Students majoring in anthropology study topics ranging from human anatomy, genetics, and biological anthropology to the study of other cultures, learning both scientific methods and how to describe new observations and insights critically. For this reason, undergraduate anthropology students are consistently among the top of their class at UT.

Among the high-flying achievers this year was Sierra Roark, who received her BA in anthropology at UT in 2016. Sierra was one of three UT students highly commended in The Undergraduate Awards and traveled to Ireland to receive award. Anthropology major Daniel Ford was among the top five graduates in the entire UT College of Arts and Sciences. Daniel is a marketing research analyst at Shelton Group in downtown Knoxville, a leading United States marketing communications firm, where he worked during his college career.

Biological anthropology doctoral student Alexandra Emmons, teaming up with Shawn Campagna, professor of chemistry, received a $5,000 grant from the Office of Research to study “Skeletal DNA Degradation through Bone Metabolomics.” The project combines the latest DNA sequencing techniques with mass spectrometry in order to identify microbial communities in human bone by the bio-molecules they produce. The microbial community composition within different bones, reveals tangible clues to bone metabolism and how those bones degrade in the skeleton after death. Emmons, as a doctoral student of Amy Mundorff, is keenly interested in differential DNA degradation in the human skeleton. Trained by Campagna in the Biological and Small Molecule Mass Spectrometry Core, Emmons is learning first-hand the techniques of microbial metabolomics, which includes use of chromatography coupled with mass spectrometry. This research builds future capabilities at UT, such as forensic fingerprinting techniques.
An Exciting First Year

Greetings UT anthropology community! It has been an exciting year for me as the new head of anthropology. What a year! My family and I love Knoxville and have been to see half a dozen different Vols sports – suffice it to say I have never sat in a stadium with 100,000 people before! I also attended two wonderful UT graduation ceremonies and noted anthropology students listed among the very top students in the college.

When I think back on the past academic year, I vividly recall the news of Hurricane Harvey. Two of our newest professors, Caela O’Connell and Raja Swamy, got NSF grants to do anthropological study of the societal after effects of Harvey – their studies are ongoing and will reveal the challenges that people face in the long-term recovery after a natural disaster.

The archaeology in the department is an amazing legacy to inherit. The local cave art discoveries being made by Jan Simek, and recorded in 3-D detail by his colleague Stephen Alvarez of National Geographic, promise to be astounding in the years ahead as they are revealed through scholarly publication and journalism. Consulting with Cherokee and Chickasaw leaders, Ellen Lofaro and her staff have quietly made consistent progress in the process of repatriating prehistoric human remains excavated since early last century. Barbara Heath is beginning to make game-changing archaeological discoveries at Coan Hall in Virginia, documenting one of the earliest colonial settlements in early 17th century North America.

In biological anthropology, I was astounded by all the Forensic Anthropology Center achieves in the classroom, the Anthropological Research Facility, and the laboratory. It is a well-oiled machine. In other forensic research, Richard Jantz, Graciela Cabana, and doctoral student Frankie West have very likely identified Pacific Island the crash site of Amelia Earhart, 80 years after this mystery began. This project has been funded by National Geographic and I am guessing there may be a new feature program in the near future!

Ben Auerbach and his doctoral students are publishing in the highest journals of science and receiving grant funding from the National Science Foundation and the Leakey Foundation. At Monash University in Australia last fall, Auerbach and colleagues made CT-scans of hundreds of marsupial skeletons, yielding the largest database of its kind. This digital anatomical database will be used to document marsupial evolution in unsurpassed detail and complexity.

In all these activities are our students. I have taught at a half dozen universities, in two countries, and yet I have never encountered students with such passion, creativity, and focus as here at UT anthropology. They are, of course, inspired by a passionate, creative, and highly productive group of faculty and staff here in the anthropology department. This newsletter barely scratches the surface, so I hope you will come by and see for yourself sometime in our new home in Strong Hall!
Hurricane Harvey Recovery Research

A year ago, Hurricane Harvey devastated Houston and the surrounding Gulf coast. Immediately afterward, cultural anthropologists at UT moved to study the situation and recovery process as they unfolded, a key opportunity to make a difference for future disaster survivors. Caela O’Connell and Raja Swamy applied for RAPID grants from the National Science Foundation.

Swamy is researching the aftermath of Harvey in Houston itself and interviewing families across the range of socioeconomic status – from wealthy homeowners in Western Houston whose homes were flooded by nearby bayous to poorer families in the Third Ward, who lack most of the economic safety net, but may need to rely more on their neighbors through closer community relationships and organizations. O’Connell is comparing the experiences of rural, urban, and suburban communities’ recovery and studying how their recovery is shaped by the choices people make. With an emphasis on the experience of rural populations, such as ranchers and farmers, her research stretches from Aransas County on the coast where Harvey first made landfall, up through Houston and east to Chambers County spanning 300 miles and six counties. O’Connell looks at the breadth of interrelated challenges after a hurricane, from the toxic chemicals deposited around flooded homes to the recovery of agricultural crops and livestock, delays in insurance payments, and disruptions to wildlife and the tourism economy. Her goal is a better roadmap for resilience and disaster recovery to feed into future FEMA training workshops, local and state government training packages, and informational materials.

Ethnographic Fieldwork in Uganda

In summer 2018, Kayla Davis, an anthropology doctoral student in the Disasters, Displacement, and Human Rights program, conducted ethnographic fieldwork in a slum community of Kampala in order to study perceptions of urban poverty. In connection with Slum Dwellers International, Davis visited the slum a few times a week and was featured in local media coverage for her work. Davis is finding that economic activity in the Kampala community is exceptional because its residents provide services for the middle/upper class members of the city.

Archaic Archaeology on Campus

In May, UT archaeology students joined Professor Kandace Hollenbach on a field school excavation on the UT Cherokee Farm campus, about 100 meters inland from the Tennessee River. The area has been occupied for thousands of years, from the Archaic Period (~8,000 years ago) through the early 20th century. Students excavated several features dating to the Woodland Period (~1000 BC - 600 AD), including what appears to be a fire hearth, as well as the cellar of a late 19th century house.
Coan Hall Project Update

The 2018 summer field school in historical archaeology took place in Northumberland County, Virginia. The project, led by Professor Barbara Heath, explores cultural and environmental change over time at Coan Hall. Sometime before 1644, John Mottrom, one of the earliest English settlers of the region, established Coan Hall plantation on a tributary to the Potomac River, and his home became the headquarters of the first English community, Chicacoan, on Virginia's Northern Neck. Summer field school participants exposed portions of palisade lines associated with a D-shaped enclosure that was probably built to defend the settlement during the first years of English occupation; excavated a circa 1640s pit that contained both European and Indian artifacts; and excavated portions of two later pits that residents filled with domestic trash in the early 18th century. The results of this summer’s fieldwork will contribute to understanding the development of the cultural landscape at Chicacoan and early colonialism in the Atlantic World.

Transitions Conference Addressed Range of Issues

In February 2018, the Disasters, Displacement, and Human Rights (DDHR) program hosted its highly successful third biennial conference, “Transitions: Crisis, Uncertainty, Opportunity.” More than 150 students and faculty from UT and other universities, as well as practitioners and community members, participated in a wide range of panels, roundtables, workshops, and discussions. Speakers included Fabio Lopez de la Roche of the National University of Colombia, Kim Tallbear of the University of Alberta, Canada, journalist Sarah Kendzior, and Irma Velasquez Nimatuj of the Guatemalan Mechanismo de Apoyo a Pueblos Indígenas Oxlajuj Tziken (Support Mechanism for Indigenous Peoples).

Conference organizers welcomed Native American tribal elders and leaders to discuss archaeology and the Native American Graves Protection and Repatriation Act (NAGPRA). Conference topics ranged from the causes and consequences of climate change and natural disasters, to indigenous rights, refugees and immigrants, and the role of forensic science in transitional justice processes.

Lead faculty organizer Caela O’Connell received invaluable help from the steering committee, led by graduate students Christine Bailey, Krista Billingsley, and Martin Walker, and a host of student and alumni volunteers. The conference could not have happened without staff members Pam Bailey and Charlene Weaver, who scheduled guest travel and all the associated paperwork for this complex event. The next DDHR Conference is scheduled for September 2019.
Historic Sites in Jeopardy

In November, **DAVID ANDERSON** published new research in PLOS ONE on how sea-level rise will likely destroy early colonial settlements and other historic places on east coast of the United States, including Jamestown and St. Augustine, which are within one to three meters of modern sea level.

“There are going to be a lot of cultural sites lost and the record of humanity’s history will be put at risk,” Anderson told *The Guardian* newspaper.

The internationally reported research is just one of many outputs of Anderson's NSF-funded Digital Index of North American Archaeology (DINAA) project, which aggregates archaeological and historical data sets on human settlement across North America. While DINAA began in 2012, Anderson has been working on building continental scale databases for about 30 years. Combining site files across the southeast since the mid-1990s, Anderson has been building collaborations from UT and Oak Ridge National Laboratory to partners in government agencies and tribal nations across the United States.

Using Big Data to Study Cultural Change

**DAMIAN RUCK** joined the Department of Anthropology this fall as a postdoctoral scholar in big-data social science. Ruck uses big data to measure social and cultural change through time, including differences across cultures and nations over historical time. Ruck’s new research, published with Professor Bentley this summer in *Science Advances*, measures the importance of religion in 109 countries spanning the entire 20th century. The study, showing that a decline in religion influences a country’s future economic prosperity, made the front page of Britain’s leading newspaper, *The Times*.

Ruck’s appointment is funded by the Office of Research. He is also a member of the NIMBioS DySoc group created by Professor Sergey Gavrilets. Ruck, originally from England, received his PhD from Bristol University, United Kingdom. He looks forward to exploring the pubs and great outdoors that are in abundance here in East Tennessee. Welcome to Knoxville, Damian!

Permanent Curator of Collections

**ELLEN LOFARO** is the permanent curator of archaeology collections. She has more than eight years of curation experience, having previously worked at the Florida Museum of Natural History in Gainesville, in addition to research fellowships at the Getty Institute of Los Angeles and the Plains Indian Museum in Cody, Wyoming.

Lofaro also brings nearly a decade of experience consulting on the Native American Graves Protection and Repatriation Act (NAGPRA) and will serve as the NAGPRA coordinator for the anthropology department. In addition to her scholarly publications, Lofaro has submitted three notices to be published in the US Federal Register – a major milestone in the NAGPRA process as these publications represent many years of ongoing consultation with Native American tribes, as well as research and compliance paperwork.
Last year, Joanne Devlin, De Ann Pendry, and Lee Jantz were all promoted to distinguished lecturer after their many years of excellence in teaching and undergraduate student administration in the anthropology department.

**De Ann Pendry** (left) was promoted to distinguished lecturer in 2017. Pendry teaches Introduction to Cultural Anthropology every fall and spring semester. Her advanced undergraduate courses are well attended. Her recent published research has focused on immigration policies and immigrant rights here in Tennessee. She is a co-founder of the Allies of Knoxville’s Immigrant Neighbors and created educational materials for Humanities Tennessee.

**Lee Meadows Jantz** was promoted to distinguished lecturer in 2017. The associate director of the Forensic Anthropology Center, Meadows Jantz is responsible for the Body Donation Program and curation of the William M. Bass Donated and Forensic Skeletal Collections. Meadows Jantz taught human osteology every year for decades and regularly teaches summer programs with the Forensic Anthropology Center. She was an instructor for the National Forensic Academy for over a decade and has served as a consultant to federal, state, and local law enforcement agencies.

**Devlin (not pictured)** teaches Anthropology 110 each semester and a variety of upper division courses that help complete our major curriculum. She is also assistant director of the Forensic Anthropology Center, director of Undergraduate Studies, and coordinates the graduate professional training series at the Forensic Anthropology Center. Devlin’s recent bio-anthropological research includes an anthropology course reader and co-PI role on grants from National Institutes of Justice.

In spring 2018, **Jan Simek’s** presidential portrait was unveiled. With warm congratulations and short tributes from Jimmy Cheek and others, Simek saw the portrait, which he had not seen until the cloth was removed at the ceremony. Never one for ostentation, Professor Simek said it was a bit strange to have a portrait of him, but wonderful, and then expressed his gratefulness to serve the University of Tennessee and thankfulness to all those who made the progress possible during his tenure as president.

**Barbara Heath** was promoted to professor and elected president of the Society for Historical Archaeology. A longstanding member of SHA, she has previously served on the board of directors and chair of the membership committee. Professor Heath has also served on the executive board of the Council for Northeast Historical Archaeology, as the president of the Council of Virginia Archaeologists. She is a long-standing member of the steering committee for the Digital Archaeological Archive of Comparative Slavery based at Monticello in Virginia.
Locating Unmarked Human Graves

The Forensic Anthropology Center has teamed up with ORNL researchers to use airborne laser scanning and 3-D modeling to find unmarked gravesites. The technique, which makes use of LiDAR, could help accelerate the search for clues during crime scene investigations.

Led by Katie Corcoran (ORNL), Amy Mundorff (anthropology), and colleagues, students with the Forensic Anthropology Center prepared a site with three human graves of varying sizes, including one mass grave, one control pit, and surrounding undisturbed ground. Using a tripod-mounted terrestrial LiDAR sensor, the team scanned the test area four times over a 21-month period, picking up millions of data points that collectively painted a digital picture of what was happening at the ground’s surface. The team then used the sensor data to 3-D model small changes in ground’s elevation—changes that were caused by disturbances of the soil as the bodies were decomposing. The study, published in Forensic Science International, is the first to use these techniques to locate unmarked graves.

“This study helps forensic human rights investigators because it reduces the amount of time a team must be on the ground in active conflict situations,” says Dawnie Steadman, director of the Forensic Anthropology Center.

The past academic year has been busy and productive for the FAC. The year began with the first FAC Open House at the Bass Forensic Anthropology Building. The entire Knoxville community was invited to see what forensic anthropologists really do with hands-on stations, a tour of the FAC laboratory, and learning about current FAC research. Several hundred community members helped dedicate a memorial garden to all the body donors and their families as well.

This coming year the FAC will continue its forensic research projects and train students and law enforcement communities across the globe. One project, with partners at Lincoln Memorial University and funded by the National Institute of Justice, investigates how certain lipids (fat molecules) in bone can reveal how long ago a person died (postmortem interval). This method has been used on muscle, but never before from bone, which survives much longer than soft tissues after death.

The FAC is also conducting research in biometrics, which are images of the irises of the eye, fingerprints, and face that can be used to identify people after they have died. The study involves FAC pre-donors who have indicated that they would like to be involved in research while they are alive. In the future, this technology can be used by military and law enforcement to identify quickly people at the scene.

The FAC welcomes two new staff members this year. Mary Davis is a new FAC research associate who will help facilitate FAC research and coordinate the body donation program. Melanie Beasley launched new studies on how isotopes can be measured in different human tissues, such as hair or teeth, to infer where people lived during different stages of their life – this can help forensic investigators identify unknown remains.

In all, FAC professors, students, and their partners have published more than 20 articles and presented nearly 40 papers at scientific meetings. FAC also conducts about 40 outreach presentations a year to learners of all ages – from preschool children to retirement and civic groups.

Another great year for the FAC!
Studying every aspect of the human condition.

Students in our department have the opportunity to learn about the breadth and diversity of anthropology by studying cultural, biological, and archeological anthropology because of support from our generous friends and alumni. Learn more about how you can support our ongoing legacy at UT by visiting anthroplogy.utk.edu.