UAB COLLEGE OF ARTS AND SCIENCES
Department of Biology

March 2017

UAB DEPARTMENT OF BIOLOGY NEWSLETTER

WE WANT TO HEAR FROM YOU!

If you have suggestions for a story or would like someone in particular to be featured in a future issue, please contact us at **biology@uab.edu.**

FACULTY FOCUS: DR. DUSTIN KEMP

One of our newest faculty members, Dr. Dustin (Dusty) Kemp, a marine biologist who studies nearshore ecology and ecological physiology, joined the Biology Department in July 2016 as a tenure-track Assistant Professor.

In high school, Dr. Kemp had the opportunity to travel to Australia and dive on the Great Barrier Reef. He was fascinated by the abundance of animals and their complex interactions. It was this experience that established what would become a lifelong interest in marine biology. As an undergraduate at Texas A&M University at Galveston, Dr. Kemp decided he wanted to make a career studying marine ecosystems. During graduate work at Florida Atlantic University and Harbor Branch Oceanographic Institute, he began working with invertebrate symbiotic relationships. This research further developed during his doctoral and post-doctoral work at the University of Georgia and Penn State University where he became particularly interested in coral physiology, microbial diversity of prokaryotes and eukaryotes associated with corals, and the effects of climate change on coral reef ecosystems. Dr. Kemp has worked on coral reefs throughout

the Caribbean and Pacific and continues to study ecology, physiology, and evolution of these important ecosystems.

Shortly after arriving at UAB, Dr. Kemp received a 3 year, $1.2 million NSF grant focusing on the physiology and ecology of reef building corals in Palau (Micronesia). Currently, Dr. Kemp is in the process of building his laboratory and recruiting highly motivated MS and PhD graduate students. The Kemp Lab focuses on invertebrates and symbiotic relationships that can ultimately have ecosystem-wide impacts using physiological and molecular techniques. The lab works, in particular, on identifying the impact of climate change on ecological patterns associated with marine invertebrates and algae.

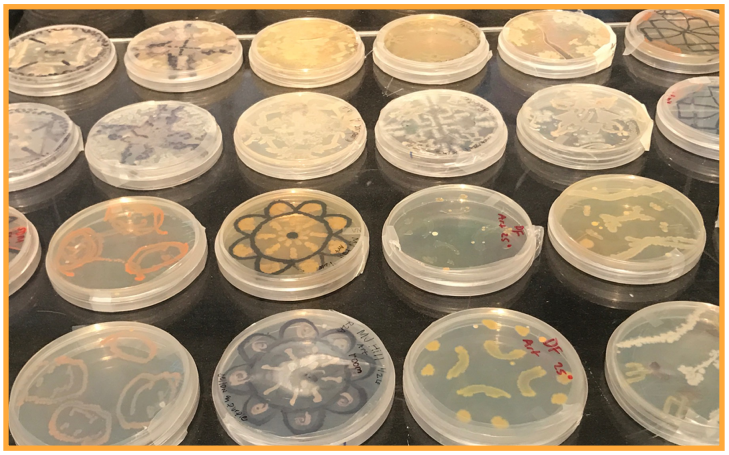
STAFF SPOTLIGHT: JACQUITA DAVIS

Jacquita Davis joined the Biology Department in December 2013 as our Administrative Associate. Her primary role is to oversee the human resource and financial needs. Her duties include processing hiring documents, funding and title changes for our employees, as well as maintaining all of the department's general ledger and grant accounts. In addition to her HR and financial duties, Jacquita is the coordinator for the Department of Biology Graduate Program. As the coordinator, she is responsible for managing incoming student applications and working with Program Directors Dr. Stephen Watts and Dr. Karolina Mukhtar to get students accepted and enrolled in the program.

Jacquita graduated from UAB in 2001 with a degree in Business with a concentration in Management Information Systems. In 2007, she returned to UAB to work in the Department of Infectious Diseases as an Office Services Specialist. She worked in Infectious Diseases for 7 years before transferring to the Biology Department. We all enjoy the high level of competence and daily good cheer that Jacquita brings to the Biology main office.

DARWIN DAY

This year's Darwin Day celebration of science featured a visit by Joe Palca, senior science reporter from National Public Radio and host of *Joe's Big Idea*. Prior to his evening lecture (Science and Journalism: A Marriage of Convenience), Joe had lunch with some of our graduate students and provided a workshop on science communication. The festivities also included a showing of the 2014 version of Godzilla and a panel discussion on the biological implications and implausibility of a 350 foot monster, as well as a biologically-oriented art exhibit (Several Powers) in collaboration with the Department of Art and Art History. "Several Powers," by the way, is from the famous last sentence of Darwin's *The Origin of Species* where he describes "the grandeur of this view of life." Among other things, the art exhibit featured microbial art. One nice offshoot of this year's event is that six of our graduate students (Sarah Adkins, Virginia Aida, Marlee Hayes, Sabrina Heiser, Mary Latimer, and Megan Roegner) under the mentorship of our own Dr. Stacy Krueger-Hadfield have become "Friends of Joe's Big Idea (FOJBI)," a national network of scientists interested in the effective and accurate communication of science to the general public. Their blog posts for *The Molecular Ecologist* now appear on the FOJBI web site.



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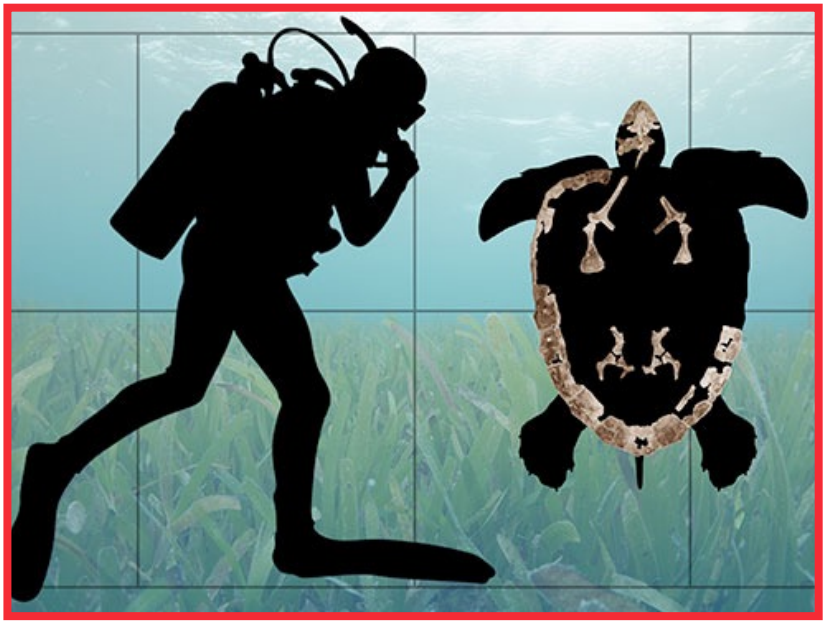
STUDENT SPOTLIGHT: DREW GENTRY



Drew Gentry, a Biology doctoral student under Dr. Scott Brande's mentorship, recently led a team of researchers in uncovering several 80 million-year-old fossils from a species of sea turtle that is the oldest known member of the lineage that gave rise to all modern species of sea turtle. The fossils belong to *Ctenochelys acris*, a marine-adapted turtle that lived in the shallow, subtropical sea that once covered most of Alabama. By dating the rock formation where these fossils were discovered, *C. acris* is presumed to have lived more than 80 million years ago. Before this research, so little fossil evidence for this species had been documented that most paleontologists doubted it really existed. Not only do the newly discovered fossils prove *C. acris* existed, they may also be a critical piece in assembling a much larger puzzle of sea turtle evolution.

"There is strong evidence indicating that freshwater turtles may have evolved to occupy marine environments at several points in the past," Gentry said. "But most of those lineages went extinct, making the exact origins of living or 'true' sea turtles somewhat of a mystery."

Comparing the skeleton of *C. acris* with those of both extinct and living species of turtles, Gentry noted that it possessed traits of both sea turtles and their closest living relatives, snapping turtles. Gentry explains, "These fossils tell us not only that marine turtles are capable of occupying specialized oceanic niches, but also that many of the sea turtles we know today may have gotten their evolutionary start as something similar to an oversized snapping turtle in what eventually became the southeastern United States."

Studying the diversity and evolutionary history of sea turtles during previous periods of climate change can provide insights into what effects climate and environmental changes might have on modern species.

RECENTLY AWARDED GRANTS

Dr. Trygve Tollefsbol

Source: NIH R01 Grant

Title: "Early life prevention of breast cancer with combined epigenetic botanicals"

Funding Amount: $1,671,720

Duration: 5 years

Dr. Dustin Kemp

Source: NSF Division-Biological Oceanography

Title: "Collaborative Research: Stability, flexibility, and functionality of thermally tolerant coral symbioses"

Funding Amount: $1,200,000

Duration: 3 years

Dr. Jessica Hoffman

Source: Glenn Medical Foundation and American Federation for Aging Research

Title: "The metabolic consequences of size and age in the domestic dog: A new model of human morbidity and mortality"

Funding Amount: $52,500

Morgan Burke

Editor & Contributor

Program Coordinator II

Dr. Steven Austad

Editor-in-Chief

Distinguished Professor & Department Chair