



UNCW research uncovering new information about Egyptian pyramids.

UNCW

CONDUCTING REGIONALLY RELEVANT, GLOBALLY IMPORTANT RESEARCH

As the leading research institution in North Carolina's fastest-growing region, UNCW faculty and students focus on discoveries that explore and enhance the human condition, in our state and around the world. From analyzing ancient advancements to studying modern opportunities, UNCW scholars and researchers are improving our understanding of ourselves.

MYSTERIES OF THE NILE

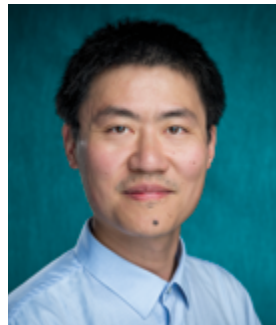
A team led by Eman Ghoneim, earth and ocean sciences professor, has discovered the pyramids in Egypt were built along a now abandoned branch of the Nile River, highlighting the importance of the river as a cultural artery and showing how humans have historically been affected by environmental change.

"Many of us who are interested in ancient Egypt are aware that the Egyptians must have used a waterway to build their enormous monuments, like the pyramids and valley temples, but nobody was certain of the location, the shape, the size or proximity of this mega waterway to the actual pyramids site," said Ghoneim. "Our research offers the first map of one of the main ancient branches of the Nile at such a large scale and links it with the largest pyramid fields of Egypt."

This discovery could explain why the pyramids are concentrated in what is now a narrow, inhospitable strip of the Saharan Desert. The work was funded by a grant from the National Science Foundation awarded to Ghoneim and colleagues at the University of Memphis and Macquarie



Eman Ghoneim
Earth and Ocean Sciences
Professor



Ying Wang
Chemistry Associate Professor

University. Ghoneim and her colleagues studied satellite imagery, geophysical surveys and sediment samples to confirm the location of the former river branch, which they propose naming Ahramat, meaning pyramids in Arabic.

Like ancient Egypt, UNCW's region, situated between the Cape Fear River and the Atlantic Ocean, is changing shape with time. "We can learn from ancient Egyptians," she said, "who were able to create such architectural marvels, and study how shifts in their environment and surrounding landscape drove their activity and how they adapted to these types of changes."

VACCINE ADVANCEMENTS

Associate Professor of Chemistry Ying Wang has been approved for grant funding from NCInnovation to continue his work in developing a groundbreaking vaccine platform that he hopes will result in a universal and longer-lasting flu vaccine. This funding is part of NCInnovation's larger mission to unlock the innovative potential of North Carolina's world-class universities.

Right now, flu vaccines do not target every strain, and they must be given every flu season – a reality Wang hopes to change. He is also the winner of the inaugural NC Biotech Pre-Venture Challenge for this same work.

Wang's innovative approach to vaccine research isn't limited to the flu. He and two students, chemistry major Carson Jackson '25 and graduate student Harrison Wooten '24, founded DuraVax Inc., a research spinoff focused on making mRNA medicines, such as COVID-19 vaccines, available to everyone in the world. Their company recently received a National Science Foundation Phase One Small Business Technology Transfer grant.

Wang credits both campus and community support for empowering him and his students to succeed. "Our students burst with curiosity and creativity, laying the groundwork for a research community that's as vibrant as it is innovative," he said. "Across campus, fascinating ideas and collaborations emerge, fostered by a university policy and the Office of Innovation and Commercialization that sow the seeds of innovation at UNCW, nurturing the growth of new technologies. The UNCW Center for Innovation and Entrepreneurship, alongside Wilmington's entrepreneurial community, provides fertile ground for emerging startups."



UNCW's Eman Ghoneim leads an international team of researchers exploring ancient branches of the Nile River.

ADVANCING KNOWLEDGE

Jackson, from Sanford, NC, joined Wang's lab during his first year at UNCW. "Being able to begin working in a university research lab that early is not very common, and being able to work with a professor as passionate, intelligent and caring as Dr. Wang is extremely rare," he said, adding that every member of the team "plays an integral role in the amazing culture that exists" in the lab.

Ghoneim and Wang represent just two of many UNCW faculty engaged in research and scholarship, often working side-by-side with students. With opportunities for first-year students through post-doctoral scholars, UNCW emphasizes research that crosses academic disciplines and translates into real-world knowledge and practical applications. Since being designated a Research University in 2018, the university has been awarded more than \$111 million in sponsored program funding that fuels discovery and innovation, creates high-quality learning opportunities for students and directly supports students, faculty and staff.

"UNCW's history and future is conducting high-quality research and innovation with our students," said Stuart Borrett, associate provost for research and innovation. "We are growing our research impact with work that is both regionally relevant and globally important, and these are two stand-out examples of the institution's capabilities."

For more information visit uncw.edu/global-research.



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