicle blight of rice

John Ridenour. Ph.D. PTSC
Faculty Advisor: Burt Bluhm
Thesis: Investigating the connection between light, a circadian clock, and pathogenesis in *Cercospora zeae-maydis*

Alumni Updates

We Love to Hear from our Alumni

Richard Leschen

M.S. Entomology, 1988.
Advisor: Robert T. "Tommy" Allen

My beetle systematics work began modestly via an MS at U of A, a faunistics study of Arkansan fungus-feeding beetles. As PhD student at the University of Kansas, the research broadened to include global systematic studies, and in New Zealand, an emphasis on antipodean forms. From humble beginnings in the woody hills of the Ozarks and Ouachitas, I wouldn't have predicted that the world of beetle systematics would provide gateway to travel the Americas, boat to remote islands, and helicopter into montane back country in search of beetles and endless eureka moments. Nor would I have ever imagined that I'd visit great museums in Europe and elsewhere or been involved with workshops and courses in China, Czech Republic, Costa Rica, and Arizona. Most of all, I cherish friends and colleagues I've met along the way and am fortunate to have shared these experiences with them.

Rich Leschen (left) is pictured here on a visit to the Museum d'histoire Naturelle, Geneva, Switzerland, along with Ivan Lobl (center), retired Head of entomology and Museum Curator; and Ales Smetana (right), retired Senior Research Scientist with Agriculture and Agri-Food Canada.

Sunny Hoffman

M.S. Plant Pathology, 2001.
Advisor: Rose Gergerich

I have lived in Columbia, MO, since graduating in 2001. I am very happily married with four children (ages 7, 14, 19, 24 (stepson)). My husband and I are getting ready to build our dream home. In the meantime, we like to camp and figure out how to afford lumber.

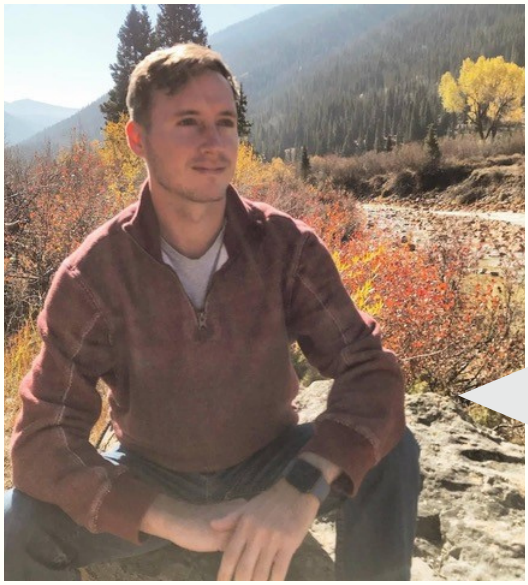
When I left the U of A, I started work as a molecular biologist in veterinary diagnostics at the University of Missouri. It was interesting work and I got to be on the front lines of several outbreaks like West Nile and Bird Flu, I performed all of the electron microscopy diagnostics for the lab, and was involved in foreign animal disease surveillance. During this time I also worked toward an MPH with an emphasis in veterinary public health. About 15 years into the position, the Director of Environmental Health & Safety called to see if I'd be interested in moving over to his department to help with biological safety. Suffering from a case of Pipette Thumb, I gladly accepted.

Within a few months, I was named the Biological Safety Officer for the University. MU has a large Plant Science department, so my background really helped me step into that role. After a couple of years, I was named the Laboratory Safety Manager for the University. The deal about working in safety is that a boring day is a good day.

If you go home and nothing happened at work, that's good. I wasn't feeling it, though. In 2017, I was diagnosed with breast cancer. After going through surgery, chemo, and radiation, I had a good look at where I was and what I wanted my focus to be—pretty typical, I think. Sounds cliché, but I wasn't pouring hope and positivity into people like I wanted to do with my life. In 2020, I had the opportunity to move over to my current position with Clinical Biosafety Services. We work with clinics and hospitals as they begin human gene transfer research. This past year we have been working a lot with COVID trials, and we work with several oncology and rare disease trials. I absolutely love being a part of this, and I would not be here if it were not for my time spent at the U of A. I'm a Hog through-and-through, even though I live in the heart of Tiger country.

Alumni Updates cont.

We Love to Hear from our Alumni



Jake Bodart

M.S. Entomology, 2017.
Advisor: Fred Stephen

After graduate school I was lucky to continue my career track in entomology and working with invasive and native pest species. I started right away at the Arkansas Department of Agriculture (formerly Arkansas State Plant Board) as an Entomologist and State Survey Coordinator for two years. With the leadership and guidance from fellow University of Arkansas Alums, Joel Bard and Chandler Barton, I was able to expand awareness of invasive pest insects, learn the intricacies of plant quarantines, and help introduce biological control agents for Emerald Ash Borer.

In 2019, I accepted a new role with the Oregon Department of Agriculture as the Manager of the Insect Pest Prevention & Management Program. This role has allowed me to expand upon my experiences in Arkansas and implement keen entomological and program management skills. Through a strong collaborative network, the program has been able to tackle multiple invasive species and pest management projects statewide. Some of the projects the program implemented to protect the natural and agricultural resources in Oregon include: Lymantria dispar asiatica, Lymantria dispar dispar, Japanese beetle, grasshopper and Mormon crickets, light brown apple moth, biological control of brown marmorated stink bug, and invasive woodborers. I am fortunate to continue in a career path where I am able to utilize all of my educational background, career interest, and passion on a daily basis. I am very humbled to join ODA and work with a very large team of fellow passionate entomologists and colleagues.

Meet New Faculty

We are fortunate that several outstanding new faculty have joined us in the past several years.

Emily McDermott

Started at U of A: October 2020
B.S., The Ohio State University
PhD., University of California, Riverside

Research/Extension areas of interest:
My main area of research is the ecology and control of arthropod vectors of livestock pathogens. In particular, I'm interested in Culicoides biting midges, which transmit bluetongue and epizootic hemorrhagic disease viruses to wild and domestic ruminants.

About:
I'm originally from Cape Cod, MA, and prior to moving to Fayetteville, I lived in Washington DC for three years. On the weekends, my husband and I like to go hiking with our dogs, Finn and Mocha. The Fossil Flats trail in Devil's Den is our favorite spot

Ben Thrash

Started at U of A: August 2018
B.S., U of A Fayetteville, Major: Crop Science Minor: Pest Management
M.S., U of A Fayetteville, Entomology
PhD., Mississippi State, Entomology

Research/Extension areas of interest:
My program is focused on insect management in soybean, cotton, sorghum, and corn.

About:
I grew up on a soybean, rice, corn, and cattle farm outside of Conway, AR. I enjoy hunting, fishing, woodworking, and winemaking.

Alejandro Rojas

Started at U of A: October 2018
B.S., Universidad de los Andes (Bogota, Colombia)
M.S., Michigan State University
PhD., Michigan State University

Research/Extension areas of interest:
My research focuses on the interaction of plant and root-associated microorganisms and their effects on plant growth and health.

Research Contd. These include the interaction between fungal and oomycete pathogens, fungal endophytes, and other guilds that are present in agricultural and natural ecosystems.

About:
I am from Colombia, but I have lived in the US for 13 years now. We are a family of plant pathologists, my wife Luisa worked with phytopathogenic bacteria, and we have three kids. During our free time, we enjoy taking care of our vegetable garden at home, and mushroom hunting with the kids.

Recent Events

Farmers' Market

The Entomology and Plant Pathology graduate students hosted a booth at the local Fayetteville Farmers' Market this summer! Each week the student groups switched off running the outreach and diagnostic booth until August 14th.

Field Trips

The Diseases of Economic Crops class with their mushroom treasure.

J & M Mushroom Farm

The Diseases of Economic Crops class visited J&M Mushroom Farm in Miami, OK on June 2nd. They enjoyed learning about mushroom production and diseases, and went home with a bounty of portabellas!

Tomato Field Trip

A group of Entomology and Plant Pathology graduate students took a trip to Warren, AR, and toured area tomato fields with professor Jim Correll and extension agent John Gavin.

The Diseases of Economic Crops class in the tomato fields.

EXTENSION UPDATES

Horn Fly Demos

Dr. Kelly Loftin, Livestock Entomologist, and county agriculture extension agents assessed different cattle groups at the University of Arkansas Southwest Research and Extension Center earlier this summer. They took part in a horn fly demonstration by applying a variety of fly controls to untreated cow groups. Some participants will return weekly to evaluate the efficacy of the various treatments applied to the cattle.

UPCOMING EVENTS

Sept 10 – Come as You Arkansas

The University of Arkansas is celebrating the 150th anniversary of its founding. It will be an all-day campus-wide event that is open to everyone who wishes to attend. Alumni, new visitors, families, faculty and staff are all encouraged to stop by!

Retired Faculty

Recent Retirements from ENPL

The past few years have seen the retirement of several of our outstanding faculty members.Their innumerable contributions to our institution and the state of Arkansas are to be admired. Each one made important impacts within their discipline, and they served as valued teachers to students, stakeholders, and colleagues.

John Hopkins. Retired, November 2020. Professor, Extension Entomologist. Urban entomology focusing on pest management education in the areas of household pests, turf and ornamental pests, and fire ant management.

Rick Cartwright. Retired, June 2020, Associate Vice President–Agriculture Extension, Director of Cooperative Extension Service, Extension plant pathologist. Ecology and management of rice diseases.

Fred Stephen. Retired, June 2020. University Professor, Entomologist. Ecology and dynamics of forest insect populations.

Donn Johnson. Retired, January 2020. Professor, Entomologist. Development and demonstration of pest management strategies for production of fruits, rice and pecans.

Robert Wiedenmann. Retired, September 2019. Department Head, Professor, Entomologist. Biology and management of exotics and invasive species.

Terry Kirkpatrick. Retired, June 2019. Interim Department Head, Professor, Nematologist. Ecology and management of nematodes.

Robert Robbins. Retired, February 2019. University Professor, Nematologist. Population biology and identification of nematodes.

Craig Rothrock. Retired, November 2017. Interim Department Head, Professor, Plant Pathologist. Ecology of soilborne plant pathogens and impacts of seedling pathogens.

CONNECT WITH US

Alumni, we would love to hear from you! Reach out to us with updates or let us know how you are using that ENPL degree at enpl@uark.edu. We would love to feature you in our department newsletter.

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