CLEMSON
BIOLOGICAL SCIENCES

Saara J. DeWalt, Chair

Note from the Chair

If I've learned anything over the last few months and the last week, it is that we can always be better and do better. We serve thousands of Tigers every year in this department, and we must do that inclusively, equitably, and without prejudice. I am committed to that, and I commit to conversations and positive actions toward progress in diversity and inclusion in Biological Sciences.

The spring was an incredibly tough semester. But we transitioned to teaching, working, and learning remotely without missing a beat. Faculty moved their courses and labs online and focused on keeping students engaged in their coursework. Our "dream team" of six academic advisors led by Londan Means Charley provided support and guidance for our undergraduate students throughout. Our research faculty and graduate students took the move to working remotely in stride and focused on what research tasks were essential and what could wait. I am so proud of my fellow faculty, our staff, and our amazingly resilient students.

Through these joint efforts, we have 261 new undergraduate alumni who now hold BA and BS degrees in Biological Sciences or Microbiology! We also graduated 3 PhDs (one each in Biological Sciences, Environmental Toxicology, and Microbiology) and 3 MS in Biological Sciences. Finally, we had 38 graduates from our online MS in Biological Sciences, a program designed for Science Educators. We could not be prouder of these graduates!

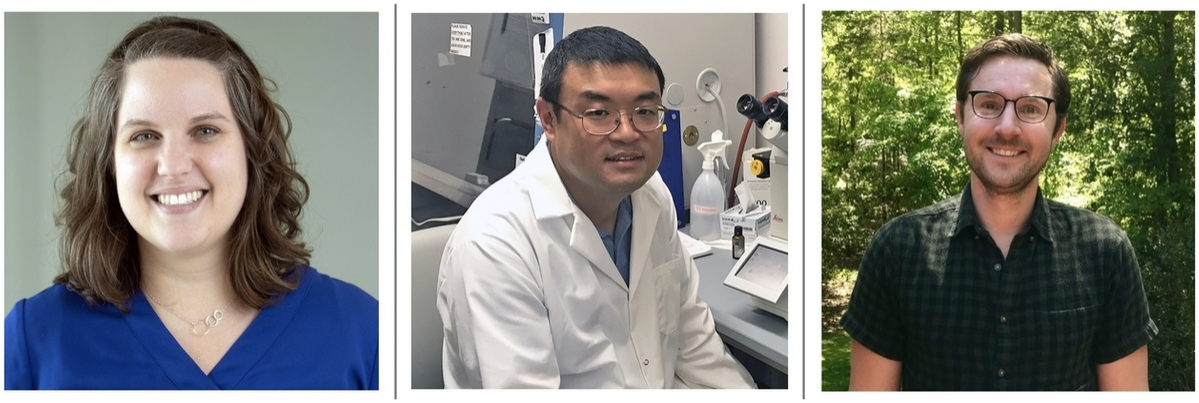
And we continue to excel in research, with several of our junior faculty recently being award grants from NIH, NSF, SC Sea Grant Consortium and publishing in prestigious journals. Congratulations to all of these faculty!

We not only adapted our teaching and learning to online, but we also transitioned to online our annual Biology Merit Exam (BME) for middle and high school students. We held our first ever award ceremony for undergraduate and graduate students and recognized our wonderful Graduate Teaching Assistants in an online format. And we held a virtual reception for our graduates from the online MS program. These events were incredibly touching and helped celebrate the accomplishments of the students as well as the dedication of our faculty to providing meaningful, engaged experiences for our students – no matter the mode of in person or online!

We appreciate your continued engagement with us! We hope you will continue to support Clemson, our department, and the incredible Tigers we serve.

Please visit our Facebook page or follow us on Twitter for more details about all that we are doing. We appreciate your continued engagement with us! Contact us at: BiolSci@clemson.edu.

Give to Biological Sciences



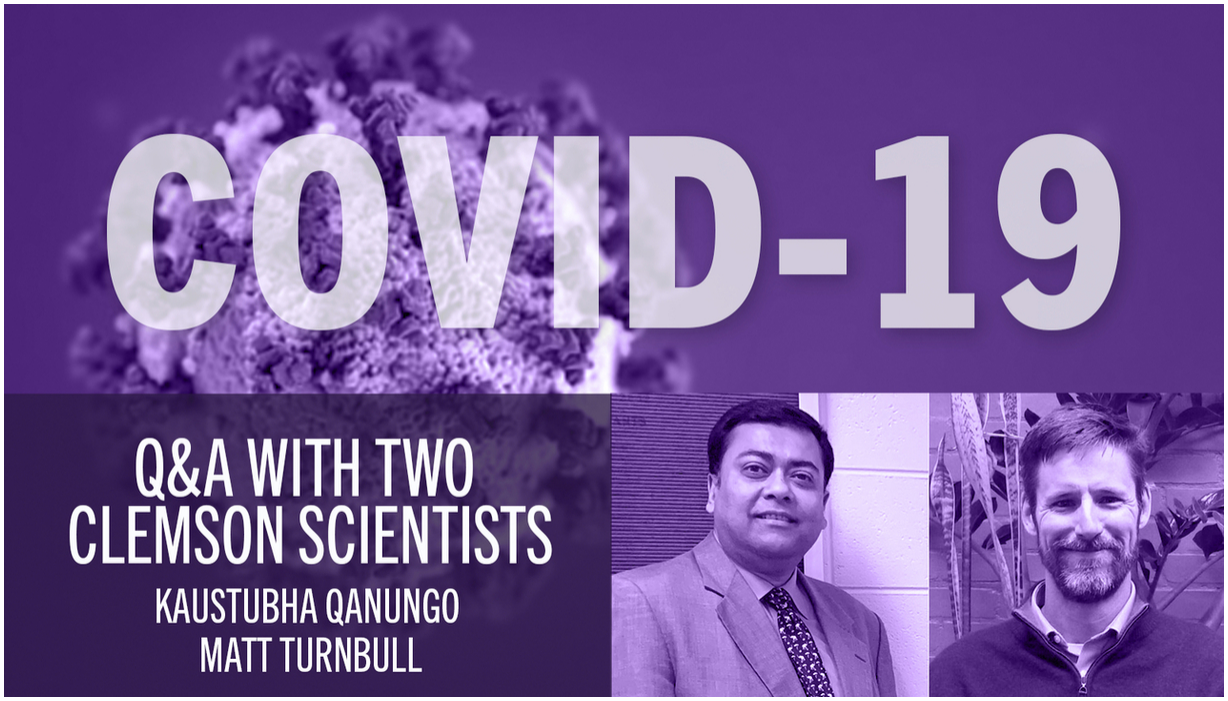
Biological Sciences Assistant Professors Kara Powder, Zhicheng Dou and Matt Koski.

Junior Faculty Receive Funding for Research

Kara Powder receives NSF CAREER award grant to investigate gene regulatory elements that determine craniofacial development and evolution.

Zhicheng Dou receives NIH R01 grant to better understand the molecular mechanisms of the parasite that causes toxoplasmosis.

Matt Koski receives NSF grant to study how flowers adapt to heat and cold.



Biological Sciences virologists Kaustubha "Kos" Qanungo and Matt Turnbull.
Image credit: University Relations

COVID-19: Q&A with virologists Matt Turnbull and "Kos" Qanungo helps broaden our understanding of

the pandemic

Biological Sciences virologists Kaustubha “Kos” Qanungo and Matt Turnbull have spent much of their careers studying viral diseases in humans, plants and animals.

Qanungo, a lecturer in the College of Science’s department of biological sciences, received his Ph.D. in molecular virology in 2003 from the Indian Institute of Technology in Kharagpur, India. He joined Clemson in 2019.

Turnbull, an associate professor in the department of biological sciences, received his Ph.D. in entomology in 2002 from the University of Kentucky in Lexington. He joined Clemson in 2003. Given their expertise, both scientists have been following the COVID-19 global outbreak with intense interest. Here are their responses to some commonly asked questions about the pandemic.

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The 2020 cast of Something Very Fishy.

Science and art theatrical production ignites awareness of marine conservation

With catchy musical numbers, colorful sets and characters, and interactive marine exhibits following the show, Something Very Fishy is an educational family-friendly event that demonstrates the importance of protecting our oceans and keeping them clean for all oceanic life and the overall health of our planet.

Something Very Fishy follows the lives of Sandy Carson, a young science major conducting coral transplanting research, and Mr. Stu Pidder, a local fisherman just trying to get by. Below

the surface, Boss the Great White Shark and his friends are wondering why marine life is disappearing and curious objects keep arriving.

After a one-hour show held on Feb. 29, 2020, audience members experienced marine exhibits like live animal touch tanks, did a virtual dive to a coral reef, and simulated coral transplantation. They interacted with Clemson University Creative Inquiry students who shared stories of their research adventures in the Florida Keys. They also met biological sciences associate professor Michael Childress, whose research focuses on understanding the impact of habitat loss on the conservation of marine communities.

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Shaoni Dasgupta. Biological Sciences major and Goldwater Scholarship winner.

Biological sciences junior Shaoni Dasgupta is a 2020 Goldwater Scholarship winner!

Since her sophomore year, Dasgupta has been conducting research in the lab of Genetics and Biochemistry professor Kerry Smith on *Cryptococcus neoformans*, the fungus that can cause fungal meningitis in individuals with compromised immune systems.

Scientists have identified three possible gene sequences for a critical enzyme, carnitine acetyltransferase, that is involved in acetate metabolism. Dasgupta is using CRISPR-Cas9 gene editing techniques to eliminate the gene encoding the third form of the enzyme. Examining the gene knockouts of the enzyme will aid in understanding the pathogenesis of *C. neoformans*, as carbon metabolism, particularly acetate metabolism, is essential in the virulence of the fungus.

“This scholarship is a great honor,” said Dasgupta, who earned a Beckman Scholar honor in 2019. “I’ve been interested in research since high school, so this award is a testament to all the hard work I’ve put in over the years.”

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More on Biological Sciences...

- John Cummings receives 2020 Phil Prince Innovation in Teaching Award
- Lesly Temesvari receives Alumni Award for Outstanding Achievements in Research
- Michael Childress and Peter van den Hurk receive funding from the SC Sea Grant Consortium
- Biological Sciences PhD '19 Kylie Smith works to restore the reefs of Islamorada
- Matt Koski's research featured as cover story in the Journal of Evolutionary Biology
- Zhicheng Dou's collaborative research could pave way to therapeutic cure of global parasite
- Saara DeWalt's ongoing research on species-rich forests featured in journal Science

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