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STUDENTS BENEFIT FROM MATCHING GIFTS

Beyond Boundaries scholarships help students clear financial hurdles

Having lived through Snowmageddon 2015, a massive winter storm that socked New England, freshman **Jacob Bukow** is majoring in meteorology so he can help predict killer storms and help save life, limb, and property. "I wanted to attend Virginia Tech's top-ranked program, even though there are a lot of miles between my home and here," said Bukow of Whitman, Massachusetts. The Beyond Boundaries Scholars program helped him cover those additional costs.

Bukow is among 130 members of Virginia Tech's Class of 2021 to benefit from the new scholarships designed to reduce cost as a barrier to enrollment for underrepresented and high-achieving students. For many of the recipients, including the five pursuing their career goals in the college, the Beyond Boundaries scholarships were pivotal to their decision to attend Virginia Tech.



Jacob Bukow

Celeste Rogers of Centreville, Virginia, who looked to stay in state, sought out the college's meteorology and geospatial information science programs. "I wouldn't be here without the Beyond Boundaries scholarship. Now I'm able to pursue a degree in a subject I find incredibly important to both myself and the world."



Celeste Rogers

Virginia Tech would have been out of reach for **George Wenn III**, a first-generation college student from Newport News, Virginia. "The scholarship allows me to go to this amazing school, further my education, and pursue my outdoor interests," said Wenn, an outdoor enthusiast majoring in wildlife conservation.



Patrick Wicklein

USA Today College Edition's ranking of Virginia Tech as having the nation's No. 1 natural resources and conservation program attracts the attention of many prospective students, among them **Patrick Wicklein** of Towson, Maryland. "I knew if I could find an additional way to afford it, I would come here," said Wicklein, a fish conservation major.

Wildlife conservation major **Caroline Ilse** of Gastonia, North Carolina, said, "I was over the moon when I received this scholarship, because it meant that I could go here. This scholarship is what ultimately made the decision for me. It relieves a lot of the stress of paying so much for out-of-state tuition."

College alumni Mike Melo ('79 B.S.) and John Harrison ('67 B.S.) are among the dozens of donors who funded Beyond Boundaries scholarships. Through the program, Virginia Tech matched up to 165 qualifying gifts made through at least the end of 2017, doubling their impact.

"My wife and I firmly believe in the value of education, and as we looked at the Beyond Boundaries Scholars program we realized it gives students an opportunity to attend Virginia Tech who otherwise might not have one," said Melo, who along with his spouse, Kathryn Melo, runs the defense contracting business ITA International.

"The critical thinking that I learned at Virginia Tech has been a key element in my success as a Navy officer and as a business owner. We just want these young men and women to have the same educational opportunity that I did at Virginia Tech," he added.



George Wenn III

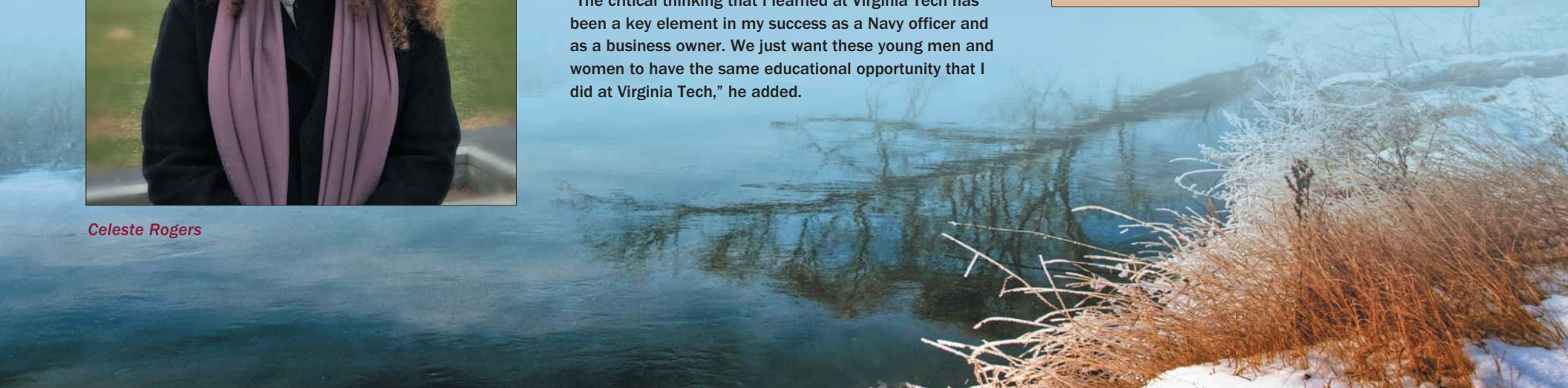
John Harrison explained, "My wife and I had talked about doing something for the college. Why? Because I look back and I look forward. I look back on my education at Virginia Tech. I felt I got a good education in forestry and had a career I enjoyed and was successful at it. I look forward with the understanding that there are some academically qualified individuals who could use financial support to achieve their career goals."

"For me, the matching aspect made it a win-win situation. It doubles the contribution, and that is what sold us on it," Harrison continued. "I encourage people to consider making their donations through the Beyond Boundaries Scholars program. It doubles the effect of what you give, which is a tremendous aspect of it. Then continue donating to it in 2018 and beyond."



Caroline Ilse

Interested in contributing to the Beyond Boundaries Scholars program? Contact Emily Hutchins at 540-231-8859 or ehutch@vt.edu.



The Margin of Excellence

Many of the articles in this issue of CNRE News reflect on our continual march toward relevancy in today's complex world and our comprehensive reach for excellence at the margin. How are our academic programs relevant to students for whom a college degree is out of reach? Our Beyond Boundaries Scholars, as well as our many other scholarship recipients, are testament to the vision, support, and generosity of our donors, who are providing students a path to Virginia Tech and our college. We are relevant to students from underrepresented groups, first-generation students, and the brightest students because we can help them financially. Thank you, donors — you are changing lives.

How do we help our students gain real-world experiences that will help them develop and be more competitive in the job market and graduate school? Funded undergraduate research experiences, like the support provided by the Morton and Spapperi Family Foundation, make a significant difference.

How do we help our faculty jump-start a contemporary research idea or experiential learning opportunity that needs seed funding to engage students and the public in the importance of our work? Virginia Tech's new crowdfunding program, appropriately named Jump, is that vehicle. Crowdfunding allows individual donors to make an impact in support of worthwhile projects and student experiences.

How do we forge partnerships with external organizations that help our students and benefit our partners? Our college career fair is an exceptional opportunity for students to learn about career options and develop relationships with organizations across the spectrum of natural resources disciplines. Our partners who participate in the career fair gain an early insight into our students and their potential as future employees. Many college alumni come back to campus representing their organizations — there is no better way for our students to hear about career opportunities first hand.

How do we help our students differentiate themselves early in their career? The Leadership Institute, funded with private gifts, is a signature program of the college that offers each year's student cohort a strategic view of leadership in state and federal agencies, nongovernment organizations, and the private sector. We need leadership in natural resources, and our students need to develop the skills, knowledge, and aspiration to lead their future organizations.



The 2017-18 Leadership Institute students outside Sen. Tim Kaine's office during their winter break trip to Charlottesville, Richmond, and Washington, DC. This is the eighth cohort of students to participate in this yearlong study of leadership. Front row (left to right): Meredith Holland, Associate Director Steve McMullin, Jenny Hwang, Sam Wilson, Leah Johnson, and Emily Reasor. Back row: Amie Scott, Director Brian Bond, Shannon Wright, Carter Grimm, Jacob Zalewski, Alexandra Ives, and Olivia Plant.

Our college leadership team, faculty, staff, and students seek excellence in all that we do in the college. The moment that we think we cannot get any better or go any higher is the moment that complacency emerges and plants a seed that enough is enough. If one side of the coin represents excellence in all we do and aspire to do, the other side represents complacency, lagging behind, and settling. Which side of the coin do you want to be on? The marginal cost of excellence can be significant but is worthy to pursue. We will continue to pursue excellence in all that we do in the college in 2018 and beyond.

Warm regards on behalf of our faculty, staff, and students,

Paul M. Winistorfer
Dean
pstorfer@vt.edu

College welcomes new communications director

The college welcomed **Krista Timney** as its new communications director in January. Timney is only the second communications director for the college, following Lynn Davis, who retired after serving 25 years in that position.

Timney has an extensive background in higher education, having most recently served as senior associate director of marketing and communications for the Office of Admissions at Indiana University–Bloomington. "I had been looking for an opportunity to find a director position within marketing and communications, but I was especially excited about this position because of the focus on natural resources and the environment," she said.

Dean Paul Winistorfer points to Timney's demonstrated expertise specific to higher education and the use of digital communication tools. "We are thrilled to have someone of Krista's caliber," he said. "At Indiana University, she planned and implemented comprehensive strategic initiatives that directly correlated to a boost in admissions."

According to Chief Advancement Officer Emily Hutchins, Timney will play an integral part in the college's



advancement efforts, which include creating a digital strategy plan and developing a cohesive web presence, creating marketing materials for the college's degree programs, and refreshing the college brand to align with the university's new brand. "Krista has a strong marketing background and the expertise to help us effectively advertise our programs and attract students," Hutchins said. "In order to maintain our No. 1 ranking, we need to develop a completely new look and feel that is uniquely ours. I think she is going to be able to do some things that the college has never seen before."

Timney, who earned her doctorate in educational leadership from Clemson University in 2011

and holds degrees from Frostburg State University, Penn State, and James Madison University, says she is drawn to the creative elements of marketing and communications. "I consider myself a storyteller," she said. "I like the integrative approach to marketing that uses multiple channels to deliver content to the public. There are so many marketing channels to explore, and the best campaigns use them all. I'm looking forward to learning what the students and faculty are doing, and I'm excited to use those digital and print channels to tell their stories."



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Dean **Paul M. Winistorfer**
Editor **Helen Thompson** (hthompson@vt.edu)
Assistant Editors **Olivia Coleman, Hannah Goode, Heidi Ketler, Lindsay Key, Barbara Micale, Jessica Stanley**
Designer **Joe Swope**
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CGIT helps Virginia’s independent grape growers assess and manage vineyards

Avid home winemakers Michael and Gerri Fritze took a leap of faith last year, buying a farm in Waterford, Virginia, and establishing Quartz Creek Vineyards LLC. The Fritzes credit GeoVine (geovine.org), a vineyard site assessment and management tool developed by the Center for Geospatial Information Technology (CGIT), based in the college, with helping them find an appropriate property for their vineyard.

GeoVine, which was funded by the Virginia Wine Board, includes a map editor that can create boundaries, a dedicated reports page, a way for users to organize multiple sites, and tutorials. By completing the online survey, the user receives a site evaluation report that includes soil, climate, elevation, slope, and aspect data; an indication of rocks in the physical

area; topographic moisture potential; and additional information on grapevine climate/maturity, land cover, and land surface forms.

Francis Lazarus of Spring House Vineyard in Loudon County used GeoVine to be sure that grapes would grow on land he was planning to buy. “The evaluation was positive and helped me make the decision to purchase the property,” he said. “I was surprised that I got such a full evaluation from remote sensing and very happy to learn so much about the property so quickly.”

CGIT Director Peter Sforza reports that his team is doing about 30 to 40 unique reports a day. “We’ve built tools to help growers not only select a site but match which variety of grape might fit best at a



An online vineyard site assessment and management tool called GeoVine is available to those interested in growing grapes for winemaking.

particular location. We continue to update GeoVine with expanded geospatial analysis and capabilities as they become available.”

New campus tree inventory to guide planning decisions

Virginia Tech will soon have an inventory of nearly 9,000 trees on campus, which will be used to monitor tree health and growth, and help university planners make decisions about development.

Associate Professor Eric Wiseman recruited Peter Stewart, a graduate student in urban forestry and an experienced arborist, to work in conjunction with



the Facilities Department on the project. Stewart has inventoried more than 5,500 trees on campus since August. Each tree is identified, photographed, measured, and evaluated for health and structure, and the information is uploaded to a database.

“I’ve really enjoyed getting to know the diversity of trees on campus,” said Stewart, who hails from Chattanooga, Tennessee. “Even having lived just a few hours south of here, there have been plenty of species in this region that I wasn’t familiar with.”

The data will tie directly into the Facilities Department’s work order system to allow for greater functionality. “Each tree will have a unique identification number, so whenever a tree needs work done, the grounds staff will be able to see exactly which ones need work and

Urban forestry graduate student Peter Stewart is inventorying 9,000 campus trees.

can keep track of it in that system,” said Landscape Architect Jack Rosenberg.

The inventory will also be used by the university to aid in decision-making about construction and landscaping on campus. “If our data are accurate, we can overlay our tree map on proposed designs early in the process to help with decisions like building location and orientation, and site plan features so we don’t remove valuable trees,” Rosenberger explained. “At some point, we hope to use analytical tools to reveal the dollar value of the trees on campus, the ecological systems benefits, and the health benefits of our trees.”

Stewart added, “Building this map will also be useful for getting a snapshot of the overall health and composition of the forest. It will help the university make good decisions about what species to plant, which trees to preserve, and what issues can be addressed through maintenance.”

Students develop strategies to address flooding and sea-level rise in the city of Hampton

Many areas in Virginia’s Hampton Roads region are at risk of tidal flooding, extreme rain events, tropical storms, hurricanes, nor’easters, and sea-level rise. “The whole area is highly susceptible to coastal flooding due to higher rates of sea-level rise and land subsidence, as well as frequent storms,” said Anamaria Bukvic, research assistant professor in the Department of Geography.

Bukvic developed a new course in fall 2017 that takes an interdisciplinary approach to the study of multidimensional aspects of climate change and adaptation. She obtained funding to enable the course’s students, which include both graduate and undergraduate students, to apply classroom knowledge to real-world case studies in the city of Hampton.

In October, Bukvic and the six graduate students in the course visited Hampton, where they learned about the historic context, emerging issues related to

accelerating coastal flooding, and existing partnerships and efforts to solve the problem.

After meeting with local officials, they visited three communities to learn about specific flood-related challenges facing residents and the importance of scale and context in the efforts to increase resilience and successfully adapt.

Back on campus, graduate student Aaron Updike led the group of undergraduate students who looked specifically at the Fox Hill and Grandview neighborhoods, where many homes have been passed down from generation to generation. “This is the lowest lying community we visited, and people here have been dealing with this for a long time,” Updike explained. “They don’t complain about a couple inches of flooding, but they have problems with main roads flooding and the power substation that’s close to the creek getting flooded and shut down.”

Graduate student Zoe Schmitt led the group of students working on the Buckroe Beach and Salt Ponds neighborhoods, which are closer to the

coast and include a popular public beach and fishing pier. “We want to provide solutions that can be implemented on different levels, from individual households all the way to regional strategies,” she said.

The student groups worked throughout the semester to develop recommendations to promote resiliency and mitigate the negative effects of flooding in each community. The graduate students returned to Hampton in December to present their recommendations to city officials and other stakeholders. Examples included the implementation of a flag system to warn drivers when roads are fully or partially submerged, and adding solar panels to nearby playgrounds and recreational facilities to help residents deal with power shortages.

“The officials seemed to appreciate the fresh perspective. They liked the level of optimism the students brought to their resilience strategies, and the fact that they connected them to other community development goals,” Bukvic said. “The students were energized by the whole experience, as they got an opportunity to collaborate with the real decision-makers and observe the complexity of how localities deal with the emerging coastal challenges.”



The six graduate students in the interdisciplinary course visited the city of Hampton and then worked with the course’s undergraduate students to develop solutions to flooding and other problems relating to sea-level rise. (Left to right): Callie Lambert, Logan Stevens, Zoe Schmitt, Aaron Updike, Bree Prince, and Jessica Kirkland.

Students brighten up Color Canyon trail

New River Trail State Park's new Color Canyon trail will be a little brighter thanks to some of Associate Professor Marc Stern's students, who created interpretive signs for installation on the trail as part of a service-learning opportunity in his spring 2016 Environmental Interpretation course.

"It's a drastic landscape. The site doesn't have the traditional scenery you'd normally find in a park, but you're able to look right at history," said Eryn Turney, who graduated in 2017, of the site near Hiwassee, Virginia.

The trail will be used by both hikers and mountain bikers, so the students had to consider multiple audiences. Working in groups, they explored the site, plotted GIS points where the signs would be placed, and decided what information would be most interesting to visitors. The groups presented



Students Delaney Beattie (left) and Karly Korbe scope out New River Trail State Park's Color Canyon for the interpretive sign project.

multiple designs, incorporating a self-guided tour, a scavenger hunt, and even a geocaching experience.

"Our signs featured information about local wildlife, geology, and the history of the site," said senior Delaney Beattie. "It was challenging to try to figure out what kinds of signs would appeal to the general public and people without any background in natural resources."

Stern added, "This whole class is designed to make students better communicators about the subjects they care about. It's interlaced with environmental, social, and cultural issues. By doing a project like this, students can put theory into practice, and the next time they need to support a place they care about, they have the tools they need to do it."

Sustainable biomaterials students do their part at Shack-a-Thon

About 30 students from the Packaging Systems and Design Club and the Society of Renewable Resources partnered for the fifth annual Shack-a-Thon, held outside Squires Student Center last spring. Each year, participating teams build 8-foot-square shacks and live in them for a week while collecting donations for Habitat for Humanity. The sustainable biomaterials team added to their donation total by auctioning off a VT-shaped wine rack, designed and crafted by students in the college's Wood Enterprise Institute.

According to packaging systems and design major Landon Holbert, a great deal of hard work and dedication went into preparing for the Shack-a-Thon. "About a month before the event, members split into design/construction and fundraising teams," he said. "The construction team met on weekends and prefabbed everything, with myself, William Bagby, and Chris Schirk spending almost all day and night working to finish the design the night before the event started."



Packaging systems and design major Teddy Polk (left) and sustainable biomaterials major Gillian Cubbage staff the display outside the team's "Hobbit Hole" during the weeklong Shack-a-Thon.

The team's shack, made mostly from wooden pallets, was dubbed "The Hobbit Hole." "We wanted to be unique and realized the hobbit hole theme also fit with packaging's and sustainable biomaterials' focuses on sustainability and the use of renewable materials," Holbert explained.

Holbert said he was happy to put in the effort because it was all for a worthy cause. "Habitat is a special organization in that it affords people the opportunity to donate their time and skills to help provide shelter for the less fortunate. It's pretty rare that college students have a lot of money to donate, so I think it's great that Habitat is active on our campus to help facilitate efforts like building homes for families and heading up awesome events like the Shack-a-Thon."

Yang earns Taiwanese government scholarship



Graduate student **Sheng-I Yang** of Kaohsiung, Taiwan, has earned a scholarship of approximately \$16,000 from the Taiwanese government to help offset the costs of studying in the U.S. The scholarship program's recipients are selected based on whether the student's field of study addresses a current or future need in Taiwan. Yang, who is concurrently pursuing a doctorate in forest biometrics and a master's in statistics, hopes that his research on assessing forest inventories by various sampling schemes can be used to help forest managers make more precise and accurate decisions regarding natural resources. "Sheng-I is talented in quantitative analysis, highly motivated, focused, and a pleasure to have as part of our graduate student body," said Professor Harold Burkhart, Yang's advisor.

Tsang places in public speaking contest



Elizabeth Tsang, a junior wildlife conservation major from Riner, Virginia, placed third in the impromptu speaking contest at the Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS) regional cluster meeting in Atlanta. "The purpose of these meetings is to provide opportunities for professional development for students, and for them to network and share strategies for successful chapters," said Professor Carola Haas, MANRRS faculty co-adviser. Three other students from the college —

wildlife majors **Lis Mota** and **Cristina Stahl**, and geography major **Tyneshia Griffin** — attended the meeting, along with undergraduate and graduate students from the College of Agriculture and Life Sciences.

Tsang said that she joined MANRRS because of its focus on professional development and diversity, and attended the regional event to develop networking skills and speak to recruiters. When she learned about the impromptu speaking contest, she discovered a way to get out of her comfort zone and improve her public speaking skills. "One skill you can never practice enough is public speaking, which happens to be something I hate," she said. "However, I believe if you're going to improve and grow in an area, you have to challenge yourself, so I forced myself to sign up for the impromptu speaking contest. This was a new experience and I definitely gained more confidence as far as public speaking is concerned."

Little Fishing Trip teaches children valuable lessons

The student chapter of the American Fisheries Society (AFS) hosted the second annual Little Fishing Trip at the Duck Pond in September. The event seeks to teach young children about science and nature. Sixteen 4-year-olds from Virginia Tech's Center for Child Development, Learning, and Research (CCDLR) participated, and many of them got to experience fishing for the first time.

"This event is important for the children because they need to get outside and experience our natural world," said Corbin Hilling, AFS chapter president. "These children are the environmental stewards of the future, and gaining an appreciation for the recreational opportunities nature provides may encourage them to support the responsible use of our natural resources."

Associate Professor Emmanuel Frimpong, who served as the liaison between the CCDLR and the AFS, said that because the weather was warmer this year, the children were catching more fish, which made the learning experience more fun. "This year almost all the children caught one or more fish throughout the two hours, and they were visibly excited," he said.

Hilling noted that both the children and the AFS members who helped with the event took away valuable knowledge from the experience. "I think the children learned what most anglers learn — patience. They learned about fish and fishing, but also about sticking with something when you're learning or not having success. This was also a good experience for our AFS members, who learned about communication, sharing your skills and knowledge, and leadership. I think both groups benefitted from the experience," he said.



A young angler proudly displays her catch.

IN MEMORIAM: Robert McElwee



Professor Emeritus **Robert L. McElwee** of Blacksburg passed away on Nov. 2, 2017, at the age of 90.

McElwee worked as an industry silviculturist for several years after earning his bachelor's from West Virginia University. He then spent 14 years at North Carolina State University, where he completed his master's and doctorate, serving as director of the Hardwood Research Program and associate director of Cooperative Programs. He joined Virginia Tech's forestry faculty in 1971 after a short stint at the University of Maine. In addition to his teaching and research activities at Virginia Tech, he was a project leader for Virginia Cooperative Extension, focusing on educational and informational programming and outreach.

"Bob McElwee's extensive contacts and well-deserved standing in the forest industry and the broader forest resources community made him an ideal leader for Extension programs at Virginia Tech," said his colleague, Professor Harold Burkhart.

Smith named president of the Society of Wood Science and Technology



Bob Smith, the college's associate dean for engagement and head of the Department of Sustainable Biomaterials, was named president of the Society of Wood Science and Technology. The society is one of the largest internationally recognized organizations of biomaterials professionals, with over 500 members from around the world.

One of Smith's goals is to develop ways to bring more students into professions relating to sustainable biomaterials. "High school students aren't necessarily aware that this field of study is

even an option," he explained. "They may come into college thinking they want to be an architect or an engineer and only later discover that they can blend that interest into what we do in sustainable biomaterials."

Smith also hopes to examine and possibly revise the society's accreditation standards to account for a growing focus on sustainability, which he thinks will help attract more students to the field. "This generation of students is very sensitive to environmental issues and wants to make a difference in these areas. This is a great profession for students to do that in a setting with just as much demand for jobs as engineering or business," Smith said. Virginia Tech has one of the 10 programs in the U.S. currently accredited by the society.

Day honored with top arboriculture research award



Associate Professor **Susan Day** received the 2017 L.C. Chadwick Award of Arboricultural Research from the International Society of Arboriculture, which supports tree care research and education around the world and offers the only internationally recognized certification program in the industry.

Day's research focuses on finding practical information to improve tree health and canopy cover in urban environments. "Dr. Day's research helps urban forest managers, communities, and the public have a better understanding about trees," said Michelle Mitchell, board president of the International Society of Arboriculture.

Day has recently published several materials on Soil Profile Rebuilding, a technique for rehabilitating soils degraded by land development. She also helped develop the soil credits for the Sustainable Sites Initiative®, a system for rating the sustainable design, construction, and maintenance of built landscapes.

The L.C. Chadwick Award is named in honor of a horticulture researcher and professor who helped organize the International Shade Tree Conference, which later became the International Society of Arboriculture. "We all benefit from L.C. Chadwick's legacy today," Day said. "I applaud his ability to think big and imagine a future that builds upon past achievements in arboriculture."

Strahm launches collaborative effort with New Zealand's forest industry

After being named a Research Fellow of the international Organisation for Economic Co-Operation and Development, Associate Professor **Brian Strahm** spent the first six months of 2017 in New Zealand partnering with scientists from Scion, the New Zealand Crown Research Institute for forestry, to develop ways to improve forest productivity without negative environmental impacts.

"Over the last few decades, New Zealand has seen massive changes in land use, from forests to agriculture and other efforts," Strahm explained. "Forest products are the country's third leading export, and they want to double the nation's forestry productivity over the next decade. To do so, they're looking into nutrient management, but a lot of people are worried about potential water quality problems that might result from it. We've been working to figure out how to add nutrients like nitrogen and achieve the maximum benefit with minimal environmental impacts."

To explore options for fertilizing forests without harming surrounding waterways, Strahm and his colleagues developed large-scale field trials to determine the fate of applied nitrogen. "We have about 10 treatment plots across New Zealand's North Island, where we'll gather data over the next few years," said Strahm, who will continue to receive and analyze samples from the treatment plots at his lab at Virginia Tech.

Strahm hopes that this project can be the start of a collaborative effort that can continue for decades. "The data we're getting back now will help us design future trials. We'll keep refining and trying to put the best information we can into the hands of decision-makers, whether they're government officials or land managers," he said. "This was a fantastic experience. I got to work with an incredibly welcoming community of scientists, and I saw the similarities and differences between their systems and ours. I think there will be a lot of opportunities for cross collaboration in the future."



Hallerman raises awareness about fisheries genetics and animal biotechnology



Professor **Eric Hallerman**, who has worked for many years on the environmental issues surrounding genetically engineered salmon, is continuing to promote a better understanding of fisheries genetics and animal biotechnology.

Hallerman co-authored "Genetic Resources of Neotropical Fishes" with colleague Alexandre W.S. Hilsdorf of the University of Mogi das Cruzes in Brazil. The book summarizes the science of genetics and fisheries management, and offers recommendations to help fisheries professionals in Latin America utilize genetics. "Much of Latin America lacks data on fish genetics, and many fisheries professionals lack the sense that this is an important part of fisheries management," explained Hallerman, who hopes the book will be a learning tool for fisheries professionals and students, promote sustainability in Latin American fisheries, and inspire Latin American students to delve into the world of genetics.

In addition, Hallerman organized the Third International Workshop for Regulation of Animal Biotechnology in Charlottesville, Virginia, in June — the first time the workshop was held in the United States. Its goal was to aid discussion of rapid advancements in genetically modified animals and their place in food and fiber production. "The technology that is currently being developed can produce animals that are more disease resistant, can produce longer-lasting products like milk, and utilize feed more efficiently, leading to less strain on the environment," Hallerman said. "We need to put regulatory systems in place so we'll be ready to actively consider applications as they come forward to the regulatory agencies. The task for regulators is to approve well-chosen lines that promote the sustainability and resiliency of our food production systems, promote human health, or provide useful products not otherwise available."

Local landowner benefits from gift-supported undergraduate research projects

Often, the most memorable learning experiences happen not in a classroom but in the midst of real-world struggles and triumphs. That's why the college's Conservation Management Institute (CMI) works to provide out-of-the-classroom opportunities to students.

Last winter, as a result of the college's budding partnership with the **Morton and Spapperi Family Foundation**, Emily Hutchins, the college's chief advancement officer, saw an opportunity. Hutchins, who is a volunteer for the New River Land Trust, helped connect the trust with CMI and the foundation, which is interested in supporting undergraduate research. The trust then identified Betty Hahn, a local landowner who wanted to make improvements to her Ellett Valley farm. The connection ultimately led to a project in which students from the college conducted on-the-ground research that will help Hahn make informed decisions



about the future management of her property, which is under a conservation easement.

The four students from a range of majors — Deirdre Conroy and Jessica Fitzpatrick (wildlife conservation), Marissa Hahn (environmental resources management), and Jack Reaume (geography) — began by discussing their work with Hahn and her husband, Doug Chancey. Using the landowners' goals as a starting point, the students designed research projects based on their own interests, which ranged from bat occurrence and diversity to water-quality testing. "The students were great," Hahn said. "They took the project very seriously, but they also seemed to have a lot of fun."

The students worked under the guidance of CMI Research Scientist Verl Emrick but were free to choose their own projects. "It's one of the most important things I've done in school," said Fitzpatrick. "I can now say that I've worked independently, designed an experiment, supervised others, and worked with multiple species."

The students worked with Emrick and other mentors from CMI throughout the summer, implementing their projects and analyzing data. In spring 2018, the group will present their findings at the National Conference on Undergraduate Research. "It gave the students a wide variety of real-world experiences," Emrick said. "There are a lot of good students out there, but many don't have hands-on experience, so this will give them an edge."

Geography major Jack Reaume records tree species the students measured in a vegetation plot on Betty Hahn's property.



Betty Hahn's property supports a wide range of plants and wildlife, including this eastern newt in its eft (juvenile) life stage.

The research opportunity was made possible through a generous gift from the Morton and Spapperi Family Foundation, established in 2015 by Kent Morton and Julie Spapperi-Morton. The foundation works to initiate and participate in projects designed to preserve, enhance, and restore land to greater ecological value and to support education in the sciences and engineering. The foundation worked with college leadership to determine where its support might be most needed.

"We wanted to make sure we were supporting students through undergraduate opportunities and providing them with skills that will translate from education into the workplace," said Julie Spapperi-Morton. "The college was wonderful about listening to our interests and making sure our goals were met. It's been a great partnership."

Student Marissa Hahn (no relation to Betty Hahn) added, "I have learned more than I ever thought I would through this experience. It has enhanced my love for our natural world and solidified that this is what I want to do for the rest of my career."

Virginia Tech community 'jumped' in to support crowdfunding campaign



The Virginia Master Naturalist program raised more than \$10,000 to support training for its volunteer leaders.

Virginia Tech launched its new crowdfunding campaign — called **Jump** — last fall, with 23 faculty and student projects raising a total of \$119,812. Each of the projects accepted donations for approximately one month, reaching out to potential donors via social media, email, and word of mouth.

Three projects associated with the college raised a total of \$16,407. The Virginia Master Naturalist campaign to improve volunteer leadership training had the most impressive results, raising 122 percent of its goal, or \$10,318. Campaigns for an interdisciplinary undergraduate science policy fellowship and an undergraduate bird-fatality study both achieved 50 percent of their goals, or \$3,500 and \$2,589, respectively.

"Virginia Tech's Jump campaigns maximize the power of crowdfunding by providing a platform to raise awareness of a project's impact for good and to inspire others to give," said Dean Paul Winistorfer. "They are great opportunities to raise project-specific funds, often for student-led efforts." Visit crowdfund.vt.edu for details and watch for announcements of future Jump campaigns.

Giving Day: College to "spring forward" with sights set on increasing engagement

Virginia Tech's **Giving Day** — from noon on Tuesday, March 20, through noon on Wednesday, March 21 — is a new fundraising platform through which alumni, faculty, staff, students, and friends can help raise essential funds for the academic unit of their choice. The college's Giving Day goal is for at least 250 people to make a gift in honor of the college's 25th anniversary.

"Giving Day is an opportunity for our diverse community of supporters to come together online and make a powerful, cumulative impact on the college and on the lives of those we serve," said Emily Hutchins, chief advancement officer. "In addition to raising money, an annual high-profile event like Giving Day helps increase awareness about our college and the importance of philanthropy."

The theme of Virginia Tech's first Giving Day is "Spring Forward" to highlight the vernal equinox and inspire donors to help propel the university forward with their contributions, large or small. Follow the college on Facebook (@vtcnre) and Twitter (@vt_cnre) for updates.

DID YOU KNOW?

Cheatham Hall houses a natural history museum

Hidden away inside Cheatham Hall, there are thousands of animals — specimens of Virginia Tech's very own natural history museum. Housed on the first floor of Cheatham Hall, the museum is supervised by Professor Carola Haas, who started a basic vertebrate identification and natural history class after arriving at Virginia Tech in 1993. "Having a specimen collection made it possible to give students hands-on exposure and to teach basic identification skills," she said.



Songbird eggs and nests are among the thousands of specimens housed in Cheatham Hall.

The collection, which was initiated more than 70 years ago, has become a big part of coursework for students in the college as well as a research tool. Undergraduate and graduate students in the Department of Fish and Wildlife Conservation help maintain the museum. Doctoral student George Brooks has managed the collection — which includes 1,000 skulls, 1,000 wet specimens (fish), and 3,000 dry specimens, such as birds, mammals, eggs, and pelts — since 2015. "I manage all of the undergraduates in terms of what they do and coordinate general maintenance of the museum," he said. "It's a balancing act of preserving the collection for posterity and making the specimens available for teaching and research."

Over half of the mammal skins and skulls and a third of the bird skins were collected in Virginia. "Having a series of animals collected here in Southwest Virginia over time can allow us to see how they might have changed as invasive species moved in, as certain contaminants were released in the area, or as forests regrew and the area became more heavily wooded," Haas said.



The natural history collection, which includes these two loggerhead sea turtle skulls, is used for teaching, research, and outreach.

Several classes, including herpetology, ichthyology, mammalogy, ornithology, and wildlife field biology, use the specimens in their teaching. Several departments collaborate in the museum for research, and the specimens are lent to K-12 groups and different organizations for outreach events. "Getting students some hands-on experience with the animals that they actually hope to study is crucial for both enthusiasm and understanding," Brooks said.

Alumni representation high among employers seeking top-notch candidates at career fair

In October, more than 330 students attended the college's annual career fair to interact with the 41 employers showcasing their businesses at informational booths. The fair has grown each year since it began in 2011, attracting students and employers eager to connect and align professional skills with opportunities. New this year, a reception the evening before the fair offered an additional venue for students to network with employers.

Of note is the number of alumni who attend representing their employers. "They view the fair as an opportunity to stay connected with the college, and they are well aware of the value of connecting with top-notch candidates from the college's well-established degree programs," said Stephanie Hart, director of the college's Advising Center, which organizes the career fair.

Networking is beneficial for both the college and the companies and organizations the alumni represent, according to **Jeff Dawley** ('07 B.A. geography), a defense account manager with Esri, an international supplier of geographic information system software.

"It's a great way to maintain a professional relationship with the college," he said. "We can keep the faculty and students informed about new developments and technologies that will prepare them for their careers, and we can directly interact with the students who will be candidates for our positions."

All students are encouraged to attend, Hart explained. "Even if they aren't ready for full-time employment or an



Dan Wilson ('12 B.S. forestry), a consulting forester with Three Rivers Forestry in Tappahannock, Virginia, talks with a student at the career fair about internships and full-time positions, while his co-worker, **Heather Southern**, looks on.

internship, they can see how a career fair works and get some practice. It's so important to network and make connections early."

Carmyn Haddix, a sophomore wildlife conservation major, heeded that advice and plans to return next year to seek internships and summer positions. "I'm glad that I went," she said. "While talking to employers from each category that attended, I learned about the interdisciplinary application of geographic information systems. I actually ended up adding it as minor."

Several employers have returned to the fair each year since 2011, including Bartlett Tree Experts, International Paper, Packaging Corporation of America, the Virginia Department of Forestry, and the Virginia Department of Game and Inland Fisheries.

Some employers conduct on-site interviews the day after the fair. "We were looking for potential packaging interns and received a lot of great resumes," said **Sarah Applegate** ('13 B.S. industrial design), a packaging engineer with Newell Brands. "We held interviews the next day and made offers to two students shortly thereafter."

Alumni know firsthand that the college's students have both an exceptional education and experiential learning opportunities outside the classroom.

"Virginia Tech students have often taken the opportunity to gain experience through internships, class projects, and/or undergraduate research, so it's a great place for the Virginia Department of Environmental Quality to hire," explained **Mary Dail** ('99 B.S. forestry and wildlife), a water quality monitoring and assessment specialist for the agency.

Walker Downs ('17 B.S. forest operations and business), an associate procurement forester at WestRock, has attended the fair as both a student and a recruiter. "I went to the fair as a sophomore, but I hadn't started thinking seriously about my career path yet. I ended up getting an internship with WestRock. The next summer, they asked me back and ultimately offered me a job," he said.

Trincado directs Chilean forest modeling effort



Guillermo Trincado ('03 M.S. statistics, '06 Ph.D. forest biometrics) has been named director of Chile's National Simulation Model Project. The project, which develops growth and yield simulation models for radiata pine and eucalyptus plantations to support management decisions, was recognized as one of the country's most innovative projects by the Chilean Academy of Sciences in 2013.

Trincado, a professor at the Universidad Austral de Chile, had served as a research assistant for the Forest Modeling Research Cooperative under Professor Harold Burkhart.

"Guillermo's experience with modeling forest stand development, coupled with his ability to collaborate with researchers and managers, made him an ideal candidate to assume leadership of this national project," Burkhart said. Trincado earned the A.B. Massey Outstanding Graduate Student Award for forestry in 2005 and the college's Outstanding Recent Alumnus Award in 2012. He also received an Outstanding Doctoral Research Award at the International Union of Forest Research Organization's World Congress in 2010.

Palmer named fisheries biologist of the year



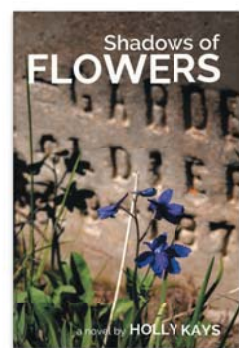
George C. Palmer ('96 B.S., '99 M.S. fisheries science), an aquatic biologist for the Virginia Department of Game and Inland Fisheries, has been named the 2017 Fisheries Biologist of the Year by the Southeastern Association of Fish and Wildlife Agencies (SEAFWA), which covers 15 states and two U.S. territories.

"George Palmer has consistently demonstrated a strong commitment to the fisheries resources and the users of these

resources throughout his career," said SEAFWA President Alvin Taylor. "His efforts and outstanding reputation are appreciated beyond the borders of Virginia."

Palmer directly oversees a comprehensive aquatic resource management program in south-central Virginia and leads the agency's Walleye Technical Subcommittee. He initiated and leads a five-state Southern Appalachian Walleye group and contributed extensively to the department's trout fisheries management. In addition to multiple walleye hatcheries, he manages the largest tailwater trout fishery in the state, two large reservoirs, several small impoundments, multiple wild trout streams, and the upper James River.

Kays releases debut novel



Alumna and award-winning journalist **Holly Kays** has released "Shadows of Flowers," her debut novel about love, loss, and the power of place. It follows the story of Dana Stullman, whose world turns upside down when her boyfriend dies in a car accident in the final days of their time as students at Virginia Tech.

Dana moves to the small town of Buffalo, Wyoming, to escape reminders of the tragedy and the life that had preceded it. Her life remains paralyzed until a crisis forces her to confront the past and choose her path into the future.

Kays, named the college's outstanding graduating senior in 2011, earned degrees in natural resources conservation and English at Virginia Tech and worked as a student writer for the college throughout her years on campus. After stints as a reporter for small newspapers in Idaho and Wyoming, she has settled in Western North Carolina. She covers a range of topics for the weekly regional newsmagazine The Smoky Mountain News, which published "Shadows of Flowers." For more details and ordering information, visit www.facebook.com/shadowsofflowers.

Hopper earns leadership excellence award



George Hopper ('82 Ph.D. forestry) earned the 2017 Southern Association of Agricultural Experiment Station Directors ESS Excellence in Leadership Award. He is director of the Mississippi Agricultural and Forestry Experiment Station and dean of the College of Agriculture and Life Sciences at Mississippi State University. Hopper,

who also serves as dean of the university's College of Forest Resources and director of its Forest and Wildlife Research Center, has dedicated his career to the university's land-grant mission in the capacities of professor, department head, dean, and director.

"I am honored to receive the excellence in leadership award from among my peers in the Southern Association of Agricultural Experiment Station Directors," he said. "It is a privilege to serve with this group that advances collaboration in agricultural and natural resources research and education."

Alumni news online

We love hearing about the great things going on with our alumni, but we don't have enough space in the newsmagazine to print them all. Catch up with former classmates and fellow Hokies online; scan the QR code or visit cnre.vt.edu/tags/alumni.html.

Recent posts

Shawn Baker ('01 B.S., '03 M.S.)
Zach Brown ('07 B.A.)
Chris Kiser ('07 M.S., '11 Ph.D.)
Bret Preston ('88 M.S.)
Javan Rasnake ('09 B.S.)
Philip Rhodes ('96 B.A.)
Charles Sabatia ('08 M.S., '11 Ph.D.)
Shelby (Lee) Spradlin Jr. ('73 B.S., '75 M.S.)
Christopher Sturgill ('13 B.S.)



In memoriam:

W. Terry Dickey ('78 B.S.)
Edward L. Goforth Jr. ('80 B.S.)
George A. Grozdits ('67 M.S., '70 Ph.D.)
Richard D. Lunsford ('63 B.S.)
Cloyd Crockett Morris Jr. ('57 B.S.)
Susan Lambert Odell ('73 B.S.)
Sarah Brown Steuteville ('94 M.S.)
Bertram O. Taurman Jr. ('52 B.S.)
Harold A. Trumbo ('63 M.S.)

Matt Lacey inspires Leadership Institute students to support community enrichment efforts in remote Ecuadorian community

When wildlife conservation major Matt Lacey visited Ecuador in summer 2016 with a study abroad course, he was struck by the beauty of the place: the lush cloud forests, brightly colored birds, and strange nocturnal mammals. But even more, he was struck by the people.

While there, Lacey met Danny Gualinga, who served as the student group's birding guide. Gualinga is a member of the Kichwa, a tribe with limited contact with the outside world; the nearest town is three hours upriver by motorized canoe. Unlike many young Kichwa, Gualinga decided to stay in his village to help expand the community's capabilities without diminishing its cultural heritage.



Meeting members of Ecuador's Kichwa tribe had a profound impact on wildlife conservation major Matt Lacey. Here, he holds a turtle hatchling that is part of the Kichwa's captive propagation and release program.

Gualinga founded the nonprofit Llikchary Institute to raise money to improve schools, increase instruction in technical trades, and facilitate an appreciation for the tribe's rich history and culture. "I want to give the young people in the village the opportunity to acquire skills, which enable them to build their future and that of the village," he wrote.

He is also passionate about hosting international visitors because it gives them "the opportunity to engage with us in a meaningful way by using their skills to get involved in the construction of our and their own future."

Lacey was struck by Gualinga's commitment to his community. "His passion for the Kichwa is so strong and their needs are so great that I knew I had to do something to help."

That fall, Lacey entered the college's Leadership Institute, a two-semester professional development course. He pitched the idea of raising money for the Llikchary Institute for his team's capstone project and was thrilled when his peers agreed.

The student team set a goal of \$5,000 to help two Kichwa students attend the university in Quito, pay for a boat license needed to take the students to the school, and fund a stipend for international volunteers to serve in the community. Under the name "Hokies for the Amazon Kichwa," the team created Facebook and GoFundMe pages. In addition to online fundraising, the team hosted restaurant fundraiser nights in Blacksburg and gave educational presentations across campus.



Danny Gualinga (right) and a community member gave the study abroad group a tour of one of their classroom buildings.

When Lacey first proposed the project, fellow team member Henry Cohen was skeptical. The mission of helping an entire group of people thousands of miles away with only a few months to prepare and limited resources and contacts seemed daunting. And it was a struggle for the team's six students to find time to meet each week. However, by the conclusion of the project, Cohen said it was incredible to look back and see how far they had come.

The team raised more than \$2,000 for the Llikchary Institute by the end of the spring 2017 semester. The GoFundMe page remains active, having reached a total of \$3,225 by press time.

"Working so closely with five other people over the course of two semesters taught me so much about leadership in a way that a typical classroom course could not," Cohen said. "This was not the type of group project where we could meet once or twice, make a Google doc, and finish it up the night before it was due. We had to call each other out when we weren't carrying our weight. I used to pride myself with being a pretty independent person, but I saw how important it was to let go of my pride and work alongside others for a common goal."

Team member Tristan Jilson added, "While working on the project, we faced challenges, such as public outreach and realistic goal setting. I learned that getting your message across to just a handful of people and ensuring they understand the issues can make a bigger difference than trying to spread your message to as many people as possible. Our speaker nights were important because we got the chance to sit people down, talk about the issues, and answer questions."

Leadership Institute Director Brian Bond said he was proud of this cohort's dedication to their projects and the skills they acquired. "Matt had to sell his idea to get five students interested," Bond said. "He used his leadership skills to communicate his vision of what the project was, and then the team had to figure out how they were going to achieve the goal. They had to use their tools of leadership to come together. It's wonderful to see how the students grow throughout these experiences."



Among the many animal species the group encountered in Ecuador, hoatzins are prehistoric birds — chicks are born with claws on their wings.



Danny Gualinga (front row, in blue shirt), who served as a birding guide for the Ecuador study abroad group, founded the nonprofit Llikchary Institute to improve education, employment, and cultural opportunities in his community.

LEARN MORE

Search for "Hokies for the Amazon Kichwa" on Facebook.com or GoFundMe.com.

Did you know?

Cheatham Hall houses a natural history museum containing thousands of specimens! See the article on p. 6.



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310 West Campus Drive
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