

Department of **Forest Resources and Environmental Conservation**

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Fall 2010



In this issue:

- Alumni Distinguished Professor Honor
- Message from the Department Head
- Welcome New Faculty/Staff
- HIGHLIGHTS
Teaching ▪ Research ▪ Extension
- SPOTLIGHT
Faculty ▪ Staff ▪ Students
- Student Club Information
- Alumni Corner ▪ Announcements

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Dr. John R. Seiler Given Alumni Distinguished Professor Honor

Dr. John R. Seiler, The Hon. and Mrs. Shelton H. Short Jr. Professor of Forestry, was honored by the Virginia Tech Board of Visitors by being named an Alumni Distinguished Professor in recognition of his “extraordinary academic citizenship and distinguished service within the Virginia Tech community.”

During his tenure in the Department of Forest Resources and Environmental Conservation, Seiler, known as “Dr. Dendro,” has received almost every teaching award given at university, state, national, and international levels. Seiler’s long list of faculty awards attest to his remarkable scholarship: the William E. Wine Award for Excellence in Teaching (1997), Institute for Distributed and Distance Learning Fellow (2000), University Student Leadership Award – Service Learning Educator Award (2001), University XCaliber Award (2001), U.S. Department of Agriculture Food and Agriculture Sciences Excellence in Teaching Award (2001), University Diggs Teaching Scholar Award (2002), and Ernest L. Boyer International Award for Excellence in Teaching, Learning, and Technology (2004).

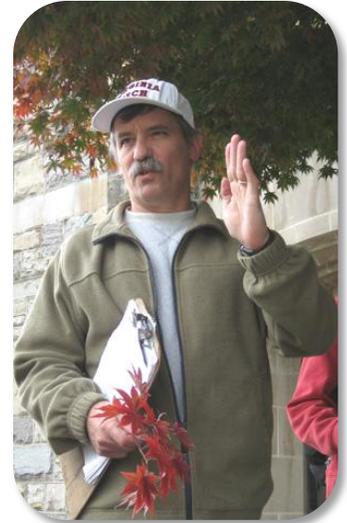
Additionally, Seiler was selected for membership in the Virginia Tech Academy of Teaching Excellence and is a repeat recipient of numerous college-level teaching awards. In 2002, Seiler received the Commonwealth of Virginia Outstanding Faculty Award, which recognizes superior accomplishments in teaching, research, and public service. It is the commonwealth’s highest honor for faculty members at Virginia’s public and private colleges and universities.

Seiler has been a major or co-major advisor for 37 graduate students and a committee member for more than 80 other students. Five of his Ph.D. students have received outstanding graduate student awards in the department or college. Frequently, his graduate students and postdoctoral researchers are awarded special recognition for outstanding presentations at scientific meetings.

In addition to his teaching and curriculum development, Seiler’s research program is stellar. He has a nationally and internationally recognized research program in woody plant ecophysiology funded by \$6 million in extramural funds. In addition, he has authored over 87 refereed publications and given hundreds of presentations at professional meetings.

Seiler said simply, “I love to talk to anyone at any time about trees and forests.”

Seiler has been teaching at Virginia Tech ever since receiving his doctorate from the university in 1984. He received his bachelor’s and master’s degrees from Penn State.



Dr. John Seiler



Dr. John Seiler

From The Department Head

Welcome to the Fall issue of “Forestry” from Virginia Tech! On behalf of the Department of Forest Resources and Environmental Conservation, I cannot be more proud of our growth in undergraduate and graduate programs, research activities, and student/faculty accomplishments in 2009-2010. Following are some of our accomplishments that I would like to share with you.



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

- ✿ Our undergraduate enrollment went up by 18%. We believe that the name change of the department, addition of Environmental Resource Management major, revision of existing options, and new set of transfer guidelines with Dabney Lancaster Community College, Mountain Empire Community College, and Allegany College of Maryland have helped us to experience this growth.
- ✿ Our graduate enrollment went up by 19% and we now have 72 graduate students. This success is entirely due to focused, hard, and committed work and excellence of our faculty members. In my assessment, graduate enrollment will go up in 2010-11 because of several successful projects that were funded recently.
- ✿ Our research expenditure has increased by 13%. Again, this success is entirely attributed to the hard work and excellence of our faculty. In 2010-11, I am confident that we will experience 50% or more growth in our research expenditures.
- ✿ The series of budget cuts have not stopped us from thinking creatively. Our extension specialists have become more innovative and vibrant in securing additional resources. They have successfully hired a full-time extension support specialist fully funded by soft monies.
- ✿ You will notice very many accomplishments of our faculty and staff throughout this newsletter. In particular, the department is proud of Dr. Seiler’s recognition with the Alumni Distinguished Professor award. This is one of the most prestigious awards that Virginia Tech offers to the faculty, and Dr. Seiler is the first recipient in the College of Natural Resources and Environment.

I will take this opportunity to wish you and your families the best. **Have a happy holiday season and New Year!**

FREC Advisory Board

The Department of Forest Resources and Environmental Conservation Advisory Board Meeting was held on Tuesday, March 2, 2010 at The Inn at Virginia Tech. For the 2010-11 year, Mr. Brad Fuller (Huber Engineered Woods LLC) will serve as Chair of the FREC Advisory Board. The next meeting is scheduled for March 31, 2011.



Lunch – Advisory Board
members with students



(L – R) Alan Jones (2010 Chair) and
Brad Fuller (2011 Chair)



Breakout Sessions



Matt Brinckman

Mr. Matt Brinckman joined the department in September 2010 as an Extension Program Associate. Matt will be working with extension faculty on various projects such as the Sustainable Harvesting and Resource Professional (SHARP) logger training program, the Virginia Forest Landowner Education Program (VFLEP), and Virginia's Link to Education About Forestry (VA LEAF). Matt is also involved with a statewide study on barriers to private forestland forest certification.

Matt received a B.S. in Environmental Resource Management and an M.S. in Forest Economics, Policy, and Management from the Department of Forestry at Virginia Tech.



Christine Haimann

Ms. Christine Haimann joined the department in October 2010 as a Program Support Technician supporting the Forest Biometrics and Geomatics area. Christine lives in Blacksburg with her husband, Steve, and has twin daughters. Christine and her family moved here from Canada in 1995. One daughter works and lives in the Washington, DC, area and the other is in the United States Army stationed in Kentucky.

Dr. Andy Horcher joined the department in October 2010 as an Adjunct Professor. He is the Natural Resource Operations Manager for the USDA Forest Service – at the Savannah River Site in South Carolina. He has a wide range of experience in both the public and private sectors, including logging, forest inventory, cruising timber, and consulting. Andy's professional interests range from equipment development to forest operations to practical solutions in forest management.



Dr. Andy Horcher

Dr. Horcher completed a Ph.D. in Forest Operations at Virginia Tech in 2008, an M.S. in Forestry at the University of Montana in 2000, and a B.S. in Forest Science from the University of Illinois Urbana/Champaign in 1994. Prior to his service at Savannah River, he worked in the US Forest Service Technology and Development Program as a project leader in forest operations.

Dr. Eric Sucre joined the department in October 2010 as an Adjunct Assistant Professor. Dr. Sucre is a Sustainability Scientist with Weyerhaeuser NR Company and is based in New Bern, NC.



Dr. Eric Sucre

His current research efforts are focused on evaluating the environmental effects of managing loblolly pine plantations for biofuel production; specifically, how intensive biomass removal associated with various forest-based feedstocks (e.g., forest residuals, understory cleanings, and intercropped switchgrass) affects carbon and nutrient cycling dynamics, life-cycle analysis, water use efficiency and water quality and overall pine productivity.

Dr. Sucre received a B.S. in Forest Management from North Carolina State University, a M.S. in Forest Soils from the University of Washington, and a Ph.D. in Forest Soils and Silviculture from Virginia Tech.

Dr. Jose Zerpa joined the department in September 2010 as a Postdoctoral Research Associate in belowground processes in plantation forestry.



Dr. Jose Zerpa

His interests are related to site resource management in plantation forestry. His current work is focused on relating loblolly pine fine root biomass, distribution, and phenology to aboveground pine growth and soil physical and chemical properties, as well as exploring genotype x environment interactions on root growth.

Dr. Zerpa received his B.S. in Forestry from Universidad de Los Andes in Merida, Venezuela. He obtained his MSc in Forestry, with a minor in soil science, and his Ph.D. in Forest Science from North Carolina State University.

Virginia Trees Well Represented At the National Level

Dr. Eric Wiseman and his urban forestry research team have produced a new website that reports the findings of their statewide street tree assessment project. The website provides facts and figures on street trees in nearly 20 Virginia localities along with information for citizens on the selection and management of street trees. Since 2008, Wiseman has worked with the Virginia Department of Forestry to inventory and assess municipal street trees throughout Virginia. The website can be accessed at www.cnre.vt.edu/urbanforestry/streets.

New Online Course Released

Urban forestry professor Dr. Eric Wiseman and an interdisciplinary team from Virginia Tech recently released a free online course to help natural resource professionals and green space enthusiasts better understand emerald ash borer, an exotic insect pest that has killed thousands of native ash trees in the eastern United States. The pest was first detected in Michigan in 2002 and has since found its way to Virginia, where it poses a threat to both rural and urban ash trees. The online course was funded by the US Forest Service and is hosted by the National Plant Diagnostic Network. Those interested in taking the asynchronous online course can access it at cbc.at.ufl.edu/CBC.php.

Prospective Transfer Students Visit FREC

On November 11 and 12, the FREC department hosted six prospective transfer students from Dabney S. Lancaster Community College and Allegany College of Maryland. Our visitors attended classes and interacted with current students and faculty throughout their visits. These visits follow newly articulated agreements with each institution to ease their transfer into our undergraduate programs in FREC. We look forward to strengthening these relationships in the future.

2010 Forest Modeling Research Cooperative Meeting

The Forest Modeling Research Cooperative (FMRC) held its 2010 Annual Meeting December 1-2 in Hot Springs, AR. Hosted by Weyerhaeuser Company; the meeting consisted of a one-day field tour followed by a one-day research reporting and business session. The field tour focused on thinning and pruning treatments in operational loblolly pine plantations on Weyerhaeuser land in the AR region. Discussions at the tour



Pruning operation where leave trees have been pruned prior to thinning.

stops centered around the impact of thinning and pruning treatments on wood quantity and wood quality. In the research reporting session, Dr. Harold Burkhart, Ralph Amateis and Charles Sabatia presented results from analyses conducted during the year and goals for 2011 were established.

The mission of the Forest Modeling Research Cooperative 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.



Cross-section of pruned log showing branch stubs embedded in log.

M.S. and Ph.D. Assistantships Available

Four graduate assistantships are available for the Master of Science and Doctorate of Philosophy degrees in FREC beginning in August 2011. The US Department of Agriculture National Needs Fellowship awarded to Drs. Carolyn Copenheaver (dendrochronology), Valerie Thomas (remote sensing/modeling), Chad Bolding (forest operations and business), and Jay Sullivan (forest economics) will meet national research needs by training future natural resource professionals in the growing areas of climate change and bioenergy. The grant will also meet national workforce needs by increasing the diversity of trained natural resource professionals by awarding the fellowships to qualified women, minorities, or first-generation students.

M.S. and Ph.D. Fellowships Available

Two master's level and two doctoral level fellowships have been funded through the USDA National Needs Fellowship program to support qualified applicants in the Department of Forest Resources and Environmental Conservation. These fellowships are aimed at providing graduate education opportunities in biometrics, geospatial analysis, and decision sciences as related to the science, policy, and practice of sustaining forest resources. Fellows will have an interdisciplinary graduate experience that will prepare them for assuming leadership positions in industry, federal and state agencies, and academic institutions. Dr. Harold Burkhart is serving as Project Director and Dr. Stephen Prisley as Program Coordinator for the NNF quantitative sciences project.

Edible Riparian Planting



Riparian Planting

It is hoped that edible and woody floral agroforestry riparian buffers can be a viable option for landowners interested in conserving their riparian areas while maintaining a source of production and revenue. Plans are in the works for a native woody floral riparian planting in May of 2011.

On November 6 a demonstration of a native woody edible riparian buffer along with a roadside zone was planted at the Virginia Tech Catawba Sustainability Center in Catawba, Virginia. Forty-five volunteers from the Catawba community, Virginia Tech Corps of Cadets, and Virginia Tech community came to help with the planting day. The project was funded by the USDA National Agroforestry Center.

Riparian buffers are streamside zones critical for water quality, soil retention, and habitat. Edible and woody floral agroforestry riparian buffers offer landowners the opportunity to obtain products such as fruit, nuts, and woody floral stems from these riparian areas while still conserving water, soil, and habitat.



Riparian Planting Volunteers

Bioenergy Production Systems



Switchgrass, a perennial warm season bunchgrass, is a popular option as a cellulosic bioenergy feedstock



Field of switchgrass

With increased attention being placed on the production of biomass for energy, novel strategies are being evaluated to increase the potential contributions of intensively managed forests to emerging biofuels markets. One concept involves the development of a multifunction biomass production system in which traditional loblolly pine (*Pinus taeda* L.) silviculture is intercropped with switchgrass (*Panicum virgatum* L.) as a cellulosic biofuel feedstock. In order to assess the scalability and sustainability of this concept, Catchlight Energy, a joint venture between Chevron and Weyerhaeuser, has developed a trial of this system in the Coastal Plain of North Carolina.

To better understand the potential of bioenergy to offset the carbon (C) emissions of traditional fossil fuel sources, however, information on the greenhouse gas (GHG) feedbacks between the biomass production system and atmosphere are required. FREC faculty Drs. Brian Strahm, John Seiler and Tom Fox are initiating a new project with funding from the USDA National Institute of Food and Agriculture (NIFA) Agriculture and Food Research Initiative (AFRI) Sustainable Bioenergy Program to do just that. Working at Catchlight Energy's study site in NC, the team will develop an understanding of how soil, site and environmental factors regulate soil carbon and nutrient pools and carbon dioxide (CO₂) efflux to the atmosphere. Additionally, the team will quantify methane (CH₄) and nitrous oxide (N₂O) fluxes, two powerful GHGs with roughly 70 and 300 times the global warming potential of CO₂.

One of the strengths of the project is the application of cutting-edge instrumentation and analytical techniques. With the newly acquired stable isotope ratio mass spectrometer (IRMS) in FREC's analytical laboratory, this research will also capitalize on the unique photosynthetic pathway (C₄) of switchgrass that imparts a distinct ¹³C stable isotopic signature to the switchgrass biomass. This approach will indicate the relative contributions of switchgrass derived C to total soil respiration to better understand the specific influence of the intercropping on atmospheric feedbacks. This work will also focus on differentiating plant (autotrophic) and microbial (heterotrophic) process regulating soil CO₂ efflux, a technique pioneered at Virginia Tech by Dr. Seiler, which has received significant recent attention in other major funding efforts.

These new research efforts significantly leverage existing funds and resources from Weyerhaeuser and the Forest Productivity Cooperative that support current Ph.D. student Kevan Minick. With Drs. Fox and Strahm, Kevan's research focuses on belowground process in these intercropping systems, with specific attention paid to temporal trends in nutrient availability and soil C dynamics.



Switchgrass intercropped with bedded loblolly pine seedlings during early study establishment

Dr. Chad Bolding and Scott Barrett Honored For Technical Writing



Dr. Chad Bolding

On September 22, the Forest Resources Association’s Appalachian Region honored Dr. Chad Bolding, Assistant Professor of Forest Operations and Engineering, with its Second Place Technical Writing Award for 2010. Scott Barrett, Virginia’s SHARP Logger Program Coordinator, was honored with the Third Place Technical Writing Award. The annual awards recognize the best serial publications from FRA’s quarterly magazine, the *Forest Operations Review*.



Scott Barrett



Dr. Michael Mortimer

Dr. Michael Mortimer Elected Fellow of the Society of American Foresters

Dr. Michael J. Mortimer, Director of graduate programs for Virginia Tech’s College of Natural Resources and Environment in the National Capital Region and Adjunct Faculty member in our department, has been elected a Fellow of the Society of American Foresters, a national scientific and educational organization representing the forestry profession in the United States. Fellows are selected to honor those members who have provided outstanding contributions to the society and the forestry profession.

Dr. John McGee Granted Tenure

Dr. John McGee, Associate Professor/Geospatial Extension Specialist, was successfully granted tenure and promoted as of July 1.

Kevan Minick Wins Graduate Student Poster Competition

Kevan Minick’s (Ph.D. candidate; Drs. Brian Stahm and Tom Fox, advisors) research presentation on the alteration of soil nutrient availability following the incorporation of switchgrass for bioenergy production in intensively managed loblolly pine plantations won the Graduate Student Poster Competition sponsored by the Forest Range and Wildland Soils division (S-7) of the Soil Science Society of America at its recent international annual meeting in Long Beach, CA.



Kevan Minick



Dr. Jeff Kirwan

Dr. Jeff Kirwan Receives Environmental Educator of the Year Award

Dr. Jeff Kirwan, Professor Emeritus, received the Environmental Educator of the Year Award, also known as "the Otter," from the Virginia Resource-Use Education Council (VRUEC). The award was presented by Delegate Ed Scott and Paula Klonowski, VRUEC Chair and Science Coordinator with the Virginia Department of Education, during the annual Virginia Naturally Partners Meeting and Environmental Education Conference. The award recognized Jeff’s tremendous work in educating Virginians about natural resources during his 32-year career with Virginia Cooperative Extension. Highlights include his leadership with the Virginia Project Learning Tree program and his co-authorship of the book, *Remarkable Trees of Virginia*.

Emeritus Faculty Status Awarded

Dr. Richard Oderwald, Professor of Forest Biometrics and Associate Dean of the College of Natural Resources and Environment, and Dr. Marion R. Reynolds, Jr. Professor of Statistics and Forestry, have both been awarded Emeritus Faculty status.

Dr. Janaki Alavalapati Receives Scientific Achievement Award

The International Union of Forest Research Organizations (IUFRO) honored Dr. Janaki Alavalapati with a Scientific Achievement Award at the Opening Ceremony of the Congress on August 23. This award is given for outstanding research published in scientific journals, proceedings of scientific meetings or books, or appropriate patents or other relevant evidence that clearly demonstrates the importance of achievements to the advancement of regional or world forestry or forest research.

7 Student Club Information

Virginia Tech Wildland Fire Crew (VTWFC)

The VT Wildland Fire crew was dispatched as a member of the suppression teams for the 240-acre Price Mountain Fire and the 210-acre Big Falls Fire in November. The VTWFC's actions halted the westerly spread of the Price Mountain Fire, much of which was on the FREC Fishburn Forest. The crew managed all of Division "Alpha," including initial attack hot-spotting, calling in several helicopter water drops, fire line construction and burn-out operations. The VTWFC is active in both fall and spring terms and works to assist state and federal agencies in wildfire suppression and to conduct fuel reduction and forest health-improving prescribed burns on the Fishburn Forest.



Wildland Fire Crew

Society of American Foresters Student Chapter (VTSAF)

VTSAF was involved in several activities for the fall 2010 semester. In October, five students from our chapter traveled to the SAF National Convention in Albuquerque, NM. Students who attended this convention gained valuable knowledge of current issues in forestry. The convention also showcased advances in technology and potential job opportunities. Locally, several students went to the Blue Ridge SAF Chapter meeting. At this meeting, students met local foresters and listened to a guest speaker from the Virginia Master Naturalist Program. As a new activity this semester, students from our chapter applied for the Appalachian Society of American Foresters Mentorship Program in which applicants will be paired with local professionals in the forestry sector. Once paired with a mentor, each student can receive advice and support to help guide them through their educational and occupational endeavors.

Urban Forestry Club

Urban Forestry Club members led the campus community in a reforestation project near the Virginia Tech Alumni Center during Sustainability Week last fall. Students planted about 20 native trees around the perimeter of a renovated stormwater detention pond to increase canopy cover, reduce soil erosion, and provide wildlife habitat.



Urban Forestry Club

Forestry Graduate Student Association Helps Community (FGSA)

The Forestry Graduate Student Association (FGSA) donated \$250 to Feeding America Southwest Virginia and \$250 to NRV Community Services, helping two specific individuals in need within the region. In addition, approximately 10 members of the FGSA volunteered at the Montgomery County Christmas Store on December 9.



Forestry Graduate Student Association

Natural Resource Recreation Society

The Natural Resources Recreation Society had a very active semester full of day hikes, tubing, and overnight trips. They did some rappelling at Barney's Wall, went raptor watching at the Hanging Rock Raptor Observatory, and backpacked in the Dolly Sods Wilderness. They also participated in the 2010 Environmental Education Expo and have registered a team in the Relay for Life spring 2011.



Natural Resources Recreation Society

Forestry Club

The Forestry Club's fall semester centered on fundraising, wood sports, and community service, with all activities including a mix of hard work, fun and socializing. Fundraising goes to support upcoming activities including the Club's hosting the annual Timberbeast event on February 19, 2011. They will travel to Athens, Georgia for the 2011 ASFC. By selling firewood, BBQ pork shoulders, and custom-cut & delivered Christmas trees, the club has made it half-way to their goal of raising \$4000. Fall service projects included yard and woodlot tree removal for local homeowners in need. Upcoming service and charity events include the Spring "Big Event" local community service day, Avon Breast Cancer walk, and the club's power tool & apparel raffle sponsored by Stihl and PowerZone in Christiansburg to support "Log-a-Load for Kids" and the Make-A-Wish Foundation.



Forestry Club

Student Spotlight

Congratulations
Summer and
Fall 2010
Graduates!

Ph.D. Program

Julia Bartens
Alejandra Lara-Chavez
Rupesh Shrestha
Jeremy Stovall
Huei-Jin Wang

M.S. Program

Sara Murrill
Charles Wade

Welcome New Graduate Students 2010

- Micky Allen
- Jacob Beale
- Evan Brooks
- Patricia Brousseau
- Joshua Chandler
- Kimberly Cowgill
- Nina Craig
- Chelsea Curtis
- Jeffrey Feldhaus
- Shannon Fowler
- Richelle Geiger
- Won Hoi Hwang (GEA)
- Nathan Kennedy
- Kylie Krauss
- Glauce Lourenco
- Kevin McLean
- Kevan Minick
- Bethany Mutchler
- Mason Patterson
- William Stanley
- Beth Stein
- Caysie Taylor
- Katie Trozzo
- David Walker
- Laura Wear
- Amy Werner
- Ying Xu
- Marco Yanez

Alumni Corner / Announcements



Eduardo Arellano (Ph.D., Forestry 2009) was awarded a USDA 2010 Global Research Alliance and Norman E. Borlaug International Agricultural Science and Technology

Fellowship. Dr. Arellano is Associate Professor of Soils in the Department of Ecosystems and the Environment at the Pontificia Universidad Catolica de Chile. As a Borlaug Fellow, Dr. Arellano will spend 12 weeks working with Dr. John Baker from the University of Minnesota on a comparative study of soil carbon and CO₂ emissions from forest and agricultural soils in the United States and in Chile.

The Norman E. Borlaug International Agricultural Science and Technology Fellowship Program aims to promote food security and economic growth by increasing scientific knowledge and collaborative research to improve agricultural productivity. It is sponsored by the USDA Foreign Agricultural Service and honors Dr. Norman E. Borlaug, father of the Green Revolution. Dr. Borlaug won the Nobel Peace Prize in 1970 for his success in developing high-yielding wheat varieties and reversing severe food shortages that daunted India and Pakistan in the 1960's

For more information about
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