EXCHANGE

POSTTRAUMATIC GROWTH
Research Illuminates How Trauma Can Lead to Growth
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The University of North Carolina at Charlotte is open to people of all races and is committed to equality of educational opportunity and does not discriminate against applicants, students or employees based on race, color, national origin, religion, sex, sexual orientation, age or disability.
Dear Alumni & Friends,

In this issue of Exchange, a common theme emerges: mentorship. We sometimes think of mentoring as a kind of individualized teaching, but in graduate study especially, it is much, much more.

The word, “mentor,” is taken from a character in Homer’s The Odyssey. In his absence at the Trojan War and during his long journey home, Odysseus placed Mentor, an elder, in charge of his young son Telemachus. After the 10-year Trojan War, it took another 10 years for Odysseus to find his way home, and in the meantime, a hoard of suitors camped out in his home, wanting to marry his supposed widow, Penelope, because everyone assumed Odysseus was dead.

This is where the story becomes interesting. While Mentor was certainly a wise and thoughtful old man, Telemachus’ guide through most of the epic is actually “grey-eyed” Athena, who assumed the human form of Mentor. When the suitors were bullying Telemachus, poaching on his inheritance, and insulting his mother, not only did Athena prompt Telemachus to stand up to these ruffians, but she also found him a ship, and sailors to sail the ship. She caused the suitors to fall asleep, allowing Telemachus to leave his home and gather a force that would help him expel the encroachers on his home. Athena, both the god of war and the god of wisdom, was a dynamic force, who refused to let Telemachus whine about his lost father and impelled him to fight for change. At the end of the story, Telemachus has grown into himself as a warrior and leader, and is poised to become his father’s successor.

This is what a mentor is – not just a dispenser of good advice but also a proactive partner who creates an environment so that student accomplishment is made possible. Sometimes the mentor uses a “hands-on” approach, sometimes not. Sometimes she prods, and sometimes she steps back. Sometimes he tells students to stick to it and sometimes he tells students to take a break and treats them to pizza. The ultimate goal of mentoring is to welcome our students into the world community of scholars and teachers.

In this issue, we celebrate Heather Smith, professor of geography and director of the doctorate in Geography and Urban Regional Analysis, who is this year’s UNC Charlotte Harshini de Silva Graduate Mentor Award recipient. Her colleague, Wenwu Tang, whose research is on complex adaptive systems, notes that his undergraduate and graduate students have been integral to a Web GIS portal that helps the Gaston County Department of Health and Human Services map and monitor well quality. Juan Vivero-Escoto, assistant professor of chemistry, specifically seeks out underrepresented high school students, beginning the mentoring process early for these pre-college students. And Lisa Walker and Murray Webster, professors of sociology, in describing their research on social inequality, clearly demonstrate the importance of the student team they assemble. Significantly, it is students themselves – particularly our two Goldwater Scholars and the Levine Scholar on her way to Oxford as an Ertegun Scholar – who eloquently attest to the importance of mentoring in their college career.

In ancient Greece, “grey-eyed Athena” provided ships and sailors for her protégé. In 2017, the resources are not so tangible – and certainly not so dramatic. Nevertheless, as so many of our stories in this issue and other issues demonstrate, the deep-seated bond created between student and mentor is one of the most significant outcomes of a university experience and is the critical foundation for the continuation of critical inquiry and scholarly discovery.
News Briefs

“Learning from the past is critical as we confront the challenges of today.”

— Dean Nancy A. Gutierrez

Heather Smith, Called Amazing Mentor, Earns Harshini V. de Silva Honor

Heather Smith, professor of geography and earth sciences and director of the doctorate in Geography and Urban Regional Analysis, is the 2017 recipient of the Harshini V. de Silva Graduate Mentor Award. “While one-on-one interactions will always be the cornerstone of the mentor-mentee relationship, Dr. Smith’s ability to merge her exceptional research expertise with her thorough understanding of the Charlotte-Mecklenburg community have been integral to her success as a graduate mentor,” says Joan Lorden, provost and vice chancellor for academic affairs. “Through her community research, she guides students to understand better the processes required to engage with the community through thoughtful endeavors that build community trust.”

In 2005, Smith, along with Owen Furuseth and Michael Dulin, co-founded the Mecklenburg Area Partnership for Primary Care Research (MAPPR). This research network works to understand the primary care needs of disadvantaged communities in the greater Charlotte area. In her role as leading social scientist, Smith provides qualitative research and helps graduate students interested in health services build research skills and develop expertise while supporting community-engaged activities.

Language Resource Center Leader Honored for Engagement, Leadership

For his leadership in foreign language education throughout North Carolina and nationally, UNC Charlotte’s Bobby Hobgood in late 2016 received a “lifetime achievement award” as the recipient of a Foreign Language Association of North Carolina Honorary Life Member Award. He also in March 2017 received the annual Educator of Excellence Award from The Southern Conference on Language Teaching.

Hobgood is director of The Language Resource Center, a technology-enhanced facility that supports foreign language and ESL learning and teaching. “The opportunity to engage others in their learning holds an important place in both my personal and professional lives,” Hobgood says. “My work has taught me how to incorporate the complementary roles of both teacher and learner.”

Hobgood advocates for the modernization of language learning via hybrid programs and the integration of technology. Colleagues describe Hobgood as a strong supporter of professional development for foreign language teachers and as someone who stays ahead of the curve with technology trends.
Historian Wins International Book Prizes For Innovative Research

UNC Charlotte history professor Mark Wilson has won two top international prizes from the Business History Conference for his book, *Destructive Creation: American Business and the Winning of World War II*, including the Hagley Prize for the best book in business history in the previous year. Wilson also was co-recipient of the Gomory Prize, in the first time a scholar has won the organization’s two major book awards. Wilson’s book takes a fresh look at how the United States transformed its massive economic capacities into military might, which proved critical to winning the war against the Axis powers.

The Business History Conference offers the Hagley Prize jointly with the Hagley Museum and Library, one of the nation’s most significant research libraries dedicated to the history of business. The award is particularly focused on innovative studies that have the potential to expand the boundaries of the discipline and includes a medallion and $2,500 prize. The Ralph Gomory Prize, made possible by the Alfred P. Sloan Foundation, recognizes historical work on the effects of business enterprises on the economic conditions of the countries in which they operate. The co-winner was Johan Mathew of Rutgers University.

Professor of French Receives NEH Fellowship

Allison Stedman, associate professor of French at UNC Charlotte, has received a prestigious National Endowment for the Humanities fellowship to complete a book project with relevance for understanding mind-body connections, the history of medicine, miracles, mysticism, holism, and metaphysical theology.

The year-long fellowship will support the outcome of in-depth research to be conducted at the Arsenal Library and the French National Library in Paris, France for Stedman’s book, *The Mind-Body Connection in Early Modern France, 1580-1735: Metaphysics, Mysticism, Miracles, Medicine*.

“This NEH Fellowship is a distinct honor, and we are so proud of Dr. Stedman,” said Nancy A. Gutierrez, dean of the College of Liberal Arts & Sciences. “The award will support her research and will generate knowledge that can be shared with our students and the broader community. Learning from the past is critical as we confront the challenges of today.”

Africana Studies Faculty Member Receives Nigeria’s Top Academic Honor

UNC Charlotte scholar Tanure Ojaide has been named recipient of the Nigerian National Order of Merit (NNOM), in the Humanities category. Established in 1979, the Nigerian National Order of Merit is the highest academic honor in Africa’s most populous country. The award is conferred annually on the most deserving scholar and intellectual who has made outstanding and ethical contributions to national and global attainments in one of these areas of scholarly endeavor: humanities, sciences, engineering, and medicine. Previous recipients of the award include Professor Wole Soyinka, the 1986 Nobel Laureate in Literature.

Ojaide, Frank Porter Graham Professor of Africana Studies, is a prolific writer with over 30 books, including poetry collections, memoirs, collections of short stories, novels, and scholarly books. His poems have been anthologized in dozens of major anthologies. A two-time Fulbright Scholar, for the years 2002-2003 and 2013-2014, he was also the recipient of a 1999-2000 National Endowment for the Humanities Fellowship. Ojaide has received more than a dozen book prizes and accolades, including the African Literature Association’s Fonlon-Nichols Award, the Commonwealth Poetry Prize, Cadbury Poetry Prize, the Association of Nigerian Authors’ Poetry Award and UNC Charlotte’s First Citizens Bank Scholar Medal Award.
Mathematical equations cycle through Kevin McGoff’s mind, as he pedals his bike on the system of greenways in north Charlotte.

The UNC Charlotte mathematician’s thoughts shift into gear, centered on problems associated with his field of study – dynamical systems. Dynamical systems serve as important mathematical models for a wide array of physical phenomena, relating to things like weather modeling, systems biology, the spread of disease, and statistical physics, for example.

In mathematical terms, such a system consists of a state space, in which a point represents a complete description of the system, and a rule governing the evolution of the system from one state to another. They basically are units whose state evolves over time according to a kind of logic or rule.

On this spring day on the greenway, the verdant greenery that envelops McGoff, the ground beneath him, and the air he breathes, are all parts of a massive dynamical system – the Earth itself. In McGoff’s case, curiosity about Earth as a system was the original spark for what has grown into a research agenda with implications for disease and other societal issues.

In one area of research, McGoff collaborates with epidemiologists who are studying the spread of diseases in populations and the dynamical effects that come into play within organisms. He currently is working with biologists to study malaria, work that grew from seeing system similarities through work with dynamical systems associated with circadian rhythms.

“You have these parasites that get into your body, and they essentially overwhelm your immune system in a dynamic way,” he says. “They all burst out of their cells at the same time, and then they swarm your immune system, and that’s when you get these spiking high fevers. That happens periodically.”

Researchers need to understand how this happens. “There must be some underlying dynamical system which tells them when to burst out,” McGoff says. “If we can now study these parasites through observations of their genetic behavior over time – dynamic signatures of their genetics – the hope would be that we could understand what program is encoded in their DNA that allows them to coordinate their behavior. Of course, if we can understand what’s making them work, then the next step is how to break it.”

McGoff and colleagues have published in journals including Genome Biology, The Annals of Probability, and The Annals of Statistics and other publications. He continues to explore the theoretical side of dynamical systems, while he also collaborates on practical applications. Both have a place in research in this field, he says.

“Beginning with concrete examples of systems and then abstracting the relevant properties is often a good way to find interesting theoretical questions for further study,” he says.

McGoff has received National Science Foundation funding to focus on characterizing when traditional statistical procedures may be effectively applied in the context of dynamical systems.

“Imagine that you’re a scientist, and you want to understand the way a certain system works,” McGoff says. “You might have some form of equations that you think makes
sense, but you want to know what exact parameters should I choose for this, or at a bigger level, what form of equations should I even select as a model for my data?"

In many cases, the underlying models that people try to use are dynamical systems. "This effort brings my knowledge of dynamical systems to bear on these statistical inference problems, going from observations of a system and trying to reconstruct the model," he says. "So, how do you use the information you get from your observations in an intelligent way to understand the underlying dynamical system?"

In one discovery, McGoff has found a way to describe what he calls a random dynamical system.

“You basically have a big bag of dynamical systems,” he says. “And, a lot of what has been done in the past has been to pick one out specifically and look very carefully at it and understand how it works. One approach I looked at in specific cases was to select one at random and ask, “What does that one look like?” This helps to characterize what typical systems do, which can have more relevance for the real world. If you looked out into the world, what behavior would you expect to see? You would expect to see typical behavior. But, what is that? You need some way of choosing a system at random and then asking what it does.”

As McGoff works with undergraduate and graduate students, he reminds them of the need to continue to take varying views of problems and to consider things from different perspectives. "Always take a different approach," he says. "When an approach works, it just flows. An idea can come at a completely random time, like the shower in the morning or on a bike ride. When you have an idea, and the consequences just start flowing, and when you get that cascading effect of ideas, you know you’re onto something.”

Words and Image: Lynn Roberson
Stories of the American South are steeped in a sense of lostness, often seen through the eyes of children as they experience loss, grief and tragedy.


“My book examines the motif of the lost child, the impact of change and loss on children, and the sense of ‘lostness’ that pervades the work of many Southern writers,” says Eckard, who has edited *The Thomas Wolfe Review* since 2013. Her book grew out of her years of research and teaching of *The Lost Boy* and other works of Southern literature.

The stories told in Fred Chappell’s *I Am One of You Forever*, Mark Powell’s *Prodigals*, Kaye Gibbons’ *Ellen Foster*, Sue Monk Kidd’s *The Secret Life of Bees*, Bobbie Ann Mason’s *In Country*, Robert Olmstead’s *Coal Black Horse*, and Lee Smith’s *On Agate Hill* take place during different historical periods. Each work is cast against the backdrop of the South during eras of change and conflict from the Civil War and Reconstruction to the Vietnam War and the Civil Rights Era.

Lostness in these novels is understood as a complex state with multiple root causes, such as losing one’s way, losing something or someone important, or losing out on life opportunities. Young characters embark on personal quests to find someone or something or to resolve their grief or struggle.

As they have delved into *The Lost Boy* and other Southern literature, Eckard’s students have found commonalities between the characters in the books. They seemed to circle back to Wolfe’s novella, published in 1937, with what she calls a knowing sympathy that bridged his generation and theirs.

For Eckard, Hurricane Katrina’s crushing devastation and the way it ripped apart lives proved a pivotal moment that pushed her forward in researching and writing the book.
Tyler Harris says, "I just remember being so horrified at what was taking place," she says. "The utter lostness of homes, families, children, even animals. It was lostness on a scale that I had never seen before, even though 9/11 was so awful, this was somehow different because it was a slow unfolding of trauma that destroyed so many people's lives."

A former nurse and childbirth educator, Eckard became interested in Wolfe at a young age. "My interest grew from being a North Carolina resident – and from visiting his mother's old boarding house, the Old Kentucky Home, now the Thomas Wolfe Memorial, in Asheville, North Carolina," she says. "I was an avid reader and had already read Wolfe's Look Homeward, Angel, and I found its rich, deep and exuberant language exciting. From there, I started seeing connections between Wolfe and other Southern writers with North Carolina ties."

Given the time period of his life, some racist themes exist in Wolfe's books. Yet, Eckard sees signs that Wolfe was changing in his views. "Wolfe's first publication was when he was in his 20s, and he died at age 38, so he lived a short life," she says. "But what happened during that time period was Hitler coming to power, and Wolfe, whose girlfriend was Jewish, began to see the discrimination and atrocities taking place with the Jewish people."

Just before he wrote The Lost Boy, Wolfe traveled on a train from Germany bound for Paris. The train stopped, and the Gestapo came aboard to arrest Wolfe's traveling companion, because he was Jewish and leaving the country with more currency than Nazi law would allow. "It was a very troubling and disturbing incident to Wolfe," Eckard says.

"It seems clear that he had begun to perceive parallels in the treatment of black people in the South, when thinking about Nazi actions, she says. "The Lost Boy was published a year before his death, and there's a passage that speaks to the mother's racism," she says. "Though he's not directly challenging it, Wolfe presents it in a way that you know he is not condoning it."

His treatment of interactions and conflict seem different in later books than in his first novel, she says. "Wolfe especially was a man ahead of his time, very aware of class difference and the impact of big business and greed on people as well," she says. "His novels explore a quest for home and belonging, I actually think in today's world we are seeing part of what he experienced, a fracturing of community."

In her classes, Eckard tries to convey the idea of building community and belonging. She works to engage her students and foster communication among classmates within the first few days of class so that everyone knows one another by the second week.

"I frequently bring food to class to share, as do students from time to time," Eckard says. "It's not just food for food's sake, but a way for people to bond and connect. As Wolfe demonstrates through his writing, we all experience loss – it's how you grow. But having a solid community around you makes it much easier. Food seems to help the process along."

Eckard's next project is also focused on Wolfe, drawing more directly from her earlier career in nursing by looking at how Wolfe treats issues such as death and illness in his writing. Her project falls within the interdisciplinary field of narrative medicine.

"Narrative medicine emerged as part of the medical humanities movement, to help patients and families voice their experiences of illness," she says. "The hope is that health care professionals will treat patients as humans with individual lives and stories, rather than just another clinical assessment. By encouraging doctors to look at the whole story of how a patient became ill and what the experience is like, a more humane and individualized treatment can be provided."

Eckard will take theories from prominent experts in narrative medicine and apply them to Wolfe's writings, to better understand his obsession with illness and death stemming from personal family tragedies. She wants to show how storytelling and literature are central to understanding illness, something Wolfe seemed to instinctively know.

"As a nurse, I found it especially true that literature helped me make sense of things," Eckard says. "Literature helped me understand my patients better, made me a little more compassionate, and have a different perspective of illness than what was just provided from my clinical training. I've seen plenty of trauma and suffering, but literature put the pieces together to help me make sense of what it really means to be fully human."
In the push to develop cancer treatment options, tiny nanoparticles have shown promise, particularly as drug delivery systems with fewer side effects than chemotherapy. UNC Charlotte’s Juan Vivero-Escoto is a leader in this work, designing nanoparticles to target cancer cells.

"Consider a cancer cell to be like a lock," says Vivero-Escoto, a chemical engineer by training and an assistant professor of chemistry. "By knowing various characteristics of a cancer cell – higher reducing environment for example – we can design nanoparticles that will target these cells. The nanoparticles are the keys that fit the locks of the cancerous cells, treating them only. Because of the lock and key combination, the nanoparticles bypass healthy cells – because the key doesn’t fit."

The growing field of nanomedicine has Vivero-Escoto reaching across disciplines to work with colleagues in biology and microbiology. Through collaboration in these areas, consultation with physicians, and his chemistry and materials science expertise, he designs these novel hybrid silica-based materials for biomedical applications.

"I want the result to be a relevant process, something that clinics treating diseases can translate and use," he says.

Vivero-Escoto’s efforts to engineer hybrid silica-based nanoparticles into efficient platforms for intracellular drug delivery systems has received funding from the National Cancer Institute (NCI), along with seed funding from the SPRINT program, a joint initiative between UNC Charlotte and the State of São Paulo Research Foundation.

“My vision is to combine basic science understanding with materials science to solve some of the most relevant problems of our time," Vivero-Escoto says. “Cancer treatment is one area of interest, and another is drug-resistant bacteria, which is also a significant issue.”

The work funded by NCI focuses on pancreatic cancer. He is collaborating primarily on this work with Pinku Mukherjee, Irwin Belk Distinguished Professor of Cancer Research and chair of the Biological Sciences Department. Their hope is that hybrid mesoporous silica nanoparticles will be effective in delivering a cocktail of anticancer drugs using the mucin-1 antibody (TAB004™) as the key for the treatment of pancreatic cancer cells.

“Only six percent of people diagnosed with the disease live five years after diagnosis,” he says. “We need to find better treatments. The nanoparticle system encapsulates drugs and serves like a carrier or a shuttle to deliver the drug to a specific area of the body. Nanoparticles are smart. They target where the tumor is. The idea is to have the ability to control where the drug is released. Currently, anti-cancer drugs, once injected into the body, go all over the place. They are not target specific. They can be internalized in healthy tissue.”

As a result, good cells along with the bad cells, are destroyed, compounding the difficulties of recovery for patients when their immune systems are weakened.

In another study using nanoparticles, involving photodynamic therapy or the use of irradiated light, Vivero-Escoto and
collaborators in Brazil are looking to apply technology to skin and breast cancer treatment. “We are using molecules that are nontoxic, called photosensitizers,” he explains. “When nanoparticles containing a photosensitizer such as porphyrin—which occurs naturally in red blood cells—are injected into the body, irradiated light then activates the treatment to kill the cancer cells,” he says. “This is an alternative to chemotherapy and radiotherapy. It has less toxicity.” Clinical trials are under way in Brazil.

Vivero-Escoto explains, “When nanoparticles containing a photosensitizer such as porphyrin—which occurs naturally in red blood cells—are injected into the body, irradiated light then activates the treatment to kill the cancer cells,” he says. “This is an alternative to chemotherapy and radiotherapy. It has less toxicity.” Clinical trials are under way in Brazil.

Photodynamic therapy is now gaining traction in treating antibiotic-resistant bacteria. “People are really scared that antibiotics aren’t working anymore,” he says. “The overuse of antibiotics has led to many bacteria being resistant to antibiotics. We believe this photodynamic approach is a novel way to kill bacteria.”

Vivero-Escoto received the 2013 Ralph E. Powe Junior Faculty Enhancement Award, a national award from Oak Ridge Associated Universities, a consortium affiliated with the Oak Ridge National Laboratory. He has collaborated with the Nanomaterials Chemistry Group at the laboratory to develop biomedical nanoparticles. He is widely published, most recently addressing breast cancer treatment in the Journal of Biomedical Nanotechnology. Other authors were Dréau Didier, Laura Jeffords Moore, Alvarez-Berrios, Mubin Tarannum, and Mukherjee.

Now, he and Jay Troutman, associate professor in chemistry, are working on topical treatment that will deliver treatment via photosensitizers, which when activated with irradiated light, will kill bacteria. The Charlotte Research Institute funds the study.

While working with other researchers, he also seeks mentoring opportunities to help students grow as scientists. He involves high school, undergraduate and graduate students, and postdoctoral fellows in his work. “We’re training them to be good scientists and good citizens,” he says. “We teach about safety, ethics, and how to do research.”

He and his students also reach out to elementary and secondary students, particularly underrepresented students. “It’s something I feel very strongly about,” he says. “As a minority myself I feel it is very important. I have an extra degree of responsibility to be a role model.”

He has developed an outreach program known as Think Big, Do Nano, to introduce minorities and underrepresented students to college and to possible fields of study, particularly in STEM (science, technology, engineering, math) subjects. “The goals are to increase the population of underrepresented groups that pursue higher education, and to enhance the participation of minorities in STEM careers,” he says. “We are trying to plant a seed.”

He and his students visit local elementary and high schools; participate in the UNC Charlotte Science and Technology Expo, which is open to the public; host schools and summer interns in the chemistry labs; and showcase nanotechnology at Discovery Place.

“It’s really exciting to engage with the community in this way,” he says. “If I could do it, I would pretty much do it the whole day. While surveys indicate short-term impacts, we are hoping that kids will remember long-term. We do what we can. If we can convince one kid to be a scientist, I will be happy.”

Words: Leah Chester-Davis | Image: Lynn Roberson
CONSUMING IDENTITY

Research Finds Role of Food in Redefining the South

Pull it from the oven, crisp, golden and fragrant in its cast iron pan. Slather the top with melting butter, drizzle on the honey. That wedge of hot cornbread is more than just lunch. It makes a statement – about you, your family and perhaps about the place you occupy in the story of the American South.

On a journey through the restaurants and kitchens of the South, the linkage between food and identity came clear to Ashli Quesinberry Stokes, a communication studies associate professor and director of the Center for the Study of the New South. She and her colleague, Wendy Atkins-Sayre, faculty at the University of Southern Mississippi, have co-authored a new book that details their findings.

*Consuming Identity: The Role of Food in Redefining the South* (University Press of Mississippi), documents how food flavors our memories and messages, telling stories both intentional and unintentional.

“A lot of people are writing and talking about Southern food,” Stokes says. “What we have done is write about the way people are talking about Southern food. When we in communication studies use the word ‘rhetoric,’ we’re talking about persuasion and persuasive messages. We were interested in how the messages we send about food – by talking about it or serving a particular food – shape who we are.”

Food tours throughout the South took the researchers to farmers markets, restaurants, gas stations, and home kitchens. Stokes and Atkins-Sayre ate, asked questions and listened as the people they met served up story after story.

“We call it rhetorical field research,” Stokes says. “There has been a movement in my field to get beyond just what’s on the page. I’m a rhetorician by training, and
I usually study words on a page. This time, we were studying persuasion by having conversations, analyzing photographs on restaurant walls, tuning into the music playing in the background, and even considering the neighborhood we’re exploring.”

Their research builds upon the argument that food holds such significance to Southern culture that it can also offer a way to help build connections across lines of class and race.

“Southern food and Southern food movement rhetoric serve a constitutive, or identity-building, function by helping to craft a Southern identity based on diverse, humble, and hospitable roots,” they write. “This identity offers a hopeful alternative to those identities based on race and class divisions and regional stereotypes. Moreover, this constitutive work has the potential to open up dialogues in the South and create communities by considering the diversity of experience through the celebration of the food.”

Stokes says the research indicates that one reason so many are drawn to the Southern table is that the foods of the region help create a sense of “us-ness” among those that pull up a chair. Or, said another way: Barbecue.

“Food can’t fix everything. But maybe you can start a conversation because of a dish you have in common.”

— Ashli Quesinberry Stokes

“Someone might write about fried chicken or other popular Southern entrées, but when she declares a style the ‘right’ kind of barbecue, she immediately speaks to her background, upbringing, and expectations,” Stokes writes. “Tussling about which barbecue is best engages identity-forming behavior.”

Barbecue is a shared love, even with its stark divisions. Despite brightly drawn lines – the red sauce fanatics, the vinegar aficionados, the mustard-lovers all standing well apart from one another – barbecue still serves as a bridge across cultural lines. Barbecue joints draw fans from all backgrounds, to eat their style of choice side by side, often tightly packed in at egalitarian counters.

“Food can’t fix everything. But maybe you can start a conversation because of a dish you have in common,” Stokes says. “What does this mean in this weighty, divisive time? To me, it symbolizes an opening. Not a fix. But maybe an opening.”

Stokes previously has researched and written about public relations and social movements. She found herself drawn to the Slow Food movement and decided with Atkins-Sayre to meld the interests. They read everything they could on Southern food, and compiled lists of the foods they thought would be represented by different regions of the South. Then it was time to hit the road, with their questions and their appetites.

At low country Bowens Island Restaurant near Charleston, S.C., they joined locals and island guests gathered around as a heap of steamed oysters poured onto raw, pinewood boards. The authors learned how best to pry open the shells and delved into coastal history, joining in fellowship forged around the communal table.

At Doe’s Eat Place in Greenville, Mississippi, the conversation was bathed in hospitality, as the owners pressed on the researchers sample after sample of all the meats on the menu. At Domilise’s sandwich shop in New Orleans, they listened to guests and servers discuss the recent death of the restaurant’s matriarch, and the place she held in history.

Food tells stories of death, but also of birth, background and belief. Consider the humble cornbread, about which fierce opinions fly. Should it contain white cornmeal or yellow? And, most contentiously, does sugar belong? Respected food writer Kathleen Purvis explored the sugar-in-cornbread debate in a newspaper story that generated some of the hottest debate of anything she has written. It turned out people were worked up not about a recipe, but about an implication that the way you like your cornbread depends on your family’s racial and economic roots.

A preference for sweetened cornbread historically may have spoken “to whether you had the ability to afford sugar or the type of cornmeal you were using,” Stokes says. “If you had sugar, you could sweeten yellow cornmeal a bit.”

The research comes at a time of national fascination with authenticity in flavors, ingredients and meals. Purvis, who is food editor for The Charlotte Observer and author of books on Southern ingredients, says the pull toward Southern food is an old one, in part because of the messages many believe Southern food sends.

“There’s something about a lot of it that is a romanticized notion about the South being a simpler, ‘truer’ place,” she says. “I think that’s what people are drawn to.” For Stokes and her colleague, the draw remains a desire to uncover the deeper message.
Aftershock    Horrific event    Depression
Grief    Life-altering    Belief System
Stress    Anxiety    Personal Strength
Earthquake    Greater appreciation    Control
Vulnerable    Deeper compassion    Growth
Distress    Invisible wounds    Unsolvable
Uncontrollable    Foundation rocking
Deep recognition    Robust relationships
New possibilities    Confidence    Strength
Positive change    Time heals all wounds

Posttraumatic Growth
Research Illuminates How Trauma Can Lead to Growth

The man waited off to the side as Richard Tedeschi finished his remarks and then, as the audience was filtering out, made his way over to Tedeschi. Something was on his mind.

The fourth annual UNC Charlotte Veterans’ Health Conference had drawn crowds eager to discuss veterans’ reintegration into civilian life. The attendee, a young veteran, described to Tedeschi a horrific event he experienced while serving in the military. The emotional aftershocks leveled his life. He spent years afterward doing little except isolating himself and struggling with depression.

“But then he roused himself and started going back to school,” says Tedeschi, professor in UNC Charlotte’s Department of Psychological Science. “He has a plan for how more education is going to give him an opportunity to be of service again. He recognizes he’s on a new mission.”

This story of a person who rises from trauma and grief to experience something new in himself is one Tedeschi has heard from people young and old, from every walk of life. He and fellow researcher Lawrence Calhoun, UNC Charlotte professor emeritus in psychology, years ago coined the phrase “posttraumatic growth” to describe what they have witnessed—that some people will grow and change in new ways after they undergo trauma.

Tedeschi and Calhoun – both practicing clinicians as well as researchers – have published widely on the topic, and their work has been cited around the world in academic publications, newspapers and magazines.

In one of their books, Posttraumatic Growth in Clinical Practice, these pioneers offered clinicians and laypeople helpful suggestions, based on practical experience, for dealing with trauma survivors.

Their work has continued to grow and evolve, as they find new avenues of research, gain new collaborators and mentor new students. Yet, when they first introduced the concept of posttraumatic growth in the mid-1990s, it represented a dramatic departure from the way psychologists and laypeople regarded trauma.

“I think there are assumptions people make about trauma, that it invariably results in a psychological disorder or emotional disorder of some kind,” Tedeschi says.

Other myths abound: that “time heals all wounds” or that people who undergo trauma do best to put away the experience and force themselves to move on. Instead, the work that Tedeschi, Calhoun and colleagues have done shows that the aftermath of trauma can be the most important factor in what the person experiences.

“When people are confronted with very negative sets of circumstances and by being forced to deal with them, many are changed in ways they think are very positive,” Calhoun says.

The circumstances the researchers focused on were no mere setbacks for the people involved. These events were deeply wrenching: Permanent, life-altering injuries. Rape. Genocide. The loss of a spouse. The death of a child.

“One of the common elements that’s a precursor to the possibility of posttraumatic growth is that whatever happens, it has to shake the foundations of someone’s understanding of the world and their place in it,” Calhoun says. “Things do not compute right away after the event. It’s kind of like an earthquake. Earthquakes shake buildings, and may cause the whole thing to collapse.”

Similarly, he says, “trauma teaches you very quickly that you’re not in control.”

What the researchers discovered is that for some who experience such foundation-rocking events, “positive change comes from the struggle,” Calhoun says.

That’s an important note: It is not that the trauma itself worked some good in someone’s life, he says. The journey through the pain is what brings about change. The researchers emphasize that posttraumatic growth never erases pain.

“We’re not saying trauma is a good thing for people,” Tedeschi says. “Traumas aren’t good for people. Even people who experience growth hurt. We’re focused on ‘what then.’ ”

This concept is not about pain and loss making people resilient, Calhoun notes. For many people experiencing posttraumatic growth, the positive change includes a deep recognition of just how fragile they really are.

“People say, ‘I am more vulnerable than I thought and stronger than I ever imagined,’ ” Calhoun says. “There is an awareness that bad things can happen to good people.”

Posttraumatic growth looks different for different people, but Tedeschi and Calhoun have seen common themes emerge from their studies and those of colleagues with the Posttraumatic Growth Research Group, based at UNC Charlotte. The growth can show up as a newfound personal strength, more robust relationships, a deeper compassion for others, and a change in one’s philosophy of life—such as a shift in one’s spirituality, a greater appreciation for life, or the discovery of new possibilities.

“I’ve worked with people who have experienced serious medical problems that have prevented them from continuing to work and be active in the way they used to,” Tedeschi says. “It’s easy to think about that as the end of life and not having much purpose, or strength, or capability anymore.”

Yet, some have discovered that they can approach life differently, he says. “I’ve had people talk about how, despite their disability, they’re making different use of the time they have — slowing down, being more observant and appreciative. Taking time to listen to other people and talk to other people and connect in their relationships. Being brought to a halt in one way in their lives allowed them to use this extra time to live life in a more meaningful way.”

This understanding – that the aftermath of trauma contains the seeds of something new – is starting to change the way military veterans suffering posttraumatic stress disorder are treated. Depending on their service era, according to the Department of Veterans Affairs, anywhere from 11 percent to 20 percent of veterans suffer PTSD, a condition in which stress and anxiety reactions from a horrific event disrupt life and change personalities.

The researchers have realized that PTSD and posttraumatic growth “are children of the same parents,” Calhoun says. For many,
traditional methods of treating PTSD, such as exposure therapy, in which people may repeatedly discuss traumatic events in order to lessen the distress they cause, just do not work.

Tedeschi is studying the outcomes of a veterans program that instead aims to foster posttraumatic growth. Warrior PATHH (Progressive and Alternative Training for Healing Heroes), is a Virginia-based program at a rural retreat center in the Blue Ridge Mountains. There, combat veterans and their families spend days active in the outdoors, talking with fellow veterans rather than clinicians. Rather than endlessly discussing the trauma they suffered in combat, they explore their motivations for enlisting, their family backgrounds, and how they can weave into their new civilian selves the personal qualities that made them successful on the battlefield. Tedeschi says outcomes suggest the new approach is working.

The standard ways of addressing PTSD, Tedeschi told The Washington Post in a story about the program, “understandably focused on reducing distress symptoms.” With the new approach, he says, “we’re trying to focus on trauma survivorship.”

Treatment veterans’ invisible wounds with posttraumatic growth as part of the equation means helping the veterans see that they have new, valuable roles to play and much to offer, despite their struggles, Tedeschi says. The approach does not focus on taking veterans back to the way they used to be, because trauma erases any such “used-to-be,” he says. Instead, the veterans find new paths that exist alongside pain.

The UNC Charlotte researchers have watched over the years as their findings about posttraumatic growth, initially greeted with skepticism, become embraced by the psychology community and public in general.

“Professionals, in the past, were more surprised by our findings than non-clinicians,” Calhoun says. “We know this because we have had numerous laypeople over the years write us and say ‘Thank God, you’ve given a name for what I’ve experienced’ and ‘I didn’t know other people had experienced what I had gone through.’ ”

Now, the researchers have turned their attention to examining posttraumatic growth in other cultures.

“We’re looking at how our measures of this concept work in other places – in Japan, Nepal, China and Turkey – and we’re finding that the concept resonates with people no matter where they are,” Tedeschi says. “It seems to have a universal quality to it.”

Universal and affirming, they say. “That’s what’s so gratifying about this work,” Tedeschi says. “You get to find out how amazing people really are.”

While anyone is capable of experiencing positive change after a traumatic event, certain characteristics appear to be common in those who actually do so, according to the Posttraumatic Research Group. These include:

- An openness to experience – being willing to grieve, and to look at what has happened and accept it.
- A tendency to voluntarily think about the trauma a great deal.
- Being in relationships with supportive people who will listen in an accepting way and not prescribe solutions for the pain or try to hurry healing.
- An ability to focus attention and resources on the most critical issues and to disengage from problems that are unsolvable or uncontrollable.
- A confidence in one’s ability to persist into growth.

Words: Amber Veverka | Image: Lynn Roberson
Scholar to Conduct Humanities Research With Ertegun Scholarship

With her selection as UNC Charlotte's first-ever Ertegun Graduate Scholar, UNC Charlotte's Eileen Jakeway is headed to England's University of Oxford, for what she anticipates will be one of the most intellectually rich and invigorating experiences of her life.

Jakeway, a Levine Scholar and English Honors student who graduates in May with bachelor's degrees in English, French and German, will conduct graduate studies in comparative literature. Each year, only about 20 full-time graduate students in the Humanities are chosen from throughout the world to receive the scholarships.

“Getting into Oxford, and on top of that receiving the Ertegun, was an important validation that I was able to take charge of my education,” Jakeway says. While at UNC Charlotte, she has collaborated with her faculty mentors to extend her classroom education through independent research and study abroad in France, Germany and South Africa. She has presented her research at professional academic conferences across two continents.

Jakeway earned a first prize in the Charlotte Research Scholars Symposium in 2016 for her work on 16th-century French poet Gabrielle de Coignard. Through the Charlotte Research Scholars program, which provides undergraduate research opportunities, she worked closely with French professor Allison Stedman to examine the epic poem, the *Imitation de la victoire de Judich* (*Imitation of Judith’s Victory*). The Levine Scholars Program provided funding for her to do archival research at the French National Library in Paris, where Stedman was also working.

“My set of skills is very much in tune with creating research and thinking about texts in new ways,” Jakeway says. “It’s very important to continue this sort of literary scholarship to bring voices of marginalized groups to the surface, particularly women, who I am interested in studying.”

She envisions herself producing meaningful knowledge through research while also being responsible for educating young minds and working with students as a professor of comparative literature. “To me, I can’t do one without the other,” she says. “I don’t want to be an academic that only deals with abstract terms and theories. I really want to make this research meaningful to a broader audience of people.”

Much of her research is focused on devotional literature written by laywomen. “This is a doubly marginalized group, because usually religious literature is not really regarded as having the same literary merit as the sort of canonized or secular literature,” she says. “And even when religious literature is studied, mostly the literature is written by people who have previously been published, such as in convents or monasteries. So, laywomen in their own lives, how they are coping with their surroundings, that is a new frontier that has not really been valorized much as it could be.”

By understanding texts from the 1500s and the 1600s, we can understand historical diversity more deeply and draw lessons that resonate today, Jakeway says.

“I think it’s important because it shows us that there are all these different discourses and different groups of people, much as occurs today,” she says. “Just because we don’t see people does not mean they’re not there. It teaches you to think about the world in a way that makes you more sensitive to the different voices that are out there.”

In addition to Stedman, Jakeway counts as her primary mentors Diane Zabolotsky, Ron Lunsford and Anabel Aliaga-Buchenau.

“I am so grateful to have had my four years here at UNC Charlotte,” she says. “Having this individual autonomy and support from the Levine Scholars Program and also from my mentors, particularly Dr. Allison Stedman, and that sort of intellectual and professional support, has prepared me for this opportunity. It shows that here at UNC Charlotte, we are in a dynamic environment that is vibrant and that is rich and that offers many opportunities for students to really thrive in their own directions.”

Words and Headshot Image: Lynn Roberson
AUTHORS SERIES REVEALS STORIES BEHIND THE BOOKS

Consider the relationship of food to the shaping of culture. Think about the role of slaves in the abolition movement and the influence of Asheville’s Thomas Wolfe on modern authors. Pause to reflect on contemporary genocides and the forces that shape them.

Four UNC Charlotte College of Liberal Arts & Sciences researchers/authors will take guests on often unexpected, sometimes uncomfortable, yet always interesting journeys as they discuss their books on these topics during this eighth year of the annual Personally Speaking series presented by UNC Charlotte’s College of Liberal Arts & Sciences, J. Murrey Atkins Library and UNC Charlotte Center City. All the talks are free and open to the public and begin at 6:30 p.m. at UNC Charlotte Center City, 320 E. 9th Street, Charlotte, NC 28202. Registration is required at clas.uncc.edu/ps.

Southerners love to talk food, quickly revealing likes and dislikes, regional preferences, and their own delicious stories. Consuming Identity focuses on the role food plays in building identities — accounting for the messages food sends about who we are, how we see ourselves, and how we see others. Author Ashli Quesinberry Stokes is associate professor in Department of Communication Studies and director of the Center for the Study of the New South. She coauthored Consuming Identity with Wendy Atkins-Sayre.

First published in 1937, Thomas Wolfe’s The Lost Boy gives name to the theme of lost children that has permeated much of Southern literature and provides a template for telling their stories. In her book, Thomas Wolfe and Lost Children in Southern Literature, Paula Gallant Eckard looks at six contemporary writers and Wolfe’s influence upon their works. The book grew out of many years of teaching Southern literature. Eckard is associate professor in the Department of English and director of American Studies in the College of Liberal Arts & Sciences.

Christopher Cameron in To Plead Our Own Cause explores the significant contributions of African Americans in the Bay State to both local and nationwide antislavery activity before 1831. He demonstrates that their efforts represent the beginning of organized abolitionist activity in America, as blacks pleaded their own cause in the fight for freedom. Cameron is associate professor of history and is the founder and president of the African American Intellectual History Society.

The well-intentioned but hollow term “Never again” has been invoked repeatedly since the Holocaust, yet genocide continues. John Cox’s book, To Kill a People, is a warning against racism and xenophobia, and offers insights into the possibilities of resistance and human solidarity. Cox is associate professor of world history and comparative genocide in the Department of Global Studies. He is director of the Center for Holocaust, Genocide & Human Rights Studies and administers the department’s minor in HGHR Studies.

For more information: clas.uncc.edu/ps
A Confucius Institute will open at UNC Charlotte in summer 2017 to broaden the University’s outreach and support for language instruction and cultural opportunities in the Charlotte community.

“The Confucius Institute will expand our offerings in Chinese language and culture, both on campus and in the community,” said Provost and Vice Chancellor for Academic Affairs Joan Lorden. “We look forward to the opportunities for unique cultural programming, study abroad and collaborative research that this new partnership will bring to Charlotte.”

UNC Charlotte will establish the Confucius Institute within the College of Liberal Arts & Sciences in the Department of Languages and Culture Studies. UNC Charlotte is partnering with Shanxi University, a comprehensive university of arts and sciences located in Taiyuan, Shanxi Province.

“We see a growing demand for Chinese language instruction and cultural activities to better understand China, improve bilateral relations and better prepare students for future opportunities and challenges,” said College of Liberal Arts & Sciences Dean Nancy A. Gutierrez. “We anticipate the Confucius Institute will work with Charlotte-Mecklenburg Schools and other schools in the region to help students be better equipped to succeed in an increasingly globalized world.”

Chinese instructors from Shanxi University would act as teaching assistants at local K-12 schools, with supervision by the local schools.

Initial plans call for the public to be able to take advantage of community offerings, which could include conversation hours, films, seminars, lectures and artistic performances.

“Our partnership will also allow us to help organizations and businesses improve their international knowledge, and gain greater access to Chinese language and cultural instruction,” Gutierrez said. “We anticipate offering educational courses to businesses, providing Chinese language testing, and developing training courses for local school teachers.”

Long-term goals include potentially connecting UNC Charlotte students with Chinese scholarships for short-term or long-term study abroad programs in China and offering students from Shanxi University the opportunity to study at UNC Charlotte through selected collaborative agreements.

Meeting the needs of the broader community is critical, Gutierrez said. The Chinese population in the Charlotte region has shown significant growth with a 168 percent rise in population between 2000 and 2014. Local schools have responded with Chinese language classes, and the Carolinas Chinese Chamber of Commerce in 2015 led a 40-representative delegation from the Carolinas for a two-week business trip to China to explore potential collaborations. A similar-sized group went to China in 2017.

Two directors – one from UNC Charlotte and one from Shanxi University – will manage the Confucius Institute and report to a Board of Directors chaired by Gutierrez. The board includes Lorden, Chancellor Philip L. Dubois, Assistant Provost for International Programs Joël Gallegos and other campus, community and Chinese leaders.

The University and College held a grand opening ceremony on March 29 to celebrate the partnership; this event, which featured artistic performances, was open to the public.

Nonprofit Confucius Institutes operate with support from a host university and from Hanban, also known as the Office of Chinese Language Council International (CLCI), a Chinese Ministry of Education subsidiary. UNC Charlotte and Hanban will share in the funding of the Confucius Institute. There are more than 100 Confucius Institutes in the United States, including ones at North Carolina State University, the University of South Carolina, the University of Maryland and Michigan State University.

Words and Image of Celebration: Lynn Roberson
As we move through our lives, we unwittingly send out signals, shaping how people perceive and interact with us. Race, ethnicity, age, gender, educational level, and other attributes known as status characteristics can influence our power and prestige in task situations by providing us with advantages or disadvantages.

Significantly, research by UNC Charlotte social psychologists Lisa Slattery Walker and Murray Webster Jr. suggests that the status value that these characteristics carry can even influence our own behavior in our interactions. In a type of self-fulfilling prophecy known as expectation states, people can expect us to perform in certain ways based on our characteristics or our past and present behaviors, and so can we.

Expectations, generally speaking, are anticipations of the quality of future performance. If people expect a member of a group will perform poorly, based on status characteristics or behaviors, interactions will communicate and perpetuate those expectations, suggests research by Walker and Webster, professors in the Department of Sociology.

Yet, things do not have to play out this way.

“When we’re talking about status differences, like gender or race differences, people tend to think it’s a socialization issue,” Webster says, referring to how society tends to attribute a subordinate nature to women, for example.

“However, we have lots of research that shows it’s a status process, and if you just change someone’s status, they will behave differently,” he says. “If you put a woman in a position of authority, she knows how to behave and act in charge. And when you put a man in a subordinate role, he knows how to be a subordinate.”

Current responses to perceived performance or behavioral differences can prove lacking, he says. “There are a number of training programs out there, whether it’s assertiveness for women, or classes for men to get in touch with their feelings, and it’s all a waste of time,” he says. “Men and women will adapt accordingly depending on the social situation.”

The researchers’ studies consider status, behavior, inequality, and expectations, with a particular focus on small group processes. The National Science Foundation has provided funding, with additional support from UNC Charlotte. Their collaboration, which has extended for close to two decades, has influenced the understanding of ways to reduce harmful effects of status characteristics in significant areas of people’s lives, such as the workplace, classrooms, and the court system.

“The bottom line is, whether for the individual, an organization or society overall, our work can be really powerful,” Walker says. “We’re missing out on a lot of contributions that people could be making, but don’t make, because they aren’t given the opportunity to be in those positions of authority. Or, what they say gets ignored because they’re seen as a low-status person. And from a global competitiveness perspective, you really don’t want to leave any good ideas anywhere on the table.”

The researchers’ first collaboration, which also included Joseph Whitmeyer of the Sociology Department, extended existing theories of status generalization by including the effects of “second order expectations,” or the effects of others’ expectations on one’s own beliefs and behaviors. The results of this work led to better comprehension of the process underlying inequality in cooperative task groups.

They expanded their focus to developing, assessing, and improving theoretical models that could explain the effects that certain kinds of behaviors have on inequality structures in small groups. The study’s models were the first to allow precise predictions of these behaviors, as well as integrate the effects with other sources of inequality, such as status differences among the individuals.

“The idea here was, we were trying to understand how status differences could arise simply out of differential behavior patterns, that is, just from the different ways people interact with each other,” Walker says. “By creating a particular combination of behaviors and patterns between an individual and a partner, we could create a status difference.”

The status difference then determined the inequality structure of interaction and influence in the group.

The research continued to focus on how status characteristics carry connotations of esteem, social worth, and performance skills, and how altering the characteristics would affect social situations to reduce inequalities. The project addressed the problem of interaction as affected by the status characteristic of race, which they and other researchers have found often disadvantages black members of work teams.
The team devised mixed-race task groups of women aimed at equalizing influence over the groups’ decisions. In baseline groups, white women participated more and exerted greater influence than did black women. In experimental groups, the UNC Charlotte research team artificially increased the participation of black women, which in return increased their influence over group decisions.

They have published their results in leading academic journals and handbooks, with 2017 and 2016 papers and chapters in Social Psychology Quarterly and Handbook of Contemporary Sociological Theory.

Student involvement has been paramount in the research and in the classroom. Webster and Walker have incorporated results, data, and experimental designs from their projects into their courses. National Science Foundation funding has provided undergraduate and graduate students the opportunity to experience research, including work in recruiting and interviewing subjects and analyzing data.

The scholars plan to expand their research in the areas of status, behavior, and expectation, particularly looking at the effects of nonverbal cues. Walker is also working with Anita Blanchard of the Department of Psychological Sciences in applying these group processes in virtual environments, such as online message boards or on social media.

“Wherever the research takes us, ultimately the purpose and long-standing effects of this work would be to help shift society and create organizations that are more egalitarian, where you really do have a better opportunity for people to make contributions,” Walker says.
“Growing up, I was always fascinated by things that were enigmatic. This ranged from examining the flow of veins on a leaf to spending hours observing the stars.”

NEMAH-ALLAH SALEH

They are already contributing in a meaningful way to the intellectual life of our college, the university and the broader community.”

The 240 Goldwater Scholars were selected based on academic merit from a field of 1,286 natural sciences, mathematics, and engineering students from among 2,000 colleges and universities nationwide. The scholarships will cover the cost of tuition, fees, books, and room and board up to a maximum of $7,500 per year.

NEMAH-ALLAH SALEH

For Nemah-Allah Saleh, enigmatic things have fascinated her, ranging from examining the flow of veins on a leaf to spending hours observing the stars. Her passion for biology and chemistry introduced her to detailed concepts of how many chemical reactions
interacted smoothly to maintain the life of living things.

“Biology and chemistry not only enhance my understanding of elemental diversity, but they also explain the phenomena with empirical evidence, like a glimpse into a whole different realm,” she says. “What excites me as a researcher is how the investigative process benefits my professional and personal growth.”

Her rigorous coursework at UNC Charlotte has built skills such as patience, resiliency and versatility, she says. She has conducted research projects in x-ray crystallography, electrical conduction of single crystals, and electron transfer in nanostructures, working primarily with Daniel Jones and Michael Walter.

“It is really rewarding to see Nemah-Allah’s success,” Jones says. “She already has proven herself as an outstanding researcher. She is building a solid foundation in the areas of structural and molecular biology, and has grown into a confident and self-assured scholar who is eager to continue to expand her knowledge.”

She intends to pursue her Ph.D. in biochemistry or molecular biology and as a Muslim American female, she hopes to contribute to the diversification of people in the STEM disciplines. After completing her Ph.D., she intends to conduct research in a university laboratory while teaching or in a government laboratory, such as at the National Institutes of Health, on the central compound necessary for life: the protein, she says.

She counts as her mentors Jones, Walter, and Christopher Bejger at UNC Charlotte, along with Benjamin Brooks, Mohammed Sanjak, and Susan Brooks.

TESS OVERTON

“I want to make the world a better place, and that desire is what inspires me. The prospect of discovering something new will always excite me.”

For Tess Overton, personally contributing to the furthering of human knowledge is the ultimate reward for her work.

“Discovery has always been what’s drawn me to science,” Overton says. “Every scientist wants to make an impact in some way, whether discovering a new cancer treatment or a way to harness renewable energy more effectively, and I’m no different. I want to make the world a better place, and that desire is what inspires me and gets me through some of the more mundane aspects of research. The prospect of discovering something new will always excite me.”

She first began research the summer after her high school junior year at the North Carolina School of Science and Mathematics. She did research in a lab at Duke University, followed by an internship at the National Institute of Environmental Health Sciences.

In her first semester at UNC Charlotte, she began working with Shan Yan in his lab, which studies DNA damage response and repair, a multipath process that responds to endogenous or exogenous damage to DNA.

“Tess is interested in studying in the area of genome stability and tumorigenesis, and is passionate, dedicated, and committed in her cutting-edge research project,” Yan says. “With the support of Goldwater Scholarship and Crown Scholarship, Tess will be able to conduct her research project, and I am confident she will publish her research findings in a peer-reviewed scientific journal in the next 1 to 2 years.”

Overton plans to pursue a Ph.D. in molecular biology to prepare her for a career in government research. She counts as her mentors Yan at UNC Charlotte and also Thomas Kunkel, Marta Garbacz, David Kirsch, Rebecca Dodd, and Sarah Shoemaker.

Words and Image: Lynn Roberson
Who is considered a citizen? That question rests at the heart of the nation’s slavery past, and provides a historical lens through which to consider today’s racial divisions and civil rights unrest, says Gregory Mixon, professor in UNC Charlotte’s Department of History.

Mixon’s latest book, *Show Thyself a Man: Georgia State Troops, Colored, 1865-1905* (University Florida Press), explores the ways in which emancipated African-Americans sought to define their own citizenship through participation in militias. These groups allowed them to bond together through shared ritual, political organization and public celebrations of freedom, and permitted them to lay claim to broader participation in the post-Civil War South.

“Joining a militia was a means of separating yourself from slavery,” Mixon says. “You join it because you want to demonstrate your citizenship, and it may provide you with some intangible rewards about your status as a person.”

The strivings and accomplishments of these young black men some 150 years ago resonate even today, Mixon says. “*Show Thyself a Man* is about what happens when freedom comes,” he says.

“What kinds of goals and objectives did African-Americans have in defining their own freedom – outside of what whites wanted? Governing structures had to make decisions about who was a citizen and who was not. That story has never been resolved. The question of citizenship is still an ongoing discussion.”

Mixon’s investigation into Georgia’s historic black troops revealed the subtle ways in which government’s view of what it means to be a citizen at times differed from the emancipated black population’s view.

There were two militias in Georgia in the late 19th century – the state-sponsored militia and the independent militia. White Georgians used militias to ensure the postwar white right to rule and to assert states’ rights. The independent militia, on the other hand, focused on black freedom and progress.

Today, for Mixon, the lessons from the past are still relevant. Just because someone is legally a citizen of the United States does not necessarily signal full citizenship, Mixon’s ongoing research suggests.

“Full citizenship can be eroded every time an African-American is shot by the police,” he says. “Every time voting rights are threatened. Every time people get up in the morning and try to go to work and deal with employers who don’t respect them. Some human beings don’t seem to grasp that we need to treat each other with dignity, respect and equality.”

Mixon’s newest book follows his 2005 work, *The Atlanta Riot: Race, Class, and Violence in a New South City*, and is part of his ongoing research into race relations and Southern history. His commitment to historical research...
includes sharing a love of that work with his students and introducing them to the places that make in-depth research possible.

He was honored this academic year with the second annual J. Murrey Atkins Library Faculty Engagement Award, presented to a UNC Charlotte faculty member who has engaged in innovative or exceptional work with library collections, programs, and services.

Every semester, Mixon’s students complete an archives assignment in which they explore a manuscript collection and gain experience with analyzing primary sources, a core research skill that helps them hone their analytical thought processes. Mixon worked with History Librarian Amanda Binder to develop a “Who Am I” project for his 2000 level history courses. In this assignment, students research a profession that interests them, and identify an African-American pioneer in that field.

“These opportunities to work with rare and special collections truly engage students in the work of history,” Binder says. “Beyond introducing students to the Atkins Library collections, Dr. Mixon also promotes library and archives professions.”

Library faculty and staff discuss librarianship, so that students with an interest in the work can learn more about it. “It’s important for students to see what historians do but also to see what folks have generated and done and what the past looks like,” he says. “What initiated a lot of this is my ongoing relationship with the librarians.”

Mixon fell in love with libraries and history at a young age. “My mother got me into a reading club where you read 10 books during the summer,” he says. “That’s how it began. From that point on, I’ve been reading.”

Books about historical figures – he recalls one in particular about frontiersman Kit Carson – led him to explore museums and films based in historical stories. The kinds of rare and historical materials contained only in a library are the very stuff of history research, essential tools of the trade, Mixon says.

“The library – public and collegiate – has been a place that opened up a universe for me,” he says. With his research, his hands-on classroom experiences for students, his academic papers and his books, Mixon seeks to open up that wide universe for others.

Words: Amber Veverka
Images: Lynn Roberson
Call him an earth sleuth. Wenwu Tang, assistant professor in the Department of Geography and Earth Sciences, scoops up information from a targeted locale and analyzes it for clues to address any number of societal problems with a spatial component.

With his research, Tang looks at land use, land cover change, how traffic patterns may influence transportation, how pedestrians or animals may move in an area or even how disease may spread. The tools of his trade include fieldwork and cutting-edge computational science.

As executive director of the UNC Charlotte Center for Applied GIScience (CAGIS) and with a research focus of complex adaptive spatial systems, Tang is a leader in the new frontiers of cyber-enabled Geographical Information Systems (GIS) and spatiotemporal analysis and modeling. His work illustrates the broad capability of CAGIS and its resources.

Increasingly called upon by other researchers to lend his expertise, he has developed a Geographically Aware Intelligent Agents framework that helps integrate simulation, optimization, and mapping, and which facilitates modeling of geographic information systems, including coupled human and natural systems.

“It promotes our understanding of the spatial complexity of these systems,” he says.

Take the local water supply in Gaston County, for example. “Many residents rely on private wells for drinking water and irrigation,” Tang says. “While each private well may have water quality results, they don’t have a regional analysis of the results.”

Toward that end, Tang is partnering with Gary Silverman in Public Health Sciences and Eric Delmelle, also in Geography & Earth Sciences. They are working with the Gaston County Department of Health and Human Services, which received a $670,000 grant as part of a “Healthy Wells” program through the Centers for Disease Control and Prevention. Tang’s role is to develop a spatiotemporal database for Gaston County that will be used for mapping and analysis.

Short-term, the study will result in a public digital database of the county’s wells that can be used in a number of ways to analyze water quality. Long-term, the study will look at the impact of two coal ash ponds that could have the potential to contaminate groundwater. Even longer-term, the system they are developing holds nationwide implications.

“Digitizing everything is the first step,” Tang says. “Such data is not commonly available across the country. The CDC realized the importance of what we proposed, which is to develop a representative database system, a framework that can be used nationally.” The CDC is the Centers for Disease Control and Prevention.

While anyone drilling a well in Gaston County must file for a permit and have the water quality tested, none of the information from more than 11,000 wells in the county had been digitized. This gap prevents researchers and officials within the county from having the capability to monitor and analyze results within a certain radius of the coal ash ponds, for example.

Tang and a team of undergraduate and graduate students are working to change that with a Web GIS portal. “It’s a quite good opportunity for students,” he says.

The project has undertaken the laborious process of scanning and entering data from well permits dating back to the 1980s into a single portal.

“This integrates the mapping and the geocoding services,” he says. “We can use the data to see the spatiotemporal pattern of water quality. We will be able to query a one-mile radius of coal ash ponds, for example, to analyze water quality results and issues. We can create a map and get a better idea of what is impacting water quality. Without this online digital database, there is no way to do that.”

Another component of the project is fieldwork. A team will work through the summer to draw water samples from each well and test the water in a laboratory. Results will go into the database and will be another piece of information that will be used to analyze whether water quality changes over a period of time.

“Through a good geocoding algorithm approach we can see the spatiotemporal pattern of water quality,” Tang says. “By having a database, we can build models to analyze the impacts that we wouldn’t know otherwise. The next step is to make the database available to the public so anyone can query about water quality surrounding their home address.”

On a regional basis, Tang uses spatiotemporal modeling with cyber GIS, another of his research areas. Before arriving at UNC Charlotte in 2010, Tang was affiliated with the National Center for Supercomputing Applications, where he honed his cyber GIS and supercomputing expertise. He is using that expertise to forecast urbanization and its impacts on the Southeast United States, for example, in the greater Charlotte Metropolitan Area.

Through multi-spectral satellite imagery, Tang and CAGIS have tracked development in the region over the past 40 years. Basing projections on current land consumption plans, the Center modeled likely development patterns through 2030. The information is helpful to decision makers and the public. It helps forecast the consequences of current patterns of urban growth.

“If we get too much land conversion in an area, water quality may be degraded due to more people and more use of chemicals and other
impacts due to development,” Tang says. “Air quality may also suffer.”

Such modeling may also indicate a need for new transportation systems. Light rail is projected to arrive at UNC Charlotte in fall 2017 and with it greater connectivity between campus and neighborhoods and business districts as far south as Pineville. Due to how it may change transportation models, Tang and Shen-En Chen, a professor in the Department of Civil and Environmental Engineering, are looking at making UNC Charlotte a zero-emissions campus through the use of such technologies as a micro people mover based on electricity or electric vehicles that might help move students. They have prepared a proposal to the N.C. Department of Transportation for the work.

“I’m excited about this,” Tang says. “My role is to develop web GIS to collect information from faculty and students so we can best utilize these technologies to analyze needs and hopefully increase efficiency.”

The Light Rail Mapping Project, another project that Tang did, includes geocoding based on addresses of faculty, students and staff and analysis of their proximity to light rail stations.

From a global perspective, Tang is part of a U.S. Department of Agriculture and U.S. Forest Service study that is taking an inventory of mangrove forests in Africa, including biomass and carbon stock. The mangrove, a salt-tolerant tree that helps stabilize coastlines and absorbs and retains significant carbon levels, may hold helpful clues to the implications of global climate change. Tang provides spatiotemporal modeling support to other researchers in the project.

“The fieldwork is dangerous due to the conditions; there are killer bees and other pests,” he says. “Every other week they have to change teams due to the quite harsh conditions.”

He identifies optimal locations for research plots using a spatial optimization algorithm so researchers can go directly to a research site rather than to a random location. Using Google Earth and Google Maps, along with information about mangrove canopy, he also identifies and digitizes stream channels, and pinpoints possible settlements where food and water may be obtained and locations for base camps.

Another project, with Akin Ogundiran, professor and chair of the Department of Africana Studies, has Tang mapping the archaeological site of a Nigerian empire that dates back to the 1500s. “Data collection about the terrain and land use patterns will help Professor Ogundiran reconstruct the settlement dynamics in the area,” Tang says.

Tang’s fascination with the earth and geography is grounded in a childhood spent near the eastern most cape of the Shandong Province of China and his love of the outdoors. His specialties in spatiotemporal work and cyber GIS transport him locally, regionally or globally, depending on the problem he is asked to help solve. It’s a model that suits him.

““It promotes our understanding of the spatial complexity of systems.”
— Wenwu Tang

Words: Leah Chester-Davis | Image: Lynn Roberson
Van Landingham Glen in the UNC Charlotte Botanical Gardens is a woodland garden that features native plants, streams, stone bridges and winding paths. Thanks to the Rhododendron Society and Botanical Gardens’ staff, the glen incorporates an impressive variety of rhododendrons. The rhododendron collection includes native and hybrid plants, creating a space for peaceful reflection. Learn more: gardens.uncc.edu

Image: Lynn Roberson