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FREC Faculty Part of Team to Forecast Water Quality with National Science Foundation Support

Thanks to a team of scientists with the Global Change Center at Virginia Tech, predicting drinking water quality will be a reality for public utility managers.

A $1 million National Science Foundation (NSF) grant was awarded to the team, led by Cayelan Carey in the Department of Biological Sciences, to develop a system that can create a real-time water forecast similar to weather forecasts and that will be used at the Falling Creek Reservoir near Roanoke. The system will collect multiple real-time environmental datasets along with local weather predictions and a state-of-the-art reservoir model forecasting future water quality.

Quinn Thomas is leading the design and implementation of the computer modeling system that will forecast water quality based on sensor data collected at the reservior. The forecasting approach is a similar technique developed by Thomas that forecasts the growth of loblolly pine forests in order to better inform land management in light of global change.

Michael Sorice is working with water managers to understand how the new scientific data and technology could best be implemented into their daily routine. In addition, he will examine public perceptions of this new technology and its effect on public trust in the water authority.

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Photo credit: Cayelan Carey

In This Issue:

COLLEGE OF NATURAL RESOURCES AND ENVIRONMENT
VIRGINIA TECH

From the Department Head

Jay Sullivan

Keeping the forest land in the land grant

Over the recent break, while I was preparing for an upcoming faculty retreat, I had the opportunity to read about the land grant mission that was the basis for the establishment of Virginia Tech and many other state universities around the country. The fundamental concept of that important mission is to provide ”practical education” for all people “in the several pursuits and professions of life” (Morrill Act of 1862). We in FREC are proud to be a continuing part of that vision, and proud that we’ve been recognized at a national level for our efforts in that regard.

But reading more deeply into Representative Justin Morrill’s motivations, I found it noteworthy from his impassioned 1858 speech in which he was first advocating for his “Bill Granting Lands for Agricultural Colleges” that he believed we never should be complacent about two things: 1) that we ever continue to build on what has been passed down to us, and 2) that “we present our land better than we found it.” It strikes me that all of us who work in FREC, as well as our alums and friends, would do well to be measured positively according to Morrill’s land grant ideals: always building on what we ourselves have received, and passing on the land about which we study, and on which we practice and we play, as “better than we found it.” What a two-fold challenge for those of us impassioned by this profession and its resources. For me personally his sentiments sum up what I see as the responsibilities of being a part of our program and being in our profession.

In FREC, we are given so many opportunities to build on not only an extraordinary program that has been handed down to us, but even more importantly, the opportunity to build into the lives and career paths of the students who come our way the professional skills and ethics that will serve them well, and which will wellserve our communities, our Commonwealth, and likely far beyond. And for all of us who teach about, conduct research on, and practice on our land and natural resources, we carry the legacy for future generations to demonstrate what it truly means to ensure that our forests and environment indeed are passed on in an even better condition than we received them.

In his speech, Morrill went on to express his desire that we would “have such colleges as may rightfully claim the authority of teachers to announce facts and fixed laws, and to scatter broadcast that knowledge which will prove useful in building up a great nation—great in its resources of wealth and power, but greatest of all in its intelligence and virtue.” I find it difficult to argue with that vision, and we in FREC at Virginia Tech invite and appreciate your partnership with us in pursuing these important goals, and in keeping forest land in the “land grant.” Please don’t ever be afraid to challenge us where we need to be challenged, but also to support us where we could grow.

The year 2017 marked the 25th anniversary of the establishment of the College of Natural Resources and Environment, although the college’s roots date back to the 1930s. Some 250 alumni, students faculty staff, and friends came together to celebrate the anniversary, which was a huge success.

Celebrations included casual gatherings, festivities where students engaged visitors of all ages in activities and demonstrations, and a business-casual reception.

Welcome New Faculty and Staff

Adam Coates joined the Department of Forest Resources and Environmental Conservation in August 2017 as an Assistant Professor of Forest Fire Ecology and Management.

Coates is a forest fire ecologist with research interests in fire's effects on ecosystem properties and processes, fire behavior, and forest restoration. He is a member of the Southern Blue Ridge Fire Learning Network's Steering Committee and a member of the Association for Fire Ecology, International Association of Wildland Fire, Society of American Foresters, and Soil Science Society of America.

Coates was a Graduate Instructor of Record at Clemson University before joining Virginia Tech in the fall of 2017. He received his B.S. in Forest Resource Management and M.S. and Ph.D. degrees in Forest Resources from Clemson University. His Ph.D. research was stationed at the Baruch Institute of Coastal Ecology and Forest Science, where he investigated the long-term use of prescribed fire as a management tool in longleaf pine forests at the Tom Yawkey Wildlife Center in Georgetown, South Carolina. Coates' current research focuses on the use of prescribed fire in long-term fire excluded forests in the southern United States and the potential impacts of fire on surface water quality, soil carbon storage, and forest health. His teaching responsibilities include both undergraduate and graduate courses in wildland fire ecology and management.

Stella Schons joined the Department of Forest Resources and Environmental Conservation in August 2017 as an Assistant Professor in International Forest Economics and Management, after completing her Ph.D. in that same area.

Schons' research has been in the field of development and conservation in the Amazon, focusing on modeling natural resource conservation and management decisions (particularly forests and fisheries). She also has experience working with community forestry and business planning for both timber and non-timber forest products, and with sustainable development policy. When not at work, She enjoys adventuring with her husband or playing the piano.

Reilly Henson joined the Department of Forest Resources and Environmental Conservation in November of 2017 as a Project Manager working with Kelly Cobourn.

She helps to manage a large, interdisciplinary research project investigating how humans interact with lake ecosystems. Her academic interests include environmental communication, human behavior change, and species conservation. Henson earned her B.S. in Biology from the College of William and Mary, and her Master's of Environmental Management from the Duke University Nicholas School of the Environment.

Highlights: Teaching - Research - Extension

Global Change Center Researchers to Forecast Water Quality with National Science Foundation Support

(continued from front page)

The team found that pumping additional oxygen into the bottom water of reservoirs can keep high levels of iron and manganese in sediment safely locked up in the sediment, even if temperatures warm. Key to these findings were team members Madeline Schreiber, Virginia Tech College of Science, and John Little, Virginia Tech College of Engineering.

The team of research ecologists, social scientists, geologists, and engineers also includes the project leader, Cayelan Carey in the College of Science at Virginia Tech, and partners at North Carolina State University and the University of Florida.

New Inventory of 9,000 Campus Trees to Guide Virginia Tech Planning Decisions

An inventory of nearly 9,000 trees on the Virginia Tech campus will be used to monitor tree health and growth, helping university planners make decisions about development.

Data collection on campus trees began in 2006 by **Eric Wiseman**, and over the next four years, urban forestry students inventoried most of the trees within the campus' central core. These data were then entered into an online web map. While this web map is still active, data may not be completely accurate due to death of trees, conditions, and new trees being planted.

In conjunction with the Office of University Planning within the Facilities Department, Wiseman recruited **Peter Stewart**, a graduate student in urban forestry from Tennessee, to work on the project. Stewart has inventoried more than 3,500 trees on campus since August 2017, identifying, photographing, measuring, and evaluating each for health and structure before uploading the new information to the campus database.

Jack Rosenberger, University Planning's Landscape Architect, has indicated that the data will not only expand the inventory of trees on campus but 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 can keep track of it in that system," he said.

While implementing development of new facilities on campus, the inventory will also be used in decision-making about construction and landscaping. Other uses of the inventory are also being considered.

Stewart believes that the new map being built will be useful as a snapshot of overall health and composition of forests and help the university make good decisions going forward about planting and preserving issues.

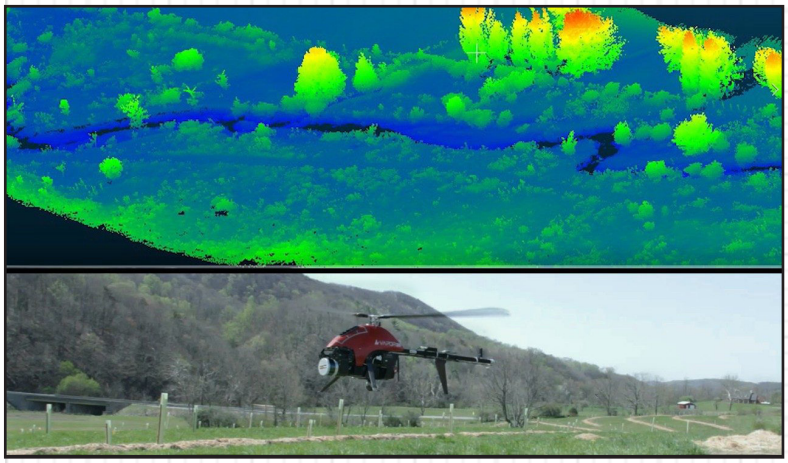
Highlights: Teaching - Research - Extension

Forest Modeling Research Cooperative Annual Meeting Held

The 39th Annual Meeting of the Forest Modeling Research Cooperative (FMRC), hosted by Weyerhaeuser Company and Molpus Timberlands, convened in Hattiesburg, MS, December 6-7, 2017. A morning field trip with about 30 participants representing the forest products industry visited forest management thinning and pruning activities in loblolly pine plantations growing under intensive management. Following lunch, the group met indoors for a workshop on forest inventory and sampling. Virginia Tech faculty and graduate students and FMRC affiliate member Dr. Steve Knowe demonstrated a new forest sampling simulator that provides managers with a tool for testing efficiency of different inventory designs and sampling intensities for estimating and projecting forest stand productivity. During the indoor session on the second day, Virginia Tech personnel **Harold Burkhart** and **Ralph Amateis,** along with FMRC members and visiting scientists, summarized collaborative efforts to develop growth and yield models for intensively managed loblolly pine plantations in North and South America. Research plans and goals for the coming year were established.

The mission of the FMRC is to develop tree growth and stand development models that advance the science of forest modeling and provide land managers with decision support capabilities needed to practice economically viable and environmentally sustainable forest management.

Drones Help to Map and Reforest a Virginia Tech Property



A drone's-eye view of the Catawba Sustainability Center plus LIDAR (light detection and ranging) technology enable creation of computer visualizations, above. The meticulously detailed topography maps will be accessible to anyone doing projects at the center.

Even as the lure of mastering agroforestry practices inspires Virginia Tech students by the dozens to plant trees on Virginia Tech's 377-acre Catawba Sustainability Center, sky-high drones complement the earthbound digging.

More than four separate research projects involving drones and LIDAR technology touch on water-quality protection, food harvests from fruit and nut trees, wetlands restoration, and more.

Faculty members central to the projects include **John Munsell,** who leads $1.4 million in grants to expand uses of agroforestry to produce farm-and-forest products while practicing conservation, Cully Hession of the College of Agriculture and Life Sciences, and Nicholas Polys of the College of Engineering.

Entities underwriting the research include the National Fish and Wildlife Foundation, USDA Natural Resources Conservation Service, Virginia Department of Forestry, USDA National Agroforestry Center, the Dominion Foundation, and Outreach and International Affairs at Virginia Tech.

Highlights: Teaching - Research - Extension

Fieldwork on the Pacific Crest Trail (PCT) in California

l-r: Jeff Marion, Jeremy Wimpey, Fletcher Meadema, Johanna Arredondo, and Mitch Rosen

Adjunct Professor **Jeff Marion** and co-investigator and past FREC Ph.D. student **Jeremy Wimpey** conducted fieldwork on the Pacific Crest Trail (PCT) in California this summer with graduate students **Johanna Arredondo** and **Fletcher Meadema** and undergraduate assistant **Mitch Rosen**. They investigated camping impacts and sustainability through fieldwork conducted along the PCT near the Mexican border and in the Inyo National Forest, Sequoia-Kings Canyon National Park, and Yosemite National Park. Their investigations were focused on areas of particularly high camping use and impact to examine problems such as campsite proliferation, expansion, and vegetation loss. The study is developing new guidance for improving sustainable camping management practices along the PCT. Some of the work was conducted in the popular Mt. Whitney portal zone and surrounding areas, so the crew had an opportunity to summit Whitney.

A sham "posed" photo of graduate students hard at work measuring a PCT campsite. Data were recorded using a Trimble GPS and a smartphone data entry app.

Natural Resource Conservation Students Advise Virginia State Parks

Four students majoring in Natural Resource Conservation recently advised the Virginia State Parks on improving the visitor experiences of millennials in state parks. In a semester-long study, **Julia Conners, Angie Green, Haleigh Martin**, and T**om Prior** evaluated park facilities, recreation opportunities, and the digital presence of the state parks.

The students presented their insights to the Virginia State Park Leadership Team in December, 2017. **Michael Sorice** and Master's student **Kiandra Rajala** directed the independent study.

Highlights: Teaching - Research - Extension

Virginia Tech as an Observer Organization at the United Nations Framework Convention on Climate Change (UNFCCC) - COP 23

The 2017 Climate Change Conference (COP 23) was hosted by the government of Fiji, in Bonn, Germany, from November 6-18, 2017. Virginia Tech was granted observer status at the United Nations Framework Convention on Climate Change in 2017 and, for the first time, participated in the climate change negotiations as an observer organization.

Students Katherine Bland and Hannah Wynne with FREC faculty Carol Franco and Randy Wynne

The observer status at the climate change negotiations gave Virginia Tech the opportunity to showcase its work in climate change through side events and panels; make technical submissions, based on expertise, to guide policy; and participate in open sessions. Furthermore, Virginia Tech was able to take students and expose them to high-level global climate change policy making, present their research, network, and access potential future work opportunities.

Carol Franco and **Randy Wynne** from FREC participated in the climate change negotiations in Bonn, together with two Virginia Tech students from the Climate Change and the International Policy Framework course (FREC 5984). Hannah Wynne, a sophomore student working on a Bachelor's degree in Arts and English, and Katherine Bland, a Master of Science student in Biological Systems Engineering, had the opportunity to experience first-hand the climate change negotiation process and followed the topics of gender and climate change and renewable energy.

Some of the main outcomes of COP 23:

- Talanoa Dialogue: Initiative to accelerate climate action in order to meet the goal of the Paris Agreement (PA) of limiting the increase in global average temperature. In order to achieve this, the 1st stocktake – inventory will be held at COP 24 in Poland to report and assess current National Determined Contributions and increase their ambition.
- The goal to increase and strengthen more ambitious actions pre-2020: Urgency to focus on advancing pre-2020 adaptation and mitigation actions to achieve the temperature goal.
- The commitment by developed countries to mobilize US $100 billion per year by 2020 to mitigate GHG was reiterated.
- The Green Climate Fund (GCF) announced the Simplified Approval Process for access to financing to carry out mitigation and/or adaptation actions with a cap of US $10 million.
- America's Pledge on Climate Change: California Governor Jerry Brown launched this initiative at COP 23, which aims to quantify the GHG emissions reduction efforts of states, cities, businesses, and other stakeholders.
- The role of cities local approach: Mayors of 25 cities of the world (including Boston, Los Angeles, New York, Philadelphia, and Portland) committed to the goal of producing zero net emissions by 2050, supported by the "C40 Cities" network, a network of cities committed to addressing the impacts of climate change.

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Virginia Ranks Third on 2017 Champion Trees National Register

The Virginia Big Tree Program, which began in 1970 and is based in FREC, maintains a register of the commonwealth's largest specimens of over 300 native and nonnative tree species and works to educate the public about the value of trees and forests.

Among Virginia's national champion trees is this tuliptree yellow-poplar in Chesapeake. Photo by Gary Williamson.

Virginia is now in third place on the 2017 American Forests Champion Trees national register, with 74 national champion trees. Virginia gained 21 new champion and co-champion trees in 2017, more than any other state. Several trees were also dethroned when larger champions were crowned.

Eric Wiseman, coordinator of the Virginia Big Tree Program, combed through records and nominated any tree he thought might be a contender. "We had a very significant change this year in our numbers. In several cases, we had trees on our Virginia register that we hadn't realized were bigger than the current national champ," he said.

For Wiseman, education and outreach are the real mission of the Virginia Big Tree Program. "Even if you're not that interested in trees, it's hard to find someone who can't appreciate a large champion tree," Wiseman said. "If people can at least identify with them, then you've got a foot in the door to have a conversation about the importance of forest conservation more broadly."

The American Forests Champion Tree national registry is updated each year and lists the largest trees in the country for more than 660 species including only certain species of native and naturalized trees being eligible. Eligibility for the register also states that trees must be at least 9.5 inches in circumference and at least 13 feet in height. A tree's size is based on a formula that includes trunk diameter (measured 4.5 feet above the ground), height, and the average spread of the crown, or upper branches. From these three measurements, a point value is assigned to each tree. The trees of each species with the most points are named champions.

l-r Gary Williamson, Eric Wiseman, and Byron Carmean

In September 2017, the Virginia Big Tree Program was honored by Scenic Virginia, a conservation organization dedicated to the preservation and enhancement of Virginia's scenic beauty, with the Paul F. Revell Scenic Trees Award. Revell, one of the founders of and a driving force in developing and expanding the Virginia Department of Forestry's Urban and Community Forestry Program, passed away in 2016.

"It was really special to me because I knew Paul well," Wiseman said. "He was so passionate about making sure that trees and people can co-exist. He worked diligently to uplift just about any program associated with trees, and he was always quick to step up and speak for the Big Tree Program. He seemed to enjoy and appreciate the big trees, but he also saw the value of the program for the general citizenry."

Wiseman hopes that the program can continue to inspire landowners and citizens to preserve big trees in their communities. Recently, the program has inspired several communities to take stock of their own big trees and even consider them in policymaking decisions.

Highlights: Teaching - Research - Extension

News from Reynolds Homestead: K2C: Kindergarten 2 College

The Henry County schools Stem Camp was hosted by the Reynolds Homestead. As part of the camp, students learned how to use pacing, geometry and tables to estimate the economic value of a 4-acre loblolly pine stand.

The College Access Collaborative at Virginia Tech sponsored a two-day college awareness and interactive STEM experience in June 2017 at Reynolds Homestead for 70 Henry County students in grades 4-8.

On the first day of the camp, students experienced an Intro to College presentation followed by STEM activities led by Reynolds Homestead staff, Forestry Department staff, and partners such as the Institute for Advanced Learning & Research. The second day included a trip to Blacksburg to tour Virginia Tech's campus, where students visited the Ware lab, the Cube, and explored the Game Changineer software.

Virginia Tech's College Access Collaborative is an organizational unit dedicated to college access. Consistent with Virginia Tech's land-grant mission, institutional motto (Ut Prosim, That I May Serve), and InclusiveVT initiative, the university is committed to supporting and enhancing a more diverse undergraduate student body. Currently, Virginia Tech serves the commonwealth through partnerships with communities in low high school attainment and low matriculation to post-secondary education.

Learning Lessons From Nature: Research Center Helps People Understand the Forest

The Forest Resources Research Center at the Reynolds Homestead, located deep within Patrick County, is almost 800 acres of land dedicated to helping people understand trees and forests. **Kyle Peer** is the superintendent.

The Forest Resources Research Center is one of 11 agricultural and research extension centers of Virginia Tech, Peer said. The center at the Homestead is part of the College of Natural Resources and Environment, and the other 10 are under the College of Agriculture. The purposes of the center are: to help maintain the 780 acres there; to assist with the research of any faculty or staff from Virginia Tech; and to distribute the results of forestry research "to the commonwealth and the folks who can use it," ranging from forest landowners to scientists to schoolchildren, Peer said.

Kyle Peer is the Superintendent of the Forestry Research Center at Virginia Tech.

The center has active research projects going on and the number of projects changes based on the needs of the students. Also, groups of students are hosted from the local area schools and the center caters its programs to match the state Standards of Learning. Students learn about habitats, forest management, wildlife and water.

The center also offers workshops for the general public. Peer leads forestry and wildlife tours and conducts training sessions for Virginia Master Naturalists.

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Learning Lessons From Nature: Research Center Helps People Understand the Forest

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The center is also used to teach and train loggers in Virginia under Virginia Tech's SHARP Logger Program. The SHARP logger program's purpose is to "train every logger and forester in the Commonwealth in the principles of sustainable forestry, environmental protection and workplace safety."

The loblolly research forest at the Reynolds Homestead was planted in 2009. The trees were big enough to begin studying last year, when this data-collection equipment was put in. The same equipment is set up in loblolly forests in Brazil and North Carolina.

Some of the current projects in the woods at Reynolds Homestead include work on how to reduce erosion on roads, how to cross streams with the least damage to the streams and surrounding areas, and how to reintroduce trees along waterways after bridge construction. A Forest Productivity Cooperative (FPC) study looks at why loblolly pines grow better in Brazil than in their native central North Carolina – and in Virginia, where climate and soil conditions are similar. The FPC study is being conducted by researchers from Virginia Tech and other southern universities, universities in Brazil and Chile, and some industry cooperators.

"The money is pooled. We can answer the question together and share the answer," Peer said. Much of the work is by the U.S. Forest Service, he said, and the equipment belongs to them: "They are the primary researchers. We are here to assist."

Many people do not understand foresters and what motivates them, Peer said. "Foresters truly do care about the environment. It's the reason we went into this, forestry. When people drive by a clearcut, they see it as damage to the environment. Clearcut is just one of the tools to manage a forest. "We use tools and science when we do what we do" to create different types of habitats and to protect the environment and nature, he continued. "We do it because we're passionate about nature and forests, and our goal is always to leave the forest better than we found it."

While part of the goal is to protect nature, he said, he hopes that people "also understand that the world needs natural resources, (such as) timber and fiber." Foresters "create a balance for future generations of recreation, nature and wood."

Virginia Tech as an Observer Organization at the United Nations Framework Convention on Climate Change (UNFCCC) - COP 23

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Some of the main outcomes of COP 23 *(continued):*

- Platform for indigenous peoples and local/traditional knowledge: This platform was created with the aim of "strengthening the knowledge, technologies, practices, and efforts of local communities and indigenous peoples" to confront the impacts of climate change and thus facilitate the exchange of experiences, best practices, and lessons learned on mitigation and adaptation in a holistic manner."
- The Ocean Pathway Strategy: This initiative calls for the integration of the oceans in the UNFCCC process due to their importance for climate change. It highlights the inclusion in the NDCs of adaptation and mitigation actions in the oceans.

Spotlight: Faculty - Staff - Students

Randolph Wynne Earns National Recognition for Remote Sensing Applications in Forestry

The Society of American Foresters recognized **Randy Wynne's** research in remote sensing applications that have resulted in significant advances in forestry with the society's annual Award in Forest Science.

This award recognizes distinguished individual research in any branch of the quantitative, economic, managerial, and/or social sciences that has resulted in substantial advances in forestry. The award includes a $1,000 honorarium, one complimentary SAF convention registration, and up to $500 to offset travel expenses. The award is presented at the SAF national convention.

Wynne has been principal or co-principal investigator of research funding exceeding $7.5 million, most of which has come from competitive sources. His research has addressed two main themes: improving accuracy of land-use and land-cover classifications, and applying the remote sensing method LIDAR (Light Detection and Ranging) for forest monitoring and modeling. Direct results of the research include better ways to identify forests and the natural and anthropogenic changes that affect them, plus improvements to spatially explicit information that improves silvicultural decision-making.

In addition to his academic and research roles, Wynne actively engages in collaboration among researchers and practitioners around the world. A highly sought speaker on remote sensing, he has presented at numerous scientific conferences, technology transfer workshops, and meetings in the U.S. and abroad. Wynne earned his bachelor's degree from the University of North Carolina-Chapel Hill and his master's and doctorate from the University of Wisconsin-Madison.

Susan Day Honored with Top Arboriculture Research Award

The L.C. Chadwick Award of Arboricultural Ressearch was awarded in 2017 to **Susan Day** by the International Society of Arboriculture. The award is given to individuals recognizing their investigation and analysis and its valuable contribution to arboriculture.

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. I applaud his ability to 'think big' and imagine a future that builds upon past achievements in arboriculture," said Day, who received the society's Early Career Scientist Award in 2010.

With more than 30,000 members worldwide, the International Society of Arboriculture 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. She is a faculty member in the FREC department and also has a joint appointment in the College of Agriculture and Life Sciences' Department of Horticulture. Day earned her bachelor's degree at Yale University, her master's at Cornell University, and her doctorate at Virginia Tech.

Spotlight: Faculty - Staff - Students

FREC Fall 2017 Graduates!

Herman Petzold, III - Ph.D.

Stella Schons - Ph.D.

Anthony Timpano - Ph.D.

Welcome New Graduate Students!

Thomas Cianciolo

Chris Dukes

Gracie Erwin

Leah Fitchett

George Hahn

Rachel Hammer

Hannah Lee

Wyatt McCurdy

Daniel Pratson

Samuel Scott

Peter Stewart

Tyler Weiglein

Philadelphia Wilkens

Paige Williams

Alumni Corner

Bettina Ring to Head Virginia Agriculture, Forestry

Bettina Ring has been appointed the Virginia Secretary of Agriculture and Forestry by Governor Ralph Northam. She previously was appointed State Forester by Governor Terry McAuliffe in 2014.

Prior to that, Ring served as Senior Vice President of Family Forests at the American Forest Foundation where she was responsible for overseeing the American Tree Farm System®, the largest and oldest sustainable woodland program in America, supporting more than 80,000 family forest owners collectively managing 27 million acres of certified woodlands.

Ring has a long history in the conservation and forestry sectors, having spent 14 years at the Virginia Department of Forestry, departing the agency in 2001 as Deputy State Forester. In her role, Ms. Ring was responsible for operations, and helped to develop and implement a new mission, vision, and strategic plan for the department. In the years following her Department of Forestry service, Ms. Ring held various leadership positions with nonprofit organizations focusing on natural resources management and conservation, including the Colorado Coalition of Land Trusts, The Wilderness Land Trust, and the Bay Area Open Space Council.

Ring holds a bachelor's degree in Forestry and Wildlife from Virginia Tech and a master's degree in Business Administration from James Madison University.

Alumni Corner

Robert Farrell Appointed Virginia State Forester

Robert Farrell has been appointed State Forester by Governor Ralph Northam. Farrell worked for VDOF for 18 years before becoming State Forester of Virginia. He began his VDOF career as an area forester, and then held the position of Assistant Director of Forestland Conservation before taking on the role of Deputy State Forester in 2012. Farrell also served as Acting State Forester of Virginia from January through April 2014.

Prior to joining the VDOF, Farrell worked as an arborist and urban forester in Maryland and Virginia. He is a Certified Arborist and currently resides in Albemarle County where he serves on the Board of the Albemarle Conservation Easement program.

"Governor Northam has stressed the importance of collaboration amongst state agencies, the importance of clean air and clean water, and the need to balance economic development with environmental protection," Virginia Secretary of Agriculture and Forestry and outgoing State Forester of Virginia **Bettina Ring** said. "Rob has strong relationships and is well respected within the forestry community, among landowners and the VDOF's many conservation partners. Under his leadership, VDOF will continue to demonstrate the importance of working forests in our environment."

Farrell is a native Virginian and a graduate of Virginia Tech with a master's degree in Forestry. He was selected by the Virginia Forestry Association as its Outstanding Member of the Year in 2017.

Kerri Cahill Recieves Social Science Achievement Award

The George Wright Society (GWS) Social Science Achievement Award is given in recognition of excellence in social science research, management, or education related to parks, reserves, and other protected areas.

Kerri Cahill ('03 Ph.D. Forestry), branch chief in the planning division of the National Park Service, was awarded the Imagine Excellence Award for 2017

Cahill has championed planning and research related to visitor use in parks and protected areas, and was a major driver behind bringing six disparate federal land management agencies together to form the Interagency Visitor Use Management Council.

Imagine Excellence, the GWS Awards Program, recognizes outstanding accomplishments in fields associated with research in, administration and management of, and communication about parks, other kinds of protected areas, cultural sites, and related supporting activities.

The five main awards are given every two years at the GWS conferences. In addition, a Special Achievement Award may be bestowed from time to time by the GWS Board of Directors.

The GWS awards consist of a plaque, payment of the winner's expenses to travel to the GWS conference, and a year's complimentary membership in the Society. Peer recognition is high and competition for the awards can be keen.

Gifts and Contributions

Gifts from our clients and friends have a direct impact on the quality of learning, discovery, and engagement programs that the Department of Forest Resources and Environmental Conservation offers. We invite you to become part of our team! To make a tax-deductible contribution, send your check, payable to the Virginia Tech Foundation, Inc., to: Department of Forest Resources and Environmental Conservation, 313 Cheatham Hall (0324), Virginia Tech, Blacksburg, VA 24061

For further information on memorial giving, endowed professorships, gifts of securities, planned or deferred giving opportunities or other contributions, please contact **Emily Hutchins**, Chief Advancement Officer, CNRE, 540-231-8859, or send an e-mail to ehutch@vt.edu.

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