Welcome to the Spring 2009 issue of “Forestry” from Virginia Tech!

For the past couple of decades, forestry has been experiencing a sea of changes in Virginia, the U.S., and elsewhere. Along with the demand for forest fiber, timber, and recreation amenities, pressures to supply woody-based fuel, clean water, biodiversity, and climate stability are on the rise. Forest industry and public land management agencies are restructuring and aligning their activities to improve forest sustainability. The need for leadership from Virginia Tech’s Department of Forestry, the Commonwealth’s flagship for forestry research, education, and outreach, is greater than ever before.

On the other hand, undergraduate enrollments in forest and natural resource programs across the U.S. are declining. In order to reverse this trend, schools across the country are realigning, renaming, modifying curriculum, and intensifying recruitment efforts. In order to position ourselves in creating the next generation of professionals and to better reflect/promote our activities, we (the Department of Forestry) are exploring a series of strategies. These include creating additional flexibility within our curriculum, better facilitating community college transfers, developing new and/or revising majors/options, and better marketing of programs.

Recently, we have changed the department name from “Department of Forestry” to “Department of Forest Resources and Environmental Conservation” for the following reasons:

1. Our programs have expanded considerably over the past 20 years. Currently we offer Forest Resources Management, Environmental Resource Management, Watershed Management, Urban Forestry, Natural Resource Conservation, Recreation, Industrial Forestry Operations and Environmental Education majors/options. We believe that the new name would better reflect the breadth of our programs.

2. Several faculty members felt that the previous name did not adequately reflect their programs/activities. We hope that the new name would address this concern and help them expand their programs.

3. We hope that the new name would gain greater attention from our clientele (students, industry, landowners, public, local communities, and funding agencies) and promote our programs more accurately.

We count on your continued support in maintaining our excellence in teaching, research, and extension of forest resources and environmental conservation!

1st Forestry Graduate Symposium

This spring we were pleased to host our “1st Annual Forestry Graduate Symposium” in the Department of Forest Resources and Environmental Conservation. The event was first conceived in the fall of 2008 during a meeting between the department head, the graduate students, and the Graduate Affairs Committee. The idea was to provide a forum for the students to showcase their research to their peers, the faculty, and to interested parties throughout the university.

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Forest Resources and Environmental Conservation is a very broad discipline and this symposium offered a unique opportunity for the diversity of graduate student research to be presented under a single academic umbrella.

After morning socializing and coffee, our symposium started off with a graduate student panel discussion. This panel was fully run and solely attended by the graduate students and was designed as an opportunity for newer students to ask questions and seek advice from senior grads. Although I was not privy to the discussion, I understand that they touched on a range of topics regarding the expectations and process of graduate school, advice on formalizing a research topic, and conducting dissertation research.

The formal symposium was opened with remarks from Dr. Karen DePauw, Vice President and Dean for Graduate Education and Dr. Mike Kelly, Dean of the College of Natural Resources. To increase the visibility of our symposium, we invited Dr. V. Alaric Sample, President of the Pinchot Institute for Conservation in Washington, DC to be the keynote speaker. Dr. Sample interacted with the students throughout the one day symposium. His participation included a keynote speech entitled “Forests: What Role in America’s Energy Future?” His talk was attended by the graduate students, interested faculty from across the university, and a few members of our Forest Advisory Board. The students also had lunch with Dr. Sample and participated in a lively round-table discussion with him about conservation issues.

The afternoon of the symposium consisted of graduate student oral and poster presentations. We had 5 oral presenters and 11 posters. A wide spectrum of topics was covered by the students who participated, falling under the general themes of: forest biology, ecology, and soils; forest biometrics and geomatics; forest economics, policy, and management; industrial forestry operations; natural resources recreation; urban forestry and environment; and geospatial and environmental analysis. The oral and poster presentations were judged by several faculty and staff to select the best participant in each category. All of our presenters did a great job and it was tough job for our judges! Our oral presentation competition resulted in a tie between Susmita Sen (PhD Student, Geospatial and Environmental Analysis), whose presentation was entitled “Locating Reclaimed Coal Mines in Southwestern Virginia using Multitemporal Satellite Images” and Jeremy Stovall (PhD Student), who presented on “Using Crown Ideotypes to Improve Clonal Screening in Loblolly Pine”. The poster winner was Huei-Jin Wang (PhD Student), whose poster was entitled “Coarse Woody Debris in Loblolly Pine Plantations: A Regional Assessment”. The winners were recognized the following day at the luncheon for the annual Forest Advisory Board Meeting.

The symposium was largely designed and organized by a group of keen and dedicated graduate students led by Matthew Brinckman, our Forestry Graduate Student Association leader (other student organizing committee members included Kemal Gökçay, Salli Dymond, Charley Kelly, Katie Nelson, Alicia Peduzzi, and Tyler Wright). We (the faculty) offered our support and guidance for what we perceived to be a very valuable professional experience for the graduate students. We hope the symposium will continue to grow every year and provide new opportunities for our students.

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HIGHLIGHTS Teaching-Research-Extension

Indigenous Ecology Class Provides Service to Community
A spring seminar class taught by Forestry Extension Specialist Jeff Kirwan and American Indian Studies professor Harry Dyer requires students to learn through service to their community. Kirwan, who is Nause-Waiwash, and Dyer, who is Cherokee, like to use non-traditional teaching methods in their class, which has received high marks from their students. During the semester, students are required to learn about traditional life ways from their elders, including residents of a local nursing home. They are also required to learn from children, who, through a process of engagement, share their bright and fresh perspective on trees when they visit the Virginia Tech campus. In addition to meeting twice a week to discuss papers that deal with indigenous ecology from both a western and native science perspective, students plant indigenous trees and other food crops, tap maple trees, even skin and eat muskrats.

Safe and Efficient Practices for Trucking Unmanufactured Forest Products
A new publication is available from Virginia Cooperative Extension entitled “Safe and Efficient Practices for Trucking Unmanufactured Forest Products.” The publication was funded by the National Timber Harvesting and Transportation Safety Foundation and may be used to decrease the likelihood of accidents, as well as to increase the efficiency of unmanufactured forest product transportation. By increasing safety and efficiency, total costs to the harvesting operation may be reduced. The manual may be obtained at the following website: http://pubs.ext.vt.edu/420-310. The authors are Dr. Chad Bolding, Scott Barrett, and Tripp Dowling.

Dr. Janaki Alavalapati Speaks in Chile
Dr. Janaki Alavalapati spoke at a roundtable organized by The American Academy of Science and Technology, a joint initiative of the United States Embassy to Chile and the University of Talca, on Sustainable Bioenergy Systems on 28 May, 2009 at the Santiago Campus of the Universidad de Talca, Québec 415, Providencia. The objective of the meeting was to discuss challenges and opportunities for bioenergy in Chile. Representatives of the U.S. Embassy to Chile, Universidad Catolica, FOR Energy, Fundacion Chile, InnovaChile, and the Energy commission attended the meeting.

Youth Tree-Planting Effort Benefits Watersheds
In spring 2009, Virginia youth planted over 30,000 hardwood seedlings to help restore the Chesapeake and other watersheds. The program, funded by the US Fish and Wildlife Foundation, used seedlings grown by the Virginia Department of Forestry and was administered by Cooperative Extension foresters in each district. Now in its fourth and final year, the project has grown each year, and has taught approximately 100,000 youth how to plant and care for seedlings. Nearly every county in Virginia participated in the project, and partners included Soil and Water Conservation Districts, 4-H clubs, scout groups, and clean city commissions. Initially a Chesapeake Bay-only project, the Virginia Forestry Educational Foundation began funding for seedlings grown outside the watershed in 2008. The Virginia Department of Forestry grows and sells bare-root hardwood seedlings from their Augusta Forestry Center.

Remarkable Trees of Virginia Project Reaches School Children
Forestry Professor and 4-H Extension Specialist, Dr. Jeff Kirwan, takes his book and pictures of trees to schools, libraries and other public venues for the purpose of promoting the Remarkable Trees of Virginia Project, which seeks to engage a new generation of Virginians with recognizing, enjoying and protecting our Commonwealth’s most significant trees.

Dr. Kirwan shows pictures of trees to illustrate how old and how big they get. He also shows those that were living during important events in American History, including Jamestown, the French and Indian War, the Civil War, even the beginnings of NASCAR. He talks about trees that are culturally important to American Indians and African Americans, and describes the economic and social benefits of trees. He challenges students to improve their world with trees. His presentation mixes science, history, literature, and beautiful photographs to capture the imaginations and minds of youth grades 3 and up.
Dr. Marc Stern’s Research Featured in Forest Magazine

Dr. Marc Stern’s research on the USDA Forest Service’s planning processes was recently featured in an article in *Forest Magazine* (Summer 2009). The article highlights the study’s finding regarding the importance of compromise in successful travel management efforts on Forest Service lands. The study itself is published in the July 2009 issue of *Environmental Impact Assessment Review*.

Advanced Forest Ecology Class Blends Teaching and Research

Dr. Carolyn Copenheaver’s Advanced Forest Ecology class recently had four class projects that were successfully published in peer-reviewed technical journals. Copenheaver says that she likes to take the class projects the additional step towards publication because the students work very hard on the projects and this gives them something that they can list on their resumes to document that effort. Laura Hendrick (MF student), Chris Pearce (MS student), and John Houchins (MS student) had their paper on growth of trees along the shoreline of an artificial reservoir accepted for publication in *American Midland Naturalist*. Katie Nelson (MS student) had her paper on reconstructing academic family trees for faculty members in the Virginia Tech Department of Forest Resources and Environmental Conservation published in *Journal of Natural Resources and Environmental Education*. Andrew Predmore (PhD student) and Dawn Askamit (MS student) had their study on vegetation in former grassy balds published in *Natural Areas Journal* and Melanie Stine (MS student), Rachel McManamay (MS student), and Julia Bartens (PhD student) had their work on growth releases in white oak, American beech, and jack pine published in *Forest Ecology and Management*.

Virginia SHARP Logger Program partners with the VA Department of Forestry for GPS cost share program

The Virginia SHARP logger program and the VA Department of Forestry have recently partnered to provide Virginia Loggers with Global Positioning System (GPS) training and cost share assistance for purchasing GPS units. The VA Department of Forestry is upgrading their harvest notification system to enable them to accept harvest notifications using the latitude and longitude coordinates of the harvest site. To encourage more loggers to notify using the coordinates of their harvest site, the SHARP logger program will offer Continuing Education (CE) classes for loggers to learn how to use GPS. These classes will teach loggers the basics of using a recreational grade GPS to obtain latitude and longitude of their harvest site for notification purposes, determine tract acreage, distance, and other basic GPS features. Loggers who attend one of the SHARP logger GPS classes and meet the VDOF eligibility requirements can receive cost share payment from the VDOF for 50% of the cost of purchasing a GPS unit. For additional details on the program, contact Scott Barrett, SHARP Logger Program Coordinator at 540-231-6494, or Matt Poirot, VDOF Water Resources Manager at 540-977-6555 Ext. 3327.

Soil Erosion Following Five Bladed Skid Trail Closure Techniques

Drs. Mike Aust and Chad Bolding along with graduate students Clay Sawyers (MF) and Charlie Wade (MS) recently began a new research project to analyze Best Management Practices (BMPs) for closing skid trails after forest harvesting operations. The study is designed to determine sediment production from various BMP treatments on both bladed and overland skid trails and the overall goal is to evaluate a range of skid trail closure techniques in order to determine which ones are most effective at protecting water quality. Treatments include: 1) waterbar only, 2) waterbar and seed, 3) waterbar, seed, and mulch, 4) piled hardwood slash, and 5) piled pine slash.

The study is being conducted at the Reynolds Homestead in Patrick County and is funded jointly by the National Council for Air and Stream Improvement, Virginia Department of Forestry, Greif, Inc., and Plum Creek.
Dr. Kevin McGuire joined the Virginia Water Resources Research Center and Department of Forestry in January, 2009, as a Research Assistant Professor. In conjunction with the Virginia Department of Forestry, Dr. McGuire researches water quality and quantity issues in forest management and forested environments. He will also advise graduate students, guest lecture, and offer graduate seminar instruction.

Dr. McGuire previously worked at Plymouth State University as an assistant professor of hydrology and as the research hydrologist for the Hubbard Brook Experimental Forest, a unit of the U.S.D.A. Forest Service’s Northern Research Station. He received a B.S. in Environmental Science from Susquehanna University, an M.S. in Forest Resources from Pennsylvania State University, and a Ph.D. in Forest Engineering with a focus in forest hydrology from Oregon State University.

Dr. Clara Antón Fernández joined the Department of Forestry in January, 2009, as a Postdoctoral Associate working with Professor Harold Burkhart and the Loblolly Pine Growth and Yield Research Cooperative. Her main interests focus on implementing state-of-the-art statistical methods to solve forestry problems. Dr. Antón Fernández's most recent work has focused on improving the accuracy of tree mortality models. She also has research experience in survival analysis, spatial statistics, and GIS.

Dr. Antón Fernández received her B.S./M.S. degree in Forest Engineering from the University of Córdoba (Spain) and her Ph.D. in Forest Science from Michigan Technological University.

Dr. Yuzhen Li joined the Department of Forest Resources and Environmental Conservation in April 2009, as a Postdoctoral Associate working with the Sustainable Engineered Materials Institute and the Forest Nutrition Cooperative. Her main research interests focus on applying quantitative techniques to forest inventory and natural resource management.

Dr. Li received her B.S. in Forestry from Shandong Agriculture University (China) and her M.S. in Forest Biometrics and Ph.D. in Quantitative Resource Management with a focus in forest remote sensing from the University of Washington in Seattle. She also has a M.S. in Statistics from the University of Washington.

Dr. Jianming Xue is a Visiting Scholar working with Tom Fox on mycorrhizal and fungal community responses to fertilization in plantation forests.

Dr Xue is a scientist with the Forest Research Institute in Christchurch New Zealand where he conducts research in soil science and plant nutrition. His current focus is on interactions between tree nutrition and genetics. His goal is to improve productivity by selecting appropriate genotypes matched to sites and by developing a site-specific fertilizer prescription. He has ongoing research investigating genotypic variation in nutrient/water use efficiency in relation to tree growth and wood quality, genetic and physiological controls of nutrient/water use efficiency, nutrient bioavailability and fertilizer responses on different site types, and plant-microbe interactions in the rhizosphere. He has also worked on physiology and biochemistry of plant nutrient uptake and utilization, the regulation of photosynthesis and productivity of agricultural crops, and selection of varieties with improved nutrient efficiency.

Dr. S. Andrew Predmore joined the Department of Forest Resources and Environmental Conservation in June, 2009, as a Postdoctoral Associate. He will be working with Dr. Marc Stern on grants from USDA Forest Service’s PNW Research Station and the Focused Science Delivery Program. They will be examining National Environmental Policy Act planning processes on federal lands. Dr. Predmore’s most recent work has focused on ecosystem management and the role of science in public land management.

Dr. Predmore received his B.A. in government from the University of Virginia and his M.S. in forestry from Auburn University. He recently completed his Ph.D. in forestry at Virginia Tech under the direction of Dr. Carolyn Copenheaver and Dr. Michael Mortimer.
Dr. Amy Brunner was chair of the 30th Southern Forest Tree Improvement Conference held at the Inn at Virginia Tech and Skelton Conference Center on May 31 - June 3, 2009. This meeting has been held biannually for 58 years at different locations in the southeastern U.S. Over 60 scientists and managers from academia, government agencies, and forest industry attended. Presentations addressed a range of topics, including conservation and restoration of native trees and tree breeding. Highlighted this year was the use of genomics and biotechnology to accelerate and enhance conventional tree improvement. A number of presentations described a large, multi-institutional effort to bring DNA marker-based breeding to application for loblolly pine and other conifers. Both keynote speakers addressed biomass for bioenergy. Tim Tschaplinski, Distinguished Scientist at Oak Ridge National Lab, stressed the need to develop designer biomass crops and described their efforts to accelerate the domestication of *Populus* (poplars) for biomass production. Brian Fiacco, timberland consultant and author of the Timberland Blog, showed that pulpwod rather than residues will be the major source of woody biomass and emphasized the need for tree improvement specifically tailored to bioenergy and biomaterials. Jeremy Stovall won the Zobel Award for best graduate student presentation at the meeting for his talk “Growth of clonal *Pinus taeda* following fertilization in the Virginia piedmont”.

**Michelle Prysby Graduates from the Virginia Natural Resources Leadership Institute**

Michelle Prysby graduated from the Virginia Natural Resources Leadership Institute (VNRLI). The program trains people from industry, businesses, local and state government, and the environmental community, and is the result of a partnership between the Institute for Environmental Negotiation of the University of Virginia, the Virginia Cooperative Extension, and the Virginia Department of Forestry. VNRLI Fellows learn about conflict resolution and consensus building involving multiple stakeholders, and they receive leadership training. In addition, participants delve into some of the more demanding natural resource challenges being faced in Virginia today. Learn more about VNRLI on the web at: http://www.virginia.edu/ien/vnrli.

**2009 Virginia Society of American Foresters Conference**

The Blue Ridge Chapter of the Society of American Foresters hosted the annual Virginia Division Summer meeting in Blacksburg, June 3-5. Seventy-one forestry practitioners from all facets of the profession attended the meeting which was themed “Inventing the Future of Forestry”. The meeting focused on three elements of forestry. The first was the innovative research being conducted at Virginia Tech. Speakers from the Department of Forest Resources and Environmental Conservation (FREC) included Department Head, Janaki Alavalapati, Amy Brunner, Steve Prisley, Phil Radtke and Val Thomas. Other speakers in this session included incoming College of Natural Resources (CNR) Dean, Paul Winistorfer, and Entomology Department faculty Scott Salom.

The second element was Virginia Tech’s FREC graduate students. Eleven students participated in a poster contest and shared their research with the meeting’s attendees. Katie Nelson won first place for her poster “Small Scale and Amenity Focused Forestry: Filling a Market Niche”. Jeremy Stovall and Claudia Cotton tied for second place. Rounding out the meeting was the third element, forestry education, with presentations by FREC faculty members Bruce Hull, John Seiler and Mike Aust.

At the awards banquet, Virginia Cooperative Extension’s Neil Clark was presented with the Young Forester Leadership Award. David Powell, Virginia Department of Forestry, received the Division Merit Award, and Jerry Foltz received the Special Volunteer Service Award; FREC faculty member Shep Zedaker was recognized for recently being named an SAF fellow. Meeting organizers included FREC faculty members, Scott Barrett, Carolyn Copenheaver, Jennifer Gagnon, Val Thomas, and Shep Zedaker.
Priscilla Bocskor and Charles Sabatia - Named Sussman Environmental Interns for 2009

Priscilla Bocskor, a Master’s student in urban forestry working with Dr. Susan D. Day and Charles Sabatia, a doctoral student in forest biometrics working Harold Burkhart, have been named Sussman Environmental Interns for 2009. The internships, supported by the Edna Bailey Sussman Foundation in New York, will support Priscilla’s research work concerning the effects of woody plants in stormwater detention basins and Charles’s research on incorporating genetic improvement effects in models of forest stand dynamics, growth and yield.

Advisory Board Chair and Chair elect

Our Advisory Board Meeting was held on March 31, 2009 under the leadership of Mr. Greg Scheerer (MeadWestvaco). For 2009-2010, Mr. Alan Jones (Bartlett Tree Experts) will serve as the Chair and Mr. Brad Fuller (Huber Engineered Woods LLC) will serve as the Chair-elect. The Department of Forest Resources and Environmental Conservation appreciates their time and support!

Forestry Club Attends 52nd Southern Forestry Conclave

The Virginia Tech Forestry Club sent a team of twelve students to compete in the 52nd annual Association of Southern Forestry Colleges (ASFC) Conclave, held March 12-14th, 2009 in Huntsville, Alabama by first-time conclave host school Alabama A&M. Conclave kicked off with the Stihl Timbersports competition, sponsored by Stihl, Carhartt and ESPNU, where each of the fifteen competing schools entered a hopeful contestant to compete in underhand chop, stock saw, standing block chop and single buck events. Virginia Tech’s James McCabe finished fifth overall, including a competition fastest time of 15.9 seconds in the stock saw event. Two days of technical and physical events followed, many of which were held in a cold Alabama rain. Only the pole climb was cancelled due to inclement weather, and very few spirits were dampened. Contestants placing in the top 3 of each event received plaques commemorating their accomplishments. The VT team took home six plaques and finished ninth overall, including a sixth place finish in combined technical events.

Thomas Fox Promoted to Professor

Thomas Fox has been promoted to full professor of forestry. His interest areas include specializing in forest fertilization and tree nutrition, silviculture of Appalachian hardwoods, intensive silviculture of southern pine plantations, forest soils, rhizosphere chemistry, environmental sustainability of intensive forest management, and ecophysiology of managed forest stands. He serves as Co-Director of the Forest Nutrition Cooperative and Director of the NSF Center for Advanced Forestry Systems.

Ritchie C. Vaughan – Outstanding Graduating Senior and Recipient of the Carter Academic Service Entrepreneur Grants (CASE)

Virginia Tech has named Ritchie Vaughan, of Richmond, VA., as the Outstanding Graduating Senior in the College of Natural Resources for the 2008-09 academic year. Vaughan received a bachelor’s degree in forestry in the College of Natural Resources in May 2009 and among her numerous awards and scholarships, is the recipient of the Steuermann Memorial Scholarship, the Colonial Agricultural Educational Foundation Scholarship, the Virginia Tech University Honors Award and Scholarship, and the National Merit Award and Scholarship. She has conducted undergraduate research at Virginia Tech, where she studied wetland mitigation, as well as at the Catawba Sustainability Center, located in Roanoke, VA.

The Jimmy and Rosalynn Carter Partnership Foundation awards Carter Academic Service Entrepreneur grants (CASE) in the United States, United Kingdom and India to students whose projects represent the most innovative and promising ways to serve the community. Ritchie C. Vaughan was recently honored with this prestigious grant. She is working together with Dr. John Munsell and Christy Gabbard to develop one of the college’s farm properties into the Catawba Sustainability Center. The center will serve as a resource for service-oriented research, environmental education, landowner networking, green marketing, and sustainably harvested agriculture and wood products. Following graduation, she plans to continue service scholarship as a Masters Student under the guidance of Dr. Munsell.
Lane Guilliams ('95 in Forestry) recently returned to her alma mater to serve as director of alumni relations for the college. “It’s rewarding to walk the same halls I walked as a student, but this time as a member of the staff,” noted Guilliams. Guilliams serves as a liaison with the Virginia Tech Alumni Association to plan and run events and special programs. Her aim is to make sure alumni feel they are a part of the university and the college. Along with the college’s Alumni Board of Directors, Guilliams coordinates alumni events, such as the CNR Homecoming, that motivate alumni of the college to remain involved.

Guilliams, who earned a master of arts from The University of Oklahoma has held previous positions with the Virginia Department of Conservation and Recreation, Roanoke’s Center in the Square, and Hollins University. She has also served on the College of Natural Resources’ Advisory Board.

You can reach Lane via email at laneg@vt.edu or by calling (540) 231-2512.