

Spring 2014

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New Degree - Water: Resources, Policy, and Management



With its academic home in the Department of FREC, a new B.S. degree program was approved by the Virginia Tech Board of Visitors at its June 1-2 meeting. The proposal now goes to the State Council for Higher Education in Virginia for consideration.

The degree program, called Water: Resources, Policy, and Management, is about water as a resource from the life science perspective plus economics, policy, law, and management. The program will be coordinated by **Stephen Schoenholtz**, professor of forest hydrology and soils in the Department of FREC and the director of the Virginia Water Resources Research Center, along with an advisory committee representing faculty from 10 departments at Virginia Tech. "People from government agencies, private industry, international aid groups, and more are all saying they want to hire people who understand the science and the human dimensions related to water — policy, communication, and stakeholder issues," Schoenholtz stated. "There is a strong outlook for jobs to meet the growing needs for managing water," he continued. The new degree will address an expected 19 percent job growth in positions that require a comprehensive understanding of water issues.

All students in the program will take courses pertaining to water resources and environmental issues, physics, watershed hydrology, environmental science, water quality, and watershed assessment, management, and policy. In addition, they can select courses in water science, policy, law, planning, economics, and geospatial technology. The degree is expected to be offered for student enrollment in January 2015.

From the Department Head

Dear Alumni, friends, and supporters:

I am pleased to inform you that the Department of Forest Resources and Environmental Conservation had a great productive spring 2014 semester! We have featured selected accomplishments of our students, staff, and faculty in this issue. Let me share a few highlights with you.

After serving FREC and the College of Natural Resources and Environment at Virginia Tech since 1981, **Shep Zedaker** retired in December 2013. Both Shep and his wife Deb plan to sail extensively in the Atlantic Ocean. We wish them the best and an enjoyable retirement life! After a successful nationwide search, we were able to hire **Morgan Varner**, currently an Assistant Professor at Mississippi State University, to fill that position. He will be joining us in August 2014.

With outstanding help from **Stephen Schoenholtz** and support from the VT campus community, the 4-year degree in Water: Resource, Policy, and Management received the Virginia Tech Board of Visitors approval on June 2. As part of this initiative, we have hired **Daniel McLaughlin** as an Assistant Professor of Ecohydrology Modeling and Informatics. Daniel is currently a Research Associate at the University of Florida and will be joining us in October 2014.

With support from Ed Jones, Director of Virginia Cooperative Extension, and Paul Winistorfer, Dean of the College of Natural Resources and Environment, we have elevated **Scott Barrett** from Extension Associate to a tenure-track Assistant Professor and Extension Specialist in Forest Operations and Biomass Utilization. He has undertaken his new responsibilities starting January 2014.

FREC honored **Carl E. Garrison III**, for his outstanding service and leadership to the Virginia Department of Forestry (VDOF). The partnership of VDOF has been instrumental to the advancement of our teaching, research, and extension programs. We are happy to learn that one of our alumni, **Bettina Ring**, has been selected to lead the VDOF.

On behalf of FREC, I will take this opportunity to wish you and your families an enjoyable summer!



Dr. Janaki Alavalapati
Professor and Head
Forest Resources and
Environmental
Conservation

FREC Advisory Board Meeting

We had a very productive and successful FREC Advisory Board Meeting on April 8. Our sincere thanks to the advisory board for attending the meeting this spring. The Advisory Board's support, guidance, and commitment to our department and the college are greatly appreciated. Thanks to **Mr. Paul Revell** for his excellent leadership of the board and to **Mr. Easton Loving** for taking the charge to lead the board in 2014-15. Thanks also to **Mr. Mike Hinch** for his willingness to serve as the Chair-elect.

Welcome New Faculty/Staff



Timothy Albaugh joined the department in January 2014 as a Research Associate. He works with Tom Fox as the Data Manager/Analyst for the Forest Productivity Cooperative. Current projects include examining the effects of thinning and fertilization on loblolly pine and studying silviculture and spacing effects on loblolly pine where the confounding effects of genetics have been removed.

Tim received his B.S. in Biology from Juniata College, an M.F. in Forest Pathology from Duke University, and an M.B.A. from the University of North Carolina at Chapel Hill.



Kevin Horn is a post-doctoral fellow with the USGS John Wesley Powell Center for Analysis and Synthesis (link: <https://powellcenter.usgs.gov/>) working with Quinn Thomas. Kevin is interested in scaling ecological phenomena from biogeochemical processes to continental scales through collaborations in macrosystems ecological studies.

Kevin has returned to Blacksburg after earning a Ph.D. in Wildlife and Wildlands Conservation from Brigham Young University in Provo, UT. Outside of his research he enjoys spending time with his children in outdoor activities, sports, reading, and studying history.



Thomas Ochuodho joined the department in January 2014 as a Postdoctoral Research Associate in forest economics and policy analysis. Thomas is working with Janaki Alavalapati on bioenergy on the US-India Biofuels Research Project funded by the US Department of Energy.

His specific research in the US-India Biofuels Research consortium deals with economic analysis of bioenergy development in the US southeast.

Thomas is a native of Kenya and earned his B.S. in Forestry and his M.S. in Forest Economics and Management from Moi University (Kenya), and his Ph.D. in Forest Economics from the University of New Brunswick (Canada).



Mihir Mandal joined the department in March 2014 as a Postdoctoral Research Associate. He is currently working with Jason Holliday, and his current project involves applying Next-Generation Sequencing (NGS) to identify genetic variation relevant to local adaptation in trees, and to use this information to predict performance in a changing climate.

Mandal is from India and obtained his M.S. in Molecular Biology and Biotechnology from GBPUA&T, Pantnagar, India. He earned his Ph.D. in Plant Pathology from the Department of Plant Pathology, University of Kentucky, in 2012. He joined Virginia Tech in May 2012 as a Postdoctoral Fellow in the Department of Biochemistry. In his leisure time he enjoys hiking, playing volleyball, and soccer.

Highlights: Teaching - Research - Extension

Copenheaver Teaches In Australia

Carolyn Copenheaver served as an instructor at the International Dendroecological Fieldweek in Tasmania, Australia. She team-taught an advanced class in dendroclimatology and dendroecology with Dr. David Frank from the Swiss Federal Institute for Forest, Snow, and Landscape Research and Dr. James Speer from Indiana University. Their workshop included participants from Australia, Belgium, Brazil, China, Germany, and the USA. During the workshop, the participants worked on a research project that examined the differences in the dendroclimatic response of King Billy Pine vs. Celery Top Pine. The results were presented as a poster at the International Tree-Ring Conference in Melbourne, Australia. Copenheaver said she enjoyed working with researchers from so many different countries, but did not enjoy the terrestrial leeches that were ubiquitous in the Tasmanian bog forests.



Brooke Warrington, an Extension Program Assistant in FREC, helped organize visits to Cheatham Hall from eight elementary schools in Tazewell County. This was part of their 4th grade Career Awareness Day sponsored by Virginia Cooperative Extension.



100 2nd grade children from Collinsville Primary School came to **Reynolds Homestead** for the day on May 7. Topics covered with the children included forest habitat, uses for trees, how a seedling grows, and what a forester does. All of the children planted their own oak seed to take home.

FREC Future Intern Updates



It has been a productive spring for **John Haworth**, the Futures Intern. John has been continuing his visits with high schools and community colleges across the commonwealth. Some visits included guest lectures regarding the department's programs, Virginia forest resources, and career opportunities. Other activities include attending community college transfer fairs, career fairs for middle and high school students, facilitating activities for visiting elementary and middle school students to Virginia Tech's campus, and assisting the CNRE Academic Programs Office with on-campus student and parent visits.
(continued page 5)

Highlights: Teaching - Research - Extension

(continued from page 4) Recently, John assisted Virginia Tech's Student Success Center by hosting campus visits from the Achievable Dream Academy (ADA) located in Newport News, VA. ADA is a program that focuses on student success regardless of socioeconomic background. John also represented the department during the 2014 Virginia Forestry Summit hosted by the Virginia Forestry Association (VFA). Along with **Jeff Kirwan** and **Brooke Warrington**, John helped lead a series of interpretive walks through Stadium Woods for over 130 elementary school students. In the next few weeks he will be participating in promotional programs in the 4-H Congress at Virginia Tech and serving as a guest presenter to 4-H summer day camps in Shenandoah County. John has also been assisting with the design and production of FREC promotional materials, including a catalog highlighting FREC courses and an updated career book.

John is also assisting CNRE's Diversity and Inclusion Committee as a co-principal investigator for Unperceived Challenges: Reflections from First-Generation College Students. The project was funded through the Virginia Tech Office for Diversity and Inclusion's Inclusive Pedagogy Grant Program. The project is producing a series of video interviews from first-generation students and faculty within CNRE.

Annual Forestry Field Studies Tour



During the week of May 19th, 16 **Forest Resource Management and Forest Operations and Business** undergraduates participated in a five-day Forestry Field Studies Tour throughout Virginia. The group lodged at the Airfield 4-H Center in Wakefield, VA.

The tour, led by **Chad Bolding** and **Scott Barrett**, spent each day in the field visiting logging operations, touring mill facilities, examining field sites displaying a range of management strategies, and meeting with forestry professionals in numerous aspects of our profession. Students toured a chip mill, two pine sawmills, a pulp mill, a pellet

mill, a wood-fired power plant, and a plywood mill.

Students also visited both Piedmont and Coastal Plain sites with intensive pine silviculture bedding, numerous mechanized logging operations including shovel logging, micro-chipping, thinning, and high production clean chipping.

The Southeast Chapter of the Society of American Foresters, chaired by **Neil Clark**, held a joint meeting with the students and provided a BBQ dinner. In addition, Harrell Turner gave presentation encouraging the students to set priorities, work hard, and find a life/work balance. Thanks are due to our many hosts and company representatives making the trip a success!



Highlights: Teaching - Research - Extension

Symposium on Forestry Best Management Practice Effectiveness

NCASI, the Society of American Foresters, and FREC hosted a Symposium on Forestry Best Management Practice Effectiveness in the Eastern U.S. on May 12 in Blacksburg. Forty invited and volunteered technical presentations were presented, with topics including studies assessing effectiveness of best management practices (BMPs) related to streamside management zones, wetland harvesting, forest roads, skid trails and stream crossings, methods for assessing BMP performance, state and federal BMP effectiveness monitoring, BMP implementations, BMPs for woody biomass production, and other topics. A full-day field tour was led by **Mike Aust, Chad Bolding, Clay Sawyers**, and numerous graduate students. The tour highlighted several NCASI and forest industry funded projects.



FREC Graduate Research Symposium



The 6th Annual FREC Graduate Research Symposium was a huge success with 35 student presentations of several different disciplines coming together to build understanding around the theme “Resilience and Adaptation of Forest Ecosystems.”

This year we had the most participants we have had yet from within our own department and additionally students from the Horticulture, Fish and Wildlife Conservation and Psychology departments at Virginia Tech. Participants were invited from other regional universities and there were presentations by

students from the University of Tennessee-Knoxville, SUNY ESF, University of Georgia, North Carolina State University and the University of Virginia.

This year our keynote speaker was Dr. Dave White, an alumnus, who received his Ph.D. from FREC in 2002. Dr. White is currently an associate professor in the Arizona State University School of Community Resources and Development, and a principal investigator and co-director of the NSF-funded Decision Center for a Desert City. We were excited to have him present the keynote on the theory of boundary organizations and boundary tools, further supporting the goal of the symposium to help build connections and open the conversation among the different disciplines in our department.

We would like to thank the faculty and staff, within our department and others, who made this symposium possible by serving as judges. We would also like to congratulate this year’s winners, for poster presentations: 1st- Ksenia Brazhnik (Ph.D., UVA), 2nd- Andrew Kniowski (Ph.D., Fish and Wildlife Conservation), 3rd- Francisco de la Mota (M.S., Horticulture); and oral presentations 1st- **Pamela Braff (M.S., FREC)**, 2nd- Michael Cherry (Ph.D., UGA), 3rd- **Bethany Avera (M.S., FREC)**.

Spotlight: Faculty - Staff - Students

Congratulations - Faculty Promotions



Susan Day has successfully earned her tenure and promotion to Associate Professor. Her research and interests include urban forestry; urban soil management and soil carbon; stormwater management;

root/soil interactions; and interactions of trees with the built environment.



Kevin McGuire has successfully earned his tenure and promotion to Associate Professor. His research and interests include watershed, hillslope, and forest hydrology; runoff generation processes; tracer

and isotope applications in hydrology; land use and climate change effects on watershed processes and water quality; forest watershed management; and interactions between hydrology and biogeochemistry.



Steve Prisley has been successfully promoted to Full Professor. His research and interests include quantitative and spatial analyses of natural resources for management planning,

including modeling of forest carbon inventories, inventory projection for wood supply planning, and evaluation of uncertainty in spatial decision-support systems.



Valerie Thomas has successfully earned her tenure and promotion to Associate Professor. Her research and interests include remote sensing of forest canopy structure and function using lidar and

hyperspectral technology; integration of these data with micrometeorological measurements to model canopy-scale photosynthesis; and evaluation of the impact of local heterogeneity on estimates of carbon exchange.

New Tenure Track Position



With support from Dean Winistorfer of the College of Natural Resources and Environment and the Director of Virginia Cooperative Extension, Dr. Ed Jones, **Scott Barrett's** position changed from an Extension Associate to a tenure-track Assistant Professor and Extension Specialist in Forest Operations and Biomass Utilization and became effective January 10.

This will significantly enhance our capabilities to serve the needs of our forestland owners and forest industry in the Commonwealth of Virginia and beyond. Scott will be located in 228 Cheatham Hall.

Spotlight: Faculty - Staff - Students

Student and Faculty Win Poster Competitions



Sarah Daman (Class of 2014, Major: Natural Resources Conservation) won first place for her poster at this year's Deans' Forum on Global Engagement. Sarah presented a poster of her undergraduate research project exploring incentives for forest conservation in the Peruvian Amazon (Advisor: **Michael Sorice**).



John Kidd, Project Associate, was awarded first place and \$500 as the winner in the Forest Science and Technology Board student poster competition at the annual convention.

The Society of American Foresters Forest Science and Technology Board supports awards to student speakers as a means to promote dissemination of research results and information and to encourage student participation in their professional society.

CNRE Spring Awards Banquet

Several prestigious awards to our departmental faculty, students, and alumni were announced at the CNRE spring awards banquet. They are listed below by category:

Faculty Awards:

Dr. Eric Wiseman received the Outstanding Faculty Award

Graduate Student Awards:

- **Nathan Hanzelka**, M.S. Forestry and treasurer of FGSA, was awarded Outstanding Student Organization Member
- **Drew Cockram**, M.S. Forestry and president of the Society of American Foresters, was awarded Outstanding Student Organization Member
- **Won Hoi Hwang**, M.S. Forestry and treasurer of the SW Virginia American Society of Photogrammetry and Remote Sensing, was awarded Outstanding Student Organization Member
- **Nilam Kayastha** was awarded the A. B. Massey Outstanding Doctoral Student Award in FREC
- **Bethany Avera** was awarded the H. E. Burkhart Outstanding Masters Student Award in FREC
- **Rajesh Bawa** was awarded the Outstanding Teaching Assistant award in FREC

Undergraduate Student Awards:

- **Paul Decker**, senior majoring in both environmental resources management and natural resources conservation and secretary of the Forestry Club, was awarded Outstanding Student Organization Member
- **Alyssa Hamill**, junior majoring in environmental resources management and secretary of the Forestry Club, was awarded Outstanding Student Organization Member
- **Wesley Johnson** was awarded Outstanding Senior in FREC
- **Paul Decker** shared the David Wm. Smith Leadership Award in FREC

Alumni Award:

- **Dr. Jeremy Stovall** ('10 Ph.D.) was awarded the Recent Alumni Award - Graduate Degree

Student and Student Club Information

VT Forestry Club Hosts Annual Southern Forestry Conclave Competition



Congratulations to the **VT Forestry Club** for hosting the **Annual Southern Forestry Conclave Competition** at Claytor Lake this past March. Conclave is a huge undertaking with over 250 students participating from the 14 Southeastern forestry schools and departments.

Congratulations to **Drew Cockram, Mason Thomas, Donnie Reese**, and the rest of the VT Forestry Club, who set up the physical events and arranged catering for the teams. Thanks also to **John Seiler, Randy Wynne, and John Peterson** for assistance with the technical events and to **Jay Sullivan**, who

helped with judging, timing, and logistical issues as they arose. A special thank you to **Jason Holliday** who has been serving as the Forestry Club advisor.

Many alumni, members of the local community, and VT faculty from the FREC department and beyond were in attendance among the spectators. The club from Stephen F. Austin University won the overall competition.

Starting in 1958, Forestry Conclave is the annual meeting and competition among Forestry Schools in the Southeastern United States. The purpose is to promote cooperation and friendly competition among the schools and to establish and maintain a high standard of ethics among students and professional foresters. Today, Forestry Conclave includes 14 southern forestry schools and more than 250 contestants. The events are composed of traditional timbersports events as well as technical events.



Students Form New Agroforestry Club



Students formed an **Agroforestry Club** in the fall of 2013. In April 2014 they received one of two John E. Dooley Student Engagement Grants from VT Engage for \$750 to install a food forest at the Hale-Y (YMCA) Community Garden. The club met with the YMCA garden coordinator and community gardeners at a potluck in May to discuss the food forest, where it would be located, and what fruits, nuts, vegetables, root crops, etc., the diverse group of gardeners would like included.

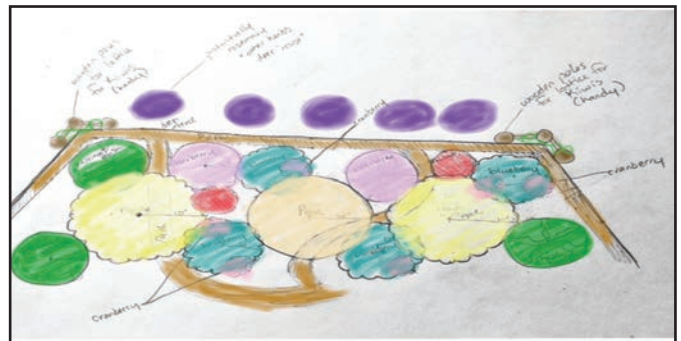
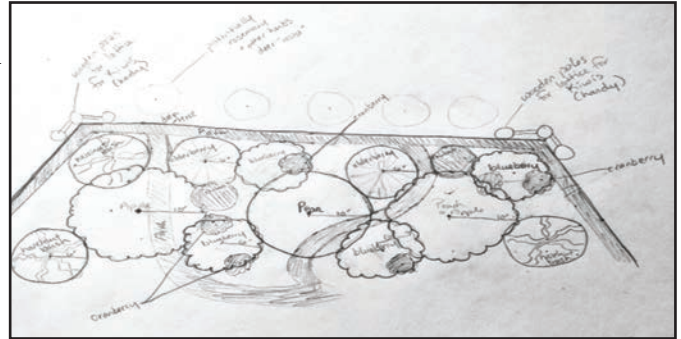
Food forest is modeled after a young forest structure which includes multiple layers both above and below ground. Those layers are filled with edible perennial plants like fruit and nut trees or shrubs. The harvesting will take place by community gardeners and their families and any excess will be harvested through programs with the YMCA so that food is distributed to those who can most benefit from it.

(continued on page 10)

Student and Student Club Information

(continued from page 9) The food forest will be installed in stages. The first stage was completed June 12 and is located within a fence in a part of the community garden plots so that it will be protected by deer. Three hazelnut, two hardy kiwis, two elderberries, six cranberries and four blueberry bushes were transplanted.

The club will be installing two more stages during the fall as well as providing a workshop on food forests and the use of the species that have been planted. Anyone interested in joining the club, or just coming out to help, are welcome to contact **Cathie Bukowski** (FREC) at cjbukows@vt.edu for more information. **Keith O'Herrin** (FREC), Samuel Barnes (Civil Engineering), Gabe Pent (Crop and Soil Environmental Sciences), **Steve Kruger** (FREC), **Katie Trozzo** (FREC) and Matthew D'Aria (Department of Human Nutrition, Foods, and Exercise) have been helping with the project.



Forestry Graduate Student Association Updates

The Forestry Graduate Student Association (FGSA) recently elected new officers: **Ben Ahlswede**, Co-President, **Nathan Hanzelka**, Co-President, and **Keith O'Herrin**, Treasurer. The club thanks their past co-presidents, **Bethany Avera** and **Brett Rivers**, for their leadership throughout these last two semesters and a special thank you to Bethany for her dedication to the success of the FGSA and her unprecedented service to the organization over the last two years. Her presence will be missed! The FGSA also raised over \$300 through their CNRE t-shirt and Hokie Oak tree sale fund raisers. Thank you to everyone who contributed to FGSA by buying a t-shirt or a tree!

Student Chapter of the American Society of Photogrammetry and Remote Sensing Place Second



The **student chapter of the American Society of Photogrammetry and Remote Sensing (ASPRS)** entered a team in a project on mapping ecosystem services in coastal Belize using Landsat imagery. The team placed second and was lead by Eric Guenther (third from left). Team members included Catherine Howey, Daniel Moore, Matthew Kopishke, Gina Li, and Matthew Vaughn.

The ASPRS club is a professional society that strives to advance the knowledge and improve understanding of mapping sciences and to promote the responsible applications of photogrammetry, remote sensing, geographic information systems (GIS), and supporting technologies.

Student and Alumni Corner

FREC Spring 2014 Graduates!

- | | | | |
|---------------------------|-------|-----------------------|-------|
| • Pamela Braff | M.S. | • Brett Heim | M.S. |
| • Kristopher Brown | Ph.D. | • Lele Kimball | M.S. |
| • Andrew Cockram | M.F. | • Andrew Neal | M.S. |
| • Steven Gaines | M.F. | • Regis Oubida | M.S. |
| • JP Gannon | Ph.D. | • Ram Thapa | Ph.D. |

Welcome New Graduate Students!

- | | |
|--------------------------------|---|
| • Ruba Bilal | Ph.D. with Drs. John Seiler and Brian Strahm |
| • Jill Derwin (IGEP-RS) | Ph.D. with Dr. Randy Wynne |
| • Holly Eagleston (GEA) | Ph.D. with Dr. Jeffrey Marion |
| • Keith O'Herrin | Ph.D. with Drs. Susan Day and Eric Wiseman |
| • Brian Parkhurst | M.S. with Drs. Mike Aust and Chad Bolding |
| • William Saulnier | M.F. with Dr. Chad Bolding |
| • Katie Trozzo | Ph.D. with Dr. John Munsell |

Alumni Passes Away Due to Kayaking Accident



John Wilburn ('06 B.S. and '12 M.S.) passed away on March 9 as the result of a kayaking accident on the Upper South Fork Smith River in northern California. John was employed by the State of Oregon as a Natural Resource Conservation officer with the Forest Service at the time of the accident. He is survived by his wife Erin, parents, grandparents, and many other family members and friends.

Glenn Gravatt (Forestry and Wildlife '79) has retired from his position in the U.S. Fish and Wildlife Service as the Branch Chief of Conservation Science and Policy Training. Glenn was responsible for overseeing curriculum at the National Conservation Training Center in terrestrial and aquatic ecology, including habitat management and restoration; conservation policy, laws, regulations, and landscape planning; and spatial data management and data analysis, including modeling and statistics.

Brad Miller ('09 Ph.D. Forest Soils) was named Junior Employee of the Year at NEIC for bringing boundless energy, creativity, and dedication to OECA's mission after being with the company for less than a year. NEIC sites Brad as being an invaluable team member and has proved himself as an accomplished scientist becoming active in multiple workgroups and publishing four peer reviewed journal articles on the speciation of metals, such as arsenic, lead, silver, and zinc, and one on the effect of phosphate as a soil amendment for lead remediation. Beyond this, Brad identified and solved instrument problems precluding the need for expensive vendor service visits; this saved thousands of dollars and allowed enforcement work to proceed on schedule.

Student and Alumni Corner



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Brenton Keefer Named President of the Hancock Timber Resource Group



based in Boston.

Brenton J. Keefer (B.S. Forest Resource Management; M.S. Forest Biometrics, GIS, and Remote Sensing) was named president of the Hancock Timber Resource Group in May 2014. Mr. Keefer, who joined the company in 1998, will be responsible for overall management of Hancock Timber, the world's largest manager of timberland for institutional investors. Mr. Keefer, who previously was Director of Resource Planning and Investment Strategy and based in Charlotte, North Carolina, will now be

Before joining Hancock Timber, Mr. Keefer worked for Rayonier Inc. in the southeast U.S. managing forest resource information and planning systems.

Bettina Ring Appointed as State Forester



Bettina Ring (B.S. Forestry and Wildlife) was appointed by Governor Terry McAuliffe to serve as the 7th State Forester in this Commonwealth's history, leading the Virginia Department of Forestry into its second century of serving and protecting the citizens of the Commonwealth. Bettina began her career with VDOF and will be well-served by her previous experience there, but she has also excelled in her career outside of VDOF and we look forward to the new perspectives and ideas she will bring to the agency.

Bettina began her new position on May 5. She comes to VDOF from the American Forest Foundation, where she was the senior vice president of family forests, a position responsible for overseeing the American Tree Farm System – the largest and oldest sustainable woodland program in America.

The Department of Forest Resources and Environmental Conservation is on social networks! Facebook (<https://www.facebook.com/vtfrec>) and Twitter (<https://twitter.com/VTFREC>). If you are a part of these social networks, look us up!

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**, Development Officer, at 540-231-8859 or send an e-mail to ehutch@vt.edu.