

ampersand

MAGAZINE OF THE COLLEGE OF ARTS & SCIENCES



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ON THE COVER

Students inside a lab in the renovated Chemistry-Physics Building. Photo by Jake Klein and Eleazar Wilson.

BACK COVER

Inside the atrium of the renovated Chemistry-Physics Building. Photo by Eleazar Wilson.

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Neuroscience and psychology December 2021 graduate

Dear Friends,

In mid-January we picked up our first puppy. A standard poodle, this little fellow weighed barely over 10 pounds and slept quietly in my wife's lap on the ride home. Just six weeks later, he is a tall and rangy mass of black and white curls, weighing over 26 pounds and bounding around the house. His rapid growth, joyful exploration of a world that is totally new, and seemingly endless energy serve as a reasonable metaphor for the transformative growth that our students undergo in their time at the University of Kentucky. That growth has been inspired and guided by faculty who care for and about students and alumni who offer examples of perseverance, resilience and success.

This issue of Ampersand is filled with the inspiring stories of our living and vibrant community. Our alumnus Anthony Jones was motivated by his father's workplace experience to seek to become an injury lawyer. In his time at UK he helped lead the Black Student Union, worked with then A&S Dean Groatch to recruit African American faculty to the University, and today he works for the White House. You will read about Prof. Hugo Reyes-Centeno from the Department of Anthropology who is doing amazing research on human remains and recently secured a cross-college grant with Engineering for \$14 million from the National Science Foundation. Perhaps most inspiring of all, you will meet this past December's commencement speaker, Bisimwa "Jack" Nzerhumana. He majored in neuroscience and psychology, but his path to UK was dangerous, circuitous, and, he will tell you, blessed as he journeyed from his home in Congo, through Kenya, and eventually settling in Lexington, KY. These stories of our faculty, students and alumni reflect the creativity and hope of our community.

These last two years have been difficult, to say the least, for everyone, everywhere. Yet our students, faculty and staff have risen to address the needs of our community and world. In my time as interim dean, I have been humbled by their resilience and commitment to one another and to our College. It has been matched by strength and support of our alumni. Thank you for your continued leadership and commitment.

Yours,

CHRISTIAN M M BRADY

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Photo by Evan Martin



News & Notes



Photo by Mark Cornelison

Crystal Wilkinson Wins NAACP Image Award for 'Perfect Black'

By Lindsey Piercy

Crystal Wilkinson, associate professor in the Department of English in the College of Arts and Sciences, can add NAACP Image Award winner to her expansive and impressive list of accolades.

The Kentucky Poet Laureate's book of poetry, "Perfect Black" (University Press of Kentucky), brought home the top honor in the category of "Outstanding Literary Work – Poetry."

The NAACP Image Awards program highlights the achievements of people of color across television, music, literature and film, and the promotion of social justice through their creative endeavors.

"I am deeply honored. So many of the nominees and recipients are writers whose work I've long admired, so I'm doubly proud to be among them," Wilkinson said. "I wrote this book to not only tell my own story but to also highlight the complexities of rural Black girlhood. I'm elated, but I also hope this recognition serves as an inspiration for others."



Commonwealth Institute for Black Studies to Receive Permanent Funding

By Jenny Wells-Hosley

The University of Kentucky is continuing its support for the new Commonwealth Institute for Black Studies (CIBS).

Created with \$250,000 of seed funding from the University last fall, the Institute will now receive annual funding of \$200,000 through UK's Office for Institutional Diversity—an important step forward in helping the Institute achieve its goals.

"Black studies is for everybody, and by funding the Institute, UK is supporting all of us," said Anastasia Curwood, director of CIBS and African American and Africana Studies (AAAS) at UK. "It's hard to find an issue in the Commonwealth of Kentucky and our present world that does not have a connection to Black studies. We can all gain clarity about where we are, where we've been and where we're going. That's why we named it the Commonwealth Institute—it is for the people of the Commonwealth and beyond."

Housed in AAAS, a program in the UK College of Arts and Sciences, CIBS is a multidisciplinary research institute that serves as a think tank for Black studies. The Institute hosts nearly 50 nationally and internationally recognized researchers with expertise in fields such as Black futures and 21st century race in digital cultures; slavery and inequality in Central Kentucky; race and sports; global Blackness (from Appalachia to Zimbabwe); and gender and sexuality in Black lives.

CIBS also collaborates with, and is supported by, the United in True Racial Equity (UNITE) Research Priority Area. UNITE is a five-year, \$10 million commitment that was established last year to support UK's research on racial disparities and inequity.

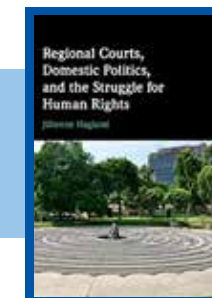
The Bookshelf: Recent books by A&S faculty members

By Richard LeComte

A&S faculty continue to add to the world's knowledge by publishing books. Among the more recent volumes are:



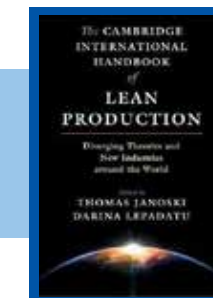
Surviving Southampton: African American Women and Resistance in Nat Turner's Community by Vanessa Holden, associate professor of History and African American & Africana Studies (University of Illinois Press).



Regional Courts, Domestic Politics, and the Struggle for Human Rights by Jillienne Haglund, associate professor of political science (Cambridge University Press).



Ideal Minds: Raising Consciousness in the Antisocial Seventies by Michael Trask, Guy M. Davenport Professor in English and director of graduate studies (Cornell University Press).



The Cambridge International Handbook of Lean Production: Diverging Theories and New Industries around the World, edited by Thomas Janoski, professor of sociology, and Darina Lepadat (Cambridge University Press).

S-STEM PROGRAM to Fund Scholarships in Biology

By Richard LeComte



S-STEM, a new program funded by a \$1.5 million grant from the National Science Foundation, will provide four years of scholarship support for up to 15 qualifying incoming biology or neuroscience majors a year in the College of Arts & Sciences. The average scholarship amount will be \$5,000 a year, depending on financial need, going up to \$10,000.

"The goal of the project is to increase recruitment and retention of talented undergraduates majoring in biology and neuroscience at UK who have unmet financial need," said Jennifer Osterhage, assistant professor in the Department of Biology and coordinator of the effort. "We will accomplish this goal by recruiting these students to actively participate in an integrated set of high impact curricular and co-curricular activities throughout their undergraduate program."

S-STEM faculty at UK will work to recruit first-generation students, under-represented minority students and students from rural Appalachian counties for the program. The funding will support three cohorts of students starting in fall 2022.

Faculty members also plan to help students stay on course in a major of biology or neuroscience, both by easing their financial burden and by matching the students with undergraduate, graduate student and faculty mentors in their discipline.

Research reported in this publication was supported by the National Science Foundation under Award Number 2130107. The opinions, findings, and conclusions or recommendations expressed are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Patricia Ehrkamp Named 2021-22 A&S Distinguished Professor

By Lindsey Piercy

Patricia Ehrkamp, professor in the Department of Geography, has been named the 2021-22 College of Arts & Sciences' Distinguished Professor and will deliver the annual Distinguished Professor Lecture. The lecture, titled "Geopolitics of Disability and the Horizon of Refuge," will take place on April 21, 2022, at 7 p.m. in Thomas Hunt Morgan, room 116. You can also register to watch the live stream at as.uky.edu/ehrkamp-lecture.

As an accomplished feminist and political geographer, Ehrkamp's research considers the politics of immigration with a focus on refugee geopolitics and trauma, as well as belonging, citizenship and exclusion in the spaces of everyday life in the United States and Europe.

Ehrkamp's work has received national and international recognition—appearing in leading journals, including the Journal of Ethnic and Migration Studies, Ethnic and Racial Studies, Urban Geography, Progress in Human Geography, Transactions of the Institute of British Geographers, Space and Polity, Environment and Planning A, and Social & Cultural Geography.

Ehrkamp is working on a project funded by the U.S. National Science Foundation that analyzes the important role of post-traumatic stress disorder in admitting and resettling Iraqi refugees in the U.S. She also recently worked on another NSF-funded project which examined the complex and changing geographies of immigration and belonging for communities of faith in the context of recent immigration and anti-immigrant legislation.



The College of Arts & Sciences inducted four new members during its 2021 Hall of Fame ceremony.

Alumni Inductees

Barbara Bailey Cowden, Bachelor of General Studies '77

Gurney Norman, B.A. English '59, Honorary Doctorate '11

William H. Turner, B.A. Sociology '68

Faculty Inductee

Paul M. Eakin, Department of Mathematics

Visit www.as.uky.edu/halloffame to view photos and videos from the event and for information on Fall 2022.

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ONE DAY FOR UK

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CAN. THE 21ST
CENTURY
CAMPAIGN



It only takes one—one day, one gift—to make a difference.

On April 21, the University of Kentucky will rally its alumni, friends and fans to support One Day for UK, a 24-hour day of giving. The College of Arts & Sciences is raising money for the Arts & Sciences Student Support Gift Fund to support urgent student financial needs that may prevent them from continuing their studies or completing their degree. With your help, we can show that anything truly is wildly possible at the University of Kentucky.

4.21.22

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Building a Community of Budding Scholars

A&S grants to undergraduate researchers stimulate collaborations with faculty, finding new stories to tell and helping humanity in many ways.

By Richard LeComte

Lily Vossekuil, Elizabeth Lorch and children working to improve their comprehension came together in the summer of 2021 to show how undergraduates and faculty can collaborate on research that benefits the Kentucky community.

Vossekuil, a psychology major, did her research under the direction of Lorch, associate dean for research and professor of psychology, and her colleague Angela Hayden. They worked together in a first-year program organized by the Office of Undergraduate Research and the College of Arts & Sciences, funded by the University's Office of the Vice President for Research and by donors to provide intense research experiences in the summer and throughout the academic year for undergraduates. Vossekuil worked remotely to investigate ways to help children improve how they understood narratives.

"It's been an amazing experience," said Vossekuil, whose project investigates the effects on comprehension from an intervention that teaches children to understand narrative structure. "I have been able to kickstart my senior honors thesis, which is a year-long project. I was able to kind of get ahead of the game by finding a research question and also understanding the recent research processes that are involved."

Qwenton Briggs, a senior history major, gathered oral histories of women working in the bourbon industry. He is pictured here at Town Branch Distillery.



Photo by Jake Klein

“Lucille Allen is recognized as the first Black chemist in the bourbon industry. She was one of the first people to break through, not only for bourbon but for chemists overall.”

QWENTON BRIGGS on his project "Index of Women in Bourbon"

As part of her project, Vossekui learned to observe and code positive attitudes and behaviors in their interactions to arrive at some quantitative data on how gains in comprehension may be related to behaviors during learning sessions. In addition to expressions of positive emotions during lessons, Vossekui also coded behaviors that might interfere with learning, such as inattentiveness.

The opportunity to work directly with a researcher, Lorch said, added immeasurably to Vossekui's research experience—even if they had to do it remotely.

"I've served as a faculty mentor for years," Lorch said. "It used to be that we were doing a lot more face-to-face encounters where many of my students were able to work in person with children who were research participants in my studies, so this was a somewhat different experience because she couldn't work directly with any children. Lily did come into my research space to work on some of the data, but we did most of our work remotely. Even with all that, it was a great experience."

The University has funded undergraduate research for many years, Lorch said, but in 2021 the Office of Research shifted its funds and administration to the colleges. A faculty committee from A&S set up an application process in spring 2021 and chose more than 30 projects to fund based on a review of student proposals, the students' GPA and previous research experience.

The A&S faculty committee was able to spread the funding out among more students than could have been supported by the funds from the University alone. Vossekui's research, for example, was funded by the Donald C. and Penney P. Rogers Scholars Fund. Lorch worked with two students: Vossekui and Kaitlyn Williams, whose project focused on improving social problem-solving skills of elementary school children.

"Often students had read research that was related to the project they were doing. So we talked about the research articles and implications of the articles for their research work."

Elizabeth Lorch

Associate Dean for Research and Psychology Professor



LILY VOSSEKUIL

Within each project undergraduates took on through this research program lies the potential either to help lives or to bring forward stories of triumph. Student undergraduate research grants assisted students in many different fields, including history and chemistry. Lorch said the College is seeking students doing research in the humanities as well as STEM fields.

For example, Qwenton Briggs was awarded a Robert and Anne Trunzo Scholarship to gather an oral history of women working in the bourbon industry. He worked with Janice Fernheimer, Zantker Charitable Foundation professor of Jewish Studies.

"We interviewed 20-plus women with various roles within the industry," said Briggs, a senior from Louisville majoring in history. "We had people who were chemists, and some who were general counsel of certain distilleries. We put it all up on one archive, and we indexed the interviews."

The project was titled "Index of Women in Bourbon." He got to meet several trailblazers in the bourbon field, and he also worked to catalog the work of others. One woman's story made an impression on him.

"One who stands out for me is Lucille Allen," he said. "She's actually a big artist now—she does ceramics for therapy. She is recognized as the first Black chemist in the bourbon industry. She worked for the Brown-Forman Distillery. That obviously was right after segregation. She was one of the first people to break through, not only for bourbon but for chemists overall."

Speaking of chemistry, Wyatt Ringo, who graduated in December with a degree in chemistry, worked with Samuel G. Awuah, assistant professor of chemistry, on a project titled "Novel Small Molecule Inhibitors of ARID4B."

The ARID4B gene encodes a protein that figures in the development of breast cancer. Ringo and his mentors have modeled certain substances that could inhibit the ARIDB4 protein and thus help check tumor growth. Ringo started the project in January 2021 and continued with it through the summer. A Rogers Scholarship helped him and his mentors buy additional materials to study.

"The compounds that are possible anti-cancer agents target a specific domain that could end up regulating the growth of breast cancer and also possibly colon cancer," Ringo said. "Dr. Ofori, who was a grad student at the time, had a previous project in which he developed a single compound that had these properties. My contribution to that project was to take off from that initial compound and add to it to see if we could get better results."

Students who participated in the program got to present their findings at the Dean's Cabinet meeting in October 2021, and some of them had the opportunity to meet directly with donors.



WYATT RINGO

"We got to talk with Don and Penney Rogers about the impact their money has on funding this kind of research and some of the long-term benefits that come out of funding this kind of research, particularly the possibility for these compounds to be anti-cancer agents, especially for resistant breast cancers."

Wyatt Ringo '21

Chemistry Alumnus

The students also will participate in a conference looking at their research in April 2022. Lorch said sharing their work is key to their development as students and scholars—a key goal in the study of the liberal arts and sciences. The students already have had small informal conference opportunities to share their work.

"I think what the conference really helped to do was to foster a sense of community among some of the students who participated that day," she said. "They got to talk to one another about their projects and their experiences."&

To contribute to undergraduate research,
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Office of Philanthropy at
givetoas@uky.edu or
(859) 257-3551.

ALUMNI SPOTLIGHT

I knew right away that I wanted to major in political science. Having a knowledge of how government works and how laws are made I thought would be a good background to prepare for being a lawyer.

A Passion for JUSTICE

Anthony Jones '00 rises from UK to a key position on President Biden's drug-enforcement team

By Julie Wrinn



His father's terrible workplace injury started Anthony Jones on a path that led him to UK, the Truman Scholarship, the U.S. Department of Labor and now to the drug policy arm of the White House.

When Jones enrolled at the University of Kentucky at 18, he wanted to become a labor lawyer and help people who experienced workplace injustices, because his father had lost a hand in a workplace incident at a manufacturing plant in Paducah.

"I wouldn't call it an accident because it was a dangerous condition that his employer knew about but failed to fix," Jones said. "As a result, my dad's hand was completely severed at the wrist. Seeing what my dad went through made me want to go to law school so I could be a lawyer and help people like my dad who were hurt due to workplace injuries."

Jones was offered a full William C. Parker Scholarship. Although he'd had opportunities at several other colleges, his parents encouraged him to attend UK because of its excellent reputation and because it gave him the opportunity to graduate with minimal debt. Choosing a major was also easy.

"I knew right away that I wanted to major in political science," he said. "Having a knowledge of how government works and how laws are made I thought would be a good background to prepare for being a lawyer."

In the UK Political Science Department, Jones found two professors who enriched his academic experience.

"There were two political science professors whom I love dearly: Ernest Yanarella and Penny Miller," he said. "Both of them were great mentors to me. They encouraged me, they challenged me, and they were really influential because I think they believed in me when sometimes I didn't believe in myself. Yanarella and Miller's encouragement and support was really instrumental to my success at UK and thereafter. They both encouraged me to apply for a Truman Scholarship, and without their encouragement I probably would not have applied."

Jones also made the most of opportunities outside of the classroom. He worked at the Martin Luther King Jr. Cultural Center all four years, under its legendary former director Chester Grundy, devising programming for students including guest speakers, concerts and plays. In his sophomore year, Jones was elected to the UK Student Government Association as senator for the College of Arts & Sciences. He worked with then-dean Howard Grotch on initiatives to bring more African American faculty to UK. Jones was also an officer in the Black Student Union.

The Truman Foundation was established by Congress in 1975 based on an idea by former president Harry S. Truman, who did not want a bricks and mortar monument but a living memorial that encouraged a life of service. The Truman Scholarship became the premier graduate fellowship in the United States for college juniors who are pursuing careers in public service. The honor is extremely competitive, with scholars selected from each state. In 1999, Jones was selected as a Truman Scholar from Kentucky.

Benefits of a Truman Scholarship include a Summer Institute in Washington, D.C., where scholars from all over the country gather. The Truman Scholarship funded Jones' law degree and provided him with a national network of other recipients.

"Some of my fellow scholars have been tremendous assets in helping me get jobs and opportunities in the federal government," Jones said. "Being part of a network like that has been really valuable for my professional career."

After law school at the University of Illinois, Jones became an attorney for the U.S. Department of Labor. That position, which focused in large part on workplace safety and health, was the realization of his lifelong ambition, and he held it for 10 years. Jones was involved in drafting mine safety and health regulations, and that knowledge formed the foundation for his next position, when an opportunity arose for him to work in the White House.

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The epidemic of drug misuse nationwide has reached new heights since the pandemic, and it's a critical time for work in this area.

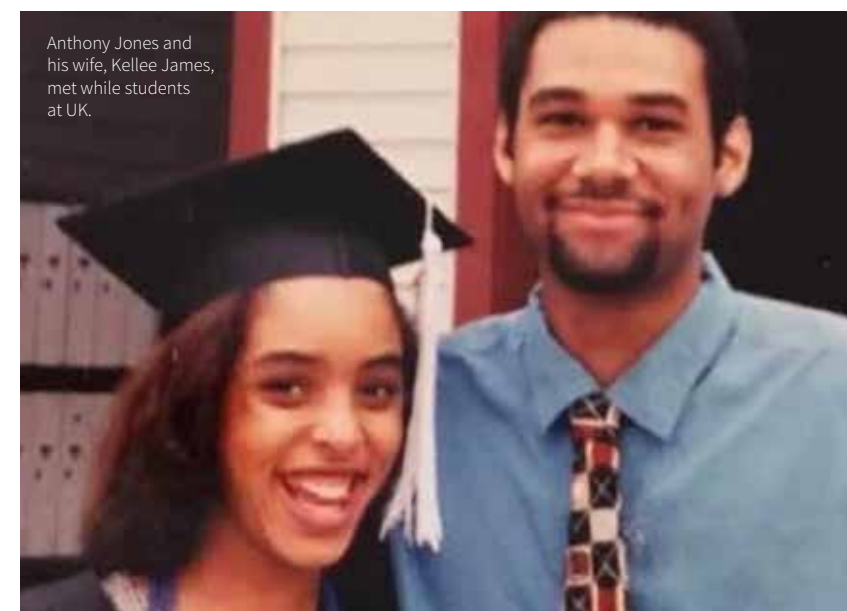
"Before COVID, the leading cause of unintentional death in America was drug overdoses, and COVID has made that situation worse," Jones said. "We're expecting the number of Americans who have died of a drug overdose for 2020 to be the highest number in history. It's a serious public health problem."

What has changed in the recent past is the composition of these drugs.

"The drug supply is completely tainted with synthetic opioids," Jones said. "It used to be that you had plant-based drugs: cocaine that was grown from cocoa leaves, or heroin that was produced from opium poppies. The plant-based drugs were less potent than the synthetic, laboratory-made drugs. And now the whole drug supply is just saturated with the synthetic kind, and that's leading to the high levels of drug overdoses."

Jones is married to UK alumna Kellee James (B.A. Spanish 1998), who is founder and CEO of Mercaris, a company that provides market data and auctions for organic and non-GMO agriculture in the United States. Because of all of these experiences, Jones feels tremendous gratitude to the University of Kentucky.

"I love UK because they gave me an opportunity to get a great education there, I met my wife there, and I made some lifelong friends," he said. "It was a wonderful experience that I will cherish throughout my lifetime." &



Anthony Jones and his wife, Kellee James, met while students at UK.

"It was only supposed to be a short-term detail, and I was supposed to go back to the Department of Labor," he said. "When you practice federal law, there's the rule-making process. The Administrative Procedure Act applies to rule-making all across the federal government. So if you have a general knowledge of what the law requires for rule making, it doesn't matter if it's a labor and employment rule or a drug policy rule or a consumer financial protection rule.

"If you know rule making, it's applicable all across the federal government. I primarily went to the White House because they had a need for an attorney who could help them with rule making activities."

That short-term assignment turned into a permanent position, and after a recent promotion, Jones is now deputy general counsel at the White House Office of National Drug Control Policy (ONDCP), responsible for coordinating drug policy across the entire federal government.

"There are about 18 different federal agencies that play different roles in what's called the National Drug Control Strategy," he said.

Those agencies include the Coast Guard, which intercepts drugs arriving on the high seas; the State Department and Department of Defense, which work to eradicate cocaine plantations in places like Colombia, Bolivia and Peru; the Department of Health and Human Services' drug treatment efforts for people who are struggling with substance use disorder; and law enforcement agencies like the Department of Justice and Department of Homeland Security that target drug traffickers.

"Drug policy touches on so many different areas," Jones said. "As a White House agency, our job is to coordinate among all the different federal agencies to make sure that they're working in a concerted way to address the problems of drug misuse."

HEALING, HOUSING AND HERITAGE IN THE HOLLERS

By Richard LeComte

The AppalachiaCorps provides students with interests and roots in Eastern Kentucky opportunities to learn and serve the region

SUMMER FUN IN APPALACHIA: hiking, climbing, camping, swimming—and holding somebody's removed femur in a hospital.

UK student Logan Turner got to participate in that last activity while working a summer observation internship in Pikeville Medical Center in 2021. He participated in AppalachiaCorps, a new program run by the College's Appalachian Center and Appalachian Studies Program and funded with help from UK's Women in Philanthropy.

AppalachiaCorps helped fund Turner's work with the Eastern Kentucky hospital as a run-up to his applying to medical school. His goal is to be an ophthalmologist.

"I was doing physician shadowing, so a lot of surgeries," said Turner, a biology major from Hueysville, Kentucky, in Floyd County. "I got to see as many as 60 cataract surgeries. I also got to observe vascular surgery and orthopedic surgery. And I got to hold the tip of someone's femur. It had been fractured, and the surgeons were going in and replacing it. That was a cool procedure. Overall, it was a really neat experience."

Turner needed to shadow doctors in action as part of his application for medical school, and Pikeville provided him with access to a variety of procedures, more so than at a big city hospital.

"They were extremely flexible with the types of things that I got to do," he said. "I asked for a full range of experiences, and the administrator basically said that sounded great."

Twelve students participated in AppalachiaCorps in 2021, and the College's Appalachian Center is seeking students for summer 2022. The students, many of whom are from Eastern Kentucky, get to ferret out a range of possible experiences, said Kathryn Engle, director of the Appalachian Center and adjunct assistant professor of sociology. Engle's group partners with UK's Center for Service Learning and Civic Engagement under the direction of Todd Stoltzfus for the AppalachiaCorps initiative.



Logan Turner
Photo by Eleazar Wilson

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"The whole program is very widely conceived," Engle said. "We had a student working closely with me in an organization that works on racial justice in southeastern Kentucky. We also had a student working in tourism, and a student working last semester in a museum setting in heritage preservation. We had other students working in health care and education."

AppalachiaCorps contributes both to the broader education of UK students and to the services and organizations benefiting from the participants' energy and inquisitiveness.

"We're providing high-impact learning experiences and experiential learning," she said. "In addition, we're building capacity and strengthening those organizations out there, allowing them to extend their outreach and commitment."

For example, Danica Moon went to work in one of the biggest issues facing Appalachia—affordable housing. She helped remotely at the Lexington office of the Federation of Appalachian Housing Enterprises (FAHE), which is based in Berea, Kentucky. FAHE is a membership organization for housing initiatives and economic development nonprofits in the region. She was working directly with Jim King, the president of the organization.

"The federation's members don't have large, full-time staffs," said Moon, a political science major from Lexington. "They don't have someone full-time to do their books, so FAHE helps them with that. A lot of what they do is directed at helping people and organizations to get grants and build their capacity."



Danica Moon
Photo by Eleazar Wilson

In the summer of 2021, she said, she, King and the rest of the staff were watching developments in Washington, D.C., to see how much of President Biden's infrastructure plan would address housing issues in Appalachia. In addition, King and Appalachian scholar William H. Turner—a recent inductee in the College's Hall of Fame—were investigating and addressing housing issues surrounding the Black population of the region. The problem, Moon found, is that it's difficult coming up with statistics for Black, Indigenous and other people of color in Appalachia.

"They wanted to focus on Black organizations in the region—they wanted to see how they could engage with them, help them find grants and do more work with them directly," she said. "I was trying to find some baseline statistics about unemployment rates of Black Appalachians, land ownership and single-family-unit housing. But there's a real lack of statistics about that: People of color in Appalachia are often missing from official data. More specific statistics are also not often separated out by county. So you could look at the numbers for the state as a whole, but you can't look at it specifically in Eastern Kentucky."

Affordability is another key issue. As a child, Moon visited relatives near the New River Gorge in West Virginia, which is one of the areas of Appalachia that faces housing issues, she said. Homes for vacationers are driving up property values, making housing values unaffordable for the people who live there year-round. She noted that the phenomenon is most prominent around Asheville, North Carolina.

"Property values are going up so quickly because some areas have become tourist destinations, and it has priced the locals out of their range," she said.

Meanwhile, Ashley Watkins focused on the heritage of Appalachia—she built a website where people who live in Martin County, in the extreme eastern side of Kentucky, can share their stories and interact. She started working on it in summer 2021 and finished around the beginning of 2022. Her work was connected to LiKEN, or Livelihoods Knowledge Exchange Network, which helps communities build local assets for economic improvement.

"A lot of that work involved setting up the website and figuring out what Martin County citizens would want to see on the website and then going from there," said Watkins, who is a writing, rhetoric and digital studies major from Lexington who has roots in West Virginia. "It was a lot more work than I expected it to be—a lot more groundwork. Since it started, my supervisors have been going around and advertising it to Martin County organizations such as the public library and the historical society to see what they think."

Health, housing and heritage are just three of the areas AppalachiaCorps has contributed to in Eastern Kentucky. And Engle sees the efforts of these students as key to the mission of the center.

"The program represents a cornerstone for the Appalachian Center and our work, because I think it touches on all of the things that the center is about in terms of engagement and teaching," she said. "The bigger picture is that we're positively impacting the Appalachian region and giving our students opportunities to do the kind of work they want to do."&

To give to AppalachiaCorps,
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Ashley Watkins

**HEALTH, HOUSING AND
HERITAGE ARE JUST
THREE OF THE AREAS
APPALACHIACORPS
HAS CONTRIBUTED
TO IN EASTERN
KENTUCKY.
THE EFFORTS OF
THESE STUDENTS ARE
KEY TO THE MISSION
OF THE CENTER.**

FORMULA FOR INNOVATION

Photos by Jake Klein and Eleazar Wilson

A renovated Chemistry-Physics Building will offer a bright future filled with student interaction, collaboration, and research. This building remains a pillar of our flagship institution.

Mark Lovell, Jack and Linda Gill Professor of Chemistry and Chair of the Chemistry Department



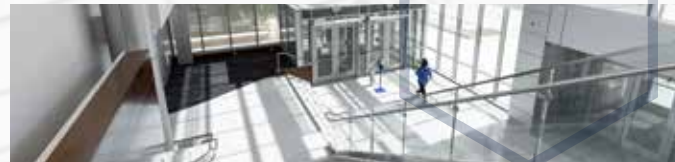
Chemistry-Physics Building renovations near completion

THE UNIVERSITY OF KENTUCKY CHEMISTRY-PHYSICS BUILDING IS GETTING A MUCH-NEEDED TRANSFORMATION.

The central campus staple is currently undergoing a two-phase construction project that will result in a renovation of the third floor, as well as a completely new exterior façade of the building, including a three-story entrance/atrium. The transformation will be completed in early June and includes 15 research labs, support and equipment spaces, offices, a new stair tower, loading dock and entrance additions.



CONTINUED ON PAGE 20 »



Originally completed in 1962, this building was one of the most advanced in the nation and helped pave the way for UK to take its place among the top tier of research universities nationwide.



Now, as a complement to the teaching spaces in the Don and Cathy Jacobs Science Building, the Chemistry-Physics Building will have world-class laboratory and research spaces.

“The University of Kentucky and the Commonwealth have invested heavily in the renovation of the Chemistry-Physics Building in order to make the future possible here.”

—Christian Brady, Interim Dean, College of Arts & Sciences



We are in the 21st Century. We needed to upgrade and update this space so our researchers were no longer making their work fit the building, but rather the building would adapt and fit their research.



Christian Brady,
Interim Dean, College of Arts & Sciences



The design decision to maximize the windows and light throughout the building is going to fundamentally transform the experience of everybody that is going to be learning, teaching and researching in this building.

Eric Zabilka, Omni Architects



Photos by Jake Klein and Eleazar Wilson

1980-2021 Remembering Susan A. Odom '03

By Richard LeComte



On April 8 at 4 p.m., the Department of Chemistry will hold the first Susan A. Odom Lecture in the W.T. Young Auditorium. The guest speaker will be Jodie Lutkenhaus, professor of chemical engineering at Texas A&M University. Among her honors, she received the 2020 Outstanding Early Career Paper Award in Molecular Systems Design & Engineering.

The lecture will mark the start of the Professor Susan A. Odom Chemistry Endowment Fund. Gifts to the fund will support:

- A faculty position in Odom's name.
- An annual named lecture in the area of organic or materials chemistry.
- A named award for an undergraduate chemistry major who has demonstrated excellence in research.



Odom joined the UK faculty in 2011 and was promoted to associate professor in 2017. She quickly became a favorite among students, winning the "Teacher Who Made a Difference" award in 2012, 2013, 2016 and 2017. She published more than three dozen articles, received five patents and filed 11 patent applications. She was also recognized with the American Chemical Society Women Chemists Rising Star Award in 2020. She died in 2021.

"Susan was adept at pursuing new ideas, determining their value, and putting the most useful aspects of the idea into practice," said Department of Chemistry colleague David Atwood. "She really embodied all the best, most ideal attributes of a university professor."

Odom's lab focused on the design, synthesis and characterization of conjugated organic materials for applications that access multiple states of oxidation. She was also committed to mentoring and supporting women in STEM fields, co-founding a group to encourage girls to pursue their academic goals and serving on the Kentucky ACE Women's Network.

The Professor Susan A. Odom Endowment Fund honors Dr. Odom's legacy of excellence at the University and will have a positive impact on the UK Department of Chemistry for generations to come. The fund has already received unprecedented support from fellow alumni, former students, family and colleagues all over the world.&

To give, visit as.uky.edu/susan-odom-fund



Scan the QR code or visit as.uky.edu/chem-phys-transformation to learn about naming opportunities and view photos/videos.



EVOLVING DISCOVERIES

New technology allows anthropologist Hugo Reyes-Centeno to unlock mysteries of human origins with UK's burgeoning Cultural Heritage Lab

By Richard LeComte

Photos by Jake Klein and Eleazar Wilson

Hugo Reyes-Centeno has sunk his teeth into a fascinating, multidisciplinary approach to the study of human evolution at the University of Kentucky. That approach involves (yes) teeth—and crania. Reyes-Centeno joined the Anthropology Department as an assistant professor in 2020. He's among the UK faculty who will be using instrumentation bought and upgraded with a recent \$14 million infrastructure grant from the National Science Foundation for noninvasive research on human artifacts and remains in a blossoming heritage science lab, called EduceLab.

Anthropology Professor Hugo Reyes-Centeno studies human artifacts by looking at dental casts in his lab at UK.

Part of Reyes-Centeno's physical anthropology research involves examining remains of the human body—skulls and teeth—to find telltale differences that separate human species and living populations. For example, he's beginning research using micro-computed tomography (micro-CT), a system that allows researchers to build a model of the insides of an object without destroying it. Reyes-Centeno and his students are using it to investigate the inner ears (cochlea) of the crania belonging to early humans and human-related species. A micro-CT system can give researchers a minute look at the cochlea's structure for detailed comparisons.

"I have some students looking at the inner ear cavity," he said. "That's the part that you might see in your doctor's office that has this very swirly-like configuration. It's actually not a bone structure, but there's bone surrounding this snail-like chamber that has important functional applications for hearing and maintaining balance."

He and the students are looking at these structures to determine how different they are among fossilized remains of different human species, such as Neanderthals, so that in the future they can be used to identify the origins of the subject.

"One of the things that we're looking at is to see whether we can use this method to understand differences in sex and ontogeny, different age groups, and differences between geographical populations," he said.

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Skull replicas from Hugo Reyes-Centeno's lab at UK.

Evidence in teeth

Teeth also can be studied in this method and with other resources. A paper he wrote with colleague Hannes Rathmann explores how anthropologists can trace the origins and diversity of humans using specific characteristics of teeth. For example, the incisors of Native Americans today frequently have a “shoveled,” or curved, back side of their front teeth. The incisors of people with European ancestry typically have flat backs.

“Incisors are the front two teeth you see when you smile, particularly the first two teeth,” said Reyes-Centeno, who earned his doctorate at the University of Tübingen in Germany. “We know that Native Americans have shoveled teeth, in some populations at almost a 100% frequency. So, if you take a person with Native American ancestry, they’re quite likely to have that kind of trait.”

Reyes-Centeno’s paper, “Testing the utility of dental morphological trait combinations for inferring human neutral genetic variation,” goes on to suggest that this shoveling of Native American teeth may not be just the result of genetic drift; the trait may have developed as an evolutionary adaptation to the environment of Native Americans.

“We wanted to know if this was something that came about by chance—what we refer to as genetic drift in evolutionary studies—or whether it was something that was selected for or if it had some purpose,” he said. “Perhaps it’s an advantage for people who are chewing a lot more with their front teeth than with their back teeth. That wasn’t something we were able to address specifically, but what we were able to say is that there probably are some kinds of selective pressures going on for that particular trait. It may not be directly

selecting for those teeth, but it may be selecting some other phenotype—a larger mouth in general, for example—that results in teeth with that particular shape.”

And looking at such traits as “shoveled” incisors can also help physical anthropologists determine the geographical origin of a fossilized human or unidentified deceased individuals. For example, traits involving a “mesial ridge” in the upper canines indicate African ancestry.

“In most sub-Saharan Africans today, you will find this trait, whereas in non-African populations you do not,” he said. “This trait is tremendously useful in identifying where someone comes from. Why is that the case? Well right away we can say with some level of certainty whether they’re African or non-African. So it is one of the traits that we found could be very useful for identifying geographical origin. The more important finding of our study, however, is that using combinations of multiple traits will allow for a more precise identification.”

Reyes-Centeno is taking advantage of the interdisciplinary and collaborative strengths of UK. He and Brent Seales, Department of Computer Science chair in the College of Engineering, received a grant from the Vice President for Research Office to bring in a micro-computed tomography system for an extremely close look at teeth—and other things, which is part of the EduceLab.

“That system will allow us to work on very small details in teeth, which is what I’m interested in, but other small bones as well,” he said. “And Brent will be looking at antique books and scrolls. We’re quite excited about that.”

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“
I take an approach that looks at the diversity we see in populations today. I’m interested in understanding why we have that diversity.
Hugo Reyes-Centeno
Anthropology Professor
”

» CONTINUED FROM PAGE 25

Evolution over 1 million years

As a biological anthropologist, Reyes-Centeno is probing some of the basic questions about why humans have evolved a myriad of differences over the course of about 1 million years.

"I take an approach that looks at the diversity we see in populations today," he said. "I'm interested in understanding why we have that diversity. And that's what got me interested in studying anthropology in general."

Reyes-Centeno was born in Mexico and raised in California. In his freshman year at Bard College at Simon's Rock in Massachusetts, he discovered a passion for biological anthropology. He transferred to Stanford, where he majored in

anthropology, and went on to earn a master's at the University of Ferrara in Italy and finally a doctorate in archaeology in Germany.

In his previous work at Tübingen, Reyes-Centeno developed a strong multidisciplinary approach to the study of human origins. As he was finishing his doctorate in 2015, he and one of his supervisors developed a broad-based center for the study of the human past.

"We wanted to have a center for an initiative that would bring multiple disciplines together to answer common questions," he said. "We came from what's called the four-field approach to

anthropology, which involves evolutionary biology, archaeology, social and cultural anthropology, and linguistics. We wanted to bring that approach to the University of Tübingen."

Reyes-Centeno and his colleagues received funding from the German government and the German Research Foundation, and as a result he found himself with a center and a job.

"I became the scientific coordinator for the center for the next five years," he said. "That meant being in charge of developing the center, planning courses, hiring people and managing all of the scientific projects."

Reyes-Centeno is eager to expand his collaborative efforts in his position at UK as well as to spread the word about human origins in the context of a liberal arts education.

"This semester I will be teaching Human Evolution and Modern Human Origins," he said. "I hope Human Evolution will lead to a lot of interest across campus—not just for anthropology students, but also biology students. The class potentially will interest pre-med and pre-dental science students as well." &

Dental casts from Hugo Reyes-Centeno's lab at UK.

UK Awarded \$14 Million NSF Grant to Launch World-Class Cultural Heritage Lab

By Lindsey Piercy, Alicia Gregory and Ben Corwin

Thanks to a \$14 million infrastructure grant from the National Science Foundation, the University of Kentucky is poised to tell the story of humanity in groundbreaking ways through the lens of heritage science.

The new EduceLab will function as a user facility for the heritage community and have its home base in UK's William S. Webb Museum of Anthropology. Founded in 1931, the museum remains dedicated to enhancing knowledge about and preservation of the nation's cultural heritage. The Anthropology Department faculty who will be working with the lab are Hugo Reyes-Centeno, Elena Sesma and George Crothers.

The Webb Museum houses a world-renowned archaeological collection from more than 250 properties listed on the National Register of Historic Places—including Native American, Revolutionary War- and Civil War-era sites. The collections provide a link to the roots of the Commonwealth and its people. Additionally, the immense research archives provide educational services, practical training and research opportunities for the campus community and beyond—making it the ideal location for EduceLab.

"Within Kentucky, it's probably a well-kept secret that we have some of the best collections that relate to this question of the first agricultural populations in Eastern North America," Crothers said. "This is going to significantly impact what we do in the museum, and in archaeology in general, because it's providing us access to the most sophisticated and high-level equipment, which we didn't have before."

Using the NSF infrastructure funding, Brent Seales, UK Alumni Professor in the Department of Computer Science, has gathered experts from the College of Engineering and the College of Arts and Sciences to build EduceLab. The collaborative facility will focus on developing innovative artificial intelligence solutions for the challenges presented by cultural heritage objects.

Heritage science draws on engineering, the humanities and the sciences to enhance the understanding of our past, inform the present and guide our future. Ultimately, the goal is to enrich people's lives and celebrate both the commonality and diversity of the human experience.

"The word Educe means 'to bring out from data' or 'to develop something that is latent but not on its own explicit.' That's what we've been doing with our virtual unwrapping work. And that context has created an opportunity to expand the very focused question of, 'Can we read what's inside a scroll?' to a broader question of, 'What heritage science questions can we answer right here in Kentucky,'" Seales said. "My goal is to rally some of the best researchers here around that theme and build a world-class laboratory that allows us to pose and then answer some of those questions." &

A&S students travel to Belize, the Tetons and western Washington for immersive learning experiences

By Olaoluwapo Onitiri and Richard LeComte

To bring College of Arts & Sciences students to the world, faculty members have developed high-impact educational experiences in the field, relevant to their disciplines. From the Tetons of Wyoming to the forests of Western Washington to the brilliantly heterogeneous ecosystems of Belize, A&S students have studied everything from big cats to thousands of years of geologic history to their own inner beings. Here are some examples of their explorations.

BELIZE—SPOT THAT CAT

A group of eight UK students was deep in Central America's nation of Belize, learning how to assess wildlife populations, including big cats, using cameras. Led by Emily Croteau, lecturer in biology, students hit pay dirt on their first foray into this wild ecosphere last summer.

"I wanted to focus on conservation biology and giving the students an authentic field experience," Croteau said. "Belize has a few different ecosystems. It has a really fascinating terrestrial ecosystem that ranges from lowland savannah areas and then into jungle habitats."

Getting the cameras in place was not only an exciting adventure for the students, but it was also quite challenging.

"It was actually really, really exciting, the first time that we went into the jungle to recover our camera traps," said Quincy Ipsaro, a junior biology major from Cincinnati. "The first day we did probably a seven-to-10-mile hike into the jungle just to set up the cameras. It was so, so hot and the bugs were insane. It was probably some of the toughest conditions I've ever been through."

Croteau said the students were able to capture images of three of the five cat species as well as tapirs and agoutis.

"We had some decent results within a few days, which I never could have imagined would have happened," she said. "We placed these cameras in savannah areas and jungle-type areas. Then we got the photos back at the end of the trip. And we did a lot of hiking, just to see the change in environments. There are really good trails in the Cockscomb basin, which is also the first jaguar preserve ever made."



Croteau and the students brought back the photos to use as data in the survey. And the students also brought back a deeper appreciation for conservation, for which Belize is known.

“The main thing that stood out for me is how focused all the people are on conservation,” Ipsaro said. “They really don’t have as many resources as we do here in the United States, but people there are giving up land on their farms for animal sanctuaries, to make sure those animals have a proper habitat. People in Belize understand that the environment is a huge part of their economy.”

In addition to the inland trek, Crouteau and the students also explored Belize’s coastal areas, looking for invasive species of fauna in the waters.

TETONS—ERUPTIVE PAST

Ryan Thigpen, an associate professor in the Department of Earth and Environmental Sciences, along with several of his students and faculty colleagues Mike McGlue, Summer Brown, Ed Woolery and Kevin Yeager, embarked on a project in the Teton Range of Wyoming during the summer of 2021.

The aim of the project was to study the possibility that the northern part of the Teton Range had collapsed into the Yellowstone hotspot—an area in the western United States that has experienced multiple supercalderas eruptions starting around 2 million years ago.

The Teton Range is bound by an active, earthquake producing normal fault caused by regional stretching of the Earth’s crust.

“It’s a very cool scientific idea, but there are a lot of broader implications for understanding active fault hazards that may have been left behind from these events” Thigpen said.

Although the project is now funded by a major grant from the National Science Foundation*, this study received seed funding from the University of Wyoming-National Park Service Research Station and the Wendell H. Overcash Earth and Environmental Sciences Student Travel Fund, the latter of which was a gift from EES alumni to provide exceptional field experiences for students. This recent trip was scheduled to happen earlier but was delayed due to COVID.

The project involved gathering land and lake seismic imaging, essentially a picture of the geology beneath the surface, as well as coring of lake sediments that preserve earthquake records and bedrock data collection that tells us about the uplift history of the mountain range. Elisha Miller, a senior geology major who did some of the land and lake seismic studies, said the field work was a great deal different from the classroom experience.

“We just learned a lot of things that I was able to apply from class because it’s different from looking at pictures of rocks,” he said. “Once you actually see it and get out on the field, it’s a different experience.”

Madison Preece, a senior geology major, described how much she enjoyed the experience.

“I think my favorite part of the Teton season is that we are really able to learn a lot from different fields of geology,” she said.

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* Research reported in this publication was supported by the National Science Foundation under Award Number 1932808. The opinions, findings, and conclusions or recommendations expressed are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Wyoming

Although the work is still in the early stages, preliminary results indicate that this team may be correct in thinking that the northern Teton Range has collapsed into the Yellowstone hotspot. To date, Thigpen said, they are still chasing the fault north, straight into Yellowstone National Park.

WASHINGTON STATE—JOURNALING JOURNEYS

Natural history writing, mindfulness and theories of “nature therapy” offered students a different look at Olympic National Park and Forest in Washington State in June 2021. Out in the woods, students had the time to look at their surroundings and write down their thoughts.

“It was primarily a hiking trip,” said Maeve Hoppen, one of the participants. “I was very interested in mindfulness, and I wanted a more active experience, which is why I chose this program.”

Beth Connors-Manke, associate professor in the Department of Writing, Rhetoric and Digital Studies, led the class, which stayed 13 days at Aramark’s Lake Quinault Lodge, a rustic lodge built in 1926. Onsite class time involved writing, hiking and mindfulness activities. Students visited a diverse set of landscapes, including the Pacific coastline, the temperate rainforest and the Olympic mountain range.

“Natural history writing has long been a genre used to protect and preserve natural and wild lands,” she said. “Recent concerns about human health and environmental destruction make it important that people reconnect with the natural world. It’s pretty clear that ecological survival and human well-being are both at stake. Natural history writing allows students to bridge the two.”

Hoppen, a recent graduate who majored in linguistics with a minor in voice, said she particularly enjoyed the writing ideas Connors-Manke gave the class as part of their studies during and after explorations.

“We would be given a prompt to chew on that related to whatever we had read in class,” Hoppen said. “We would sit down and take 10 minutes and write, and then we’d take 20 minutes to go around and share what we had written and then continue the hike. On some days, we would do the whole hike and then come back and have a reflection or a period of meditation.”

The prompts focused on attention to the natural world—each idea asking students to probe their reaction to the stunning environment.

“Sometimes she asked us to objectively describe the environment that we were in,” she said. “Then some of them were more abstract. I think one of the more out there, super-fun prompts we had was, ‘How do you define a face?’ We’d talk about it and then go write. Or we’d pick a piece of plant life and then just sit with it and write about it—it was very free-form.”

Ultimately, Connors-Manke sees this high-impact learning experience as both educational and therapeutic.

“At its best, education is about meaning in life,” she said. “The more we build courses that combine knowledge, experience and healthy connection to the natural world—our home—the more we are serving students. Serving them intellectually, socially and psychologically.”&

Q&A



with

JACK NZERHUMANANA

By Olaoluwapo Onitiri

Photo by Pete Comparoni

Everyone has a different journey in life.

The journey may not always be smooth, but it is what shapes a person into who they are. Bisimwa "Jack" Nzerhumana, a December 2021 graduate who majored in neuroscience and psychology at UK, is one whose complicated journey has made him who he is today. At the graduation ceremony, he delivered one of the student addresses. We sat down with Jack to discuss his journey from his homeland (Congo) to Lexington, Kentucky, his passion for neuroscience and psychology, and his impact on the community.

Q: Could you tell us about your journey from your homeland all the way to the United States?

I am originally from Congo. However, at the time in Congo, there was a lot of war and fighting with the neighboring country going on. I remember seeing everyone running, hearing bullets and seeing people being killed. That led to my family and I migrating to Kenya as a refugee when I was around 5 years old. We lived in Kakuma refugee camp before moving to Nairobi, Kenya, a couple years later. The students were not welcoming over there because I was not from Kenya, especially when I was a prefect. Then, in 2012, after getting all of our documents sorted, the UN helped us to migrate over to Lexington, Kentucky, where I was able to complete eighth grade through high school and then attend college.

Q: What made you choose the University of Kentucky as the place to further your education?

I chose UK specifically because during my junior year in high school I attended a program for a month that was sponsored by the UK College of Medicine. I was able to interact with professionals, doctors and researchers. Also, just seeing the environment and new facilities like the Don & Cathy Jacobs Science Building and the new Gatton Student Center really attracted me to come to UK.

Q: How has your experience at UK been?

Overall as a first-generation student receiving two degrees, I believe I have had the best time here, especially meeting different people with different walks of life. UK has really prepared me on learning how to overcome some of my hardships and being able to work in the community by volunteering with urban impact. They also want you to succeed here. Before I came to the University, I did not know any chemistry or biology. However, I had resources like the Chemistry Learning Center, the Study and professors to help push me over my limit. The College of Arts & Sciences has also provided resources to help me succeed. Whenever I had questions, professors had their office hours open for me to come and just express myself and really be able to understand different concepts in a different manner.

Q: Why did you decide to pursue a career in neuroscience?

Something about neuroscience that really interested me is that the brain is very complex and there are a lot of things we don't understand about the brain. I suffered a traumatic brain injury after a group of students hit the back of my head in Kenya, and that really pushed me into studying neuroscience. The fact that I was able to get my eyesight back and all other functions of my body back after a traumatic brain injury really sparked my interest in neuroscience. I could see different ways to help people who suffer traumatic brain injuries.

Q: Could you talk about your research experience, including working with Wild Health during the pandemic?

As an undergraduate, I was able to do research specifically in traumatic brain injury, working in Dr. Patrick Sullivan's lab. My focus was to see the mitochondria that gets a dysfunction and to see if there's a therapeutic drug that can improve the mitochondria after it's been damaged. I'm looking to see if it can get recycled and re-created through biogenesis to get new mitochondria, so that the cell can function.

Also, during the pandemic, and even right now, I am working with Wild Health, a Lexington-based company currently conducting COVID-19 testing for UK, to help provide the best help to Kentuckians during this tumultuous time. You need people who can really help with COVID testing and provide the best care when it comes to giving vaccines. I enjoy working with Wild Health because it's something I'm giving back to my community and it's a beautiful way to give back.

Q: What are your long-term goals?

After graduation, first I'll be working with the residency program here at the Pediatrics Clinic at UK, just to get exposure to different ways medicine is being provided. Another long-term goal that I have is to become a gastroenterologist or a neurologist, depending on what really interests me when I get into medical school. My ultimate goal is definitely becoming a physician. I will not only serve Kentucky but go outside different places where they don't have doctors that can really help give medical care attention. I also want to provide the best care to everybody and to also be a motivation to a lot of refugee students who are thinking of going to a university to get a higher education, because sometimes it can be daunting.&

To watch the full interview,
SCAN HERE





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