



Sustainable biomaterials faculty Jennifer Russell (at left) and Kiara Winans are looking to natural systems for insights to inspire industry's transition toward a more sustainable future.

**For Assistant Professor Jennifer Russell of the Department of Sustainable Biomaterials, a factory floor that rolls out some of the largest construction vehicles is an ideal test case for an economic model that reveals the value of prioritizing sustainability.**

“We can go into a manufacturing facility producing heavy equipment and measure and compare the energy, emissions, waste, labor, and cost impacts of making a brand-new excavator or grader,” said Russell. “We can then compare those impacts to the impacts resulting from a remanufactured machine where older parts and components have come back to be disassembled, cleaned, tested, and integrated back into the production process.”

The results can be astonishing: according to a United Nations study that Russell co-authored, remanufacturing efforts in heavy equipment factories resulted in a 90% reduction in material use, a 90% reduction in process energy, and a 60% reduction in emissions and energy required for materials.

The transition in industry from one-directional processes of extraction, production, and waste towards a circular economic model that focuses on value retention and reuse is the central research focus for Russell. She and Collegiate Assistant Professor Kiara Winans are blazing a new path that will merge research about natural resources and materials science with an innovative perspective incorporating environmental resources considerations with social and economic benefits.

“The college and our faculty are at the center of research aimed at providing the goods and services necessary for society,” said Dean Paul Winistorfer. “Studying sustainability through a quantitative lens is necessary for society to make better decisions regarding material choices, and we need to equip our students with the tools and skills to address the large sustainability challenges that society faces.”

**FROM QUANTIFYING SUSTAINABILITY TO A CIRCULAR ECONOMY**

For Russell, the task of quantifying the benefits of a circular economic model is well underway.

“My research for the U.N.’s International Research Panel was very much about quantifying the benefits of circular economy,” she said. “In our research for that report, we asked ourselves: ‘If we were successful in adopting this strategy, what would be possible? Could we mitigate climate change or address biodiversity loss? What is possible before we go down the path of rearranging our entire economy?’”

The group’s findings showed that the adoption of remanufacturing processes enabled increased production activity without the typical associated rise in environmental impacts due to resource collection. With the data to support a transition that will help both industry and the planet, Russell is now turning her attention to the challenge of turning theory into practice.

“My real focus now is transition,” she said. “How do we start to rearrange and reconfigure these massive global supply chains and complex technologies that have been in place for 150 years? And just as challenging, how do we reconfigure the mindsets and priorities of industry leaders who have been trained to focus narrowly on the economics of supply and demand logic?”

**PUTTING INDUSTRIAL ECOLOGY THEORY INTO ACTION**

Winans describes industrial ecology as the study of the flows of materials and energy in natural environments and industrial systems. Industrial ecologists consider the effects of these flows on the natural resource base; the influences of political, regulatory, and economic factors; and social and cultural conditions.



Jennifer Russell (at right, bottom row) is also leading a research study exploring how sustainability practices can impact material flow in an area retirement community.

There is also a natural systems component, which both Winans and Russell focus on to understand the systems view of today’s wicked challenges.

“The beauty is that circular economy comes out of industrial ecology, which is a field that is founded on the principle that we can learn from natural systems,” Russell said. “Much of what Dr. Winans and I teach is about bringing the balanced systems that the natural world has had millions of years to develop into the design and operations of our industrial settings.”

Russell was recently awarded another National Science Foundation grant that tasks her with creating collaborative research networks around the world to connect the systems-focused approaches that she advocates for with the researchers who best understand system requirements needed for circular economic models to take hold.

“Collaboration is critical not just among researchers, but also between researchers and interested parties: for example, those in our communities,” said Winans. “We need to learn to work together across different value systems and cultures to enhance belonging and well-being.”

Both researchers acknowledge that for students coming into the field, challenges such as sustainability and climate change may feel daunting. To combat this, Winans and Russell train students in how to apply a systems approach and impact assessment tools to their own lives and experiences, as well as the broader global challenges of a sustainable future.

“Humans have the ability to make or break the possibility of a sustainable future,” said Russell. “We have the technology, the data, and the ability to adapt and innovate. What we don’t have is collective alignment or understanding. We’ve built this economic system and designed it to serve human needs. If we want to fix or change these systems, the power is in our hands.”

“We are reaching our planetary boundaries and need to disrupt our current way of doing things,” said Winans. “Students are genuinely inspired to be agents of change and contribute to a more sustainable future.”

## From the dean's perspective

Faculty time and commitment are our most important commodities and are at the root of delivering our mission. College faculty have deep disciplinary expertise and share their passion with students as they carry out their work in the classroom, the field, and the lab, extending knowledge throughout the commonwealth and around the globe. They create remarkable careers that have the power to change the world. What we do in this college makes a difference, and the pages which follow deliver the diversity of our work and delve into the many varied impacts and successes through which it is on display.

Last fall, I traveled throughout the region to meet with alumni and supporters. We have alumni who have risen to prestigious positions, and we highlight several individuals and their leadership journeys in this issue. We seek to equip students with the skills and knowledge that form a foundation for their future success. As a student, you may not have realized your potential to lead, but, along the way, you were influenced by someone, mentored by someone, and encouraged by someone to grow, in many cases, beyond your comfort zone. I hope our current students, as well as alumni, remember that the degrees conferred upon you will not be endpoints in your journey, as evidenced by the featured successful alumni.

Sustainability has moved from a buzzword that was initiated decades ago into a physical and human science indicative of our present challenges and critical for our future survival. We highlight the work in sustainability by faculty members



Dean Paul Winistorfer (at right) welcomed alumnus Mike Cerchiaro '98, M.S. '04 to campus in March. Cerchiaro assumed the role of president and CEO of Forest Investment Associates, an investment adviser of sustainable forest investments, on January 1, 2024. Congratulations Mike!

Jennifer Russell and Kiara Winans of the Department of Sustainable Biomaterials. They have developed the tools and expertise necessary to evaluate the impact of extraction, manufacturing, distribution, and life cycle of products.

I say it all the time: everything in every room of your home or office was produced from resources extracted from the earth and manufactured into products we rely on and

use: fiber, food, metals, synthetics, plastics, cotton, glass, flooring, carpet, and wood chairs, tables, and beds. And, don't forget the electricity powering nearly everything we do. Throw in forests, biodiversity, clean air and clean water, and a growing world population, and you get a sense of how important our work is.

Our students are interested in creating a sustainable future. Our corporate and industry partners want to learn how their processes and products can be more sustainable. More than buzzwords today, terms such as life-cycle analysis, product life-cycle, and circular economy are important for the future of the planet and a thriving human ecosystem.

Finally, we welcome Professor Joe Knight as the new head and leader of our Department of Forest Resources and Environmental Conservation. I hope you will welcome Joe throughout the CNRE academic, alumni, friend, and stakeholder communities and make sure he feels at home.

Onward toward commencement and the journey that awaits our newly minted graduates! Please hire them, mentor them, and push them to change the world — just as someone did for you.

Warm regards from our faculty, staff, and students,

Paul Winistorfer  
Dean



The college celebrated December graduates with a special breakfast before the ceremony for our new Hokie alumni and their families. The most popular guest at the event was clearly the HokieBird!

### GRADUATION BREAKFAST



### LAST FIRST DAY

Do you remember your first day of college? CNRE wanted to be sure that our students remembered the start of their final semester, so we joined the College of Science to host the Last First Day of College celebration for all May 2024 grads.



## GENEROUS DONORS COME TOGETHER TO MAKE A BIG IMPACT ON GIVING DAY

Virginia Tech's annual Giving Day took place on February 21-22, and Hokies from around the globe came together for 24 hours to show their support for Virginia Tech and CNRE.

Preliminary numbers show that within the college, 774 donors gave \$308,003 — both new records for CNRE!

Thanks to the uptick in donors, CNRE was No. 5 on the Beat-Your-Best Donors Leaderboard, which celebrates the university units with the highest increases in donors over the previous year. The college received an additional \$8,000 for their finish and was the highest ranked college with their 39.46% increase in unique donors.

We also want to give a special shout out to the Virginia Master Naturalists, who tallied the most donors in the college with 445. Thanks to their loyal following, the program garnered an additional \$1,000 in funding for their top spot on the CNRE Beat-Your-Best Leaderboard.

Make sure to watch for announcements about Giving Day 2025 and mark your calendar!

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## Joe Knight named head of the Department of Forest Resources and Environmental Conservation

Joe Knight has been named head of the Department of Forest Resources and Environmental Conservation in the College of Natural Resources and Environment. Knight brings an extensive background in forestry and natural resources science with a focus on the applications of geospatial analysis and remote sensing in the field.

“The Department of Forest Resources and Environmental Conservation is very strong with a faculty that is highly accomplished,” said Knight. “There’s a diversity of intellectual interests, capacities, and research agendas among our faculty, and I look forward to growing and enhancing our department’s role in preparing the next generation of foresters and conservationists.”

Knight comes to Virginia Tech from the University of Minnesota, where he was a professor in the Department of Forest Resources and director of the Remote Sensing and Geospatial Analysis Lab.

“My research has centered around the application of remote sensing and geospatial technologies to forestry

challenges, which has allowed me the chance to work across many different research areas,” said Knight. “I’ve worked on questions related to forest and urban forest health and dynamics, permafrost and thawing monitoring in Alaska, wetlands functions and processes, and invasive species monitoring.”

Knight has received numerous awards for teaching excellence, public engagement, and service. He is a member of the Society of American Foresters, the American Society for Photogrammetry and Remote Sensing, and the Geoscience and Remote Sensing Society of the Institute of Electrical and Electronics Engineers. Knight was previously a biologist and remote sensing analyst for the U.S. Environmental Protection Agency.

“We welcome Dr. Knight to the college in this important department leadership role,” said Paul Winistorfer, dean of the college. “Our forestry and environmental conservation program is one of the largest and most successful in the nation, and Dr. Knight brings a strong academic record and



Professor and Department Head Joe Knight

valuable experience to our college. We are excited about working with him to not only continue the legacy of a great department, but to also guide the future of the department and the contributions our students and faculty will make to the commonwealth and the world.”

## FALL FORESTRY AND WILDLIFE TOURS connect the campus to the commonwealth

For Jennifer Gagnon, the best part of leading Fall Forestry and Wildlife Tours is the conversations that take place as she visits a forested property, tours a barrel cooperage, or drives a 12-passenger van to the next destination on the tour.

“The best part of these tours is the people sharing their stories,” said Gagnon, coordinator of the Virginia Forest Landowner Education Program. “The tours provide opportunities for people who own tracts of land to talk and learn from each other. They get the chance to make connections with other landowners and natural resource professionals.”

Connecting forest landowners with the research knowledge at Virginia Tech is a key aim of Virginia Cooperative Extension and the Virginia Forest Landowner Education Program.

“Private individuals and families own over two-thirds of all our forests in Virginia,” said Gagnon, a member of the college’s Department of Forest Resources and Environmental Conservation. “We want the people who own those forests to have the information they need to take care of them, to make sure that they’re healthy and productive, so that we can all benefit from them, both environmentally and economically.”

Last fall’s forestry and wildlife tour series was the 47th iteration of the program, making it the longest-running Extension program of its kind in Virginia. Four tours were held in October, each with a schedule curated by district forestry Extension agents that reflected county-specific natural resource issues.

In Bland County, landowners visited a 500-acre Certified Tree Farm, a family firewood business, and a timber harvesting operation before attending a presentation on the

benefits of prescribed burning in the Appalachian forests. In Mecklenburg County, participants visited a Wildlife Management Area and then toured Virginia’s largest

In addition to the fall tours, Gagnon and two of the district forestry Extension agents lead winter Woods and Wildlife presentations on subjects as varied as growing wild

■ **“The tours provide opportunities for people who own tracts of land to talk and learn from each other. They get the chance to make connections with other landowners and natural resource professionals.”**



Virginia Cooperative Extension and the Virginia Forest Landowner Education Program lead annual Fall Forestry and Wildlife Field Tours for landowners.



Jennifer Gagnon, coordinator of the Virginia Forest Landowner Education Program

human-made lake to better understand the dynamics between human and ecosystem processes.

Gagnon said that the Fall Forestry and Wildlife Field Tours are a collaborative effort that rely significantly on the contributions of partners, including federal and state agencies, the forest industry, and private contractors.

“We couldn’t provide this service without the contributions of the Virginia Department of Forestry and the Virginia Department of Wildlife Resources, as well as other partners,” she said. “We’re tasked with providing educational programming to the entire state, and we really rely on the folks that work with landowners every day to keep us updated on what information and services we can provide.”

gingens, managing invasive species, considering solar energy options, and discussing silvopasture strategies that allow livestock, trees, and vegetation to share a landscape.

The group also leads Generation NEXT workshops on legacy planning for forest properties, workshops on best practices for prescribed burning, online courses and weekend retreats on forest management, and even a SHARP Logger program that details how to harvest trees safely.

The 2024 tour schedule will be available this summer. You can sign up for a tour when the dates are announced and learn more about educational resources for woodland owners at [forestupdate.frec.vt.edu](http://forestupdate.frec.vt.edu).

VIRGINIA TECH  
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**COMMENCEMENT 2024**  
LANE STADIUM  
COLLEGE OF NATURAL RESOURCES AND ENVIRONMENT | THURSDAY, MAY 9, 3:30 P.M.  
UNIVERSITY COMMENCEMENT | FRIDAY, MAY 10, 8:30 A.M.  
WASHINGTON D.C. METRO AREA  
GRADUATE SCHOOL COMMENCEMENT | SUNDAY, MAY 12, 1 P.M.  
LEARN MORE  
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# VIRGINIA TECH STUDENTS PARTICIPATE in annual U.N. climate change conference

With its bright red fruit, winterberry stands out on a snowy landscape, similar to a Thomas Kinkade painting.

A species of holly, it thrives in the eastern part of the United States. Anna Pletch spent part of the fall semester working in tandem with a Virginia Tech Ph.D. student using geographic information systems, more commonly known as GIS, to map the current and future distribution of the shrub based on predicted climate change outcomes over the next 20 to 50 years.

Her interest in GIS and climate change ultimately led the senior from Chesterfield, Virginia, halfway across the world.

Pletch was one of seven Virginia Tech students, along with two faculty members, who attended the 2023 United Nations Climate Change Conference in Dubai in early December. For the past 28 years, the Conference of the Parties to the United Nations Framework Convention on Climate Change, or COP for short, has allowed negotiators, legislators, and observers from nearly every country in the world to come together to assess ways to address issues related to climate change.

Pletch, who graduates in May with degrees in environmental resources management from the College of Natural Resources and Environment and French from the College of Liberal Arts and Human Sciences, hopes to pursue a career in natural resource management, specifically using GIS technology to manage those resources.

“COP28 really opened my eyes to how many different jobs and careers there are, whether they be conventional or not, in the field of natural resources, climate policy, and sustainability. There’s such a wide range. It opened me up to a lot of possibilities, especially globally, and it was interesting talking to people from around the world and seeing what paths they took to get to where they are,” she said.

At COP28, the group of Virginia Tech students, led by Carol Franco (at third from right), not only observed negotiations, but in certain situations, got to moderate panel discussions and participate as guest panelists, allowing them to network and prepare for future careers that will help with climate change adaptation.



“I’m a first-generation college student and I had only really been exposed to a traditional path through the workforce. But COP helped me career-wise to take a step back and really assess all my options. The diversity of the background at COP was meaningful for me.”

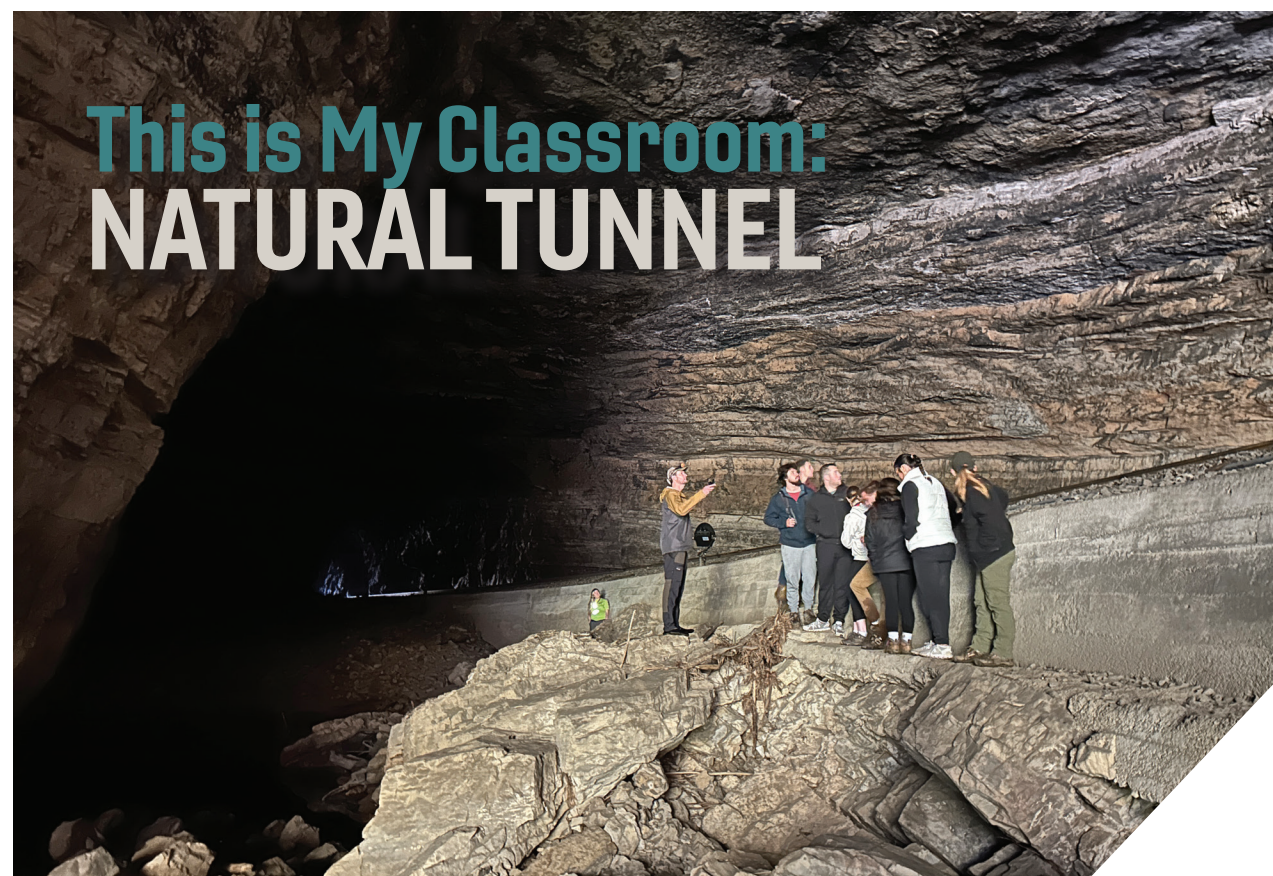
Pletch and the others attended COP28 because of a study abroad opportunity offered by Carol Franco, senior research associate in the Department of Forest Resources and Environmental Conservation since 2014. Franco serves as part of the Dominican Republic delegation and has been attending COP since 2012.

She and Bob Oliver, who teaches a sustainable urbanization course in the Department of Geography, oversaw the Virginia Tech contingent in Dubai. Franco, who teaches climate change and international policy framework

and whose research focuses on policy, led the way for Virginia Tech’s application into the conference as an observer organization, allowing the university to send representatives to sessions and meetings.

“I always give the example that you might have five people in your house deciding on dinner or what movie you’re going to watch. Imagine more than 190 countries trying to decide which policy we’re going to use and how we’re going to implement that policy. It’s also a way of showing to the students, ‘This is what really happens. This is policy development, climate change policy, the dramatic highest level when you have the ministers and heads of state there. There are many things that are happening there that will shape the future, and you can be part of it.’”

Read the full story at [cnre.vt.edu/spring2024mag](https://cnre.vt.edu/spring2024mag).



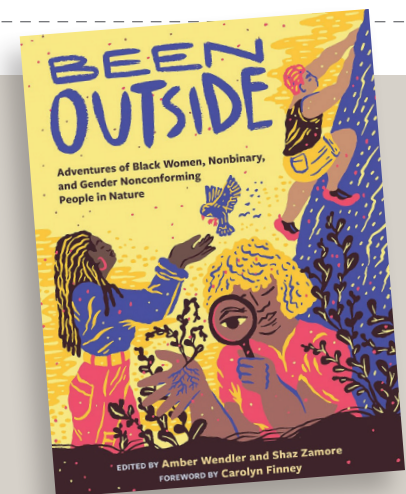
Students in Stewart Scales’ Geography of Virginia class had the opportunity to visit Natural Tunnel, a striking example of karst, a topography where the slow erosion of carbonate rock such as limestone gives way to caves, sinkholes, and other notable features.

“In my regional geography classes, I try to illustrate the importance of how the rocks beneath us determine so much of what we see today across the landscape, and how geology and topography determine where our water goes, where we choose to build settlements and towns, and so much more about human geography,” said Scales, who is an advanced instructor in the Department of Geography. “There’s no better way to learn about these topics than visiting a site and seeing these physical processes in action.”

Students in Advanced Instructor Stewart Scales’ Geography of Virginia course studied karst topography at Natural Tunnel.

The tunnel, formed along a fault line and created by water eroding the walls over millions of years, is both geologically significant and historically important, with the Natural Tunnel State Park featuring a recreation of a 1700’s era blockhouse that would have been used for housing and defense on Virginia’s early frontier.

“I’ve found that my students benefit greatly by having a field component to their learning,” said Scales. “It allows us to take our classroom knowledge, apply it in a hands-on environment, and make memories that will last well beyond their time in CNRE.”



## Hokies share experiences and promote collective action in “Been Outside”

What’s it like to be a Black woman or nonbinary scientist studying the natural world? Answering this question and seeking to articulate how experiences in the natural world shape the self is the overall purpose set forth by the editors of a new collection of essays and poems titled “Been Outside: Adventures of Black Women, Nonbinary, and Gender Nonconforming People in Nature.” CNRE’s connection to the book is twofold.

Recent Department of Fish and Wildlife Conservation alumna Sharon Dorsey M.S. ’23 reflects in an essay about finally meeting a wildlife professional who looks like her. Co-editor Amber Wendler is a current graduate student in the College of Science and a mentee of CNRE Director of Inclusion and Diversity Maryam Kamran. Together, the editors and contributors “contemplate the moments that sparked their love of nature, as well as the ways time in the field and outdoor adventures have enhanced or expanded their perspectives about what is possible.”



# The Antarctica journals

Virginia Tech students share their experiences visiting the coldest and most remote continent on Earth.

In January, a group of Virginia Tech students and faculty traveled to Antarctica as part of the Hokies Abroad Antarctica: Humans and the Environment course.

Led by Professor Lynn Resler of the Department of Geography, the course gave students the opportunity to visit the continent while learning about the history of exploration to Antarctica, current conservation efforts to protect the terrestrial and marine ecosystems, and the geographic and interdisciplinary dimensions of the polar region.

Through their journals, three Virginia Tech students — seniors Allison Walsh and Jolee Bisson and junior Meg Teasdale — shared personal sense-of-place accounts and insights about their time at the bottom of the world.



Traveling and staying on the ship Ocean Victory, the explorers followed a route around the Antarctica Peninsula, allowing students to participate in expeditions to the continent and surrounding islands while also conducting observational research on seabird populations, iceberg censuses, and ecotourism in the region.

## Jan. 6: Half Moon Island, McFarlane Strait

**Walsh:** On Jan. 6, the expedition leader announced that we saw land for the first time. We didn't have to go very far [on Zodiac boats] to reach the land, and when we got there, we were greeted by chinstrap penguins! Right on shore, there was a small shipwreck that looked really old, and the penguins were hanging out by it. The land that we were allowed on was ice free and was very wet and filled with small pebbles covered in bird poop. Seeing how big this place was and knowing how only 2% of Antarctica is ice free really put in perspective how large the continent actually is.



## Jan. 8: Neko Harbor, Lemaire Channel, Pléneau Island

**Bisson:** After we left the harbor, we were coasting around on the water when I noticed movement over my shoulder. I turned to see an iceberg beginning to roll. The iceberg slowly turned to expose the turquoise blue of its underside. As the iceberg finished its roll, I was hit with this powerful sense of love for Antarctica that I had not felt yet. Yes, admiration and awe were common at that point, but not love. I felt love for the continent as if it were my younger sibling: someone who needed protection and someone to stand up for them. It caught me off guard. I had never felt that way about a place before.

## Jan. 9: Cuverville Island, Leith Cove, Paradise Bay

**Walsh:** Imagine being surrounded by icebergs, glaciers, penguins swimming in the water to feed, Antarctic birds in the distance, and, in front of you, a humpback whale family carrying on with its normal life. I can't put in words how it made me feel. It brought tears to my eyes and still does anytime I think of it. I felt so special to be able to be this intimate with a family of whales in their environment. It felt like we were the only ones in the whole world that were there.

**Teasdale:** Our group also had a discussion about how we feel about this place so far, and many people brought up how they feel so protective over the environment and wildlife in Antarctica. One of our group leaders made a point that really hit me: he said that we need to view where we are from with the same awe and protectiveness we feel here. That really stuck with me because I did realize that

I have never thought of my hometown with as much awe as I did here and now.

**Walsh:** This was when my perspective really changed. I went from feeling the need to write every detail down to just soaking everything in. A sense of peace and wonder filled my body for the rest of the trip. I didn't want to write anymore: in fact, I had to force myself to keep up with my writings. I knew that nothing would ever be able to describe the experiences I was fortunate enough to encounter on this trip. It was like a switch flipped.

## Jan. 10-12: Returning, The Drake Shakes, Reflecting

**Teasdale:** As we were leaving, the ship encountered a huge orca pod. Everywhere you looked, there were orcas, adults and babies. This moment made me feel a lot of things, but, mostly, I felt admiration, awe, and affection. There was so much admiration for how beautiful and naturally curious those creatures were, so much awe for how such a normal activity for them was an amazing and unique spectacle for us, and, finally, so much affection for the wildlife that was so unbothered and carefree with the ships being there.



**Bisson:** One of the main takeaways I took from this trip was something an expedition guide said on a Zodiac cruise: "Never forget the power of now." Take time to sit in silence, just feeling where you are at that exact time in space, and just feeling what is below you and around you. This means that not everything you see in front of you needs to be captured with technology or verbal acknowledgment. It can just be witnessed and experienced to its fullest in that moment.

Read the full story and see more photos at [cnre.vt.edu/spring2024mag](https://cnre.vt.edu/spring2024mag).

# From field sites

## Three conservation executives talk about t

■ For Kirk Mantay '96, '97, an offhand comment from a political powerbroker has echoed throughout his journey toward leadership.

“When I was working as a field biologist, a lobbyist told me that if we manage to get a bill passed in Congress, that would save more wetlands than anything I could ever build in my career,” said Mantay, now the executive director and principal ecologist of Green Trust Alliance Inc. “It wasn’t a nice thing to say, but it really got me thinking about how to build impact for the causes I believe in.”

Mantay, who leads Green Trust’s mission to work with stakeholders, funders, and communities to improve polluted and degraded land in Maryland and New Jersey coastal communities, said the transition from boots-on-the-ground work to impact-focused leadership required a change in perspective.

“I realized that I could leverage my experience and knowledge by training and guiding other people and by generating funding and advocating for legislation that they can use to go out and make a difference on the landscape,” he said. “So that’s how I’ve gotten comfortable with a life that is less often in the field.”

Mantay is one of three conservation leaders from the College of Natural Resources and Environment who shared their journeys from aspiring conservationists to leaders in their fields.



ABOVE: CEO Kate Fritz is merging a science background with a motivation to be an agent of change at the Alliance for the Chesapeake Bay.

RIGHT: Kate Fritz traveled to China for the global study portion of her master's degree, offered through the Center for Leadership in Global Sustainability.

## KATE FRITZ: Change agent

Most people enroll in master’s programs to gain new skill sets to further their careers. Kate Fritz, who earned a Master of Natural Resources in 2012 and is the chief executive officer at the Alliance for the Chesapeake Bay, came away with a badge.

“One of the things that I got while I was a graduate student is a sheriff’s badge that says ‘change agent,’” said Fritz, a graduate of the Executive Master of Natural Resources (XMNR) program offered through the Center for Leadership in Global Sustainability. “I have it right in front of my computer because that’s my work. That’s why I’m in my current role. I was hired to be a changemaker.”

Fritz began her career as a field biologist with the Annapolis-based Environmental Systems Analysis Inc., pursuing a career that aligns her passion for science with a personal drive toward leadership opportunities.

“I’ve always naturally tended toward leadership,” said Fritz. “I’ve benefited tremendously from getting a solid base of field experiences and an academic background that is rooted in science. I’ve always aspired to be in an executive position, and I wanted to make sure that the decisions I made for my organizations were based on science and data.”

Fritz said pursuing her master’s degree gave her practical skills and qualifications to move into leadership positions.

“What I really appreciated was that the XMNR program gave me a greater perspective on the business side of natural resources management, which in turn gave me credibility when I stepped into my first leadership role,” said Fritz. “I loved that it was a master’s program designed for professionals who had already been working in their field because I was really seeking a peer network and executive-level experiences that would position me for the next step in my journey.”

Fritz said the same motivations that drove her to study environmental studies as an undergraduate are guiding her as a leader and mentor for the next generation of conservationists.

“I still show up with the same motivators and the same values and purpose that I had earlier in my career,” Fritz said. “What’s changed is my aspirations to do more and more. I find myself being deliberate about what I’m spending time on, but that’s so I can focus on what I truly value, which is mentoring staff and students to be the best that they can be.”



# to C-suites

: their leadership journeys.



CEO Robert Schmidt (at left) has traveled the world — including Antarctica — while building a career on understanding the chemical possibilities of wood resins.

## ROBERT SCHMIDT: A global Hokie sticks with wood

**I**t took a push from a particularly determined guidance counselor to get Robert Schmidt, who earned his Ph.D. in 1998 and is the chief executive officer of WoodChem Australia Pty Ltd., to consider a career in wood sciences.

“My father was a high school guidance counselor and he made me take all these interest inventory tests, and I always ended up in science and business,” said Schmidt. “So he said, ‘Why don’t you take a look at forestry?’”

That prompt was the start of a career that would see Schmidt move from laboratory research to leadership positions, traversing the world in a career that has been stuck — very literally — on the resins and adhesive products that hold wood products together.

As a doctoral student in what is now the Department of Sustainable Biomaterials, Schmidt studied the adhesives used in the wood industry. Working with faculty that included Chip Frazier, Fred Kamke, Wolfgang Glasser, Tom Ward, Jim Wightman, and Geza Ifju, Schmidt had the opportunity to leverage connections between the campus and industry to overcome more than a few sticky moments in his academic career.

“The technical training that I received at Virginia Tech I couldn’t fault at all,” said Schmidt. “I think the ability to design experiments, to think outside the box and really look at big, multidimensional problems in different ways and to come up with a program or a path to a solution were experiences that really stuck with me.”

Having risen from the lab to the level of senior vice president of the chemical company Dynea, Schmidt earned an MBA at Queen’s University in Kingston, Ontario. He then took on new positions — and a new hemisphere — in Australia, with leadership roles at two global chemical manufacturing companies before joining WoodChem as CEO in 2023.

## KIRK MANTAY: Merging wildlife and geography

**M**antay started his studies as a biology major before finding his way to CNRE. “I tell this story a lot. After a year, I realized that I had to make a change. I loved environmental science and biology, but biology just wasn’t clicking for me.”

At the time, Mantay was taking an introductory course in renewable natural resources in the Department of Forest Resources and Environmental Conservation.

“I looked around that class and there were city and rural people, people who were really interested in timber harvesting and people who wanted to save every species that was possible,” he said. “And the oddness of that group of people — the strange dynamic where we all cared about the same resources, but we cared about them differently — I felt like I fit right into that.”

Mantay’s timing was good. The field of environmental conservation was an emerging industry with a demand for young professionals who could bring new technologies to bear on challenges that were just coming into focus.

“This was very early into utilizing remote sensing and GIS technologies for anything other than military applications, and I quickly fell in love with that,” said Mantay. “I had missed enough prerequisites that I was on a five-year plan, but that actually opened up all these potential electives, and I decided to keep geography along with the wildlife major.”

As the executive director of Green Trust, Mantay still makes sure to get his feet wet: “I still look forward to doing fieldwork. I’ll still show up and plant trees. I’ll show up for construction inspections when we’re building wetlands or improving shorelines. Those experiences will always be a part of this work, and it’s a part of why I remain committed to this field.”



Executive Director Kirk Mantay is leading conservation efforts to improve neglected coastlines with Green Trust Alliance.

**“And the oddness of that group of people — the strange dynamic where we all cared about the same resources, but we cared about them differently — I felt like I fit right into that.”**

# Ut Prosim (That I May Serve) Spotlight

**DEAN CUMBIA '82 | Director of Forest Management, Virginia Department of Forestry**

For Dean Cumbia, a week at Virginia Tech was a gateway to a career in the service and conservation of Virginia's forests.

"When I was a junior in high school, Virginia Tech had a program called the Forestry and Wildlife Resources Institute," said Cumbia. "It was a weeklong program, and we got to do a little bit of everything, from wood tech projects in Cheatham Hall to field trips out to sites. That experience helped convince me that a career in forestry was what I really wanted."

Cumbia is the director of forest management at the Virginia Department of Forestry (DOF), an agency he has served for nearly four decades. In this current role, he oversees the planning of policies and programs that help connect DOF staff with citizens and landowners throughout Virginia.

"The Department of Forestry provides assistance and support across the state in implementing all of the work that gets done on the ground," said Cumbia, a lifelong member of the Virginia Forestry Association, which he

joined as a student. "Forestry is the third-largest industry in the state, and our forests provide countless benefits to the commonwealth, including timber production, watershed protection, and habitats for wildlife and recreation."

As one of numerous graduates who have joined the agency to embark on careers in forestry, Cumbia has retained strong ties with the college over the years. He has collaborated with Virginia Cooperative Extension faculty on outreach efforts throughout the commonwealth, and is a frequent guest speaker in forestry classes. This past spring, he met with Assistant Professor David Carter's silviculture course.

"It's always a great opportunity to meet students, as there are a lot of jobs and opportunities to explore in forestry," Cumbia said. "Cheatham Hall is full of good people, as is the forestry community in Virginia. From DOF and the faculty and staff in CNRE to forest landowners, loggers, and industry professionals, we all work together really well to make forestry work."



Dean Cumbia, CNRE alumnus and DOF director of forest management

## A CNRE ALUMNUS REMEMBERS

**Joe Movic '05 | Bachelor of Science in wood science and forest products, concentration in packaging**

### What have you been doing since you graduated?

After graduating in fall 2005, I started working for Pallet Alliance. My education gave me a unique opportunity in that very few professionals had entered the workforce with the knowledge and skills that the packaging concentration at Virginia Tech provided. I didn't have to search for my first professional role, as there were several major players from the industry watching and waiting for the program to generate young professionals. I chose Pallet Alliance because they gave me the opportunity to not only sell pallets, but to really use what I had learned to holistically drive value for national clients. I'm still happily employed at Pallet Alliance today!

In 2012, I married my beautiful wife Elizabeth (also a Hokie!). We live outside of Durham, North Carolina, with our two dogs, Panda and Tuna. We spend as much time as we can at the beach in the summer and visit many ski resorts in the winter. My role with Pallet Alliance and our love of travel have allowed me to see 45 states, several Canadian provinces, and a handful of exotic destinations. I've also been known to spend as much time as I can trying to catch whatever swims in the lakes, rivers, and oceans, in addition to my gardening and woodworking hobbies.

### What is your fondest memory?

Having small classes in our major allowed me to really get to know all of my classmates and build some lifelong friendships. From our biweekly breakfasts at Dietrich (where this Pennsylvania native was introduced to biscuits and gravy) to regular Wood Wednesday nights out, our tight-knit group of classmates was amazing. I'll never forget when our class cheerleader tossed me up in a tree to gather a needed twig so everyone could properly identify a tree

in Dendrology! The energy around campus on a football Saturday certainly can't be left out. I had the fortune of being at Virginia Tech when the Hokies were at the top of their game and earning annual ACC Championships and trips to the biggest bowl games, one of which I was privileged to see in the old Superdome in New Orleans.

### What is the most amazing thing that you learned? What professors inspired you?

Working as a lab technician at the Center for Unit Load Design (CULD) was, by far, the most valuable experience someone in my profession could gain outside of the workforce. It provided me with the opportunity to work with clients and understand the challenges they faced in safely shipping products to end users. I was learning from the very best in the field of pallet and unit load design, and it provided a huge advantage to me in my professional career.

While many of my professors had a lasting impact on me, Dr. Mark White stood out as the most influential. To have the opportunity to learn from someone with his extensive knowledge was truly invaluable. I had the fortune of graduating with his son Braden, so I'm lucky to call the entire White family friends to this day. I can still reach out any time if I have questions, and he always seems to have the answers. Ralph Rupert was my lab manager at CULD, and I also learned a great deal from him while we performed testing for the many clients conducting unit load research.

### If you could go back in time, what's the one thing you would tell your undergraduate self?

Spend more summers in Blacksburg. It wasn't until my senior year that I spent my first summer in Blacksburg.

The lighter course schedule and better weather gave me a lot more time to explore the town and surrounding area than the busy spring and fall semesters. Southwest Virginia is a truly amazing part of the country with lots of outdoor activities, from the New River to the Cascades and all the mountains in between. This was also when I met my wife Elizabeth on a camping trip at a mutual friend's family farm on the Little River in Floyd County.



Joe Movic at his Virginia Tech Commencement

## WHAT'S YOUR JOB?

**ALEXIS GEORGE '22**

**Weather observer and meteorologist, Mount Washington Observatory, New Hampshire**

While most people's commute to work involves a train, bus, car, or bicycle, Alexis George's winter travel comes on the tracks of a snowcat, which carries her up 6,000 vertical feet to the Mount Washington Observatory, home of the world's most severe weather.

"I work the night shift, where my primary responsibility is to take hourly weather observations at New England's highest peak," said George, who is enjoying her second winter on the top of the world. "No matter the weather conditions, I head outside at least once an hour to take the temperature, look at the sky condition and precipitation type, and take other meteorological data. In the winter, I also have to free the weather instruments of rime ice accumulation using a mallet or crowbar, sometimes on an hourly basis."

While the cold work and solitude of the night shift is challenging, George has found ways to use the cold conditions to have fun. "I think the best part of my job is that no day is quite the same, and by the end of every shift, I enjoy feeling that I've worked my hardest," said George, who is from Arlington, Virginia. "When conditions allow, I'll sometimes go sledding at the summit after my shift. The snow drifts can reach to the roof of the building, so we'll climb those and sled down."

Read the full story and see more photos at [cnre.vt.edu/spring2024mag](https://cnre.vt.edu/spring2024mag).



Alexis George at the Mount Washington Observatory, home of the world's most severe weather

# DEAN'S ADVISORY COUNCIL SERVES AS A CONDUIT FOR THE ADVANCEMENT OF THE COLLEGE

Composed of approximately 20 volunteers who attend in-person meetings twice a year on a Virginia Tech campus, the Dean's Advisory Council (DAC) serves to advance the college by providing advice, access, advocacy, and philanthropic investment in support of the dean's strategic objectives.

The DAC may be asked to provide counsel on programmatic opportunities, weigh in on priorities and initiatives, bring stakeholder concerns to the attention of the dean, provide access to individuals and organizations who can elevate and impact the college, strengthen the alumni network, and assist with fundraising.

In the spirit of *Ut Prosim* (That I May Serve), council members champion the college and their department constituencies. Most are Virginia Tech and CNRE alumni, and all are dedicated and devoted members of the Hokie family who have distinguished themselves in both their professional endeavors and personal integrity.



**LISA SCHABENBERGER '93, M.S. '96**  
Program coordinator in the Department of Forestry and Environmental Resources at N.C. State (retired)

"Most of my working years were devoted to supporting students, alumni, faculty, and staff in natural resource education and research programs. I strive to contribute to the Dean's Advisory Council by using the insights and perspective that I gained through those experiences. In particular, I hope to provide sound advice on practices that I've seen be successful, provide strong advocacy for students and staff, and help promote diversity and inclusion in the college."



**DAN CUMBO '98, M.S. '99**  
President of Beasley Flooring Products



**TOM FOX M.S. '84**  
Emeritus Professor of Forestry at Virginia Tech (retired)

"I serve on the Deans Council to support CNRE, which I believe is one of the best natural resource programs in the country. Sustainable management of our natural resources is needed to address many of the critical issues facing society today. I hope that I can provide both an academic and an industry perspective on the college and how its programs and students can positively impact our profession and address the broader needs of society."



**JIM YOUNGBLOOD '77**  
Owner of American Woodlands

"My hope is that by engaging with CNRE, I can help facilitate the focus, open doors of opportunity, and promote the progress of the programs."



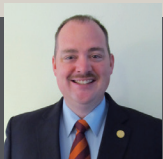
**STEVE PRISLEY '80, M.S. '82, PH.D. '89**  
Principal Research Scientist with the National Council for Air and Stream Improvement

"My hope is to communicate the perspective I've gained after several degrees from the college and several decades in the workplace to help this outstanding college continue to lead the nation in preparing natural resources professionals. I'm very proud of the college and what it has accomplished over the years, and I know it must continue to adapt to succeed."



**STEVE YELLAND**  
CEO of JFR Holdings

"I serve on the Dean's Advisory Council to ensure we have a voice at the college that is a representative of the wooden packaging industry and to provide resources for programs that aid in the professional and personal development of students, so they have the best opportunity at success as they transition from college to their professional careers."



**DON BRIGHT '98**  
President and CEO of Meherrin River Forest Products

"I am honored to serve on the Dean's Advisory Council. The College of Natural Resources and Environment put me on a path to success, so it is only right to give back and help shape its future. After all, our motto is *Ut Prosim*."



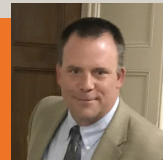
**PATTY MIMS M.S. '94**  
Corporate Director, Global National Government, at Esri

"I hope to bring to the council some experience and knowledge around technology trends. Working in a GIS/software company and with government, we see skills that we are looking for in students and where the industry is headed. This feedback can potentially assist students in being even more prepared for the next steps in their careers."



**TRAVIS HARDY '02**  
Senior Manager, Location Intelligence at Deloitte Advisory

"Give of yourself what you can, when you can, and at the stage of life you are in. Start by finding and supporting a college or department initiative that aligns with your personal or even professional passions. From there, look to lead by lending undergrads or other college alums a helping hand: career fairs, networking events, Giving Day, etc."



**EASTON LOVING '89, M.S. '91**  
Regional Fiber Supply Manager at WestRock

"Our university's motto, *Ut Prosim*, requests that we serve, and there is great joy and responsibility in supporting and serving a college and university that provided a solid foundation for our professional and personal success. I want those that follow to have enhanced pathways to success, just as someone's previous service provided opportunities to me."



**DEBBIE MCDONALD '77, M.A. '99**  
School Counselor with Fairfax County Public Schools (retired)

"Our involvement provides opportunities to collaborate and continue learning across all of Virginia Tech's colleges, serve as a role model for others, inspire undergraduates, and expand our Hokie family. There are worthwhile connections, adventures, and fun surprises at any level of involvement."



**STEVE MICHAEL '73**  
President and CEO of Spartanburg Forest Products (retiring)

"My advice for young alumni getting involved with their college is to make sure they are able to commit ample time to actually fulfill the role that they are seeking. The students and faculty want your honest input on many subjects related to their own specific areas of expertise and which target different initiatives that are important to them."



**STEVE MOYER M.S. '84**  
Former Vice President for Government Affairs of Trout Unlimited (retired)

"I am honored to serve on the Dean's Advisory Council because it is a new way for me to give back some of my time, treasure, and advice to the school that has made a huge, positive impact on my life."



**JAY PHAUP '81**  
Wood Procurement Supervisor at Greif

"I choose to serve on the Dean's Advisory Council to continue a legacy started by a Virginia Tech alumnus 45 years ago who took the time and energy to mentor me as a student, while ensuring industry involvement in students' education. It was instrumental in my education and career successes. The need is just as valid now for our students and graduates."



**BETTINA RING '86**  
State Director for Virginia of The Nature Conservancy

"I think it is very important for alumni to be engaged because they bring their applied knowledge and expertise, which can help the college remain relevant. They can help with employment opportunities and the placement of students post-graduation. They can also provide financial support, which is necessary for the long-term sustainability of the college."

# Researchers use environmental justice questions TO REVEAL GEOGRAPHIC BIASES IN ChatGPT

A research group led by Geography Assistant Professor Junghwan Kim has discovered limitations in ChatGPT's capacity to provide location-specific information about environmental justice issues. Their findings suggest the potential for geographic biases existing in current generative artificial intelligence (AI) models.

ChatGPT is a large-language model designed to understand questions and generate text responses based on requests from users. The technology has a wide range of applications from content creation and information gathering to data analysis and language translation.

"As a geographer and geospatial data scientist, generative AI is a tool with powerful potential," said Kim. "At the same time, we need to investigate the limitations of the technology to ensure that future developers recognize the possibilities of biases. That was the driving motivation of this research."

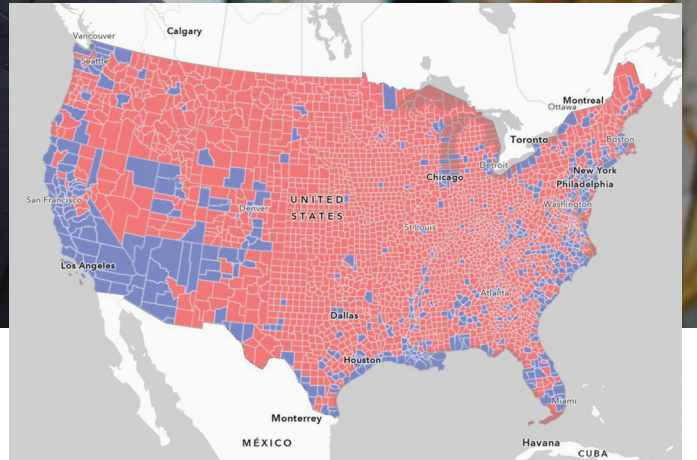
The research group surveyed counties with populations ranging from in the millions to less than 100. While the generative AI tool showed a capacity to identify location-specific environmental justice challenges in large, high-density population areas, the tool was limited in its ability to identify and provide contextualized information on local environmental justice issues.

"Our findings reveal that geographic biases currently exist in the ChatGPT model," said Kim. "This is a starting point to investigate how programmers and AI developers might be able to anticipate and mitigate the disparity of information between big and small cities, between urban and rural environments." **Read the full story at [cnre.vt.edu/spring2024mag](https://cnre.vt.edu/spring2024mag).**



Assistant Professor Junghwan Kim

A U.S. map shows counties where residents could (blue) or could not (pink) receive local-specific information about environmental justice issues.



## Bird feeding may give humans SOMETHING TO CHIRP ABOUT

Ashley Dayer hopes to peck away at the notion that bird feeding is simply for the birds. An associate professor in the Department of Fish and Wildlife Conservation, Dayer is the lead author of an article published in *People and Nature* that argues not only for the acknowledgment of the activity's benefit to humans, but that it should play a role in public guidance and policy.

"Wildlife agencies and others making decisions on managing bird feeding need to be considering not only what the science is behind what's going on with birds, but also the science behind what's going on with people," Dayer said.

Associate Professor Ashley Dayer (at right)

The article also encourages additional research to better understand how human well-being is impacted by regularly feeding birds, and Dayer and a team of researchers both in and outside of Virginia Tech are leading the way. The group is conducting what is perhaps the first large-scale bird feeding research that also incorporates observing humans as part of a more than \$1.5 million National Science Foundation grant.

"People are not only reporting what they see at their bird feeders, but also their emotional responses to it," Dayer said. "It's pretty fun because most citizen science projects focus just on the natural or physical science, but we're now able to look at the human piece of it." **Read the full story at [cnre.vt.edu/spring2024mag](https://cnre.vt.edu/spring2024mag).**

## Understanding atmospheric flash droughts in the Caribbean

In the sun-soaked islands in the Caribbean, drought conditions can occur rapidly, with warning signs appearing too late for mediation strategies to limit agriculture losses or prevent stresses on infrastructure systems that provide clean water to communities.

Such occurrences — known as flash droughts — are the focus of a new paper authored by Geography Assistant Professor Craig Ramseyer. The paper's finding is that Caribbean Islands are uniquely susceptible to sudden droughts, and Ramseyer advocates for alternative methodologies to more accurately measure dry conditions in the region.

"The tropics have extremely intense solar radiation, so atmospheric processes tend to be expedited," said Ramseyer. "Despite often receiving daily rainfall, island ecosystems are particularly vulnerable to drought conditions."

Ramseyer, who received funding for this research through a grant from the National Oceanic and Atmospheric Administration's Climate Program Office, stressed that identifying drying conditions earlier is a key step to limiting the impacts of droughts.

"The key current and future issue for the Caribbean is all about finding a way to capture rainfall successfully and draw it out slowly to mitigate evaporation losses," said Ramseyer. "Puerto Rico and all of the Caribbean have water infrastructure challenges that must be addressed to accommodate these trends." **Read the full story at [cnre.vt.edu/spring2024mag](https://cnre.vt.edu/spring2024mag).**

Assistant Professor Craig Ramseyer



# Forensic science combats wildlife trafficking

**A \$2.6 million grant will fund a new wildlife forensic center to support Botswana's fight against illegal wildlife trafficking.**

For pangolins in Africa, a pattern of overlapping scales is a vital armor against predatory lions, hyenas, snakes, and wild dogs. For traffickers of illegal wildlife, those scales are a unique and valuable currency, capable of moving untraced across national borders and a significant driver of criminal activities that threaten both wildlife populations and human communities around the globe.

To combat the challenges of wildlife trafficking, the College of Natural Resources and Environment was awarded a \$2.6 million grant from the U.S. Department of State's Bureau of International Narcotics and Law Enforcement Affairs to develop a state-of-the-art wildlife forensics laboratory in Kasane, Botswana, that will be operated collaboratively with the Botswana government.

The new wildlife forensic laboratory will expand the research portfolio in Botswana of Professor Kathleen Alexander of the Department of Fish and Wildlife Conservation. The laboratory will allow researchers and interagency law enforcement professionals to rapidly use DNA evidence to investigate and prosecute wildlife trafficking in northern Botswana. The grant also will support a novel experiential learning program that will launch Botswana's multiagency wildlife crime training and response units: the Elite Team.

Virginia Tech will partner with the Republic of Botswana as well as the nongovernmental organization Centre for African Resources: Animals, Communities, and Land Use (CARACAL), which Alexander founded in 2001. The Wildlife Investigation Training Alliance, a nonprofit conservation organization, will lead educational components of the project with Virginia Tech and its partners.

"Wildlife trafficking is escalating across the globe and is increasingly seen as a threat to conservation and local livelihoods," said Alexander. "But more significantly, we're seeing that wildlife trafficking is part of an integrated system that allows criminal syndicates to operate and grow. Tackling wildlife crime is not just about conservation related impacts, it's about national and global security."

The wildlife forensic center is the latest addition to Virginia Tech's collaborative relationship with the government of Botswana. In March 2023, His Excellency Eric Mokgweetsi Keabetswe Masisi, president of Botswana, became the first international head of state to visit the Blacksburg campus. In October of last year, Virginia Tech President Tim Sands traveled to Botswana to meet with Masisi and attend the groundbreaking ceremony for the new forensic center.



Pangolins are one of the many species trafficked illegally by poachers. Adobe stock image.

## Adapting to an evolving challenge

From pangolin scales and elephant ivory to shark fins and jaguar meat, the illegal wildlife trade has emerged as one of the greatest threats to many charismatic animal species around the world. It is also a trade that is staggeringly lucrative, with illicit wildlife trafficking estimated to bring profits between \$7.8 billion and \$10 billion per year, according to the Wildlife Conservation Society.



A delegation, including Virginia Tech President Tim Sands (at center, holding phone), President of the Republic of Botswana Eric Mokgweetsi Keabetswe Masisi (at right, wearing a hat), and Professor Kathleen Alexander (to the left of Masisi) learn about wildlife rehabilitation efforts at CARACAL.

That wealth is driven and controlled by sophisticated groups of international criminal networks that exploit the natural resources of developing countries to turn significant profits through the sale and transport of illegal products across the globe.

This illegal trade has impacts on the biodiversity of species as well as human and animal health. The illegal trade of wildlife

presents a risk of zoonotic disease spread, and the transfer of funds through criminal organizations carries significant national security risks.

Alexander's research portfolio in Botswana embraces a One Health approach, engaging the complexity of coupled natural and human systems. With the establishment of a new wildlife forensic center supported by the Bureau of International Narcotics and Law Enforcement Affairs, Alexander and CARACAL add another dimension of impact: a focus on wildlife trafficking as a driver of broader security and conservation challenges in southern Africa.

"This laboratory and the associated training programs will take a unique and partnered approach with the government of Botswana to advance wildlife security in the region," said Alexander. "Without DNA forensics in northern Botswana, investigations and prosecutorial functions are hampered. This laboratory and the development of the Botswana government's Elite Team exemplify Botswana's commitment to innovation and leadership in fighting wildlife crime and securing conservation of natural resources in the region."

Alexander hopes that Virginia Tech's continued collaboration with the Botswana government can be a model for how universities can bring knowledge to bear on the key challenges facing the world.

"The basis of this entire collaboration sets the stage for showing how academic universities and governments can partner at the highest level," Alexander said. "This reflects Virginia Tech's unique commitment to service, and I hope that this can serve as a model for our students and others to look to in the future when asking how we can bring peace, secure democracy, alleviate poverty, and address inequality in communities most in need of service." **Read the full story at [cnre.vt.edu/spring2024mag](https://cnre.vt.edu/spring2024mag).**

## CNRE WELCOMES NEW FACULTY FOR THE SPRING SEMESTER

**ANJA WHITTINGTON** has joined the Department of Forest Resources and Environmental Conservation as a collegiate associate professor. Her research examines the experiences, difficulties, and opportunities that affect females in outdoor recreation and vocations.

"My research has primarily focused on girls' and women's experiences in the outdoors, researching topics of resilience, courage, gender identity, and career roles in outdoor recreation," said Whittington. "Other research has included youth development as it relates to summer camps and thru-hiker experiences on the Appalachian Trail."

A native of New England, Whittington earned a B.S. in forestry from the University of New Hampshire, then completed an M.Ed. in science education and an Ed.D. with a concentration in gender studies in outdoor recreation at the University of Maine.

Prior to coming to Virginia Tech, Whittington was a professor of recreation, parks, and tourism and the director of the Women's and Gender Studies Program at Radford University for 12 years. Before that, she served as a professor at the University of Maine at Presque Isle for six years. Throughout her time as an instructor and

researcher for various universities, Whittington also served numerous outdoor and recreational programs in the roles of consultant, coordinator, or director.

**JOSH STARNER** began the spring semester as an instructor in the Department of Geography, where he has been an adjunct instructor since 2021. Starner earned a B.S. in applied economic management in 2017 from Virginia Tech, then a master's degree in geography in 2021.

Starner specializes in research within transportation geography, studying connected vehicles and routing, Python-based and geoprocessing tool development, cartography, and web mapping. "My focus area within geospatial information technology is the support of geospatial research and practice-based student education within our college," said Starner. "I am driven by the goal of providing our students with an opportunity to create strong links between geospatial theory and practice. The experiences and feedback provided during these teaching interactions are designed to provide the confidence that will allow our students to develop their own proficiencies as they approach the evolving needs of our world."



Collegiate Associate Professor Anja Whittington



Instructor Josh Starnes

# CNRE Hokie Highlights

## President Tim Sands visits Africa to celebrate an expansion of collaborative projects

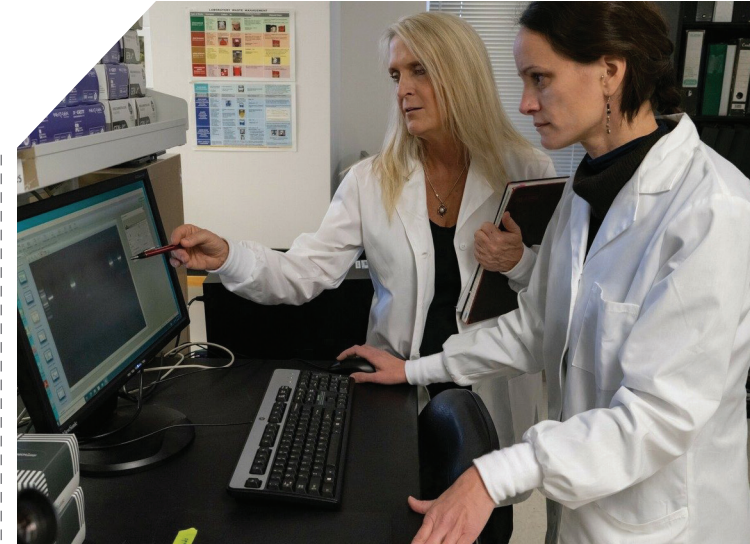
Virginia Tech President Tim Sands traveled to Botswana to meet with His Excellency Eric Mokgweetsi Keabetswe Masi, the president of the Republic of Botswana, and Her Excellency Neo Masi in October to further collaborative partnerships between the Botswana government and Virginia Tech.

Sands, the first president to travel to Africa as a representative of the university, was on hand to participate in the groundbreaking of a new wildlife forensic center (see Page 11). The collaboration will enable the development of future programs to combat illegal trafficking of wildlife, critical research projects aimed at reducing the spread of zoonotic diseases, and other efforts to address critical conservation, health, and security challenges that are affecting sub-Saharan Africa. "Virginia Tech and the government of the Republic of Botswana bring complementary strengths, resources, and capabilities together as we pursue a shared goal to make a difference for our communities, our countries, and our world," said



(From left) Professor Kathleen Alexander, first lady Neo Masi, Virginia Tech President Tim Sands, and Botswana President Eric Mokgweetsi Keabetswe Masi meet to celebrate collaborations between Virginia Tech and the Republic of Botswana.

President Sands. "Today, we are laying the foundation for a place where our visions intersect." [Read the full story at cnre.vt.edu/spring2024mag.](https://cnre.vt.edu/spring2024mag)



Professor Kathleen Alexander (at left)

## KATHLEEN ALEXANDER receives Virginia's highest faculty honor

Kathleen Alexander received a 2024 Outstanding Faculty Award from the State Council of Higher Education for Virginia. This award is the highest honor awarded to faculty in the commonwealth, celebrating significant accomplishments in teaching, research, scholarship, and public service. Alexander, who has taught wildlife disease ecology and forensics in the Department of Fish and Wildlife Conservation since 2007, is the co-founder of the Centre for African Resources, Animals, Communities, and Land Use in Botswana. She is internationally recognized as an expert in disease emergence at the nexus of human, wildlife, and environmental interactions.

"Dr. Alexander's decision to anchor her fieldwork in Africa has proven impactful in ways beyond typical measures of scholarship and success," said Paul Winistorfer, dean of the college. "The impacts of her work on the scientific community and the social, political, and environmental networks of Botswana and beyond are a testament to her vision, passion, and commitment to a better world." [Read the full story at cnre.vt.edu/spring2024mag.](https://cnre.vt.edu/spring2024mag)

## Lauren Varboncoeur honored with December 2023 Aspire! Award

Advisor Lauren Varboncoeur was recently honored with the Virginia Tech Aspire! Self-Understanding and Integrity Award. Varboncoeur was recognized for her unwavering commitment to support students while respecting their autonomy and decision-making. Like all helping professionals, advisors are faced with ethical dilemmas relating to how to interact with students. Her nominator said of her work in this area, "I have always seen Lauren approach such situations with a thoughtful reflection of self and student so that she moves forward with integrity, in a way that aligns with her values. I know Lauren values providing students with relevant information and resources so that they can make informed decisions. This balance can be challenging to maintain, but it is critical to advising with integrity."



Lauren Varboncoeur (at right) and Vice President for Student Affairs Frances Keene



## ALUMNUS RECEIVES THE 2023 MARCUS WALLENBERG PRIZE

CNRE alumnus Richard Haynes '67, M.S. '69 received the 2023 Marcus Wallenberg Prize in November. The prize is awarded annually by the King of Sweden to recognize scientific achievements that contribute to forestry and forest industries. According to the U.S. Forest Service, Haynes developed the Timber Assessment Market Model, a spatial model that projects volumes and prices in the solid wood products and saw timber stumpage markets and estimates total timber harvest and inventory by geographic region. Since its development, the tool has been used by the Forest Service to support assessments and special policy analyses, and by public and private agencies and environmental groups to explore a broad range of environmental issues ranging from export policies to carbon sequestration.

Richard Haynes (at second from left) and colleagues received the Marcus Wallenberg Prize from Sweden's King Carl XVI Gustaf (at right). Photo courtesy of the Marcus Wallenberg Foundation.

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