

BioBriefs

The Annual Newsletter of the Department of Biological Sciences
 Eastern Illinois University

Message from the Chair *BIO Excels Despite the COVID Storm*

Greetings Alumni, Annuitants, and Friends. The Department of Biological Sciences and EIU are gearing up for a full return to a bustling, “back to normal” campus experience this fall semester. This is a welcomed change.

It has been some time since spring 2020, when COVID-19 hit the U.S. and EIU responded with a rapid retooling of course delivery after spring break. Social distancing and masking were required during the academic year, with many classes going online and face-to-face classes moving to large spaces where 6-foot distancing could be achieved. Nearly all BIO lectures were delivered outside of the Life Sciences building. Even Room 2080, the large 80 person lecture hall, only had a 17 student capacity. Class sections with labs were capped at 24 students and laboratory sessions were delivered in several formats: group A/B with every other week meetings face to face and online assignments in alternate weeks; group A/B and breaking 3 hour labs into two shorter sessions; meeting in two adjacent classrooms; going completely online with self-written labs or virtual labs purchased through online vendors such as RedShelf and Labster. Through it all, EIU and the Department of Biological Sciences rose to the challenge to find creative ways to deliver course content and to continue research endeavors while social distancing, as well.

Research has remained strong despite the pandemic and the budget issues that followed. Our faculty produced 26 publications in peer-reviewed journals in 2020, and 22 publications in 2021. Notable achievements by BIO faculty over the last two years include:

Gordon Tucker received a full Professional Advancement Increase.

Scott Meiners received the 2021 Raney Outstanding Graduate Faculty Mentor award for the Graduate School.

Five summer Council for Faculty Research (CFR) awards went to BIO faculty in summer 2020 and six were awarded in 2021.

Britto Nathan received the Graduate Dean’s Award of Excellence in Research or Creative Activity two years in a row.

Many faculty members were recognized for teaching, research, and/or service with Achievement and Contribution (ACA) awards and many received Redden grants to support equipment purchases for classroom use and instructional development.

Paul Switzer was named 2021 recipient of the Luis Clay Mendez Distinguished Service Award by the EIU Faculty Senate. This is one of the most prestigious honors available to EIU faculty.

Rob Colombo is the 2022 recipient of the Bud May Award for Outstanding Achievement in Research and Grants from the Graduate School.

Eden Effert was awarded a 2022 EIU Student Impact Grant for Faculty Mentors from the Office of Research and Sponsored Programs.

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 See ‘COVID Storm’*



Gary Bulla, Ph.D.
 Chair, Department of Biological Sciences

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Alumni Profile

Jessica Weir (Thornton) BS'15 MS '18

Congratulations are due to Jessica Weir who has just published her first work from studies conducted in her doctoral program at Ball State University in Indiana.

The publication, [Big data from a popular app reveals that fishing creates superhighways for aquatic invaders](#), utilizes angler data from Fishbrain, a fishing app that creates a network of fine scale movement across the US. According to Weir, 'these movements combined to form invasion superhighways along which invaded lakes were likely to be found. The data also revealed potential invasion fronts and super spreader lakes for invasive Eurasian milfoil and Dreissenid mussels. The paper highlights the important role anglers can play in helping to prevent future aquatic invasions.'

Jessica Weir started her academic career with the Department of Biological Sciences at EIU, receiving a Bachelor of Science in 2015 and a Master of Science in 2018. While at EIU Jessica conducted research on *Factors affecting the spatial distribution of oviposition sites for tandem black saddlebags dragonflies* with research mentor Paul Switzer, Ph. D. She joined the Colombo research team as a graduate student where she conducted evaluation studies of shovelnose sturgeon.

Now a wife, mother, and Ph.D. student working to finish her dissertation in December 2022, Jessica stays quite busy. She is employed full time with the Indiana Department of Environmental Management. Jessica last visited EIU for Homecoming 2021.

Want to be featured in our next issue? Reach out!

EIU Biology or Pre-Health alumni, please tell us what you've been up to.

[CLICK HERE](#) to share your news, stories, accomplishments and photos.

He's Still a Little on the Spicy Side

Many alumni and annuitants will remember this guy. John Ebinger is still around and at age 89 is involved in research, fieldwork, is actively publishing, and has several manuscripts in the works. Presently, John is also conducting field work with Gordon Tucker at the Gleason Preserve and is visiting U of I only once per week. This, for John, is "taking it easy." Tucker recently stopped by to visit John and brought along a bottle of Taco Bell Diablo sauce, a favorite for our senior scientist who said he had been saving up the fire sauce packets from Taco Bell.

To you, our readers—we asked John what he wanted to tell everyone in the newsletter. Here is your message straight from the horse's mouth: "I'm still alive and kicking and moving and I'll be at the department's homecoming potluck. I'll get there!" We hope our alumni are able to make it here for homecoming to see Ebinger. The Homecoming Potluck is Saturday, October 15th.



John Ebinger (2022)
PIC: G. Tucker

Recent Personnel Changes

Sandy Baumgartner retired after 28 years as BIO Stockroom manager. **Cassi Moody** (MS-BIO alum and former research associate with the Rob Colombo lab) was hired to replace Sandy. **Elliott Ziemann** completed his first year as a Unit A parasitologist/immunologist. So yes, **Jeff Laursen** has retired. **Cheryl Laursen** taught microbiology for over 20 years in the department and she, too has retired. **Ann Fritz** retired EIU after some 20 years of service, notably introducing coursework in Evolutionary Medicine into both majors and non-majors curriculum. **Ian Cunningham, Dan Johnson, and Marissa Grant** (all BIO-MS grads) taught part time as adjuncts in FY21 and **Marietta Mayo** taught part time in Spring 2020.

This fall 2022 we welcome **Eden Effert** as Aquatic Ecologist and **Marissa Grant** as Unit B Microbiologist to primarily cover non-majors microbiology following **Cheryl Laursen's** retirement. We have hired eight new faculty/staff in the past few years which brings a great deal of new energy to the department. The department has been approved for a Wildlife Biologist and a Unit B instructor who will primarily teach anatomy courses to fulfill the position vacated by **Eden Effert** when she transitioned to Unit A faculty at the start of the academic year. Finally, **Gary Bulla** has announced that he will return to a faculty and research position, thus allowing another to assume the role of Interim Department Chair until a national search is approved. Gary's term as chair will end on June 30, 2023.

Eric Bollinger Awarded for Exceptional Service

Congratulations to Eric Bollinger, recipient of the 2022 Lawrence A. Ringenberg Award, the highest faculty honor bestowed by the College of Liberal Arts and Sciences.

Dr. Eric Bollinger has led a distinguished career as faculty in the Department of Biological Sciences (formerly Department of Zoology) at EIU for over 31 years. As a renowned ornithologist, he has published a remarkable 63 articles in peer-reviewed journals (39 with student co-authors), and given 75 presentations (58 with student co-authors) at national and international conferences. He has received >\$2.5M in external grants, and \$100K in internal grants to support research efforts of his laboratory. He is an exceptional instructor and mentor, training 30 Masters students and over 30 undergraduates in research projects. He has been recognized for many achievements, with 16 awards for teaching, research and service at EIU. He served as Associate Editor for the flagship journal in ornithology, *The AUK*, as Grievance Officer for the UPI, and currently serves as on the Board of Directors for the Urban Butterfly Initiative. Eric was officially recognized at the spring 2022 CLAS Awards ceremony. Eric will complete his service to the university in May 2022.



Urban Butterfly Initiative - www.urbanbutterflies.org

Paul Switzer and the Urban Butterfly Initiative

Paul Switzer, Ph.D. is a long-time faculty of the Department of Biological Sciences having joined EIU in fall of 1996. His research interests are in animal behavior and behavioral ecology and he is a recent recipient of the Luis Clay Mendez Distinguished Service Award. This is described as "one of the most prestigious honors available to faculty." More recently, Paul has created an international community service organization—the Urban Butterfly Initiative—that is engaging the campus and the City of Charleston in efforts to increase biodiversity, scientific awareness and beautification of the region. Per their website, the Urban Butterfly Initiative (UBI) 'uses butterflies as ambassadors to nature, providing an approachable, fascinating, and beautiful link between people and the environment.'

Speaking of linking people and the environment; the local Urban Butterfly Initiative hosts a large scale community event known as the Butterfly Blitz and has also published an e-guide to common butterflies. The first local Butterfly Blitz was held in 2021 to offer community members the opportunity to submit photos of butterflies. This citizen science effort produced over 1600 observations of 44 species of butterfly across Coles County in just 9 days! The eGuide: Quick and Easy Guide to Common Butterflies has seen in excess of 4,000 downloads since publication.

The local UBI is only a part of a much larger international effort. The UBI is partnering with the Belize Botanical Gardens near San Ignacio, and a larger scale work is underway in India. Paul traveled to India the last two summers to meet with government officials, private businesses, academic institutions, and non-governmental charities to identify sites and work with architects on design, etc. Visit their website or click the links below to learn more about the UBI.

[Click here for Butterfly Blitz Info](#)



[Click here for the e-Guide](#)

Charleston, Illinois named Monarch Champion & Butterfly Capital of Illinois

Charleston is often referred to as a small town, but it is receiving some big recognition.

Our alumni and annuitants are aware that our East Central Illinois city which is nestled in the midst of farmland, is a far cry from the hustle and bustle of large metropolitan areas. Home to Eastern Illinois University, Charleston is still home to Warbler Ridge Conservation Area, Fox Ridge State Park, and the recently developed, beautiful Lake Charleston. These natural areas create a conservation corridor that spans over 4,000 acres.

With Paul Switzer, professor in the Department of Biological Sciences at Eastern Illinois University leading the effort, the city has partnered with the Urban Butterfly Initiative to create 12 dedicated butterfly habitats in Charleston and across the EIU campus.

With the prominence of various species of butterflies returning to the area, the National Wildlife Federation (NWF) announced Charleston a "Monarch Champion" community. Additionally, Charleston has been named the "Butterfly Capital of Illinois".



BRING THE BEAT BACK
EIU HOMECOMING 2022

BIO HOMECOMING POTLUCK & PICNIC

11:00 AM ON OCTOBER 15TH
O'Brien Picnic Pavilion on Grant Street by Facilities

Please Make Your Plans to Join Us!

This will be one of the best reunions that biology, botany and zoology have known!

Alumni Profile

Emily Won (Xiong) MS '19

Emily Won was recently named Community Health Director at Madison County Health Department (IL) where she manages the Community Health section of the health department with overall planning, development, maintenance, and evaluation of community health assessments.

Emily is a graduate of our one year master's program, but while here at EIU she became a vital and viable member of the campus and the Charleston community, as well.

Emily was a graduate assistant at EIU's Health Education Resource Center (HERC) assuming the position of Collegiate Recovery Coordinator, where she learned more about the recovery community at EIU and brought awareness to campus.

Emily also volunteered in the BIO department, helped to launch the new local doughnut shop—Revival City Doughnuts, and was quite instrumental in the success of our first departmental Community Science Festival in Spring 2019. Other alumni may best remember that Emily conducted a kimchee workshop for BIO students where she taught the history of kimchee, shared about Korean culture, taught attendees the fermentation process, and had everyone take jars of kimchee home to enjoy.

Now married to Yeongcheol ('20), the Won family resides in southern Illinois with their beagles Toby and Henry. Emily's favorite part about EIU is the community. While here, she was able to glean from BIO faculty and enjoyed researching new solutions to worldwide problems.



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Renovations in the Life Sciences Building

This story begins in fall 2014 when a \$4M renovation project was initiated to replace all plumbing including DI water, tap water and HVAC. At that time it seemed that construction of a new science building was improbable, so upgrading of our current building was approved. The project was halted in August 2015 due to the Illinois budget impasse. Just before the 2020 lockdown, the state of Illinois released monies to complete the project with expected completion set for December 2022. Presently, all three floors of the main building are vacated with BIO personnel and equipment dispersed to five locations across campus. New flooring, walls, fixtures, etc. are included in this renovation.

Finally. A New Science Building.

A portion of the funds for the \$118M science building approved by Governor Pritzker in FY19 were released to hire an architectural firm to lead the programming, schematic design and visioning of a new, interdisciplinary science building on the campus of Eastern Illinois University. The Illinois Capital Development Board selected RATIO Architects, Inc. who in close collaboration with the Department of Biological Sciences and the Department of Chemistry and Biochemistry designed a structure of approximately 171,000 sq. ft. to house both departments. After three developed designs, the consensus between departments was unanimous, and the concept structure adopted was collectively named "The Synapse".

Merging visioning strategies including open learning venues, science on display and collaborative spaces, The Synapse promises to offer a modern atmosphere to learning, as well as innovative infrastructure to promote research and cross-disciplinary collaborations. In a larger footprint, The Synapse increases our department's learning venues, in addition to increasing our indoor open spaces, inviting students to learn and admire the disciplines of science beyond the lecture rooms and laboratories. Modern, modular laboratories with state-of-the-art learning equipment will occupy the southern portion of all four floors, and spacious lecture rooms will be distributed through the building. In addition to learning laboratories, the southwestern most portion of the building will house of a larger, innovative greenhouse facility, which is physically connected to The Synapse. Beyond the greenhouse and research laboratories, the vivarium and other animal care facilities will be centralized. Currently, animal care facilities are all housed in other campus buildings. This unified strategy facilitates cutting-edge research and training for our students in the sciences.

The Synapse will be built on the south end of the grassy field south of the Tarble Arts Center; an area nicknamed the Tundra by alumni. The impact of The Synapse is expected to expand beyond its doors. The landscape surrounding the building is planned to extend our learning venues, incorporating the native prairie ecosystem to the landscape of The Synapse. This state of the art structure will serve as an architectural anchor to campus, will be an excellent tool to recruit faculty and students to the university and will provide all the necessary elements for experiential learning activities for the community.

Interdisciplinary Sciences Building



Modular labs



Social spaces



Shared instrumentation



Science on Display



APPLAUSE

Jessica Derham, Master of Science in Biological Sciences, earned EIU's top research honor for her master's thesis titled,



Determination of the Functional Significance of Glutamate Carboxypeptidase II in Folate Metabolism in Caenorhabditis elegans. Gopal Periyannan, Ph.D., Professor of Biochemistry and Britto Nathan, Ph.D., Professor, Biological Sciences, served as faculty mentors. Jessica's thesis will be nominated for the Midwest Association of Graduate Schools' thesis competition.

Undergraduate Recognition

Pine Honors College Undergraduate Research & Creative Activity Grants were awarded to 3 majors: Lindsey Woods, (A. Fritz Lab), Alexandra Seiple, (Martinez Lab), and Hannah Tauscher (Canam Lab).

Five students completed requirements for the departmental honors program which includes an honors thesis. AY20 Graduates were Cassandra Hall, Jackie Spathies, Stephanie May, Melissa Nathan, and Rachel Price. AY21, Noah Wright and Sarah Mummel. AY22 Megan Adams and Harper Nebergall.

We continue to award in excess of ~\$60,000 in scholarships to deserving biology and pre-health professions students each year.

Vegetation Studies at Ameren Substation

In partnership with Ameren Illinois, the regional power company and the Electric Power Research Institute, the Meiners Lab has been conducting research on native plants at power company properties such as substations and transmission rights of way.

On each property, spread across central and southern Illinois, native prairie vegetation has been planted. This vegetation, in contrast to the turf normally established on these sites, should require less maintenance and provide ecological benefits to the surrounding landscape.

For the past three summers, EIU students have been sampling the vegetation and, this summer (2022), have also begun monitoring pollinator activity. The overarching goal of the work is to determine the most cost-effective way to establish native vegetation that maximizes the diversity of native plants and pollinators supported.

To support the educational mission of EIU, these projects support multiple graduate and undergraduate students each year. It is a win-win for the environment and EIU students!



Malak Mahlaoui, an undergraduate biology student, samples vegetation at the Stallings Substation, outside of Granite City, IL.

Faculty Spotlight ~ Elliott Ziemann



Elliott Ziemann is one of our newest tenure-track faculty members having joined the department in fall 2020. With undergraduate and graduate degrees from SIU-C, Elliott began his professional career as an Assistant Professor in the Department of Biology at Wilmington College in Wilmington, Ohio.

Dr. Ziemann's research focuses on vector-borne and zoonotic pathogens of wildlife and domestic animals. He investigates the ecology of these pathogens using traditional and molecular techniques. Vector-borne and zoonotic pathogens are an increasing threat to wildlife, our domestic animals, and to humans in an altered landscape.

Graduate Programs on the Rise

Our graduate programs continue to excel under the leadership of Britto Nathan. Enrollment has been on the rise, and the past two years have seen our graduate programs steady and strong with ~76 students in fall 2022. Recent revisions in the MS program include:

- Removal of the MS internship option
- Making the GRE optional in the application process
- Adding an online delivery option for many of our non-laboratory graduate level courses
- Adding a fully online MS program option

While enrollment in these programs showed excellent numbers, COVID-19 restrictions had a strong negative impact on research and presentations in 2021. Awards supporting these efforts included receipt of 15 (down from 26 in FY20) awards from the Graduate School including 6 William's Travel Awards and 9 Graduate School Research Awards. On the other hand, the BSGSA seminar series has remained consistent and robust with many Zoom based presentations. Additionally, the MS in Biological Sciences retains its recognition as a First Choice Graduate Program.

Pre-Health Advising

Meet Sam Laingen. After a four year vacancy created at the retirement of former Pre-Health professions Adviser Pam Levine, Mary "Sam" Laingen joined EIU in fall 2019 as University Pre-health Adviser.

Sam is a tremendous resource for students in Clinical Lab Sciences (formerly Med Tech), as well as all of the health professions. This past year she advised over 350 students, updated and edited pre-health advising checklists, presented at a wide range of recruiting events, and helped spearhead many Alpha Epsilon Delta (AED) pre-health club activities while serving as AED adviser. Sam also has her hands on many committees, boards, and initiatives across campus, in the community, and with local health-care providers, assuring that our students have access to mentoring, shadowing and hands-on learning opportunities that improve their applications to professional school while fostering the idea of professional growth, collaboration, and responsibility.

Sam is keen on raising awareness about the lack of diversity in health care. In February, she hosted two screenings of the premier documentary film *Black Men in White Coats* for the EIU community. The film focused on a lack of representation of black men in medicine, but Sam's goal goes a step further to raise awareness about the lack of health-care diversity across cultural, ethnic, socioeconomic, religious, and gender lines.

Sam is very excited about her role and is happy to share that Eastern's acceptance rate to professional school is above the national average.



If you would like to bestow a gift to BIO or the Health Professions, please click [here](#).

COVID Storm, cont.

External funding has also remained strong with new and current grants at ~\$760K in FY21 and ~\$700K in FY20. This includes funding from the Illinois Department of Natural Resources, Electric Power Research Institute (ERPI), the US Fish and Wildlife Agency, the Lumpkin Foundation and collaborations with University of Illinois and SIUC. BIO Faculty PIs or co-PIs on these grants include **Rob Colombo, Eden Effert, Eloy Martinez, Scott Meiners, and Paul Switzer**.

In FY20, undergraduate research continued to be strong, despite the lack of funding at EIU, with nearly 50 students engaged in faculty-mentored research projects each semester of the academic year. Five of these students were engaged in BIO Honors research. Due to COVID-19 restrictions, only a handful of professional presentations occurred. Students received 4 BIO research awards, and 3 Undergraduate Research and Creative Activities Grants from the Honors College.

EIU enrollment (FTEs) showed an increase of 2.5% (from 5,892 to 6,045 full time students) in FY20. Student recruitment efforts included a 3rd annual FebFest, which hosted 269 area high school students on EIU's

campus, and the Bio-on-the-Road program, which resulted in a 6 area high school visits.

In FY21, we were still burdened by strict COVID-19 guidelines. Many courses were online and many students were studying from home. Undergraduate research decreased to 20 students engaged in faculty-mentored research projects each semester of the academic year and only a handful of professional presentations were given. Students received 4 BIO research awards, and 3 Undergraduate Research and Creative Activities Grants from the Honors College.

We were relieved to start FY22 with slightly fewer restrictions on classroom size and some relief in masking mandates. Overall, enrollment and engagement remained the same.

As FY23 gets underway, the department is moving forward with a general theme in mind: BIO Reboot! At our annual faculty retreat, I acknowledged the negative impact of this past year and a half on the department's mission due to both COVID-19 response and HVAC project displace-

ment. Also noted is lower moral among both faculty and students with a large number of students simply dropping out of college along with a spike in mental health issues among students.

It is my desire and goal to get the department back to where we were prior to COVID-19. Classroom spacing is back to normal this fall and the Life Sciences Building HVAC project is nearing completion. 12 BIO related RSOs have been reinvigorated, and outreach activities are again in motion. Our target is to fully reengage students in research, clubs, recruitment, and volunteer activities.

The BIO department has obvious strengths and a faculty that boasts a history of student mentorship, scholarship, and engagement. This is our year to reimagine possibilities and to focus on future growth.

Come Home for Homecoming 2022!

Department of Biological Sciences
Eastern Illinois University

The primary mission of the Department of Biological Sciences at Eastern Illinois University is to provide an exceptional education to both undergraduate and graduate students.

We not only excel in our mission, but have purposed to exceed it.

This is our passion.

This is our life's work.

We are All In.



SAVE THE DATE
October 10th-15th

For a complete list of events for EIU Homecoming 2022



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