SUMMER 2023

Alumni Distinguished Professor in the Department of Biological Sciences, Lesly Temesvari, is one of EPIC's founders.

EPIC: At the forefront of biomedical research on eukaryotic pathogens

A specific class of infectious agents known as "eukaryotic pathogens" cause some of the most devastating diseases in humans, including malaria, amoebic dysentery, sleeping sickness and fungal meningitis. Globalization has increased the prevalence of such infections in the U.S. Clemson University's Eukaryotic Pathogens Innovation Center (EPIC) is an interdisciplinary research cooperative founded in 2013 that is at the forefront of biomedical research on these devastating pathogens. There are currently about 150 faculty, postdoctoral fellows, research technicians and students working in the 15 laboratories that form EPIC. The Department of Biological Sciences is a major player in this effort as faculty from the department direct five of these laboratories.

Work in EPIC labs includes research aimed at identifying new therapeutics for infections that currently lack efficacious drugs. This includes infections caused by two different brain-eating amoebae, three of the four fungal pathogens classified on the WHO's Critical Priority List and a suite of other organisms that infect millions worldwide. EPIC scientists have a lengthy track record of major contributions in this globally important area of research. Since the founding of the center, EPIC faculty have graduated 44 doctoral students, mentored hundreds of undergraduate research students and published over 750 scientific publications that include almost 400 student authors. Since its inception, the research center has garnered $61 million dollars in competitive external grants. The goal of the center is always to remain a nationally

prominent center for research and education on global infectious disease, turning discoveries into real-life public health interventions.

Read more about EPIC's decade of life-saving, global infectious disease research.

Explorations

Matthew Koski

Samantha Price

Matt Koski, Sam Price earn NSF Career Awards

Samantha Price will study fish and scales as a part of her National Science Foundation Early Faculty Career Development Award, but probably not in the way you're thinking. Price won't be researching why some fish have scales and some don't. Instead, Price and her student researchers will study body shapes of a large and extremely diverse group of ray-finned fish called teleots to determine whether studies conducted on closely related species at small phylogenetic scales translate to other scales.

Read more about Price's planned research.

Matthew Koski will assess whether and how flower color evolves without major shifts in dominant pollinators. Koski's research with his National Science Foundation Early Faculty Career Development Award will look at flower color diversification from a novel angle — how the visual context in which the pollinator is viewing the flower affects the flower's color. Koski and his students will focus on Appalachian phacelia, or Phacelia dubia, which is a bee-pollinated annual native to the eastern United States. It is found in different habitats such as granite rock outcrops and grassy roadside meadows.

Read more about Koski's planned research.

Impressions

Meet our new faculty!

Jason Fridley

I am originally from the Midwest and spent 16 years on the biology faculty at Syracuse University after a Ph.D. at UNC-Chapel Hill and a postdoc in Sheffield, England. We study terrestrial ecosystems in my lab, with a focus on

invasive woody plants and vegetation-climate interactions. I look forward to local projects at the S.C. Botanical Garden and Clemson Experimental Forest and continuing long-term studies in Great Smoky Mountains National Park.

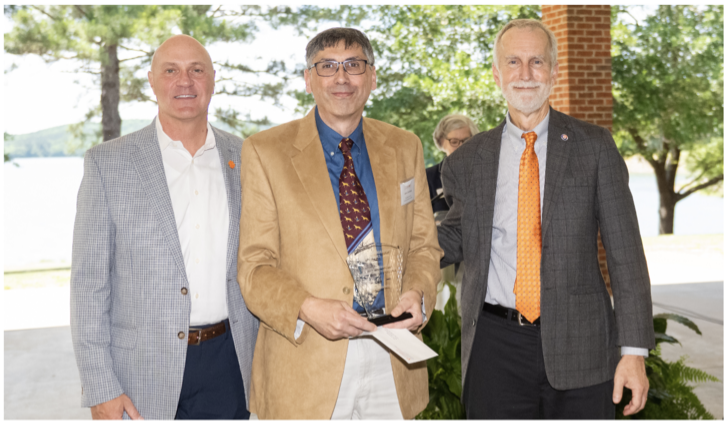
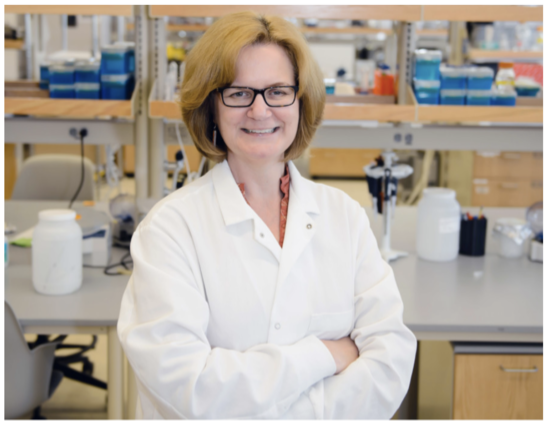
Krissa Skogen

I received my Ph.D. in ecology from the University of Connecticut. Before joining Clemson, I was an associate conservation scientist at the Chicago Botanic Garden and adjunct professor at Northwestern University. My research focuses on plant-insect interactions, namely pollination, and floral trait diversity. While most of my research to date has focused on systems in the western U.S., I look forward to starting new projects in the Southeast. I'm excited to explore the Clemson area and experience the great biodiversity of the Southeast first hand!

Norman Wickett

I grew up in British Columbia, Canada and received my Ph.D. in ecology and evolutionary biology from the University of Connecticut. Before moving to Clemson, I was a conservation scientist at the Chicago Botanic Garden and adjunct professor at Northwestern University. My research focuses on the application of genomics tools to understand the origin and evolution of plant diversity. I look forward to continuing to explore these themes here while getting to know the local flora.

Connections

Top left to right: President Jim Clements, John Cummings, Provost Bob Jones, Barbara Campbell.
Bottom left to right: Kristi Whitehead, Andrea Thornal, College of Science Dean Cynthia Young, Chris Minor.

Biological Sciences faculty and staff honored with College, University and external awards

John Cummings was presented with the Ted G. Westmoreland Faculty Excellence Award at the 2023 University Spring Awards ceremony. The award recognizes faculty for excellence in teaching, research and service.

Barbara Campbell was named a recipient of the College of Science Dean's Professorship Award, which recognizes the College of Science's most talented scholars.

Kristi Whitehead was named a recipient of the College of Science Dean's Distinguished Lecturer Award. This award recognizes teaching-focused faculty members who demonstrate significant positive impact on the classroom.

Several BioSci faculty and staff were recognized for excellence at the College of Science awards ceremony. The awards recognized teaching and research excellence, outstanding performance as well as outstanding student and engagement. **Read why they were nominated**!

> **Outstanding Staff Member**: Andrea Thornal, financial analyst in the College of Science's Dean's Office, is known for her excellent customer service and positive, can-do attitude. Thornal works with the Department of Biological Sciences, supporting the teaching, research and outreach missions of the Department.
>
> **Excellence in Teaching Award:** John Cummings, principal lecturer, stands out among instructional faculty for his dedication to teaching the next generation of health professionals and biologists, developing graduate student teachers and devising ways to support learning — not just in his classes, but across the University.
>
> **Excellence in Discovery Award**: Barbara Campbell, professor, has an internationally prominent research program that has received significant extramural funding. Her lab, which combines fieldwork with bioinformatics to understand how microbes influence aquatic, soil and host-associated

ecosystems, is currently supported by six external grants, including a five-year, $2.5 million grant from the National Science Foundation.

Chris Minor, principal lecturer, was selected as the Outstanding Use of Courseware Technology winner for the 2022 Pearson Excellence in Higher Education Award. This award recognizes faculty who successfully integrate technology into their course(s) through learning platforms, videos, assignments, feedback and grading using technology to positively impact student accessibility and success. **Pearson highlighted Minor on their website**, social media and PR outreach. She also received a grant to attend a conference to share her differentiated teaching and learning expertise.

Noteworthy

Alumni

BioSci was happy to welcome **several alumni who participated in the eighth annual Tigers on Call**. They gave back to Clemson by talking about their career paths and giving advice to our pre-med, pre-PA, pre-PT, pre-OT, and pre-dental students. Students across majors — but many of them from biological sciences and microbiology — soaked up the career advice.

Elizabeth Timmons (B.S. biological sciences ’14) receives Clemson Young Alumni Council ‘Roaring10’ award.

Faculty

Bill Baldwin identifies enzyme that reduces diet-induced obesity in humans.

BioSci department chair **Saara DeWalt, Ben Taylor (M.S. biological sciences '10)**, other Clemson faculty and Dominican researcher Elvis Stedman determined that trees in hurricane-prone areas have strong ability to survive even after severe damage.

Kaustubha “Kos” Qanungo uses magnetic fidget toys and Buckyballs to teach students about the complicated structure and working principles of viruses.

Kara Powder launches a new outreach program — BeakerBox — designed to engage middle school students in the life sciences with the goal to make science accessible and exciting for everyone.

Michael Childress and his students study how to successfully communicate the importance of ocean health.

Antonio Baeza nominates Chilean abalone for International Mollusc of the Year — and it wins!

Students

Sophie Millard (Ph.D. student in microbiology) and her path to focus her research on the pathogen Clostridium difficile featured in College of Science Women in Science article.

Natalia Leigh Diaz, senior biological sciences major, researched Crohn’s disease as part of a Creative Inquiry project and found a lot of misinformation on social media.

Nella Stringer, B.S. biological sciences ’23 and minors in psychology and microbiology, continues her family’s Clemson legacy with a service-first mindset.

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