



CNRE NEWS

ADVANCING THE SCIENCE OF SUSTAINABILITY

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MANAGING RESOURCES AND MAKING DECISIONS

New center to provide improved data, tools, and models for sustainable outcomes

In keeping with its commitment to advancing the science of sustainability, the college has created the **Center for Natural Resources Assessment and Decision Support**. “Our first task will be to answer the question, ‘Are we using our forest resources in a sustainable manner?’” said Associate Professor Stephen Prisley, who brings 30 years of experience in natural resources inventory, monitoring, and assessment to his new role as director of the center.

“As important as forests are to our quality of life, it is critical that we sustain them — that we use only what we and nature can replace,” said Prisley. “Yet the data and analytical tools needed for assessment and projections are not as precise nor as flexible as they need to be.”

Housed with the college’s Conservation Management Institute in the Virginia Tech Corporate Research Center, the center will provide datasets of forest resource conditions; computer models designed for use by industry, government, and policymakers; and assistance in adapting models and data for specific applications, as well as offer research and internship opportunities to students.

Plans for the new center took hold after college representatives heard from private- and public-sector natural resource stakeholders across Virginia that they need improved data, models, and analytical techniques to assess the status and trends of resources such as wood fiber, water, and biodiversity. Among the center’s nearly 20 funding sources are The Nature Conservancy, Dominion Resources, Enviva, MWV (formerly MeadWestvaco), Morgan Lumber Company, and RockTenn. The center also receives critical support from the Virginia Department of Forestry and the U.S. Forest Service.

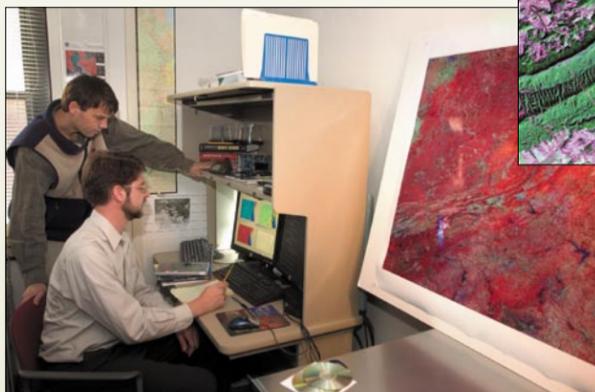
The center will begin by creating models of forest harvest and regrowth in Virginia at the county level or an even finer geographic scale. Such models, based on data from remote sensing and from measurements collected by the U.S. Forest Service, will provide a new perspective on available resources and sustainability. “We will

improve the integration of land-based forest inventory and remotely sensed resource data,” said Prisley.

In the long term, the center will conduct assessments of additional geographic regions and incorporate GIS layers of land use, infrastructure, population, and other attributes. “We will expand our research to assess the wider range of natural resources to include water, wildlife habitat, and diversity among plants as well as animals,” said Prisley.

“In addition to improving the data and analytical tools to create highly accurate projections for forest managers and policymakers, we will have the ability to revisit an assessment in the face of real-life variables such as fire, weather, land-use changes, and shifting market demands,” he continued.

The center’s clients will gain strategic planning advantages, better risk management, new measurement and modeling tools, boots-on-the-ground data verification, and the ability to anticipate resource and market changes. They will also be able to identify students as prospective employees.



The center’s research contributes to advancing the technology used in decision making and data application.



Stephen Prisley, associate professor of forest inventory and GIS, brings 30 years of experience in natural resources inventory, monitoring, and assessment to his new role as director of the center.

“The college already has the critical scientific expertise,” said Dean Paul Winistorfer. “The center will provide the focus and, thanks to our partners in industry and government, the resources to fine-tune assessment science for decision making about natural resources.”



Satellite imagery and remote sensing are among the many data resources the center uses. This Landsat Thematic Mapper image of the New River Valley shows forests (dark green), agriculture (light green), and development or bare soil (pink), bisected by the New River (black).

Learn more about the Center for Natural Resources Assessment and Decision Support (CeNRADS) at cenrads.cnre.vt.edu.

In addition to providing vital data, tools, and assistance to natural resource stakeholders, the center will offer opportunities to connect students with potential employers through internships, meetings, and presentations.



Forest inventory data is crucial for the center and its partners. Graduate students working with forest inventory data develop an appreciation for the ways in which field information is scaled up to provide critical information at a regional level.



The center’s output will provide public and private landowners with information that can support planning for sustainable harvests of forest products.

We continue to innovate while building on our exceptionally strong learning, discovery, and engagement foundation across the college. The work of our newly created Center for Natural Resources Assessment and Decision Support (see cover story) will be vital to decision making and policy setting in Virginia and beyond, and will be a major contributor to advancing the science of sustainability. With strong involvement from the Virginia Department of Forestry, the private sector, nongovernment organizations, and the U.S. Forest Service, the center has embarked on a long-term effort to model and project the future sustainability of our natural resources while taking into consideration biodiversity and the economic vitality of our resource base.

In January, the State Council of Higher Education for Virginia approved several new bachelor of science degree programs in the college. Our packaging program is one of only a handful offered in the U.S., and student response to the new **packaging systems and design** degree has been very strong. Our **sustainable biomaterials** degree is the first in North America named as such. And, after many years, we have officially separated the forestry and wildlife degree into two separate degrees: **forest resources and environmental conservation** and **fish and wildlife conservation**. These recent changes bring to a close a marathon of course, curricular, and degree actions in the college that were initiated four years ago to set the stage for moving our academic programs into the future.

Our common first-year experience course, led by Don Orth, was honored as one of three exemplary programs on campus (see article on p. 3), and we celebrated with a reception and awards program in December. Now in its third year, the course is helping to provide our entering students with a strong foundation and skill set in problem solving, inquiry, and integration of learning skills.

Lastly, Shep Zedaker and his wife, Debra, have set sail for retirement in Florida. Shep shared 32 years of his life and his passion with us and made enormous contributions in the fields of forestry and fire ecology to our students, the research environment, and the culture of the college. Thank you, Shep, for your steadfast contributions and



Dean Paul Winistorfer (center) with Shep Zedaker (left) and Don Orth.

commitment to the college and our students. We are proud of and thankful for you. You have made a difference.

We continue to move forward. Thank you for your interest in and support of what we do in the college.

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

Paul M. Winistorfer
Dean
pstorfer@vt.edu



Leadership Institute

The 2013-14 Leadership Institute student cohort winter break trip included stops in Richmond, Charlottesville, and Washington, D.C., where the students met with policymakers in state and federal agencies, nongovernmental organizations, and private industry, as well as representatives of Virginia's elected delegation. During a very busy week of travel, the students experienced organizational, political, and agency processes, and leadership at all levels.

Front row (left to right): Emily Ronis, Sierra Steffen, Kelly Summers, and Zachary Shiner. Middle row: Britney Kreiner, Kelley Anderson, Katy Battle, Alex Garretson, and Juan Botero. Back row: Associate Director Brian Bond, Jeremy Withers, Paul Decker, Mohamed Mwinyi, and Director Steve McMullin.

New environmental informatics major opens a world of opportunity

As efforts to manage natural resources grow increasingly reliant on computer-based approaches, the need for professionals trained in data gathering and knowledge integration has skyrocketed. The college has responded by introducing a new undergraduate major in **environmental informatics**.

"Today's problems are increasingly complex and involve vast amounts of data," said Professor Randolph Wynne. "As a result, the need for professionals trained in technical and analytical approaches to environmental problems is rising dramatically."

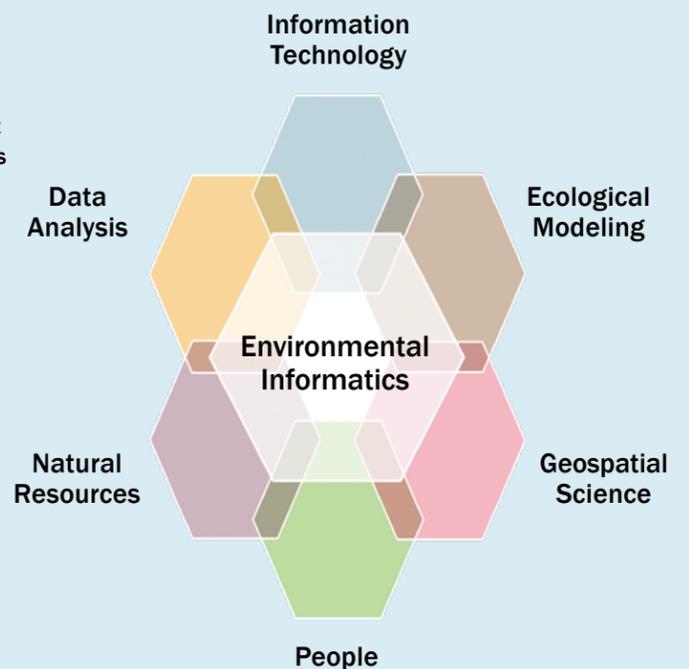
Bringing together information technology, data analysis, natural resources, geospatial science, and ecological modeling, the environmental informatics major, based in the Department of Forest Resources and Environmental Conservation, enables students to explore and apply information science to the sustainable management of the natural world.

"Young people are more globally aware and care deeply about the world around them," said Assistant Professor Valerie Thomas. "We want to give students the cutting-edge skills they need to make a difference and prepare them for exciting and rewarding careers."

Students will develop skills in remote sensing, ecosystem management, spatial data analysis, statistics, Web and database management, and sustainability analytics that can be applied in fields ranging from forestry and landscape mapping to pollution modeling and watershed ecology.

Visit frec.vt.edu/ei for more information.

Environmental informatics brings together science, technology, modeling, and analysis — enabling increased understanding and sustainable management of the natural world.



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Virginia Water Resources Research Center vwrrc.vt.edu

First-year experience program honored

The college's first-year experience program — Invent the Sustainable Future — received one of three 2013 University Exemplary Program Awards. This year's awards recognized groups implementing programs for first-year students that incorporate problem solving, inquiry, and integration of learning skills. The college's program will receive a portion of the \$40,000 award.

Invent the Sustainable Future helps incoming students develop their sense of identity and a relationship with the college. The three-credit course emphasizes active learning strategies and allows students to investigate timely and local issues. It incorporates social media, ePortfolios, and career exploration tools to encourage self-reflection and promotes high-impact educational practices such as undergraduate research, internships, summer jobs, service learning, and education abroad.

Offered since fall 2011, the course gives students exposure to many college faculty through experiences such as panel discussions and student video interviews. In addition, more than 30 peer mentors have served as instructional assistants, offering new students the opportunity to interact with and get advice from fellow students.

Professor Don Orth, who spearheads the program, emphasizes that adjusting to the demands of college is critical to the success of all entering students. "We teach them wise strategies and how to make good choices for not only success in college, but also in life," he explained. "Accepting responsibility is the core of everything."

Professor Dean Stauffer, Associate Professor Eric Wiseman, and teaching assistant Kimberly Cowgill have

served as instructors along with Orth since the course was initiated. "We strive to push students out of their comfort zones with learning and problem solving," Wiseman said. "For many freshmen, it can be tough to transition from the high school learning model to the college learning model. We're trying to engage them in this transition and help them discover strategies to be successful."



Students learned about problem solving through case studies during a visit to Stadium Woods.

Many first-year students find the experience to be transformational. "[The course] showed me what student resources are available to me and what different strategies I could use to become a lifelong learner and to do well in the new college classroom environment," one student wrote. "My approach to learning is no longer doing the bare minimum, memorizing, receiving the grade, and then forgetting all the material. It is now a process of reading, re-reading, absorbing, understanding, and talking it through with my professors and peers, not worrying too much about the grade but being more concerned with whether or not I feel comfortable with and know the material being taught. . . . [It] made me think a lot about where I want to be, who I am, and what my real passions are. . . . My sense of self has greatly improved. I think I know a lot more about who I am and what I want out of school and life in general than I did a few months ago."



Students collaborate on many learning activities in Cheatham Hall's Student-Centered Active Learning Environment for Undergraduate Programs (SCALE-UP) classroom.

Wiseman leads Virginia Big Tree Program

Eric Wiseman, associate professor of urban forestry and arboriculture, has been named coordinator of the Virginia Big Tree Program, based in the college's Department of Forest Resources and Environmental Conservation. "I will work very hard to ensure that everyone continues to enjoy and value the Virginia Big Tree Program," he said.

The program, which began as a 4-H and Future Farmers of America project in 1970, maintains a database of the five largest trees of each species in the state. Citizens participate by searching for and nominating trees and by helping to re-measure trees every 10 years. The Virginia Urban Forest Council augments the volunteer effort by funding a summer internship position for a Virginia Tech forestry student to measure and photograph trees around the state.



Virginia currently has 64 big trees in the National Big Tree Register, placing it in fourth place. "It's remarkable that Virginia has that many champions given the size of the state," Wiseman said. "It's a testament to the rich natural resources we have and people's passion to the program."

Wiseman takes the reins from Professor Emeritus and Extension Specialist Jeffrey Kirwan, who coordinated Virginia's program for the past 10 years. "Having someone like Eric is a big step forward," Kirwan remarked. "People who own these trees have questions about tree care and protection, and a trained arborist like Eric is well qualified to advise and assist."

"It's a real privilege to pick up where Jeff left off," said Wiseman, who is an International Society of Arboriculture Certified Arborist. "He's done an excellent job of bringing together a committed core of volunteers."

"The Big Tree Program is a wonderful complement to our department's urban forestry program," Wiseman continued. "It fits in with the mission of what we're trying to accomplish with our urban forestry outreach at Virginia Tech."

wei

Unveils 2014 product

The Wood Enterprise Institute (WEI), a student-run entrepreneurial venture that uses a concept-to-marketing business approach, is taking orders for its 2014 product — a customized maple and cherry cutting board.



To order, visit vtwei.com, email sales@vtwei.com, or call 540-231-8841. Orders must be received by April 19, 2014. Show your Hokie spirit while supporting this unique program!

State launches wildlife conflict helpline

Virginia residents have a new resource available for dealing with wildlife issues, from bats in your attic to bears in your trash cans and everything in between. The Virginia Wildlife Conflict Helpline, a joint venture between the Virginia Department of Game and Inland Fisheries (VDGIF) and the USDA Wildlife Services with assistance from Virginia Cooperative Extension and the Farm Bureau of Virginia, was launched in October. The helpline offers residents "one-stop shopping" for addressing wildlife issues.

Calls are routed through a central switchboard, which, according to Extension Specialist Jim Parkhurst, provides three main benefits: (1) callers receive consistent, accurate, and timely information and are directed to appropriate professionals for technical assistance when necessary; (2) the VDGIF can tabulate valuable data about the types and locations of conflicts across the



Deer are unwelcome visitors to residential gardens.

state to better direct resource allocation and to define and prioritize research needs; and (3) field staff, freed from responding to routine inquiries, can focus on other important on-the-ground needs.

The Virginia Wildlife Conflict Helpline is available toll-free at 855-571-9003 from 8 a.m. to 4:30 p.m. Monday through Friday.

Career Fair

The college's Career Fair was moved to Owens Hall this year to better accommodate both students and potential employers. Forty-five representatives from 18 organizations met with 120 student attendees to discuss employment and internship opportunities, with several conducting on-campus interviews. Employers interested in participating in the fall 2014 career fair can contact Teresa Quesinberry at tquesinb@vt.edu.



Parece reaps multiple accolades

In addition to winning scholarships and a poster competition, **Tammy Parece of Blacksburg, Va.**, a geography doctoral candidate in the geospatial and environmental analysis program, has co-authored a number of published works.

Parece is one of six doctoral students nationwide who received a 2013 United States Geospatial Intelligence Foundation scholarship for outstanding students studying geospatial sciences or a related field. She also received the Freedom First Credit Union scholarship from the Cabell Brand Center for Global Poverty and Resource Sustainability Studies in Salem, Va. The center's scholarship program encourages young people to accept the challenges of diminishing poverty, promoting the environment, and advancing peace and justice.



Parece's poster "Virginia's K-12 Students See Their World From a New Perspective" won first place in the Virginia Tech Engagement Showcase Graduate Poster Competition. The poster provided detailed information

on the outreach efforts of the Geographic Society at Virginia Tech and illustrated the benefits gained by students in the geography department as well as the community.

In 2012, Parece co-authored a chapter on water use and conservation with Tamin Younos, a retired Virginia Tech geography professor and president of the Cabell Brand Center, for "21st Century Geography: A Reference Handbook." In 2013, Parece and her thesis advisor, Professor Emeritus Lawrence Grossman, published the article "Reducing Carbon Footprint of Water Consumption: A Case Study of Water Conservation at a University Campus" for the "Handbook of Environmental Chemistry, Volume 25." She is also the lead author on two recent journal articles.

"My motivation throughout my graduate studies and research is to support sustainable systems in both social and physical environments and to engage multiple partners at the university with private citizens," Parece said.



Brittany Mays (left) wraps a pallet of firewood with plastic wrap while Scott Neil stacks firewood on another pallet.

Forestry Club provides firewood to new dining hall

The Forestry Club has been selling firewood locally for many years to raise funds for timber sports activities. In spring 2012, the club was asked to help supply local firewood to the new Turner Place dining facility when it opened that fall. The club readily agreed to supply one pallet of seasoned wood a week throughout the semester to fuel ovens for the facility's Atomic Pizzeria and 1872 Fire Grill. "The Forestry Club was so fired up about being able to provide a product to our fellow students because we knew we would be a part of something bigger than just us," remarked Mason Thomas, the club's vice president and firewood chair.

Members cut the wood about 10 miles from campus on the Jefferson National Forest via a wood cutting agreement with the U.S. Forest Service that involves helping implement a forest management prescription in that area. Trees are processed into firewood pieces in the

woods or at the Forest Harvesting Lab on campus. A few times each semester, multiple pallets are loaded and transported across campus to Turner Place by trailers, trucks, or even a tractor generously borrowed from the equestrian facilities on campus.

This collaborative effort by students who volunteer their time to harvest, process, and deliver the firewood helps club members bond and promotes a spirit of fellowship while offering the university an opportunity to showcase the use of sustainably grown and harvested wood derived from local sources.

"The resulting collaboration has afforded learning opportunities for the campus community in understanding the sourcing of the wood, and the partnership has been great for both Dining Services and the Virginia Tech Forestry Club," said John Barrett, assistant director of Turner Place.

Fisheries program opens doors for freshman

Paige Crane of Blacksburg, Va., a freshman majoring in wildlife science, got a jump on her college studies by participating in the Hutton Junior Fisheries Biology Program over the summer. Crane was one of 25 students chosen from across the country to participate in the program, sponsored by the American Fisheries Society.

Each student in the program is awarded a scholarship and matched with a professional mentor for a summer-long, hands-on research experience. Associate Professor Emmanuel Frimpong of the Department of Fish and Wildlife Conservation mentored Crane as she participated in his National Science Foundation funded research. Crane studied how the bluehead chub, a local fish species, makes nests to improve its environment for breeding and how this reproductive behavior benefits numerous other fish species.

"I've learned so much this summer and have been able to get involved in the field that I'm going into in the fall," Crane said at the conclusion of the program. "I've



Paige Crane (left) and Associate Professor Emmanuel Frimpong examine a male bluehead chub.

loved being able to work outside and learn things that are going to be applicable to my classes. I consider myself very lucky to have the opportunity to gain all this lab and field experience."

Raymond presented with Scholar Award

Forestry doctoral student **Jay Raymond of Elliot, Maine**, received an International Plant Nutrition Institute Scholar Award for graduate students in sciences relevant to plant nutrition and crop nutrient management. The institute's president presented Raymond with his award at the Soil Science Society of America Annual Meeting in Tampa.

Along with his advisor, Professor Tom Fox, Raymond is researching the dynamics of applied nitrogen fertilizer through loblolly pine plantations to provide forest managers with an improved knowledge of nutrient stewardship in these systems. Raymond's career goals and objectives include research emphasizing the importance of soil nutrition in relation to the productivity of forest agro-ecosystems.

"I am very thankful that the International Plant Nutrition Institute recognized the relevance of our research to their mission of responsible management of plant nutrition to meet societal needs," Raymond said.

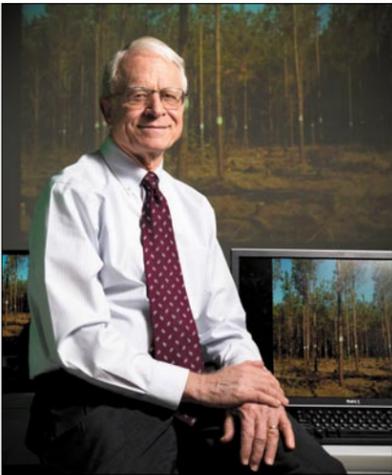
Search and rescue!



When not working on her master's in geography, **Ashley Lewis of Blacksburg, Va.**, spends much of her time as a search and rescue (SAR) volunteer, which includes training, teaching, and responding to calls. Lewis, who is a member of several professionally trained SAR teams, helped rescue two men in Patrick County who were lost overnight last fall in extremely steep terrain and poor weather conditions.

Fortunately one of the men required only minimal assistance to ascend the slope. The team had to fashion a chest harness to assist the other man, using trees as anchor points to belay him up to the safety of a waiting ambulance. The rescuers and victims made most of the 2-hour climb on their hands and knees! Several area SAR teams participated in the challenging search and rescue operation, which was reported in the Martinsville Bulletin.





Burkhart named Forest Champion

Harold E. Burkhart, University Distinguished Professor and the Thomas M. Brooks Professor of Forestry, was named Forest Champion of the Year by the Forest Landowners Association. The honor is bestowed upon individuals who have made a significant contribution to the private forest landowner community through research, legislative, or regulatory efforts at the local or national level.

“Dr. Burkhart’s commitment to the continued advancement of private forest landowners through his service to the Forest Landowner Association is unquestionable, and we are sincerely thankful for his many valuable contributions over the years,” said Scott Jones, the association’s CEO.

Burkhart, whose contributions to the advancement of forest growth are unprecedented, has led the way in developing new methodology for tree and stand modeling and elucidating the complex mathematical relationships between models of differing levels.

“It is a great honor to be recognized by the Forest Landowner Association, which promotes sustainable forest management on private land throughout the United States,” he remarked. Among his many career achievements and honors, Burkhart was recognized as Virginia’s Outstanding Scientist in 2013.

NEW COLLEGE FACULTY



Scott Barrett
Assistant Professor
and Forestry Extension Specialist
Department of Forest Resources and
Environmental Conservation

Ph.D. (2013), M.S. (2001), and B.S. (1998)
Virginia Tech

Special interests
Logger education (SHARP Logger Program)
and the impacts of education on logging safety,
productivity, and the implementation
of sustainable forestry practices



Leandro Castello
Assistant Professor Department of Fish
and Wildlife Conservation

Ph.D. (2007) State University of New York–ESF
M.P.A. (2004) Syracuse University
B.S. (1998) Fundação Universidade do Rio
Grande, Brazil

Special interests
Fish and fisheries ecology and management



Kelly Cobourn
Assistant Professor
Department of Forest Resources
and Environmental Conservation

Ph.D. (2009) University of California–Davis
M.S. (2004) University of Maine
B.A. (2001) University of Virginia

Special interests
Natural resource economics, bio-economic
modeling, applied econometrics, water policy,
water rights institutions, agricultural land use,
pest management



Alycia Crall
Coordinator, Virginia Master
Naturalist Program

Ph.D. (2010) University of Wisconsin–Madison
M.S. (2003) Colorado State University
B.S. (2000) University of Georgia

Special interests
Citizen science, informal science education,
environmental education, invasive species,
interdisciplinary approaches to conservation,
program evaluation, biological data integration



Luke Juran
Assistant Professor
Department of Geography

Ph.D. (2012) and M.A. (2008) University of Iowa
B.A. (2003) University of Northern Iowa

Special interests
Sustainable water resources management,
household water treatment and safe storage,
hydro-social cycle, water-hazards interface,
participatory processes, south Asia and
global south, human ecology, human-nature
interactions



R. Quinn Thomas
Assistant Professor
Department of Forest Resources
and Environmental Conservation

Ph.D. (2013) Cornell University
M.S. (2007) University of New Hampshire
A.B. (2005) Dartmouth College

Special interests
Ecosystem ecology, forest dynamics,
biogeochemistry, ecosystem-climate
interactions, carbon and nitrogen cycling,
ecosystem and Earth System modeling,
global environmental change

Kelly recognized as a Global Conservation Leader

Associate Professor **Marcella Kelly** received the Global Conservation Leader Award from the Philadelphia Zoo at the zoo’s fourth annual Global Conservation Gala on Nov. 14. This year’s gala served to spotlight issues facing big cats with an emphasis on one key threat – habitat loss due to deforestation caused by the expansion of unsustainable palm oil plantations – and launched 2014 as the zoo’s “Year of the Big Cat.”



The award recognizes Kelly for her potential to create a global impact on wildlife preservation through her work with big cats. The zoo will provide \$20,000 each year for five years to support her global cat conservation projects. An additional \$5,000 each year will enable students in the Zoo Champions for Restoring Endangered Wildlife program to join Kelly on domestic and international cat conservation projects.

“I am so honored by this award recognizing my wildcat work and so thankful for the tremendous support that the Philadelphia Zoo has provided,” Kelly told the gala audience. “Their exceptional support has enabled wildcat research and makes me optimistic that the world’s wildcat population will survive, especially in the case of tigers, which are the most endangered.”

“The college is very proud of Marcella’s accomplishments and her ongoing work with big cats around the world,” said Dean Paul Winistorfer. “Her stellar research and conservation passion are making a difference, especially in regards to keeping the tiger population from extinction. Her efforts epitomize what our college is all about – advancing the science of sustainability.”



Fox receives Barrington Moore Award

Tom Fox, professor of forest soils and silviculture, received the Society of American Forester’s Barrington Moore Award in Biological Science, which recognizes outstanding achievement in biological research leading to the advancement of forestry.

The award is named in honor of a prominent member of the first generation of professional foresters in the United States, who joined the society in 1911. Barrington Moore served on several committees, including the Committee on Forest Policy, which prepared the first truly comprehensive statement of forest policy ever attempted by the society.

Fellow faculty member Harold E. Burkhart received this prestigious award in 1991.

“I am honored to have been selected to receive the Barrington Moore Award,” Fox said. “This really is recognition of the efforts of the many excellent graduate students and post-doctoral associates I have had the privilege of working with throughout my career. I am very grateful for support from the college that has enabled my students and me to pursue our research focused on increasing the productivity and sustainability of plantation forests in the Americas.”

Stiles commended by the CIA



Kenneth Stiles, a lecturer for the Department of Geography and the College of Engineering's Ted and Karyn Hume Center for National Security and Technology, received the Career Commendation Medal from the CIA for exceptional achievement during his 29 years of service.

Stiles contributed his extensive knowledge of geospatial information systems (GIS) and technical targeting to the CIA and its partners in the U.S. Intelligence Community. He brought new sources and methods to bear in the war on terrorism that directly impacted the success of high-risk, high-gain technical collection operations, saving numerous lives. "His depth of experience, superior technical skills, creativity, and dedication to duty justly earned the respect and admiration of those with whom he served," reported the CIA.

Stiles joined the CIA in 1984 and over the course of his career worked with accounts covering societal

issues, the Middle East, information operations, and counterterrorism. He served in three of the four main directorates of the CIA and completed tours in Afghanistan, Pakistan, Europe, and Iraq before retiring in 2013.

"I had a great career, not just a job, and did a wide range of things, but the last decade doing counterterrorism work was the best," he said. "Being at the forefront of taking action after 9/11 was special. I worked with some unbelievably talented people under very trying conditions."

Stiles joined the geography faculty in 2011 as part of the CIA's Officer-in-Residence program, teaching about the ways the intelligence community uses GIS applications to support policymakers and military operations, and the history, organization, and function of the CIA. In spring 2014, he will teach a section on Turkey in today's world for the Presidential Global Scholars program in Riva San Vitale, Switzerland, and will accompany students on a trip to Turkey, where they will meet with both U.S. and British consulate personnel.

"Being an imagery analyst originally, I could only dream about flying around Afghanistan in a Russian helicopter with an M-4 and laptop working with Delta Force, but it happened and it was thrilling and rewarding," Stiles said. "Now, I love working with the students and getting them excited about the intelligence community or working with GIS to support our national security operations."

Dean Emeritus honored with lectureship



Dean Emeritus **J. Michael Kelly** was honored by the Soil Science Society of America with the 2013 Sergei A. Wilde Distinguished Lectureship on Forest Soils. Kelly's lecture at the society's annual meeting — titled "Application of Minimalist Mechanistic Nutrient Uptake Models to Woody Plants, Have We Learned Anything Useful?" — presented a review of his more than 30 years of work on the subject.

Based on his long-term research, Kelly made several insightful suggestions for future research in the field and concluded that future improvements in methodology and models will most likely be brought about by close collaboration between experimentalists and modelers. The named lectureship honors the leadership of Sergei A. Wilde, a Russian immigrant and long-time faculty member at the University of Wisconsin, in the evolution of forest soil science in the 20th century.

GLOBAL SUSTAINABILITY CENTER

New center partnerships work toward responsible water management

Effectively managing the planet's water resources is critical to ensuring equitable development around the world. "Integrated management of water resources will be essential for sustainable development and security moving into the future," said Michael Mortimer, director of the college's Center for Leadership in Global Sustainability, which provides interdisciplinary graduate education in the National Capital Region.

The center was recently accepted as a university member in two internationally recognized networks — the U.S. Water Partnership and the Global Water Partnership. Both are committed to advancing integrated water resource management practices and technologies globally. As a member organization in these international coalitions, the Center for Leadership

in Global Sustainability has become an active partner in working toward a water-secure world.

"Effective integrated water resource management demands collaborative leadership, which the center can help build through membership in these two networks," Mortimer said. "We look forward to working with our new partners to advance leadership for integrated water resource management around the world and to providing our students with invaluable direct access and insights into innovative sustainability strategies and partnerships in nations around the globe."

"These memberships dovetail perfectly with our existing efforts in the Chesapeake Bay and Mekong River watersheds and help strengthen our relationships with

existing corporate partners, including Ford Corporation and Coca-Cola, and nongovernmental partners, including World Wildlife Fund, The Nature Conservancy, the Stimson Center, the U.S. Water Alliance, and others," Mortimer concluded.



Student partners with Campbell Soup to make Camden a 'healthy community'

Partnering with the Campbell Soup Company's Healthy Communities program has opened Pam Nagurka's eyes to the private sector's role in social issues. For her capstone directed study project, Nagurka, a student in the college's Executive Master of Natural Resources program, is working with Healthy Communities Director Kim Fortunato to help build the program beyond the city of Camden, N.J., where the company has been headquartered for almost 150 years.

The company launched the program in 2011 as a commitment to affect measurable change in reducing obesity and hunger in Camden by focusing on four core areas: food access, physical activity and access, nutrition education, and public will. The program employs a "collective impact" model, with the company acting as both the major funder and the backbone organization.

"Working with the Campbell Soup Company has provided me the opportunity to learn firsthand how one major private corporation is enhancing global equality," Nagurka explained. "I am impressed with, and applaud, the company's commitment to improve the quality of life of its employees, families, and neighbors in its many hometown communities."

Developing resources for the company's plants is one of Nagurka's main tasks. They will serve as a "how-to" for employees who want to volunteer in their communities, guiding them toward selecting projects that align with the company's goals and providing an outline for how collective impact can be used to create sustainable programs.

Pam Nagurka (right) visits the gardens of Healthy Communities program partner **ECO Charter School** in Camden, N.J., with Healthy Communities Director **Kim Fortunato (left)** and **Antoinette Dendtler**, founder and head of ECO Charter School.

Nagurka, who teaches sixth-grade science full-time at Williamsburg Middle School in Arlington, Va., notes the connection between this project and her profession. "Academic success is closely linked to good nutrition and positive self-image," she observed.

Her interest in teaching is what attracted her to the Executive Master of Natural Resources program, which is based in the Center for Leadership in Global Sustainability. "My curriculum is a survey course that includes energy and the Chesapeake Bay," she said. "In order to help students understand the relationship among the various science disciplines, I teach my content through the Earth System Science lens."

"After graduating in the spring, I look forward to using the collective impact model to help solve many societal issues facing our children," Nagurka said. "My degree will meld my science teaching career and passion for global sustainable practices surrounding the environment, food access, fair trade, and fair wages."



Alumni Profile

Christian Heine

Alumnus **Christian Heine** has come a long way — literally and figuratively — from his start as a woodworker's apprentice in his home country of Germany to his current position as president of Bosch Power Tools North America.

Heine started out designing and manufacturing high-quality wooden stairs and furniture in Stuttgart, Germany. He earned a bachelor's in wood technology from Rosenheim University of Applied Sciences in Germany in 1996 and went on to earn three graduate degrees at Virginia Tech — a master's in wood science and forest products in 1997, an MBA in 2000, and a doctorate in wood science and forest products with a focus on structural and timber engineering in 2001.

"Partly attributed to the complexity of wood as a material, the department's curriculum, and my research, my work and study in wood science touched many different areas — mechanical engineering, statistics, organic chemistry, structural engineering, civil engineering, computer science, and more," he said. "This, and the interaction with the Virginia Tech community, prepared me well for the entry into a global technology company such as Bosch."

The Bosch Group, a leading global supplier of technology and services, is comprised of more than 350 subsidiaries and regional companies in over 50 countries. Products manufactured and marketed in North America include automotive equipment, industrial drives and control technology, power tools, security



and communication systems, packaging technology, thermotechnology, household appliances, solar energy, health-care telemedicine, and software solutions.

Upon graduation, Heine began a career with Bosch that took him across Europe and back to the U.S. After first joining the company in Germany, he went to Madrid, Spain, as a regional brand manager for two years. He returned to Germany as the director of product marketing and rose to vice president of the company's branch in Leinfelden-Echterdingen, where he controlled worldwide product decisions for many items from concept to discontinuation. He was named president of Bosch Power Tools North America in 2011.

"My time at Virginia Tech was an invaluable experience, both professionally and for my personal life," Heine said. "I really enjoyed the internationality of graduate school. Being able to meet, study, and work with students and professors from all over the world provides for an intensive mix of cultural learning and change of perspective."

Heine now lives in Chicago with his wife and two boys, who have grown up speaking three languages — a testament to their well-traveled parents.

Alumni Events Calendar

MARCH 10-14, 2014

79th North American Wildlife and Natural Resources Conference
Denver, Colo.
wildlifemanagementinstitute.org

APRIL 8-12, 2014

Association of American Geographers Annual Meeting
Tampa, Fla.
aag.org/cs/annualmeeting

MAY 16-18, 2014

Commencement Ceremonies:
Friday, May 16 – University Commencement
Saturday, May 17 – College of Natural Resources and Environment Graduation Exercises
Sunday, May 18 – National Capital Region Commencement

JUNE 3-6, 2014

National Conference of Private Forest Landowners
New Orleans, La.
forestlandowners.com

AUGUST 10-13, 2014

Forest Products Society 68th International Convention
Quebec City, Quebec, Canada
forestprod.org/ic/

AUGUST 17-21, 2014

American Fisheries Society 144th Annual Meeting
Quebec City, Quebec, Canada
fisheries.org

Austen heads American Fisheries Society



Douglas J. Austen ('84 M.S. in fisheries science) has been selected as executive director of the American Fisheries Society, the world's largest and oldest organization of professional fishery scientists and managers.

"To have this opportunity is taking all my work experience and putting it to good use on behalf of the profession and the fisheries resources not only in North America, but worldwide," said Austen, who has more than 30 years of fisheries and natural resources management

experience. "I'm very excited to use my experience to help the society become a better partner and colleague to all our state and federal members and partners."

Austen is responsible for all of the society's staff operations and collaborates with partners in Washington, D.C., and other areas to ensure fisheries science is used in policy development and legislation. He will work toward achieving the society's 2020 Vision — a future where worldwide fisheries production is optimized and sustained while marine, freshwater, and estuarine ecosystems are maintained or improved. He also serves as secretary-general of the World Council of Fisheries Societies, which includes cooperating fisheries societies from a dozen nations.

"By far, the most fun part of the job has been reconnecting with many friends from around the country who work in fisheries," Austen explained. "Many of them have offered to help with the society by working on committees that address many of our science or policy challenges."

Austen had served as the National Coordinator of the Landscape Conservation Cooperatives with the U.S. Fish and Wildlife Service since 2010. He has handled various roles with the American Fisheries Society, including president of the North Central Division, president of the Illinois chapter, and co-chair of the Fisheries Action Network. He previously served six years as executive director of the Pennsylvania Fish and Boat Commission.

Bullard garners multiple honors

Steven Bullard ('83 Ph.D. in forest management economics), dean of the Arthur Temple College of Forestry and Agriculture at Stephen F. Austin State University, has been elected president of the National Association of University Forest Resources Programs (NAUFRP) for a two-year term that began in January 2013. The association's membership includes university faculty, scientists, and outreach specialists, with leadership provided by deans, directors, and heads of more than 80 member universities.



In October 2013, the Society of American Foresters honored Bullard with the W.D. Hagenstein Communicator Award. Bullard, who has been a member of the society since 1977 and was named a Fellow in 2010, had a direct role in highlighting and celebrating the 50th anniversary of the McIntire-Stennis program. He outlined and drafted an article on the program's history that was published in the April/May issue of the *Journal of Forestry*.

The journal article led to an invitation from the USDA National Institute of Food and Agriculture to develop a related video, which was distributed to NAUFRP institutions and key partners nationally and aired at local, state, and regional meetings. Both the article and video communicate the continued importance and relevance of university-based research and graduate training in forestry and related fields and help build strong, long-term relationships with key forestry and natural resources constituents. Bullard also wrote a resolution that was passed by the U.S. Senate in 2012 recognizing the 50th anniversary of the McIntire-Stennis program. All three resources are available at naufnp.org.

"I want to credit the great faculty at Virginia Tech, like Dave Klemperer, who is now retired, and Harold Burkhardt," said Bullard. "They were both absolutely instrumental in my development."



Hokie Nation Network, a portal for alumni interested in professional networking opportunities, leverages social media, job listings, and other career resources designed to help Hokies connect with fellow alumni. Visit alumni.vt.edu/hnn to start networking today!

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Aspiring wildlife filmmaker wraps up as co-host of children's TV program

Clark DeHart of Blacksburg, Va., who graduated in December 2013 with a degree in wildlife science, is not only following his dream career in wildlife conservation filmmaking, he has also received two Telly Awards while a part of the multiple award winning children's TV series "Aqua Kids."



Clark dives with shark off the coast of the Bahamas.
Photo by Stuart Cove's Dive Bahamas

For the past three years, DeHart has been a part of co-hosting, filming, and taking photos for "Aqua Kids," which is designed to educate kids with a conservation message. The show inspires young people to take an active role in protecting and preserving marine environments. DeHart also writes a travelogue for the show's website.

"Aqua Kids" was started by producer George Stover, who loves to scuba dive. Stover noticed the impacts that humans were having on reefs and knew that what happens up stream affects downstream — that all natural systems are connected.

Now in its ninth season, "Aqua Kids" has earned two Emmy Awards and 15 Telly Awards. The syndicated show, which reaches 92 percent of the nation's audience, casts teenagers and young adults to help deliver its message through interaction and practical involvement, from protecting sea life by picking up litter to assisting with animal rescues.

After an episode aired on trash and the chain of littering in the Chesapeake Bay, young students from across the country wrote to the cast and crew expressing interest in organizing all types of events — from beach cleanups to schoolyard recycling drives.

When DeHart teamed up with "Aqua Kids," he was able to draw on material from his college classes. "I need to acknowledge the benefit I gained from classes taught by various professors," he noted. "David Jachowski's class on conservation management for endangered species was a huge help, along with Carola Haas' field biology class on habitats and identifying species, Marc Stern's class on environmental education and how to motivate citizens to act, and Jim Parkhurst's class on wetland ecology."

DeHart, who started making films in high school, produced the short film "Only Time Will Tell," which reveals the impact of invasive species on coral reefs in Hawaii and was shown at the 2013 Beneath the Waves Film Festival. Invasive algae are suffocating the reefs because non-native species have been introduced into the fragile Hawaiian ecosystem for use in modern food and cosmetic products.

"Large vacuums can remove some of algae but are not able to keep up with the proliferation," DeHart explained. "Native urchins are also being used to help mitigate the spread of non-native algae. I believe that my generation, like none other in history, has both the responsibility and the resources to leave the legacy of a healthier, more sustainable planet."

DeHart came to realize that filmmaking was the best way to reach the public with conservation sustainability messages. He got his start on television through an introduction from Jean Beasley, founder and director of the Karen Beasley Sea Turtle Rescue and Rehabilitation Center in Topsail, N.C. DeHart was visiting the center to shoot footage for a documentary on sea turtles, and "Aqua Kids" happened to be filming there at the same time.

"Along the way, the show has given me a chance to experience some amazing locales," he said. "Episodes have been shot up and down the East Coast and across the United States, including Alaska and Hawaii."

DeHart has enjoyed his time on "Aqua Kids" while facing the challenge of chronic fatigue syndrome, a debilitating medical condition characterized by persistent fatigue that does not improve with rest. Despite his condition, DeHart served as the president of the Virginia Tech student chapter of The Wildlife Society this past year and has worked to inspire other Virginia Tech students to get involved in protecting the environment.

In a fitting end to his time with the show, DeHart returned to the Karen Beasley Sea Turtle Rescue and Rehabilitation Center, where he was given the honor of releasing an endangered sea turtle back into the wild.

Now that he has graduated, DeHart hopes to continue to motivate his peers. "Wildlife conservation gives me something significant to focus on and be passionate about," he said. "My dream job would be to work for National Geographic."

"Aqua Kids" and more online

- Visit aquakids.tv to view previously aired episodes, find showtimes in your viewing area, read DeHart's travelogue, or learn more about "Aqua Kids" and its mission.
- Read DeHart's personal blog at livingthewildlifewithclark.blogspot.com.
- View some of DeHart's wildlife videos, including "Only Time Will Tell," at youtube.com/user/RoddyAndClark/videos.



Clark (left) and a fellow "Aqua Kids" cast member examine a blue crab on the Living Classrooms Foundation boat in the Chesapeake Bay.
Photo by George Stover III



Clark (left) and a fellow "Aqua Kids" cast member canoe on Jim Lake in Alaska, learning about anadromous fish.
Photo by Johnny Slaughter



The cast and crew of "Aqua Kids" raft down the Kenai River in Alaska. Photo by Johnny Slaughter



Clark along Maine's Penobscot River at the Veazie Dam.
Photo by Katie Mulligan



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