

uncg research

Fall 2021

Research, Scholarship, and Creative Activity



NEXT LEVEL

MFA student transforms through dance **p16**

Goldwater Scholar: "This is what a scientist is" **p14**

SPEL makes a splash in the new field of evaluation **p10**

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Cover: Choreographer Billy Hawkains III performs part of his MFA thesis project.



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In the wake of the murder of George Floyd and national conversations elevated by the Black Lives Matter movement, UNC Greensboro, like many other institutions, is examining how we can deepen our work to embed equity, diversity, and inclusion at all levels of the University. As a public research – and minority serving – institution, one of the ways we're operationalizing these values is by focusing on access.

Our University's commitment to accessible excellence has already placed us first in North Carolina for creating social mobility. You'll find that dedication to access and excellence, which changes the life trajectories of our students, not only in our teaching but also woven throughout our research and scholarship.

In this issue of UNCG Research Magazine, you'll read about how our scholars bring diverse voices together to collect actionable data that accurately reflects the needs of the people we serve.

You'll see how we are developing and launching high-quality services to address gaps in health and educational outcomes.

And you'll be introduced to members of the next generation of researchers, scholars, and artists, and learn about how we're strengthening and diversifying our nation's workforces – ensuring that our findings, rigorous methods, and values are carried forward.

Our researchers are addressing some of the most challenging issues facing our communities and nation. The COVID-19 pandemic has only amplified the visibility and impacts of the systemic inequalities we must dismantle.

The work is not easy, but at UNCG, our faculty, staff, and students know that the more – and the more diverse – hands and minds at work, the smarter, broader, and better the solutions.

TERRI L. SHELTON, PHD
Vice Chancellor for Research and Engagement

FEATURES



Behind the STEM Scenes

Millions of dollars pour into STEM recruitment. But how well do these programs work? A unique lab at UNCG stakes out territory in the Wild West of program evaluation. *Photo: May 2021*



The Future of Nursing

This year, the School of Nursing moved into a new home, outfitted with cutting-edge labs, classrooms, research facilities, and more. It's a new era, as Dean Debra Barksdale takes the helm with an eye on expanding research.



Steps to Success

College students with ADHD, on average, get lower grades, are less likely to stay in school, and have a lower quality of life. A leader in the field has developed a program to change their trajectories.

uncg research

DEPARTMENTS

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ATOMIC *DILEMMA*



In 1945, the United States dropped atomic bombs over the Japanese cities of Hiroshima and Nagasaki, killing around 200,000 people, mostly civilians. Just a few years later, the Japanese government, utilities companies, and the media began to promote the use of what they called “good nuclear energy.” And, from the 1970s to 1990s, Japan became the third-largest nuclear power in the world.

Then, in 2011, an accident at the Fukushima nuclear power plant forced 160,000 residents to evacuate, and more than 2,000 died from exhaustion, disorientation, and suicides. UNCG Associate Professor Etsuko Kinefuchi, whose hometown is just an hour and a half from Fukushima, watched the devastation from afar.

“I started to ask myself, ‘How did we get here? How is there so much nuclear power in Japan, and what are the Japanese people doing about it?’”

It was the beginning of Dr. Kinefuchi’s shift in scholarly focus from intercultural communication to environmental communication. Her work has culminated in a book, set to publish later this year as part of Routledge’s Environmental Studies Series. It explores pro-nuclear discourse and the anti-nuclear movement in Japan, from the 1950s through today.

Japan faced an economic crisis after World War II, and new technology, specifically nuclear power, was part of the plan to reemerge on a global scale. Kinefuchi found that soon after World War II, the “nuclear power industrial complex” began to broadly disseminate communications that strategically presented nuclear power as green, economical, dependable, and safe.

Nuclear power plants targeted rural, economically disadvantaged areas by emphasizing the economic benefits a plant could bring to a community – jobs, subsidies, and infrastructure.

“But some local groups have been successful in rejecting plants in their communities,” Kinefuchi says. They’ve presented counter narratives that focus on community wellness and impact on future generations. For many, the health and safety



A SUSTAINABLE PEACE

of the community prove more important than financial benefits.

In large cities, there were massive demonstrations and Occupy-style activism after Fukushima. With funding from a UNCG internal grant, Kinefuchi conducted fieldwork at some of their camps in 2012 and 2013. She found these were key spaces for dialogue about Fukushima, nuclear power, and other political issues. Camps facilitated networking and learning for urban activists, many of whom were unaware of the challenges facing rural communities.

In many countries including Japan, nuclear power is hailed as the key to a carbon-free future. Kinefuchi questions that narrative. While nuclear power does not produce CO₂, uranium mining is toxic, she says. Nuclear power plants require massive amounts of water, and nuclear waste must be managed for tens of thousands of years. It's not, she says, the green energy source it is often presented to be.

For alternatives, she points to countries like Denmark, where wind energy has become a reliable, affordable, and renewable energy source.

More broadly, she is focused on challenging the dominant narrative that normalizes infinite economic growth.

"This mentality of continuous growth is problematic. It's incompatible with environmental protection, and it doesn't improve our well-being," Kinefuchi says.

"We have to maintain a certain level of economic stability, but I think a lot of happiness reports and indexes show that health, education, good governance, culture – not continuous economic growth – are the answer."

by Alyssa Bedrosian
learn more at go.uncg.edu/kinefuchi

Imagine for a moment Sweden declaring war on and violently annexing Norway. The idea is close to unthinkable, in much the same way war between Greensboro and Raleigh would be. The Nordic countries have not warred amongst themselves for over 200 years.

They're part of what Dr. Douglas P. Fry and Dr. Geneviève Souillac – and their collaborators – call a peace system. "These clusters of neighboring societies do not war on each other, and in some cases don't make war at all," explains Fry.

The married researchers in UNCG's Department of Peace and Conflict Studies – Fry an anthropologist, Souillac a philosopher – push back against the narrative that war is tragic but inevitable, through their studies of sustainable peace and the factors that underlie it.

Nature is in some ways less "red in tooth and claw," Fry says in his 2012 Science review of the subject, than their fields have historically acknowledged. When scholars invoke human or animal nature, the evolutionary basis for cooperation and helping gets little airtime. But they exist, Fry says, as do peaceful societies.

Examples of peace systems range from small bands of hunter-gatherers to the 300-year Iroquois Confederacy and the European Union. One of the EU's explicit missions was to prevent warfare between member states, and it has succeeded for over 70 years. "The Mardu Aborigines of Australia," says Fry, "even lack words in their language for feud or war." But what allows some societies to remain peaceful, while others struggle with violence?

That's the question Fry, Souillac, and their collaborators at Columbia University and the City University of New York seek to answer through the Sustaining Peace Project. The interdisciplinary group, with specialties ranging from psychology to astrophysics, develops complex mathematical models to capture the dynamics of sustainably peaceful societies.

Their latest study, published this year in the Nature journal Humanities and Social Sciences Communications, employed machine learning to identify the most important factors distinguishing peace systems from more warlike societies.

What are the most important peace-promoting factors? "Non-warring values and norms," says Souillac, "such as the Upper Xingu view that aggression is immoral or the Nordic valuing of consensus decision-making." Overarching identities, such as American or European citizenship over loyalty to an individual state or nation, also ranked highly.

The 2021 article has already received over 4,800 visitors and coverage in popular media including Scientific American.

"The work frees us from old, confining narratives about an aggressive, conflict-driven human nature," says Souillac. "People are excited by our findings about an inherent human capacity for cooperation, particularly as we face issues – climate change, migration, pandemics – related to global survival and justice."

by Randall Hayes
learn more at hhs.uncg.edu/pcs

THE FUNDAMENTALS

Poor health care. Unemployment. These are a few ways that low literacy rates affect individuals in the United States. One in five American adults is illiterate, and nearly two-thirds of fourth graders read below grade level, according to the National Center for Education Statistics. Communities of color, particularly Black and Brown populations, are disproportionately affected.

READING COMMUNITY

In recent decades child literacy rates have increased among all racial and ethnic groups in America – with one exception.

“Native American children’s literacy levels have decreased dramatically,” says Dr. Anthony Chow.

His investigation into why this is happening recently resulted in a \$1.4 million Institute of Museum and Library Services grant to break down barriers to literacy in five Native American communities.

The project Chow launched – Reading Nation Waterfall – partners with the Lumbee Tribe of North Carolina, the Eastern Band of Cherokee Indians, the Northern Cheyenne, the Crow Tribe of Montana, and the Santo Domingo Pueblo, as well as national literacy organizations such as Head Start and Little Free Library. But its origins lie in a study he conducted previously in Browning, Montana, where the Blackfoot Nation resides.

Working with local librarians and community leaders, Chow’s team surveyed 300 members to assess how to increase reading within the nation. “We found that

Blackfoot parents valued literacy as important to the future of their children,” Chow says. However, a combination of socioeconomic factors blocked regular access to books.

“Looking at the reality of being a parent in the Blackfoot Nation was jarring,” says Chow. High levels of poverty and unemployment, single-parent homes, and housing insecurity compound to create unstable living situations. And when parents are struggling to just get by, buying books isn’t really a priority, he says. Meanwhile, community and school libraries were poorly funded and lacked books or programs culturally relevant to Blackfoot members.

These realities – rooted in decades of underfunding coupled with a history of eradication and forced assimilation – are what the Reading Nation Waterfall leaders



Left and top right: Lumbee children from the local Head Start attend a Reading Nation Waterfall book share, led by Robeson County Library director Katie Fountain as “Petunia the Unicorn.” Bottom right (l-r): Chow, Lumbee Tribe partnership lead Dr. Kim Sellers of UNC Pembroke, and UNCG graduate students Melissa Casey and Anna Sink restock the Little Free Library at Pembroke Elementary School.

Photos: May 2021

face in their work to increase literacy in Native American communities.

As a first step, the team is installing Little Free Libraries – overseen by local librarians – at elementary schools, community centers, pre-K centers, and other locations regularly frequented by Native American families. The idea is to make access as convenient as possible, Chow says.

“If I’m a parent who works three jobs, how much energy will I have to go to the library? We’re going to the people, as opposed to expecting the people to come to us.”

The team also focuses on including books culturally relevant to Native American youth.

When Chow and his collaborators instituted Little Free Libraries in Browning, over 1,000 books were taken within a short period of time.

Few were returned, but Chow says he’s happy for the kids to take the books home and keep them. Many of the project areas are book deserts, he explains, where families have fewer than 80 books on average. These circumstances have been found to coincide with lower literacy and technology skills.

Over the next three years, the team plans to infuse Reading Nation Waterfall communities with 75,000 books. “We’re shifting the paradigm of what a library is or can be.”

And that’s really the goal for Chow and his team. It’s about changing libraries to fit the communities they serve.

That means sitting with each of the tribal chieftains to ask them about their ideas, identifying community needs and interests, and helping local libraries use that information to offer more relevant programming and resources.

“We need the tribes to embrace the library as a hub of the community. That’s how we build the love of reading,” Chow says. “I view our project as a catalyst, to get that engine running. We want this waterfall of books to become a self-sustaining ecosystem in the community – one that will long outlive our three-year project.”

Once the project is completed in the five nations, Chow and his partners hope to replicate the model nationwide.



NC LESSON PLAN

The earlier the better. That's the motto that Dr. Christie Cavanaugh lives by when it comes to literacy and children.

Research shows that students who can read at grade level by the end of third grade are more likely to graduate from high school, earn a college degree or credential, and experience economic success in adulthood. But only 36% of North Carolina's fourth graders were proficient in reading in 2019, and that number drops to just over 20% for low-income fourth graders.

Last year, Cavanaugh was chosen by the Board of Governors as one of eight literacy fellows to create a framework to guide all UNC System faculty who prepare preservice teachers for literacy instruction.

"There's a lot that goes on with young children that sets them up on a path for success in the areas of language and literacy," says Cavanaugh, a clinical associate professor in the School of Education.

"This framework will ensure our teachers have the essential knowledge and skills regardless of which educator prep program they attend across the state system."

Exposure to language through rhymes and songs and even interacting through physical touch can increase brain activity in infants and affect their ability to read and write in later years. But Cavanaugh says that even without those early experiences, students can still excel, they just have to be taught what practitioners call "foundational skills."

"We should have high expectations for all children and for ourselves," she says. "We have to provide rich experiences no matter what children come into our classrooms knowing."

The framework will focus on the period between kindergarten and third grade. During this time, Cavanaugh says educators teach things like decoding – how to translate printed words to sounds for reading – and encoding – how to use

sounds to build and write words. These, she says, are fundamental building blocks for literacy down the line.

"Children also require rich language experiences," she says, to build skills in areas like vocabulary and syntax. Kids need to comprehend words – and how they fit with other words – to read and write.

Many of the methods in the framework aren't new, but the idea of a common, evidence-based method of preparing teachers for literacy instruction is. "There aren't many states that offer this level of guidance yet," says Cavanaugh.

"We're talking about impacting a lot of teachers who will in turn impact lots of children."

by Sayaka Matsuoka

learn more at myreadingnation.com
soe.uncg.edu | go.uncg.edu/cavanaugh

Cavanaugh demonstrates literacy instruction methods in the School of Education's Michel Family Teaching Resource Center. Photo: May 2021

DIVING IN DEEP

Two UNCG researchers are recognized for their unique approaches and potential for far-reaching impact.

INFORMATION AND ANALYTICS RESEARCHER AWARDED PRESTIGIOUS NSF CAREER AWARD

Imagine reading thousands of complex, technical articles, and then painstakingly marking all of the important concepts within each one and connecting them across all scientific publications over time.

That scenario describes the traditional process biologists use to catalog knowledge – using biological ontologies –





Asked Siri to identify a song lately? Then you've used deep learning, the type of machine learning at the heart of the work Manda and her collaborators Dr. Somya Mohanty and graduate student Pratik Devkota (r-l) are conducting. Photo: June 2021

and make it accessible to scientists across the globe. This work requires enormous resources, says bioinformatics specialist Dr. Prashanti Manda. "The process is slow, tedious, and impossible to scale."

It also contributes to a bottleneck, where databases aren't as updated as they should be, and scientists can miss critical connections.

Manda and her collaborators are attempting to develop an open-source artificial intelligence application that can create ontologies automatically.

"We're trying to teach a machine to do what a human can do intuitively," she says.

Manda was recently awarded an NSF CAREER Award for the project. These prestigious grants support early-career faculty with the potential to become academic role models in the integration of research and education.

Ultimately, the project seeks to help scientists recognize important biological concepts from literature more efficiently. "We hope these methods will supplement human labor," says Manda, "and free up researchers to focus on scientific inquiry."

SCHOOL OF EDUCATION PROFESSOR NAMED AN AAAS FELLOW

For a young person, it's hard to imagine growing up to be a scientist or an engineer if you don't see scientists or engineers that look like you. Dr. Edna Tan is changing that, one young person and community at a time.

"Professionals in STEM are often white males. There's a lack of representation of people of color, and women," she says. "How children are introduced to STEM and how they engage with it influences whether they regard STEM as something they can or want to do."

Last year, Tan was elected as a fellow of the American Association for the Advancement of Science, or AAAS. She is the first woman at UNCG to receive this coveted honor from the world's largest multidisciplinary scientific society.

AAAS fellows are selected by their peers for efforts that advance science, that are scientifically or socially distinguished. Dr. Tan's research explores how we design

STEM teaching and learning that is both impactful and equitable, with a focus on underrepresented populations.

Her approach calls for deep embedment within communities over long periods of time. Building trust and personal relationships are key, she says, because successful learning environments are developed in collaboration with the youth and teachers they engage.

Tan's co-authored paper "Rethinking High-Leverage Practices in Justice-Oriented Ways" recently won the Journal of Teacher Education's Outstanding Article Award.

Her goal for STEM learning, she says, is "learning where youth can be rightfully present, where they can be themselves, and where they can become who they want to be."

by Matthew Bryant • learn more at go.uncg.edu/manda | go.uncg.edu/tan

IN THE NEWS

Like the rest of us, these social scientists are wrestling to sort out facts, errors, and fibs – in our world’s 24-hour stream of news, gossip, and social media.

Racial attitudes have long been categorized by scholars as sticky.

“There’s a lot of evidence that they form early and that they’re hard to change,” says political science researcher Dr. Andrew Engelhardt.

“But they aren’t fixed in stone.”

Engelhardt has found that White Democrats are becoming more cohesively positive towards Black Americans, while White Republicans become more negative.

The size of these shifts, he says, cannot be accounted for by an influx of younger people into the Democratic Party or by people changing parties because of their racial attitudes. “People within political parties are actually changing their attitudes.”

The biggest change has occurred among Democrats. It’s why, he says, Black Lives Matter protests in the summer of 2020 involved a larger number of White Americans. “White Democrats have a stronger belief in structural racism now than they did in prior years.”

His findings are part of a study published in the British Journal of Political Science, and covered by NPR and The New York Times.

What drives the change he’s tracking? While common wisdom holds that racial attitudes cause political conflict, Engelhardt says the reverse is also true – “Partisanship affects racial attitudes.” Specifically, he says, the rhetoric employed by liberal and

conservative media and the political elite is shifting racial attitudes.

Engelhardt recently compared broadcast transcripts from left-leaning Rachel Maddow and right-leaning Bill O’Reilly between September 2008 through December 2016 – more than 4,000 hours of airtime. To handle the large dataset, he analyzed a sample of about 30,000 paragraph-like sections and then designed artificial intelligence algorithms to continue that assessment over the remaining transcripts.

In his analysis of words-become-data, he

sought to identify racially conservative and liberal themes. The study period included historic racially charged events, such as the 2014 killing of Michael Brown by police in Ferguson, Missouri.

Engelhardt found that Maddow’s reporting focused attention on police behavior, racial profiling, and systemic issues. O’Reilly, conversely, focused on the protests, rather than the impetus for those protests, with comments that suggested distrust and resentment of protestors’ motives.

While a viewer often can, on a gut level, instantly identify political bias, Engelhardt says, “It’s not until we actually test things, that we know how far off our gut is, or not.”

In the weeks after Maddow episodes discussing race and racial inequality,



**ANDREW
ENGELHARDT**

Engelhardt has also found that Gallup opinion polls showed greater public concern for these issues. But in the weeks after O'Reilly episodes discussing the same, opinion polls showed less concern. "How they were talking about race seemingly impacted levels of public concern."

Day in and day out, influential conservative and liberal media figures use different language to discuss race. "Repeated exposure can connect race and values in viewers' long-term memory," Engelhardt says.

"The words and phrases that media elites use – they're not innocuous. People are sitting on their couches getting this information that can boost positive attitudes or lead to negative attitudes too."

###

Mark Twain understood the power of bad information.

"A lie," Twain allegedly said, "can travel around the world and back again while the truth is lacing up its boots."

Sorting out truth from mistruth in this era of spin and fake news has consequences for individuals and for society, says psychology researcher Dr. Chris Wahlheim.

Mistakes are inevitable in delivering the news. In recent years the term "alternative facts" debuted, further challenging news consumers who just want to know what's real.

Responsible news organizations attempt to correct errors. But what's the best way to do that?

"There's been debate about that," says

Wahlheim, who directs UNCG's Memory and Cognition Lab.

Some researchers say reminding someone of past incorrect information when you provide them with a correction might accidentally solidify their memory of the incorrect information. "Bringing to mind old incorrect information can make it more accessible, more familiar."

But Wahlheim and his graduate student Timothy Alexander recently published a study in their field's flagship journal, *Psychological Science*, with different results.

In the study, subjects saw a set of news website statements that included some misinformation, followed by another set of statements in which the misinformation was corrected.

The researchers found that restating the original incorrect information and labeling it as erroneous helped subjects recall the new, corrected information more easily.

"Retrieval of past events – that are similar to what's currently being perceived but also include differences – can help people remember a new experience better," says Wahlheim. A sensitivity to changes to past information is part of an important mental process, he notes. "People use past experiences to anticipate the future."

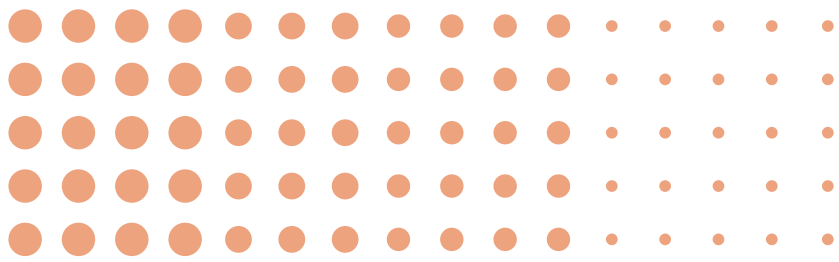
Ultimately, Wahlheim's research may lead to improved strategies for news providers that prioritize accuracy, and for people who want to be more savvy news consumers. The work is already getting attention – last year it was covered by *Forbes*.

As for that memorable quote often attributed to Mark Twain, it's a common misquote. Satirist Jonathan Swift is the more likely source. Remember that.

by Tom Lassiter • learn more at go.uncg.edu/engelhardt | go.uncg.edu/wahlheim



CHRISTOPHER WAHLHEIM



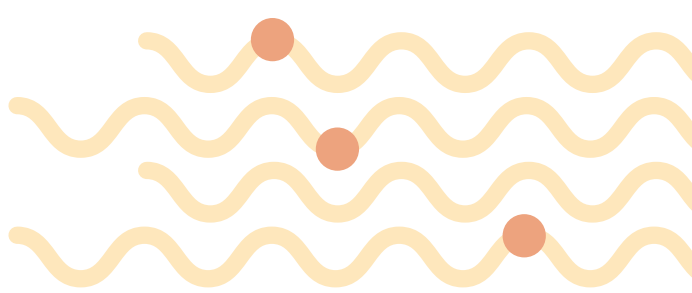
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WHAT MAKES A GREAT STEM INITIATIVE?

At SPEL, it's all about the Values-Engaged, Educative approach, which places emphasis on a project's stakeholders and their specific needs. The keys to success, they say, are programming with cutting-edge scientific content, strong teaching methods, and sensitivity to diversity and equity issues.





BEHIND THE STEM SCENES

Dozens of elementary-aged kids impale gummy bears on toothpicks and twist their creations together with licorice while chatting away in Spanish with their parents and siblings and noshing on pizza. It's not a craft – the kids are learning about polymer models at a night of “Cena y Ciencias,” or Supper and Science, a free monthly Spanish-language initiative in Urbana, Illinois, to introduce K-5 students to science and scientists.

Across the country, scores of similar initiatives aim to bring more people, particularly underrepresented populations, into science, technology, engineering and mathematics, aka STEM. Targeting groups from kindergartners through early-career faculty, these recruitment, retention, and advancement programs are more important than ever as our nation works to remain globally competitive and faces thorny issues at home related to infrastructure, inequity, health, and the environment.

“We need scientists and people who are versed in mathematics and engineering to solve some of these really important problems,” says Dr. Ayesha Boyce of the Department of Educational Research Methodology. “That means tapping the next generation of talent.”

But how do we know that these STEM initiatives, buoyed by millions of dollars of funding from the government, are working?

That's where Boyce and her department colleague Dr. Aileen Reid come in: they direct the STEM Program Evaluation Laboratory, also known as SPEL.

“The thing that people don't know is that when all these initiatives are funded, someone's standing alongside all these scientists evaluating their work,” Reid says. “That's what we do. You never see or hear about what we're doing. But we are right on the frontlines and on the frontiers with them.”

In the three years since its launch, SPEL has worked with over a dozen STEM initiatives, representing approximately \$90 million in funding, to evaluate their effectiveness. That includes the new \$12.5 million NSF-funded parent institute of Cena y Ciencias.

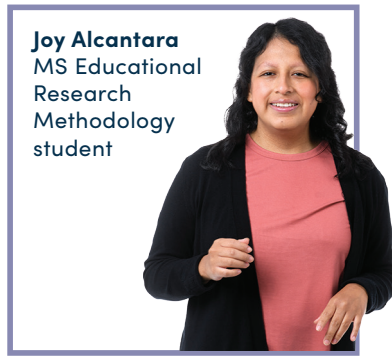
Reid and Boyce hope SPEL will serve as a model at UNCG and across the nation. Their research and mentorship structure is unique in their field. So is the makeup of their team.

“Oftentimes, frankly, students don't see Black women getting million-dollar grants, or leading these big research initiatives, particularly in our field,” Boyce says. “It's important for them to see that representation.”

In the few years since its creation, SPEL, led by Dr. Ayesha Boyce and Dr. Aileen Reid (l-r), has brought in over \$4 million in funding to UNCG. Photo: May 2021



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(Spring 2021)

MAKING A NAME IN THE “WILD WEST”

Evaluation is a new discipline. The American Evaluation Association was only founded in 1985.

As such, researchers and students in the interdisciplinary field come from a variety of areas including sociology, communications, psychology, statistics, health, and education. Private firms and government entities including the Department of Education also carry out program evaluation.

“Over the last two decades, the National Science Foundation and the National Institutes of Health began to require evaluation for all funded projects, but there’s no accreditation process for evaluators,” says Reid.

“We’re really at a point where everything is kind of like the Wild West – everyone’s doing something different,” Boyce adds.

SPEL traces its roots to fall 2015, when Boyce and Reid joined the Department of Educational Research Methodology as an assistant professor and graduate student, respectively. Under the auspices of the Office of Assessment, Evaluation, and Research Services, which she co-directs, Boyce created the lab in 2018.

The following year, Reid graduated and joined SPEL. They are both co-directors, and within their field, the researchers say, having two faculty running a laboratory is rare. The lab now includes another faculty member, Dr. Tiffany Tovey, as well as twelve graduate students and six undergraduates. That’s not all that distinguishes SPEL.

“We’re one of the only places in the nation where you are learning how to do evaluation with a social justice orientation,” says Boyce.

That orientation leads lab members to focus on culturally responsive evaluation, keeping the cultures of project participants in mind as they examine project methods and measure project impacts.

For example, researchers might assess a project’s anti-deficit orientation – a way of thinking about underrepresented groups.

“Instead of saying, ‘Oh, we need to help these poor people, what’s wrong with them?’ we say, ‘What’s wrong with our own culture so that certain people can’t succeed?’” Reid explains. “And we ask what strengths those groups bring versus saying, ‘Here’s all the things wrong with them.’”

The directors are proud of their lab’s diversity, and not just in terms of race and ethnicity. “They are in all kinds of places in their lives,” says Boyce, who is herself pregnant with her second child.

PUSHING FOR GROWTH

The researchers express a deep sense of ownership and pride in the projects their lab helps advance.

A recent example is the \$10 million NSF-funded STEM PUSH network, which connects and advances pre-college programs that increase the preparation of ethnically and racially underrepresented students for college STEM programs. PUSH also seeks to expand the ways college admissions offices assess potential students, diversifying beyond standardized test scores and grades.

With the shifts in admissions requirements due to the pandemic, it’s a perfect time to push for a reassessment of traditional metrics, says Reid. “We’re in a kairos – a critical moment – for admissions.”

Other large clients include the Purdue University-based Network for Computational Nanotechnology, which has been in operation for 20 years, and the Midwest Big Data Innovation Hub connecting 12 states and six research universities.

“When we started off we had smallish projects that had between like \$50,000 and \$100,000 over the life of the projects,” Boyce says. “The really exciting aspect is that, as more time has gone on, we have more opportunities for large-budget projects.”

Closest to home is the prestigious \$1 million NSF ADVANCE grant recently won by a team of physical and social science faculty at UNCG. The project, which includes Boyce as a co-principal investigator and Reid as senior personnel, seeks to promote gender equity at the University.

Their aim, the researchers say, is to change culture, climate, and policies at UNCG – and not just within STEM fields.

SPEL

THE NEXT GENERATION

This summer SPEL ran 13 active projects, each involving at least two graduate researchers and one undergraduate. Since the lab's launch, 20 students have worked there, developing their research skills by conducting interviews, focus groups, document reviews, and surveys.

"Through SPEL, we are able to mentor the master's and PhD students as faculty members," Reid says. "And then they in turn get experience, not just in evaluation research and evaluation practice, but in mentoring undergraduate students."

Those undergraduates are another feather in the SPEL cap.

Last spring, Reid won the University's Thomas Undergraduate Research Mentor Award, a feat all the more remarkable because the Educational Research Methodology department has no undergraduates.

In fact, there are no undergraduate programs in the young field of evaluation. Hence Reid and Boyce focus on mentorship of undergraduates from other fields. Some will hopefully move on to graduate programs in evaluation.

For those who don't, says Reid, it's still "a big win, when they can begin to make those connections with the work that they're doing and transfer it to their own field – it brings evaluative thinking into another area."

The lab offers a high-impact experience. In addition to learning evaluation skills, students create data visualizations, generate reports, and present to funders and at conferences.

All lab members take part in weekly three-hour lab meetings, which include an hour of professional development as well as project check-ins. Reflecting the SPEL's values of social justice, anti-racism, and inclusivity, the group discussed "How to Be an Antiracist," by Ibram X. Kendi, for some of their professional development hours.

With their emphasis on diversity and inclusion both in their work and within their lab, Reid and Boyce embody the values they espouse.

"We have students from all walks of life," Boyce says proudly. "I mean ethnicity and race, but I also mean in terms of age, background experience, having children and not having children – they are in all kinds of places in their lives."

That makes a difference to the work, says Reid. "I think we are transforming the landscape of STEM program evaluation because of who we are and how we're doing it."

by Yen Duong • [learn more at erm.uncg.edu](http://learn.more.at.erm.uncg.edu)



Dr. Tiffany Tovey
Educational
Research
Methodology
clinical assistant
professor



Xinru Yan
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Chandni Lal
BS Psychology student



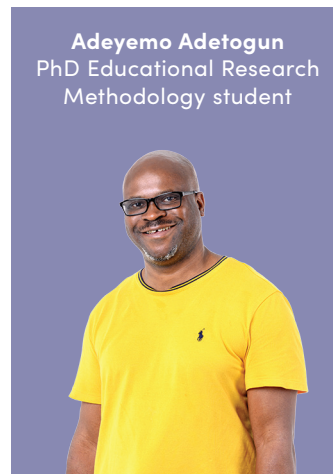
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student

WE'RE GOING TO NEED A BIGGER MOLECULE

Kala Youngblood comes from a small, rural Virginia town. She describes it as a beautiful area, but not one where many people were exposed to or interested in her biggest passion: science.

As a middle-schooler, she attended a monthly Women in Technology and Science program at a nearby university. "That was really encouraging to me because it wasn't the stuff I was seeing on TV or what the media was portraying," recalls Youngblood.

"I realized: this is what a scientist is, and I can be that person."

Several years of hard work later, she has received a Goldwater Scholarship – one of the oldest and most prestigious STEM scholarships in the United States. Youngblood is the first Goldwater Scholar at UNCG in almost a decade.

Scholars are selected for their commitment to a STEM research career, display of intellectual intensity, and potential for making a significant contribution in their future field.

For Youngblood, that field is chemistry. She's currently exploring chemical synthesis as an undergraduate researcher in the lab of organic chemist Dr. Kimberly Petersen.

She was inspired to do so in a class taught by Petersen. There she learned the story of the drug thalidomide, sold as an anti-nausea drug for pregnant women in the 1950s. After a decade of use, the medical community discovered the medication caused severe birth defects and death in infants.

The problem, Youngblood explains, was molecular asymmetry. The drug was composed of two types of molecules that were mirror images of each other – alike but subtly different. "Like our hands." They

might seem the same, but if you put your right hand over your left, you can see their structures are oriented differently. "One version of the molecule was an effective drug, the other caused birth defects."

In Petersen's lab, Youngblood is now looking at asymmetry in lactones, chemical compounds commonly used in antibiotics, anti-cancer drugs, and other medicines. While there are already ways to make lactones in harsh conditions – such as reactions requiring dangerous hydrogen chloride gas – Youngblood is working on methodologies to create them in milder conditions, which also allow for the development of more complex molecules. The work will hopefully contribute to future safe and effective medications.

When she explains her work to her family, Youngblood draws on their interests. Her father knows about car repair, and to him she explains that medicinal compounds, like cars, are made up of many pieces – she's not building the whole car but finding a way to make a better wheel.

"You can't build a car by putting two pieces together and be done. You have these smaller pieces you put together, and you end up with a car. So, in the lab, we're working on these small pieces that other people could put together to make a bigger molecule. We're discovering how to get the version we need that's not going to cause issues in the body and figuring out better ways to access the correct version."

The first-generation college student is part of UNCG's prestigious NIH-funded MARC U-STAR program, which seeks to bring underrepresented students into science research careers. As a MARC fellow, Youngblood receives support for her research

and access to professional development opportunities, such as presenting at the Annual Biomedical Research Conference for Minority Students – where she received the Award for Outstanding Poster Presentation.

She also participates in the Spartans for Science Policy Club, a student group that works to increase science communication skills among their members, make science more accessible, and build trust between scientists and non-scientists through outreach.

This summer she completed an externship at Cal Tech through the MARC program. Her research project focused on phenazines, organic compounds that occur naturally in plant root systems and can protect crops from disease.

"I grew up surrounded by farms. So, I've seen the struggle of farmers and what it's like to have crops fail, and I'm really passionate about food security," she says. "Synthetic applications aren't just for medicine – they can also be used in farming."

Youngblood hopes someday to have her own research lab, where she can also mentor students. "The reason I'm here is because I had mentors – from my high school chemistry teacher to the MARC U-STAR faculty – who believed in me and told me that I could do those things."

She currently volunteers at Hope Academy in Greensboro, tutoring in an afterschool science program.

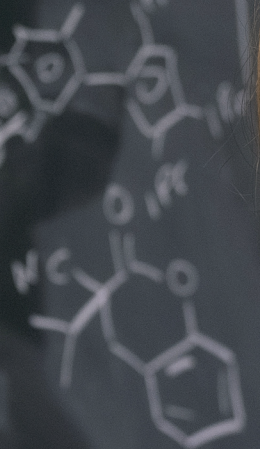
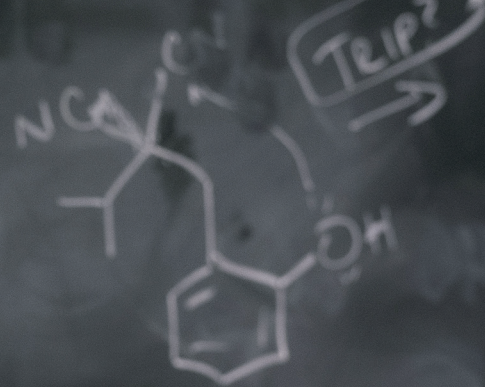
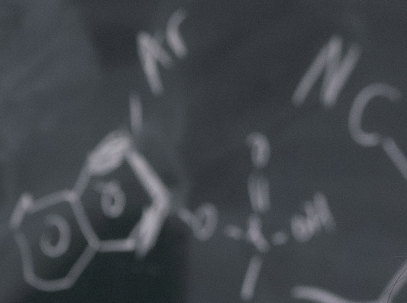
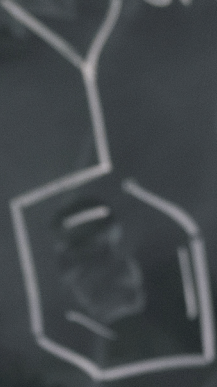
"It's different, but it reminds me of where I grew up," she says. "There are so many beautiful kids who are so smart and so intelligent but just need a push, like: 'you are a scientist, go do this.'"

by Susan Kirby-Smith • [learn more chem.uncg.edu](https://chem.uncg.edu)



Need to make

NC CN



TRIP?



by fire

Minutes into Billy Hawkains III's film "By Fire," and the pulsating rhythmic beat from the bongo and conga and the polyrhythmic sounds from the organ and high cymbals make you want to, well, dance. But then, that's the point.

Hawkains, a dancer and choreographer, knows that the body wasn't meant to be stagnant. "I see everything as dance – walking, swaying," he says. He's particularly fascinated by what he sees, and saw growing up, in the Black church.

"When I see people in church moving and shouting, my mind goes to dance," he says. "I do that in class, I say to myself."

Those experiences inspired Hawkains' MFA thesis project, the original choreographed piece "By Fire." What would have been an in-person dance production, required of all UNCG MFA candidates, moved to film due to the pandemic. But Hawkains didn't see the shift to celluloid as settling.

"There are certain restrictions in a live performance that you can overcome with film," he says. "The camera can take you closer in on the body as it moves. You can see the facial expressions, the hands. You can see all around the body."

"By Fire" examines how the body can operate "as a vessel of transformation," Hawkains says. He began the work by conducting historical research on the roots of physical movement as part of Black worship.

"I was highly focused on looking at Black bodies in the Southern Black church. Our bodies are a very important part of the service. The way that we sway and jump and clap and even sweat is important. Other churches aren't like this – it's tied to our history."

In his studies, he found the ring shout, which was indigenous to much of Central and West Africa and practiced on plantations by slaves in the Southern United States and beyond. "They would form a circle, and, using their bodies as percussive instruments, they would bring their bodies to a moment of exhaustion. Through call and response, dancing, shaking, clapping, the body began to transform. It opened them up to something greater than themselves. It was something they could pour themselves into."

It was also a way to remember home and deal with slavery's brutality, Hawkains says. "They used their bodies as a form of resistance and perseverance. They are fighting for freedom. They leave with burdens lifted off their shoulders – because the Black body carries so much."

But Hawkains wondered if the experience could be brought to people outside of the Black church. "There is a certain level of liberation and freedom that we all as human beings are reaching toward," he says. "I wanted to know if this could be a universal experience." To answer that question, he brought the ring shout into the dance studio, "working with Black bodies and non-Black bodies," to conduct embodied research.

"The site for embodied research is the body itself," he explains. "Dancers take elements, like from the ring shout, and instead of talking or writing about them, we embody them, we experience them."

He worked with a team of dancers and percussionists, most students at UNCG. Each rehearsal would begin with elements from the ring shout, and the artists developed the movements from there.

The more they practiced and perfected

the choreography, the more the dancers were changed. "What I saw, what we experienced was a freedom," Hawkains says of his multi-gender and multi-racial troupe. For some it was a religious experience, for others a spiritual one. "It was the kind of freedom that comes from opening your body and mind and spirit."

In seven months, the team of artists had created "By Fire." The name is inspired by a biblical verse in Acts: "And divided tongues as of fire appeared to them and rested on each one of them. And they were all filled with the Holy Spirit..." During the performance, Hawkains and his team dance through infusions of white and red smoke.

Hawkains' work was supported by a competitive grant from UNCG's Atlantic World Research Network and a scholarship from UNCG's Kristina Larson Dance Fund.

His thesis chair was Professor Duane Cyrus. After graduating from the NC School of the Arts, Hawkains danced with Cyrus' Theatre of Movement company, and it was Cyrus who suggested he apply to UNCG.

"When I think about this journey I've been on, I realize everything that happened was ordained," Hawkains says. "I'm just glad I allowed myself to move and sway and get to the place I was meant to be."

Now, with his UNCG MFA in hand, he is fired up to join the faculty of Kennesaw State University. There he will continue merging dance and film and helping more people discover the beauty in dance.

"I feel like I've just gotten started."

by Robin Adams Cheeley
learn more dance.uncg.edu



The future of **NURSING**

On a quiet Sunday in March, Dr. Debra Barksdale got her first tour of the NIB – UNCC’s new Nursing and Instructional Building.

As she entered, Barksdale gazed across the wide-open atrium with 15 rows of seats rising from the first floor to the second, and then up the long staircase that stretches from the second floor to the fifth, totaling 100 steps.

At the time, Barksdale was considering an offer to become the next dean of the School of Nursing.

She walked through nearly every room in the 180,000-square-foot building, passing long walls of windows offering panoramic views of campus and the Greensboro skyline. By the end of her tour, she had gotten in a good workout.

“I actually got 6,000 steps in that building,” she says.

Barksdale came away impressed, by not just the facility but the faculty and the school’s ambitious plans for the future.

On March 31, she was introduced as the new dean. The appointment follows five years as a

nursing professor and associate dean of academic affairs at Virginia Commonwealth University.

Before that, she was the first Black faculty member to achieve the rank of full professor with tenure in UNC Chapel Hill’s School of Nursing.

With a new dean and a new \$105 million building, the School of Nursing is poised to expand in every direction, including in terms of its nationally recognized research, which has focused for the past two decades on addressing health disparities in vulnerable populations.

Since last fall, five new research faculty members have joined the school, and Dean Barksdale has no plans to stop there.

“Increasing research levels is a goal of the University and the School of Nursing,” Barksdale says. “I plan to work with the school to help increase research productivity and recruit more researchers.”

“Increasing research levels is a goal of the University and the School of Nursing.” – Dean Barksdale





CROSS-DISCIPLINARY BENEFITS The NIB boasts 39 learning labs and 14 classrooms that will be used for nursing education as well as for STEM disciplines across campus. The building also hosts state-of-the-art research labs run by the departments of Biology and Chemistry and Biochemistry. On the first floor, the School of Health and Human Sciences and the School of Nursing share a community engagement center, where research teams can meet comfortably with participants and collaborators.

MAKING ROOM FOR RESEARCH

When Associate Dean for Academic Programs Heidi Krowchuk joined UNCG's nursing faculty in 1990, only a few of her colleagues conducted research.

The Moore Building, which opened in 1969 and served as the home of the School of Nursing for 51 years, allocated a small space – now a supply closet and a few classrooms and staff offices – for that work.

As the school's research efforts grew, research spaces were cobbled together across four different buildings. They didn't have a wet lab, so faculty members stored their biological samples, such as blood and hair, in other schools' labs around campus.

As the NIB was designed, administrators in the School of Nursing wanted to ensure that the plans included plenty of space for faculty, staff, and student researchers, plus room to grow.

"That was one of the discussions we had, that we ensure we had ample research space not just for now but also for the next 10-15

years," says Dr. Debra Wallace, senior associate dean for research and innovation.

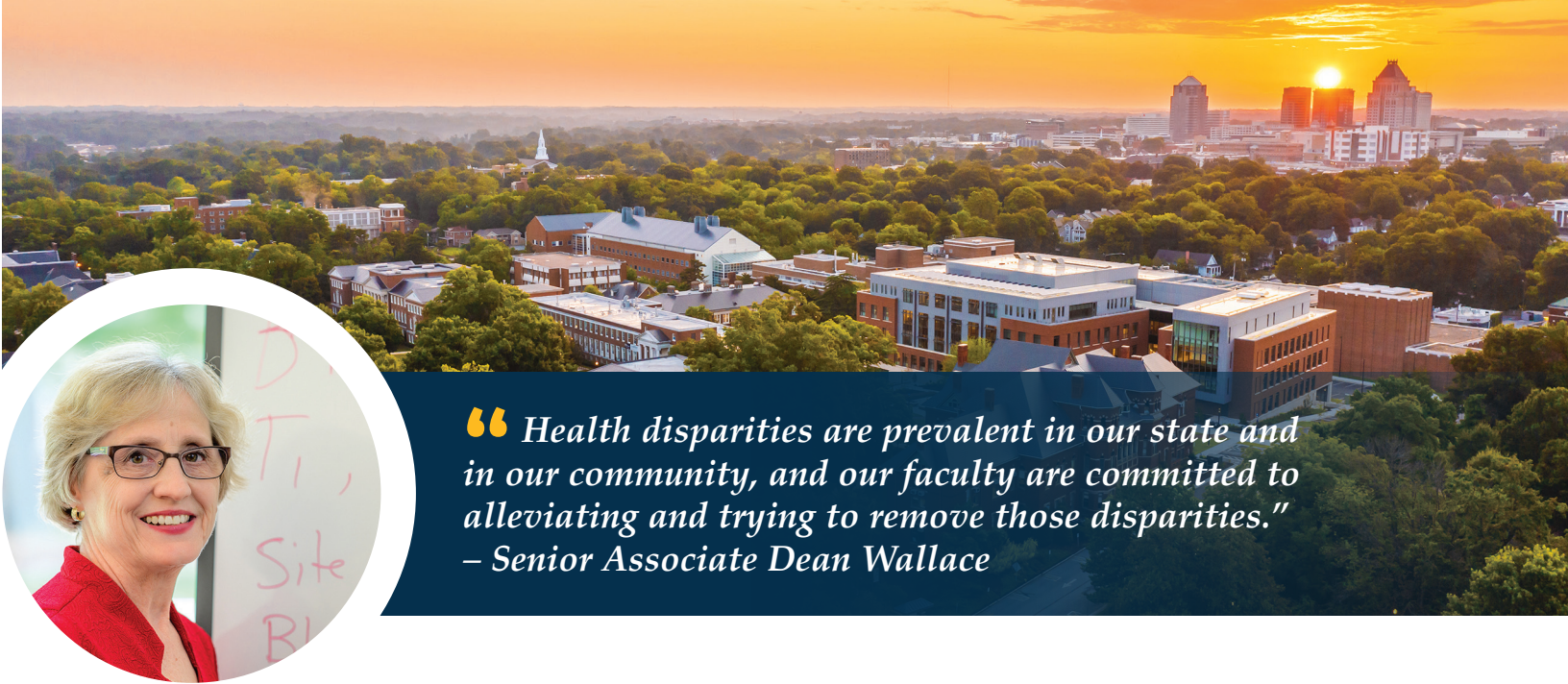
The impressive new glass-enclosed facility, which sits next to the oldest building on UNCG's campus – the 129-year-old Foust Building – reflects those priorities.

Most of the School of Nursing's space on the second floor is reserved for research, including four large suites where scholars can comfortably meet. Two floors up, there's a large wet lab with a safety shower, a refrigerator and freezer for storing biological samples, and enough room for five researchers to conduct lab work at the same time.

"Now we have our own space," says Dr. Krowchuk. "We've designed the building thinking futuristically, since we know that we're going to expand our research and we needed the space to do it."

“We’ve designed the building thinking futuristically, since we know that we’re going to expand our research and we needed the space to do it.” – Associate Dean Krowchuk





“Health disparities are prevalent in our state and in our community, and our faculty are committed to alleviating and trying to remove those disparities.”
– Senior Associate Dean Wallace

SERVING THE UNDERSERVED

As they launched their PhD program in 2004, nursing faculty decided to focus their research on health disparities in vulnerable populations.

A major initiative within the School of Nursing has been the TRIAD Center of Excellence in Health Disparities, which the National Institutes of Health funded with two grants totaling \$11.5 million. Wallace served as principal investigator on the project.

Interdisciplinary teams operating through the center examined self-management of diabetes among Hispanic populations, nutrition and blood pressure control among African American adults, risky sexual behavior among teenage girls, and more.

The grant that launched the TRIAD Center of Excellence in Health Disparities is one of the largest NIH research grants in UNCG’s history.

Faculty from NC A&T, NC Central, and Winston-Salem State as well as local community partners and agencies collaborated on center projects, which were ultimately, says Wallace, “about the impact we can have on our community to improve health.”

The research trajectory chosen by faculty in the early 2000s is no less relevant today.

“We are much more aware of health disparities than we were 30 years ago or 25 years ago or 20 years for that matter – the literature has just really expanded,” says Krowchuk.

“Now everybody is talking about social determinants of health because we know that where you grow up, how you grow up, what kind of neighborhood you lived in, and what access your family had to resources – that really impacts your health down the road.”

The new dean’s own research interest in stress and heart disease among African American adults aligns perfectly with the school’s focus.

Barksdale became interested in the ways stress negatively affects the body after a dentist told her that she had developed temporomandibular joint syndrome, or TMJ, from being stressed as a graduate student at Howard University. She was clenching her teeth at night.

Later, when she was working at a Maryland clinic, she noticed that many of her patients were young Black men who had high blood pressure.

“They weren’t obese and didn’t have other risk factors traditionally associated with high blood pressure, but they frequently indicated that they were under this tremendous stress as Black men,” Barksdale says.

RECENT RESEARCH PROJECTS AT THE SCHOOL OF NURSING INCLUDE



a collaboration with Cone Health examining how hospitals assign work to nurses, with the goal of improving quality of care and safety, led by Dr. Cindy Bacon



weight management interventions for young Black women that address chronic psychosocial stress, negative emotions, and eating behavior patterns, led by Dr. Stephanie Pickett



a study of long-term cardiovascular health risks experienced by women diagnosed with hypertension and other cardiometabolic complications during pregnancy, led by Dr. Forgive Avorgbedor



a study of a school-based therapy program to help children cope with asthma, conducted by Dr. Colleen McGovern along with the University of Rhode Island and Nationwide Children’s Hospital in Ohio

WHO ENTERS NURSING?

Complex issues involving race also play a role in the school's commitment to being an inclusive learning environment.

This year, two teams of nursing faculty have won large U.S. Health Resources and Services Administration grants that will support their work to recruit, prepare, and retain nursing students from underrepresented backgrounds, to diversify the nursing workforce. A four-year \$2.2 million effort led by Dr. Audrey Snyder will focus on gerontological nurse practitioners working in underserved primary care settings. A five-year \$770,511 effort led by Dr. Carrie Hill will focus on maternal child health.

Dr. Pamela Johnson Rowsey's interest in nursing student diversity sparked over a decade ago, at a graduation event she attended at another institution.

"Normally the faculty would be on the floor, but that year we were all sitting on the stage," Johnson Rowsey says. From that vantage point, she was forcefully reminded of how few nursing students were students of color. "I'll never forget this. I thought to myself, 'What can we do to improve this?'"

As Dr. Ernest Grant – president of the American Nurses Association and the first Black male to earn a nursing doctorate at UNCG – states in a 2019 op-ed in *Modern Healthcare*, "a diverse

nursing workforce helps to increase access to quality healthcare services, address preventable health conditions, and tackle social determinants of health" because it "fosters cultural competence and removes sociocultural barriers to care in clinical settings."

But in 2020, the National Nursing Workforce Survey found that only 6.7% of registered nurses in the U.S. identified as Black/African American and only 5.6% identified as Hispanic/Latinx.

Johnson Rowsey, now chair of UNCG's Adult Health Nursing Department, co-authored an article about increasing diversity in the workforce in the *Journal of Professional Nursing* last year.

If we want to see a change, she says, "We've got to go out and start recruiting at middle school and high school levels. Actually, high school might be too late."

In focus groups she and her collaborators conducted, nursing students also spoke about the need to correct myths and stereotypes about nursing, in terms of what the job entails and who becomes a nurse. Media portrayals, both positive and negative, are a major contributor to perceptions of nursing.

Barksdale decided to become a nurse as a kid growing up in rural Virginia when she watched the TV sitcom "Julia."

The show is often credited as the first weekly TV series to star an



“We've got to go out and start recruiting at middle school and high school levels. Actually, high school might be too late.” – Department Chair Johnson Rowsey



The NIB features state-of-the-art simulation labs that will provide students with hands-on training and prepare them for real-world scenarios with patients.

African American woman in a non-stereotypical role, with the title character played by Diahann Carroll working as a nurse.

In 1967, one year before “Julia” premiered on NBC, Dr. Ernestine Small became UNCG’s first minority faculty member when she joined the School of Nursing.

Now in 2021, Barksdale, the daughter of a sharecropper, has been hired to lead the School of Nursing into the future.

“It’s important for students to have faculty that look like them who understand their experiences,” Barksdale says. “This gives them hope and encouragement that they too can reach their goals and potential.”

The impact won’t end there, Johnson Rowsey adds. “Barksdale’s hiring sends a message for faculty as well that the University is committed to having diverse students, faculty, and staff.”

It’s a new chapter, in a new building, at the UNCG School of Nursing.

by Alex Abrams • learn more nursing.uncg.edu



Nursing students electronically monitor the vital signs of a mannequin representing a pregnant person and their fetus, during a simulation.



To the GRAVE

We interviewed Dr. Joanne Murphy, who received the 2019-20 Junior Research Excellence Award for her groundbreaking scholarship on ritual and death during the Greek Bronze Age. The Classical studies professor is internationally known for her methodological rigor and interdisciplinary approach to archaeology, and for overturning entrenched narratives in her field. Murphy has edited five books, with prestigious publishers such as Oxford University Press and Routledge, and has over 30 peer-reviewed publications and a monograph. Closer to home, she is distinguished for her efforts to support regional humanities research and has received her college's teaching award and UNCG's undergraduate research mentor and service and leadership awards.

ALL GREEK TO ME

"In Ireland, where I grew up, our myths and legends always had heroes coming back from Greece with mystical, profound knowledge. So, Greece was this exotic, romantic location to me. In college I majored in Greek and Roman Studies, an amazingly deep and broad subject. You do history, philosophy, literature, art, all these things in the one discipline, and that's how I found archaeology. The fact that you can touch things that a human made several thousand years ago, the connection with this ancient humanity – even now it blows my mind."

RITUAL PAYS

"Solon, an Athenian statesman, said, if you want to know whether you've lived a good life, you need to die. That's how it is where I grew up: who turns up to your funeral is really important. It's fascinating to me how the living use death to assert identity. That's how I got into rituals. In archaeology, rituals are repeated actions and artifacts found in comparable spaces. When we find evidence of ritual, I look at sociopolitical impact. What service is this doing? Why are people investing in this?"

SAME, SAME BUT DIFFERENT

"My major field work is from Pylos, a Bronze Age palace. Tombs there span the rise and fall of the palace, and you can see how the dead were treated differently over time. Pylians initially used tombs to compete for status. As in 19th-century America and England, the wealthier a family was, the bigger the tomb. But once hierarchy was firmly established, people at Pylos shifted their investments to other areas.

"My findings are different from what you see at Mycenae, the most famous Greek Bronze Age palace. There, people continued to invest huge amounts of money into the dead – it didn't taper off.

"Greek archaeologists historically thought what they found at Mycenae would be everywhere. But that's like saying everything that happens in New York City will happen in Greensboro, because they're both cities. The rituals at the two sites are different, reflecting their different sociopolitical and economic histories."

GREEK BRONZE AGE GOES GLOBAL

"Two of my recent books, 'Ritual in Archaic States' and 'Ritual in Collapsing States,' share studies from all over the world that focus on a central theme.

"A common idea is that people panic and invest more in religious ritual when they are under threat. We show that's not a universal truth. In some collapsing societies in ancient Greece, for example, we found investment in big feasts instead – they were prioritizing their networks, their connections to the outside world.

"Greece is a highly developed, distinct subfield in archaeology and rarely included in discussions comparing cultures. But these books are being referenced in work coming out of the Andes, Mexico, and Myanmar. It's exciting to bring Greek archaeology into global anthropological discussions."

METHODS MATTER

"Archaeology is inherently an interdisciplinary science – for a regular project I need pottery specialists, metallurgists, and chemists. But to answer nuanced questions, you need more. In one study of glass beads from Pylos' tombs, I worked with a chemical engineer and nuclear physicist. By identifying the beads' elemental makeup, we could see Pylians were importing glass from Egypt and Mesopotamia much earlier than previously thought.

"Over the last decade I've led an archaeological survey and field school on the Greek island of Kea. Loads of archaeologists do surveys but nobody has gone back and tested survey data. We're comparing our survey to one from the 1980s. Are more things hidden or exposed? Do the differences change our view of the past? It's part of the larger scientific reproducibility debate."

STUDENTS ON SITE

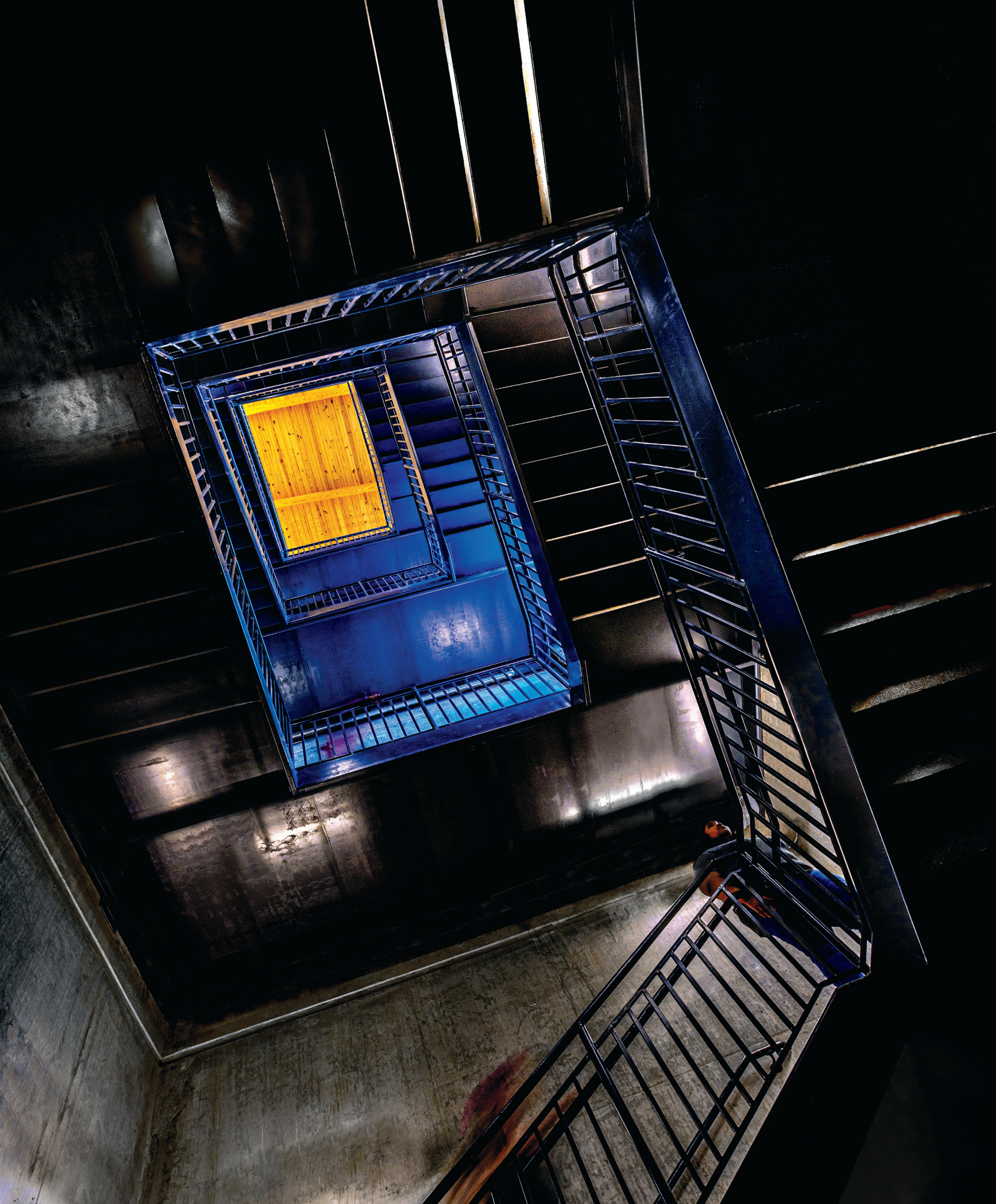
"Around 90 students have gone through the field school, and I also mentor undergraduate researchers at UNCG. Undergraduate research is a total game changer. Students learn how to argue, to defend their positions, and they develop identities as scholars. The experience allows them to find their own gifts and strengths and positions them for postgraduate success.


"They get to know their own curiosity and passion, which is what drives research. We call it research, because we have posh words for things, but it's curiosity and passion."

interview by Sangeetha Shivaji • learn more go.uncg.edu/murphy

“I’m an Irish Catholic. If you ask one of us whether we’d rather attend a wedding or a funeral, we’ll choose funeral. It’s fascinating what death rituals tell us about who we are.”







STEPS TO SUCCESS

For students with ADHD, college can be an uphill battle

The college years are when many of us take our first steps into adulthood.

“During this period, we learn behaviors that can put us on a trajectory for success – or failures – as adults,” says UNCG psychologist Dr. Arthur D. Anastopoulos.

“Demands for self-regulation really increase. You’ve got to manage your own academics, your finances, your meals, your health, your social life, your car – you name it.”

It’s a big developmental adjustment for all students, but for students with attention-deficit/hyperactivity disorder, or ADHD, he says, “There’s an enormously larger gap.”

The convergence of increased demands for self-regulation, coupled with withdrawal or reduction of support services for ADHD, is a recipe for disaster.

Anastopoulos, who is one of the country’s leading authorities on ADHD in children, adolescents, and young adults, says that for the roughly 5% of college students with ADHD, college can be a kind of “perfect storm.”

In college, students with ADHD frequently stop taking – or lose access to – medication, as well as other help such as counseling.

Anastopoulos observed this firsthand at his ADHD clinic at UNCG. Launched to serve children in the community while offering opportunities for graduate student training and research, the UNCG ADHD Clinic began to receive a growing number of referrals for potential diagnoses among UNCG students in the early 2000s.

Some individuals with ADHD did well enough in high school to get into college, Anastopoulos realized, but then struggled.

“They were just hitting a brick wall,” he says. “I was really curious why these students were having such a hard time.”

In subsequent research, he found that college students with ADHD, on average, get lower grades, are less likely to stay in school for eight consecutive semesters, and have a lower quality of life compared to their peers without ADHD.

It’s a significant problem. At UNCG, 5% of the student population represents around 1,000 students – including 800 undergraduates. Across the UNC System, which has nearly a quarter of a million students, thousands of young people are affected.

In early 2011, Anastopoulos read a newspaper article that quoted then-UNCG Chancellor Linda Brady about student retention and graduation rate challenges. He realized he had part of the answer and reached out.

“I said, although I know it’s not the whole problem, I can guarantee you the students we see in our clinic are contributing to the retention and graduation concerns.”

That email led to the largest, longest, and most rigorous treatment studies of ADHD in college students ever done – and the creation of a proven intervention to improve their outcomes.

DIAGNOSING ADHD

It was Anastopoulos, along with his colleagues Dr. George J. DuPaul, Dr. Thomas J. Power, and Dr. Robert Reid, who developed a standard ADHD diagnostic tool in 1998.

“There’s no simple or fast way to diagnose ADHD,” says Anastopoulos. “You have to gather data from multiple sources – and assess how well a person is functioning relative to their peers.” That complexity is why their tool, updated in 2016, includes questionnaires for teachers and parents, versions for children and adolescents, and separate profiles for boys and girls.

Their method, which has been translated into several languages, is widely used by clinicians, in schools, and in medical settings. It’s also used by many pharmaceutical companies seeking to measure the effect of their drugs on ADHD symptoms.

But Anastopoulos remains troubled by “the casual way some people still evaluate ADHD, especially frontline medical professionals who often rely on a single rating scale.”

He and his spouse Dr. Terri L. Shelton – UNCG Vice Chancellor for Research and Engagement and also a clinical psychologist – co-wrote the only book to-date that describes, step-by-step, how to rigorously diagnose and evaluate ADHD.

“Establishing a diagnosis is like putting a puzzle together,” he says. “If there are enough pieces, they will form a clear, unmistakable picture.”

TOOLS TO IMPROVE OUTCOMES

- knowledge
- behavioral strategies
- adaptive thinking

A COMMUNITY ENDEAVOR

Brady introduced Anastopoulos to a nascent UNC System research effort – involving East Carolina University and, later, Appalachian State University – to find ways to help students struggling academically.

That effort soon turned into the College STAR – supporting transition, access, and retention – initiative, with \$891,000 in funding going to UNCG’s portion of the project. Support for the project came from the Oak Foundation and GlaxoSmithKline – and, in Greensboro, from the Bryan, Weaver, Cemala, Tannenbaum-Sternberger, and Michel Family foundations.

“It was a community investment,” says Anastopoulos.

UNCG’s part of the project focused on college students with ADHD, the group Anastopoulos spotlighted for the chancellor. That program was called ACCESS, or Accessing Campus Connections & Empowering Student Success, and began with 88 students.

THERAPY TECHNIQUES

Because very little research on treatment for college students with ADHD existed in 2010, Anastopoulos based the new ACCESS program on two successful studies that employed cognitive behavioral therapy, or CBT, to treat adults with ADHD.

“We extracted the main elements of those two adult programs and packaged them in a way that was developmentally appropriate for college students,” Anastopoulos says.

For college students, that included a strong dose of educating. Many of the students understood their ADHD the way it had been explained to them when they were much younger. Helping them understand the condition in an accurate, age-appropriate way was the start of helping them take control of it.

At the same time, behavioral therapies helped students adopt new habits to be more successful. These included things like using a planner to keep track of assignments or agreeing to meet with a friend in the library for regular study sessions.

Finally, cognitive therapy helped students think more accurately about difficulties, so they could avoid negative emotional states – staying away from what psychologists call “maladaptive thoughts.”

If a student does poorly on the first test of a semester, maladaptive thinking might spur them to think they’re not capable of succeeding in that class. The student might ruminate on that idea and sink into a depression, believing they’re destined to flunk out of college and fail at their goals.

Adaptive thinking, on the other hand, might help a student to realize it’s just one test in one class, and that doing poorly simply means that they should seek out extra help, perhaps by talking to the professor or using tutoring support available on campus.

HONING THE INTERVENTION

As each semester passed, Anastopoulos and his colleagues fine-tuned their approach – changing how long the program ran and other variables.

“That was the beauty of the generous funding from the foundations,” he says. “It gave us three and a half years to create, test drive, and tweak.”

The program they settled on requires two consecutive semesters – longer than many other treatment programs – to address ADHD’s chronic nature.

During the first semester, participants meet weekly for 90-minute group

WHAT DOES ADHD LOOK LIKE IN COLLEGE?

When you think of ADHD in students, you might be imagining children struggling to focus or acting impulsively. While these are traits you might see in college students, usually described as problems with “executive functioning,” Anastopoulos wanted a deeper understanding.

He secured a \$3 million National Institutes for Health grant to examine outcomes among college students with ADHD, in collaboration with Dr. George J. DuPaul at Lehigh University and Dr. Lisa L. Weyandt at the University of Rhode Island.

Their project – the very first longitudinal study to focus on

college students with ADHD – followed 456 first-year students, some with and some without ADHD, at multiple universities.

The study provided new insights not only into students’ academic struggles, but also social and personal challenges they face.

Among students with ADHD, a staggering 55% also had another diagnosis, usually a depressive disorder or anxiety. By comparison, 11% of students without ADHD had similar diagnoses.

“This emphasizes the importance of assessing for – and treating – more than ADHD,” Anastopoulos says.

therapy sessions. They also meet one-on-one with a mentor each week. Mentors reinforce what students learn in the group sessions and help connect the students with other resources on campus.

The second semester locks in the positive changes that students made during the first semester, with one group session and four to six mentoring sessions.

“We saw great results,” says Anastopoulos. “So it was time to take the intervention to the next step.”

In 2015, he partnered with Virginia Commonwealth University professor Joshua M. Langberg to evaluate ACCESS with multiple cohorts of students, across multiple campuses, over several years.

Their work was funded by a \$3.18 million grant from the Institute of Education Sciences in the U.S. Department of Education, and they were among the 5% of awardees to receive funding on their first attempt.

It remains the largest randomized control trial of an ADHD intervention for college students – and the largest evaluation of a college psychosocial intervention – ever attempted.

ACCESSING SUCCESS

The four-year study screened 361 students, enrolled some 250 students, and included a control group, where researchers compared students who got the intervention with those who received it on a delayed basis.

“We saw massive increases in their knowledge of ADHD, their use of behavioral strategies like time management, and also their adaptive thinking,” Anastopoulos says. As a result, ADHD symptoms went down, while executive functioning went up.

Students who received ACCESS services also reported feeling less stressed about managing their daily lives. While students in the control group reported an increase in anxiety and depression, students participating in ACCESS didn’t.

“Untreated ADHD is kind of like having a broken arm,” Anastopoulos says. “It’s not that you can’t be successful. It’s just that the broken arm is keeping you from being all you can be.”

The benefits endured, lasting at least six months after the program ended.

Over the past year, Anastopoulos and his collaborators have created a treatment manual and series of training videos, to help other colleges and universities implement the program.

“We have had a lot of interest for us to provide training and bring ACCESS to other campuses,” Anastopoulos says. “We’ve also gotten calls from parents and students around the U.S.”

That means that work begun in Greensboro to help students with ADHD will be shared and potentially help thousands of college students across the country in the years to come.

by Mark Tosczak • learn more accessproject.uncg.edu

“Over the course of our treatment studies, we have made a difference in the lives of hundreds of students.”





A DIFFERENT VISION

In the photo above, Tony Totten shares his story with UNCG student Emily Jay, with assistance from an interpreter.

WHAT IT MEANS TO BE SEEN

The Industries of the Blind's massive building takes up an entire city block on Gate City Boulevard but, with its nondescript brick exterior, few people noticed it there. That all changed, however, with last year's installation of six larger-than-life paintings scrolled out across the building's façade. The 8x10-foot banners represent a three-year collaboration between the company's employees and UNCG students.

These paintings by students in the College of Visual and Performing Arts give insights into the triumphs and struggles of the Industries of the Blind's employees – over half of whom are blind. "It would be easy to have a mural showing the things we manufacture here, or of somebody wearing dark sunglasses walking a path with a cane in their hand," says Richard Oliver, the company's director of community outreach and government relations. "But that doesn't tell the whole story of who we are – or of the people who work here."

The banners tell the stories of employees like Afiya Jackson, who had to fight to keep her children when authorities tried to take them away, believing blindness would prevent her from caring for them. And Tony Totten, who was born with the ability to see and hear but lost both senses over time.

"The visibility of these banners shows employees that their stories are worth being heard—and are just as valid as anyone else's," says Mariam Stephan, associate professor of art and painting.

"The paintings are an embodiment of their successes."



ALL HANDS ON DECK

At first, the goal was for six visual arts students to partner, one-on-one, with six employees to learn more about the employees' life experiences and to brainstorm ways to communicate them via art – both through a painting and an accompanying audio narrative to describe the painting.

“But like any exciting project, it began to snowball,” says Adam Carlin, the college’s director of community engagement, who partnered with Oliver to bring the project to life. As the project grew, the art became a more interactive experience, and more inclusive for the people it was representing.

Soon, music students created original scores to support the paintings and the audio narratives collected by art history students. Interior architecture students designed audio boxes with two buttons so that blind or low-vision passersby can easily walk up and listen to the narratives and music. And fellow School of Arts students created touch-friendly bronze relief sculptures to accompany each painting. Eventually, the project involved more than 100 students – a number that continued to grow this year, as creative writing students joined in to interpret a second round of 10 paintings through fiction.

“These students are learning a lot about the importance of making art not just for a community, but in collaboration with a community,” says Carlin. “That’s an important part of community engagement, which is vital to our college’s identity.”

Stephan adds that the project raised the bar for how her students approach painting. “They had to think differently about the visual language in general,” she says. “You can’t make a literal picture of what it means to feel a cool breeze on your face. You have to learn how to incorporate non-visual experiences.”

When she began to partner with Mary Martinez, a third-year art student, Afiya Jackson didn’t know what to expect. She couldn’t have imagined the final painting – an image of Jackson walking down a New Orleans street with her son and daughter.

“We discussed colors, different shapes, and how I see things in a different way – not being able to visually see objects,” says Jackson. “We had conversations about my life and how I live independently, as well as how I can travel alone and with my small kids. I’m able to live my life as independently as anyone else in the community.”

(from top to bottom) Studio art student Jordan Harp works on “The Sun All Around Me,” a collaboration with Industries of the Blind employee Danielle Woods. Student Cristal Zeballos sculpts a tactile ceramics piece based on “Riding Blind,” a painting by student William Suits and employee Thomas Martin. Art history student Julia Alexander interviews Afiya Jackson about the painting she created with studio art student Mary Martinez.





STORIES BEHIND THE PAINTINGS

On his desk, Oliver maintains a growing list of employees eager to be represented in future rounds of paintings. For these employees, the opportunity to feel seen and heard is irresistible. “I’m sure this happens to people with many disabilities, but it’s tough being out in public,” says Oliver, who is legally blind and has worked with the Industries of the Blind for 25 years. “You’re at a restaurant with someone who isn’t blind, and the waitstaff speaks to the person you’re with rather than you to see what you want.”

That perception of helplessness is amplified by popular media. “A lot of times in TV and movies, blind guys are helpless. But that’s not who we are. People here are truly independent and self-sustaining,” he says. “They are building careers to provide for their families and send their kids to college. That is the journey that UNCG is helping us to share.”

UNCG’s Green Fund, a student-led and student-funded campus-based program that offers opportunities to students and employees to forward UNCG’s sustainability mission, partially funded the project. The fund’s committee said it was drawn to its “synergistic connections to the environment, economics, aesthetics, and social equity.” Support also came from a UNCG community-engaged scholarship grant.

Oliver hopes people driving by will be struck by the banners. He wants them to park in the Industries of the Blind’s parking lot, get out of their cars, and go press every button so they can really get to know the stories behind the paintings.

“We are all in the world together striving to make it a better place for each other,” Jackson says. “My goal is to educate as many people as possible about blindness and to let them know that we live the same way they live – just a little bit differently.”

by Robin Sutton Anders • [learn more at go.uncg.edu/vpa-iob](http://go.uncg.edu/vpa-iob)



SIGHT. SOUND. TOUCH.

Anthony Johnson, Tanessa Brown, and AJ Inglesby (top to bottom) explore the ceramic pieces developed based on their stories. Above, the team installs pieces developed in the second year of the project.

WHEN TRAUMA GOES TO SCHOOL

A fifth-grade teacher leads a lesson with a mostly engaged class. One student, however, seems disconnected, or “zoned out,” you might say. It’s not the first time this semester, or even this week.

Mental health issues are on the rise among all ages. One study in the *Journal of Children and Adolescent Counseling*, by UNCG’s Dr. Carrie Wachter Morris and Dr. Kelly Wester, found 13% of high school students were at serious risk for suicide.

Professor Wachter Morris and Burlington Industries Excellence Professor L. DiAnne Borders are two of the researchers heading up the School of Education’s new NC Academy for Stress, Trauma, and Resilience, which offers trauma-informed training and services to K-12 schools and the wider community.

Traumatic life events and circumstances – such as poverty, abuse, or loss – can leave survivors struggling. “Your brain shifts to cope,” says Dr. Borders. “You experience ‘fight, flight, or freeze’ because your brain has been retrained to view certain things as threats.”

Young people may hide harmful life experiences and counter them with detrimental behaviors. Disciplinary actions can further isolate them. They are negatively labeled by peers and teachers. They fall behind in – or are even expelled from – school.

One academy focus is breaking this cycle. “We want to evaluate how students are behaving and how teachers are responding, to make the school environment more trauma-sensitive,” says Wachter Morris.

The academy began its work last year with Rockingham County Schools, or RCS, one of just three districts in North Carolina to secure a U.S. Department of Education grant for nearly \$2.6 million to expand mental health services. The funds, secured in collaboration with the UNCG researchers, will put more mental health providers inside schools and pay for teacher and staff training.

“The funds come at a critical time,” says Dr. Stephanie Ellis, RCS executive director of behavioral health, crisis intervention, and student safety and a project partner.

“Thirty-seven percent of students at the county’s four traditional high schools report depression symptoms,” she notes. “North Carolina ranks suicide as the second leading cause of death among young people, ages 14-24.”

With funding from the grant, UNCG counseling master’s students are serving as interns in RCS and offering trauma-informed training to school counselors and educators.

“As more teachers build trauma-informed classrooms, teachers will be able to recognize when a child’s response is less about a discipline issue, and more about a survival issue,” says Borders. “We want to give them ways to cope and manage.”

The researchers are also assessing wellness among RCS teachers and staff, particularly in the context of the pandemic. As Wachter Morris explains, “It’s not just students who need support.”

learn more at go.uncg.edu/nca-star



Last year, Arionna Wilkerson was part of the first cohort of UNCG master’s students placed in Rockingham County Schools to increase trauma-awareness. Now she works at RCS full time as a counselor.

An earlier version of this story, written by Andrea Spencer, appeared in UNCG’s “Transform” Magazine. If you or someone you know is in crisis, call the National Suicide Prevention Lifeline at 800.273.8255 or text 741741 to reach a Crisis Text Line to reach a counselor.



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INTO THE FUTURE The School of Nursing has a new home at UNCG. In August, Provost Debbie Storrs (third from left) led the ribbon-cutting for the new Nursing and Instructional Building with University and fundraising leaders. Newly named spaces include the Remsburg/Chamings Deans' Terrace, the Dean's Suite in Memory of Dr. Eloise R. Lewis, the Metzger Atrium, the Hagan Family Intensive Care Simulation Lab, the Glen & Mildred Jensen Veterans' Student Lounge, and the Barbara & Dale Phipps Student Skills Practice Lab. Learn more about the building and new dean Dr. Debra Barksdale (far right) on page 18.