



CNRE NEWS

COLLEGE OF NATURAL RESOURCES AND ENVIRONMENT

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\$20 MILLION GRANT TO IMPROVE SOUTHERN PINE FORESTS

Virginia Tech is among a consortium of land-grant institutions in the South to receive a \$20 million Coordinated Agricultural Grant from the National Institute of Food and Agriculture (NIFA) to study the effects of climate change on southern pine forests.



Tom Fox is serving in a number of leadership roles on the grant.

"The project, called PINEMAP (Pine Integrated Network: Education, Mitigation and Adaptation), is focused on creating the knowledge needed to sustainably manage southern pine plantations so that they are better adapted to droughts, temperature extremes, and other variations in climate," said Tom Fox, professor of forest soils and silviculture, who is the lead principal investigator (PI) on the \$3.4 portion of the grant going to the college's Department of Forest Resources and Environmental Conservation.

"The five-year grant will study climate change mitigation and adaptation as it relates to southern pines, particularly loblolly, from Virginia to Texas," said Dean Paul Winistorfer. "It reflects a lot of hard work and cooperation with many researchers. Securing this level of support is a very impressive effort."

Fox, who serves as the overall lead PI for silvicultural research on the grant as well as the Integration Team Leader for mitigation, will help coordinate and synthesize the work of the more than 29 scientists from 11 southeastern universities, eight forest industry research cooperatives, and the U.S. Forest Service, as well as climatologists from the Southeastern states.

The grant builds on more than 40 years of research conducted by industry/university research cooperatives in forestry, including two housed at Virginia Tech: the Forest Modeling Research Cooperative and the Forest



Tom Fox discusses the management, nutrition, and carbon sequestration potential of loblolly pine with industry cooperators and scientists.

Productivity Cooperative. "NIFA clearly recognized the immense value of the long-term data brought to the project by these industry/university partnerships," stated Fox. "The overall goal is to improve the health, productivity, and sustainability of southern pine forests and to provide landowners the tools they need to better manage their forests in the future to mitigate and adapt to climate change."

"Another key aspect of the grant was the outstanding team of scientists we assembled to work on this project," Fox noted. Co-PIs on the grant include faculty members Harold Burkhart, Jason Holliday, John Seiler, Brian Strahm, Valerie Thomas, and Randolph Wynne. "NIFA required us to bring together a large, multi-institutional, trans-disciplinary group of scientists to comprehensively address the impacts of climate change on southern pine forests," Fox noted. "Without the expertise and contributions of the entire team of PIs at Virginia Tech, this grant would not have been possible."



Importance of Southern Pine Forests

- The 34 million acres of southern U.S. pine forests produce more timber than any other country in the world.
- These forests sequester 12 billion metric tons of carbon each year – 36 percent of the carbon sequestered annually by all forests in the lower 48 states.

Professor Randy Wynne, co-director of Virginia Tech's Center for Environmental Applications in Remote Sensing, is co-leader of the overall project modeling team, which includes Valerie Thomas, assistant professor of forest remote sensing, and University Distinguished Professor Harold Burkhart, who specializes in forest biometrics, in addition to researchers at other participating institutions. The team will examine the response of the southern pine ecosystems to future scenarios based on regional carbon and productivity models driven by the extensive field data, experimental results, and remote sensing.

Alumni Distinguished Professor John Seiler is investigating tree ecophysiological responses, including soil respiration and the separation of total soil respiration into heterotrophic (CO₂ produced by microorganisms in soils) and autotrophic (CO₂ produced by tree roots) components. Accurate estimates of heterotrophic respiration are critical for accurately predicting



John Seiler and doctoral student Marco Yanez train with the Li-Cor 6400, a portable photosynthesis system used to measure carbon fluxes in forested ecosystems.

carbon dioxide capture. He is also co-director for the large education component of the project. "We will be training teachers in the role that forests play in mitigating climate change, sending undergraduates into public schools where they will teach students, and also using undergraduates as research interns during the summer," Seiler said.

Jason Holliday, assistant professor of forest genetics and biotechnology, will examine the genetics component of the project in collaboration with researchers at Texas A&M, North Carolina State, and the University of Florida to better understand the genes that underlie climatic adaptation. "This knowledge can then be used to enhance forest health and productivity by correctly matching planting stock to changing climatic regimes," Holliday added.

Brian Strahm, assistant professor of forest soils and ecology, will focus on the role and responses of forest soils to the mitigation and adaptation of southern pine ecosystems to climate variation. "I'll be working closely with the ecophysiology and silviculture teams by evaluating soil carbon and nitrogen dynamics with a specific focus on how the interaction of climate change and management affect nutrient availability and use, carbon sequestration, and greenhouse gas fluxes," he explained.



The PINEMAP Project focuses on how to sustainably manage pine plantations so that they are better adapted to droughts, temperature extremes, and other variations in climate.

Greetings from Blacksburg and the college. We had a great college graduation in May, the highlight of the year for us on campus — a time of celebration, accomplishment, joy, and seeing our students set their sights on the next step. Our most important educational mission is educating our students so they can make meaningful contributions to society through their work in natural resources and environmental stewardship. We graduated our first cohort of students in the Leadership Institute and have selected 12 outstanding students to begin this nine-month experience in August.



Dean Paul Winistorfer with the 2010-11 outstanding graduating seniors from each department (L-R): Holly Kays, forest resources and environmental conservation, and college outstanding senior; George Cummins, fish and wildlife conservation; Kathryn Procriv, geography. Not pictured: Chris Rider, wood science and forest products.

We have had a very strong year of faculty accomplishment in all program areas. The dedication, motivation, and contributions of our faculty to our overall mission are our bedrock. We are well positioned for the future with our exceptional people in the college.

Our focus moving forward is on our undergraduate curricula, degrees, and making sure that what we offer is relevant to the needs of employers. Jobs and the right skill sets for those jobs are critical in today's economy. We intend to grow our undergraduate program in strategically important degree areas.

Thank you to those who responded to our stakeholder survey as we learn more about perceptions of the college from many different angles. It is important what others think of us and our work, and your opinions will continue to help us shape the future of the college. Survey responses have been most interesting reading. We thank you for taking time to tell us what you think. Perception really does help shape reality.

Thank you for your support of the college and our students. Many of you have given of your financial resources during the past year, and we are very grateful for your support because it makes an important difference in the quality of our college and the opportunities we can offer our students and faculty.

Every day I am more attuned that what we do in the college is critically important for the future of our natural resources and therefore important to people, communities, and society at large.

I hope your summer has been enjoyable. We look forward to seeing you on campus in the coming year.

Warm regards from all of us in the college,

Paul M. Winistorfer
Dean
pstorfer@vt.edu

COLLEGE NEWS

College Launches Student Leadership Institute

The college launched a new program in fall 2010 to develop leadership abilities in some of its top undergraduate students to help prepare them as future leaders in managing natural resources for sustainability and biodiversity. Twelve students were chosen for the inaugural class of the Leadership Institute, a two-semester special study sequence in which select students with demonstrated leadership skills and academic ability strengthen their talents through in-class discussion and hands-on leadership projects. Through this unique program, students explore aspects of natural resources leadership such as service learning, profit motives in natural resources management, teamwork, and success in the political arena.

"We are mentoring our best and brightest students so they can be well prepared to lead private and government organizations someday — managing, protecting, and utilizing our natural resources," said Associate Professor Steve McMullin, who directs the institute.

The students visited Charlottesville, Richmond, and Washington, D.C., with McMullin and Dean Paul Winistorfer during a weeklong trip in January to meet with elected officials, state and federal agency heads, and non-governmental organization directors to hear firsthand about the issues and challenges leaders face. "I could not have been more pleased with how our students interacted with state and national leaders during this week of experiential learning," said Winistorfer, who loved his week with the students. "It exceeded all of our expectations, as well as strengthened and built relationships with the organizations we visited." Senior wildlife science major Kathy Hixson added, "It was a refreshing experience to meet with natural resources professionals who are still passionate about the field even 20 or 30 years into their career."



The Leadership Institute students met with Secretary of Natural Resources Doug Domenech (far right), a college alumnus, during their stop in Richmond.

In the spring semester, students worked on service learning projects such as creating a recruitment video for the college, organizing student participation for the Big Event service weekend, and developing and delivering environmental education programs for Montgomery County schools. "The first year of the Leadership Institute was a rewarding and challenging experience for both students and instructors," reported McMullin. "Associate Director Brian Bond and I are looking forward to making it an even better experience in the coming year."

"We are well on track to reach the vision we have for this program," Dean Winistorfer noted. "Our hope is that the Leadership Institute will become a signature program of the college that is widely recognized."

Generous donations enabled the college to quickly start up this critical program and will ensure its continued success. Major donors include Frank and Susan Boucek of Naples, Fla., Guy and Katherine Crane of Chicago, Ill., Jon DeHaan of Naples, Fla., the Donohue Family Foundation of Pittsburgh, Pa., Bob Garst of Roanoke, Va., Bob Hagler of Leesburg, Va., William Lee of Williamsburg, Va., and institute director Steve McMullin of Radford, Va.

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Department Renamed, New Option Added

To reflect the growing emphasis on sustainability, the college's fisheries and wildlife sciences department has changed its name to the **Department of Fish and Wildlife Conservation**. The new name is one of a number of steps the college is taking toward further positioning itself as a leader in the area of sustainability. "We are refocusing our efforts to address the most critical and pressing problems facing the global community," said Dean Paul Winistorfer. "The programs of the college are central to nearly every conversation you wish to have about sustainability, natural resources, or the environment, and renaming the department helps set the stage for the future."

The change also intends to correct misconceptions stemming from the former department name. "The old name conjured up images of bass fishing and deer hunting," Department Head Eric Hallerman explained. "Students interested in environmental sciences were not realizing

that our program is so much broader than that and actually affords them a wider range of opportunities. We now have a name that reflects more of what we are about, one that should not only capture students who have conservation and environmental science interests but also attract a wider range of research collaborators."

In response to student interest, the department has developed a marine fisheries option within the fisheries science major, the first in the commonwealth. "There is a growing need for marine fisheries scientists, as sustainable marine fishery practices have become an issue," Hallerman noted. In addition to taking courses with a marine science focus, students also spend the first semester of their senior year at another university, providing them with hands-on experience in marine fisheries techniques. "These students, who will be leaders in sustaining marine resources, will be the ones to tackle future challenges," said Hallerman.



Undergraduate students can now enroll in the Department of Fish and Wildlife Conservation's marine fisheries curriculum option.

\$4 Million Grant to Study Gulf Oil Spill's Effects on Plovers



Researchers began collecting data on piping plovers in the Gulf within a week after the grant was awarded.

College researchers received a \$3.4 million grant from the U.S. Department of the Interior to study the effects of the *Deepwater Horizon* oil spill in the Gulf of Mexico on piping plovers, shorebirds that have been listed as threatened since 1986. The research team began work on the grant application within days of the explosion that caused the oil spill, and had a full team of 28 researchers collecting data on site within a



week of the grant notification. The study, led by faculty members James Fraser, Sarah Karpanty, Bill Hopkins, and Dan Catlin, was originally funded only through the end of the plovers' spring migration in April, but an additional grant of \$650,000 has enabled the team to continue their field study through the summer breeding season.

Piping plovers have been listed as threatened since 1986.
(Photo by Sid Maddock)

The researchers, from the Department of Fish and Wildlife Conservation, have been measuring plover survival and migration patterns by comparing rates of survival and emigration in oiled and unoiled areas of the Gulf, where the birds overwinter each year. With the additional funding, they are studying the plovers' migration back to the American Great Plains, one of their three summer breeding grounds, focusing on sites along the Missouri River.

Fraser has been studying piping plovers since 1986. His vast data collection and his renowned expertise helped the team to secure the additional funding. "We were very fortunate to have had

great historical data on reproduction and survival on the Missouri River," Fraser observed. "This should allow us to compare reproduction and survival from previous years with these parameters after the oil spill."

Unfortunately, this year's unprecedented flooding of the Missouri River has been greatly affecting the plovers' migration to their summer nesting grounds and may impact the study's results. "Our goal is to find birds that we saw at the Gulf back on their breeding ground and to observe them in terms of reproduction," stated Karpanty. However, much of the birds' habitat is currently underwater. "The amount of water coming down the river is the highest since the dams were constructed in the mid-20th century," Fraser added.

When completed, the research will provide data upon which litigators can base settlements for the damage lawsuits resulting from the oil spill. In order to factor damage to plover habitat into these settlements, litigators must know whether and by how much plover survival and migration patterns have changed since the spill. "Our real hope," Fraser said, "is that our data will be used for restoration efforts. We want our research to help people think toward the future."

The team is planning to pursue additional funding to continue their research through the next winter season.

College Brings Expertise to ClbM

The college is teaming up with the Center for Innovation-based Manufacturing (ClbM), based in Virginia Tech's Institute for Critical Technology and Applied Science, to research the future of innovation and lean engineering. Henry Quesada, assistant professor of business and manufacturing processes in the Department of Wood Science and Forest Products, is leading the center's Wood Innovation Research Group. "The idea for the group came after we conducted qualitative research around Virginia and found there was little knowledge about innovation," Quesada explained. "We saw an opportunity to increase our contribution by providing more Extension activities and creating more research to



Master's student Scarlett Sanchez participates in a business process management simulation.

benefit the industry." Quesada's team of five students — Scott Lyon, Johanna Madrigal, Scarlett Sanchez, Bryan Stinnett, and Chao Wang — conducts research in five areas of manufacturing. "By linking our group with the center, we now have access to other students and faculty who can provide expertise that we would otherwise lack. This gives us an interdisciplinary approach," Quesada added.

One of the studies has already gained national attention. EnerNOC, a leader in energy management applications for the smart grid, partnered with the group on its "lean energy" project. The Boston-based company specializes in data-driven programs that advance energy efficiency. "Working with EnerNOC allows us to monitor real-time energy consumption and analyze energy usage trends in the wood industry in order to improve energy efficiency," Quesada said.

The goal of the ClbM is to help university researchers commercialize new innovative technologies. "There is a lack of consistency in making innovation translate into practical applications," said Quesada. "Our hope is to provide applications for use in every industry and to bridge the gap between theory and practice."

CNRE Cancer Crushers Participate in Relay for Life

Despite the rain and cold temperatures, a team of college faculty and staff dedicated a Friday night in April to walk and run laps around the Drillfield for the Virginia Tech Relay for Life. The CNRE Cancer Crushers team raised \$2,765 for the American Cancer Society, far surpassing their initial goal of \$1,200.

"Our team was a motivated and spirited crew that really pulled together to raise money while honoring our family and friends by doing a few laps in their name around the soggy Drillfield track," said Audrey Zink-Sharp, team captain. "Our thanks go out to all who supported us. Next year we'd like to double team membership and our donation totals."

The university, which has hosted the Relay for Life for the past 10 years, has received a variety of awards and recognition for its participation and fundraising, including the 2009 and 2010 Gordy Klatt Award for the highest net income in the youth/college category, as well as past awards for top college participation per capita, top online fundraising, and greatest number of survivors present at an event. This year Virginia Tech had the biggest university effort at 5,500 participants, and was recognized as the first collegiate relay in history to raise more than \$600,000.



The CNRE Cancer Crushers team braved the rain and raised more than double its fundraising goal. Front row (L-R): Arlice Banks, Audrey Zink-Sharp, Cathy Barker, Dean Stauffer. Back row (L-R): Tracey Sherman, Jesse Sherman, Tom Hammett. Not pictured: Alan Raflo, Harold Burkhardt, and Eric Hallerman.

DeHart Pursues Cinematography Passion



Clark DeHart, a sophomore wildlife science major from Blacksburg, Va., was awarded third place in the Ecological Society of America's 2010 Eco Art Festival for his documentary film, "Topsail Turtles." Despite receiving recognition for the film, DeHart says it is a work in progress. "I haven't finished the film completely. I still want to film a turtle in the process of nesting."

The film, DeHart's second wildlife documentary, was shot during two family vacations to Topsail Island, N.C. DeHart wanted his film to showcase the work of the Karen Beasley Sea Turtle Rescue and Rehabilitation Center, located on the island. "In this day, documentaries

DeHart continues to work on his award-winning documentary, "Topsail Turtles." (Photo by Roddy DeHart)

are full of doom and gloom about species and their plight for survival," said DeHart, "But I really wanted to show the positive side and show someone making a difference. That person is Jean Beasley." Beasley, who now directs the center founded by her daughter, contacted DeHart after he had returned home to invite him back for scheduled rehabilitated turtle release. DeHart filmed the release of 16 turtles and added the footage to his developing documentary, but he has yet to capture a nesting turtle on film.

DeHart aspires to be a wildlife cinematographer and has secured a co-hosting position for the summer season of the children's educational program, "Aqua Kids." The show travels to aquariums, research facilities, and other destinations to showcase aquatic life.

Chong Weathers a Challenge

William Chong, a senior geography major from Alexandria, Va., volunteered with the National Weather Service (NWS) Blacksburg office to fulfill his undergraduate research credit requirements. Every Wednesday, Chong shadowed the office's senior meteorologist, who collected nightly weather data and updated the evening forecast.

During his time at the NWS, Chong was assigned to compile a reference booklet that is now used by Department of Transportation workers in Virginia, West Virginia, and North Carolina. Given only a few guidelines about the final product, Chong created a comprehensive booklet that included information on how to navigate the NWS Blacksburg website and where to locate specific weather data. Phil Hysell, warning coordinator meteorologist for the NWS Blacksburg office, was extremely impressed by Chong's work and has received positive feedback on

the booklet. "Many people have told me that this booklet has been extremely helpful for locating specific forecast information that may only be needed a few times a year," said Hysell. Although Chong's internship is over, he periodically volunteers at the NWS Blacksburg office when assistance is needed on various projects.

Last summer Chong spent two weeks storm chasing in the Great Plains with a team of Virginia Tech students, which included spending up to 12 hours a day in a minivan. "The students were like the forecasters for our professor, who was the driver," said Chong. "We were looking at models every morning and figuring out where to position ourselves for storms." Chong, who has applied to graduate school and wants to pursue a career in meteorology, was also the lead photographer on the trip.

William Chong



Kays Named Outstanding Graduating Senior



Holly Kays of Fairplay, Md., a double major in natural resources conservation and English, was named the college's Outstanding Graduating Senior for the 2010-11 academic year. Award recipients are selected from each college for outstanding performance in academic achievement, extracurricular activities, leadership positions, and service to the university and community.

Throughout much of her college career, Kays was a student writer for the college's public affairs office, composing stories for the CNRE News, Virginia Tech Research magazine, and the university homepage. As a sophomore, she won second place in the Virginia Outdoor Writers Association's Collegiate Undergraduate Writing Contest, and she currently does freelance writing for the Arbor Day Foundation website.

Kays exemplifies Virginia Tech's motto of *Ut Prosim* through her community service efforts. Since 2008 she has been working with Common Ground Trailer Park Ministries, an ongoing community ministry that focuses on developing relationships with children in need

Holly Kays

through after-school tutoring and activities. She was a team leader in The Big Event in 2010 and has made several spring-break trips to Mobile, Ala., where she organized and taught Bible School for the Inner City Ministry. Kays has been a member of the Phi Kappa Phi honors society since 2009 and received the honor of AP Scholar With Distinction in 2007.

Kays, whose parents are both CNRE alums, hopes to pursue a career as a magazine writer, preferably focusing on the relationship between communities and sustainability. "I feel that this type of work would combine my love for writing with my interest and knowledge of sustainability issues and my desire to make a difference in other people's lives," she said.

Editor's note: Having worked with more than a hundred interns during my career, I have never had such an exceptional student in every way as Holly. She exemplified all the qualities a teacher or parent hopes for. She was a pleasure to have in our communications office and we know she will be one of CNRE's bright stars making a difference in the world. We will greatly miss her. *LMD*

Students Initiate National Interdisciplinary Honor Society

A group of graduate students, including a number from the college, founded the National Interdisciplinary Research Honor Society at Virginia Tech, the first of its kind in the U.S. The society's goal is to encourage communication between students of different disciplines and to promote new interdisciplinary research. "We are a very diverse group across several colleges and several nationalities," said **Tammy Parece**, a geospatial and environmental analysis doctoral student and chair of the society's membership committee.

The society members plan to utilize their website (www.idrsociety.org) for easier communication and are working on a forum where people from various disciplines — not only other students, but people around the world — can come together for online discussions. "You have access to different countries, different perspectives, and different colleges, not only in the United States. You may have access to research that's being done, or has been done, in other countries," noted wood products doctoral student **Johanna Madrigal**.

"I think we are all outgoing researchers interested in guiding others who are having difficulty navigating the challenges of interdisciplinarity," added **Risa Pesapane**, a fisheries and wildlife sciences master's student. "We're all happy to be a resource for others interested in interdisciplinary research by talking about our own disciplines and providing further resources within our departments through the communication network on our website." The group hopes to start developing chapters in other universities around the country.



Members of Virginia Tech's National Interdisciplinary Research Honor Society gather at the society's induction ceremony. CNRE students include Johanna Madrigal (far left), Tammy Parece (middle row, fourth from left), Risa Pesapane (back row, third from left).

CIA Officer-in-Residence



Kenneth Stiles

Kenneth Stiles, a Central Intelligence Agency officer with more than 25 years experience, has joined Virginia Tech as a visiting faculty member through 2012. Stiles' appointment is in the Department of Geography owing to his professional expertise in Geographic Information Systems (GIS) analysis and remote sensing. "Ken Stiles' experience in the operations of the U.S intelligence community, his on-the-ground knowledge of significant parts of the world,

and his interests in things geographical make him a perfect fit for our department," remarked Bill Carstensen, head of the geography department.

Stiles taught a course on the history, organization, and function of the CIA within the intelligence community during the spring 2011 semester. In the fall, he will offer a GIS course on how the intelligence community uses GIS applications in its analytic support to both policy makers and U.S. military forces in the field.

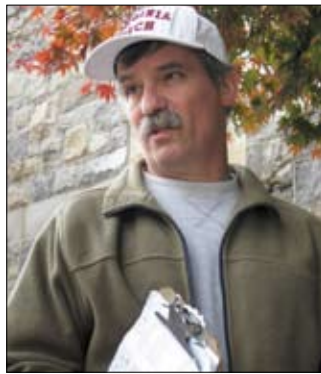
Stiles came to the university through the CIA's Officer-in-Residence program, which sends employees for two-year tours on the faculties of participating colleges and universities. Stiles will work with the Ted and Karyn Hume Center for National Security and Technology, and the Intelligence Community Center of Excellence, both affiliated with Virginia Tech.

Seiler Named Alumni Distinguished Professor

The Virginia Tech Board of Visitors recently named **John Seiler** an Alumni Distinguished Professor, making him the first college faculty member to receive this honor. Alumni Distinguished Professors are recognized not only for their enviable record of scholarship and service to their disciplines but also for their contributions to the instructional program and impact on the lives of generations of Virginia Tech students. Less than 1 percent of the university's faculty hold this elite honor.

Seiler is a popular forestry professor known for his caring, thoughtful, innovative, and passionate teaching. He excels not only in engaging students but also in developing creative multimedia software that provide an educational, interactive experience for all levels of tree enthusiasts. Seiler said simply, "I love to talk to anyone at any time about trees and forests."

Seiler's multimedia computer software for tree identification and an electronic textbook are popular at both national and international levels. His natural resource outreach program for middle school students engages Virginia Tech students in service learning, and an interactive website connects middle school children with



John Seiler

Virginia Tech faculty members. Seiler's dendrology website, which includes over 900 Tree Fact Sheets, is used by hundreds of students, teachers, and other professionals daily. His popular Web link, "Ask Dr. Dendro," provides direct answers to tree-related questions.

In addition to his teaching and curriculum development, Seiler has an internationally recognized research program in woody plant ecophysiology funded by \$6 million in extramural funds. "His contributions to enhance the productivity of Southeastern forests and advance the science relating to carbon flow in forest ecosystems are unparalleled," said Dean Paul Winistorfer.

"Dr. Seiler excels in every aspect of teaching, research, outreach, and service," Winistorfer added. "You can't separate John from his positive influence on students. He demonstrates every day his interest in students and learning. He is a rare mixture of intelligence, ingenuity, and common sense."

Sforza Receives XCaliber Award

Peter Sforza, director and research scientist at the Center for Geospatial Information Technology and instructor in the Department of Geography, received the 2011 XCaliber Award. Shorthand for exceptional, high-caliber contributions to technology-enriched learning activities, the XCaliber Award is presented annually by the Virginia Tech Center for Innovation in Learning to recognize faculty members or teams of faculty and staff who integrate technology in teaching and learning and celebrate innovative, student-centered approaches to learning activities.



Peter Sforza's (R) Web-mapping course helps students understand current and next generation software and technology.

Sforza was recognized for his Web Mapping course, through which students learn the theoretical and societal context of Web mapping while gaining experience using interactive mapping applications in a collaborative working environment. The course helps students understand Web maps in the context of spatial data infrastructures from global to local scales. It also examines the fundamental building blocks that students need to understand current and next generation software and technology, and teaches them how to choose an appropriate Web-mapping solution to a particular problem. Group projects have focused on the theme of virtual cities and have a recognizable value to the local community. Recent projects used the data infrastructure (terrain, building models) of the 3D Blacksburg model to develop applications for solar analysis, pedestrian routing, WiFi mapping, and soundscape mapping.

Lindsey Joins 'Car Talk'

Adjunct Professor **Kieran Lindsey** has added a new entry to her resume — she is now the official animal-vehicle biologist for the famed Tappet brothers, Click and Clack, on "Car Talk," one of the most popular shows on National Public Radio. Whether it's bats in the garage, escaped pet hissing cockroaches, or deer-vehicle collisions, Lindsey tackles questions and explains what listeners can do about their animal problems, posting some of the most common automotive-animal conundrums on the show's Wildlife and Your Car web page.

"Car Talk's' definition of wildlife is very broad, basically anything that's alive and not human," Lindsey explained, so she expects questions to run the gamut. She will also lend a hand to answering wildlife questions in "Car Talk's" nationally syndicated newspaper columns and its newsletter. "I look at this role as an opportunity to educate the public about the natural world and to frame answers within an ecological context so people can appreciate what is outside their door," Lindsey said.

Lindsey is no stranger to educating the public about urban wildlife. She headed a nonprofit wildlife center in Houston, hosted a weekly radio program, "Wild Things Radio," on public radio in Albuquerque, N.M., and writes a blog, Next-Door Nature, that focuses on the benefits and challenges of interacting with wildlife in urban and suburban settings. "People have an innate interest in wildlife and the natural world, but they don't always know where to look. I'm trying to open some eyes by pointing out that nature is all around us — it doesn't stop at the city limit sign."

Lindsey directs the Natural Resources Distance Learning Consortium for the college and teaches graduate courses in urban wildlife management, human-wildlife conflicts, and human dimensions of natural resource management in the college's natural resources program in the National Capital Region.



Sometimes the wildlife is the boss! Kieran Lindsey tackles automotive-wildlife questions from listeners for the popular National Public Radio show, "Car Talk."

[Photographer Jim Stroup used his creative talents, and a bear mount from the college's T. Marshall Hahn collection, to craft this lighthearted photo.]



Mortimer Named SAF Fellow

Michael Mortimer, director of graduate programs for the college in the National Capital Region, has been elected a Fellow of the Society of American Foresters (SAF).

Michael Mortimer

Fellows are selected to honor SAF members who have provided outstanding contributions to the society and the forestry profession, and are limited to only 5 percent of the society's more than 14,000 members. "Being elected a Fellow in the Society of American Foresters puts me in the company of some of the most prominent and distinguished forestry professionals and scholars in the country, a great honor for me," said Mortimer.

Kelly Contributes to Hantavirus Research



Extreme caution, such as wearing appropriate personal protective equipment, must be taken when handling animals that may carry Hantavirus.

Marcella Kelly, associate professor of wildlife, contributed research to an article reporting two cases of Hantavirus pulmonary syndrome (HPS) in West Virginia. HPS is a rare cardiopulmonary disease most commonly transmitted to humans through rodents. The article summarizes two cases in an effort to stress effective methods of reducing exposure to Hantavirus.

In the first case, a 32-year-old Virginia Tech wildlife science graduate student was hospitalized after suffering from fever, cough, and chest pain. According to fellow students, he had recently handled mice for research without consistently wearing gloves or washing hands after contact. He did not survive past his third day of hospitalization. In the second case, a 41-year-old father who had returned from a week-

end trip with his family to a log cabin suffered from similar symptoms upon hospitalization. During his trip, he had rid the cabin of multiple rat infestations. After testing positive for HPS and receiving appropriate treatment, the patient experienced a full recovery. Researchers studied the areas in which both patients had been and found multiple populations of small mammals carrying the Hantavirus.

A total of 560 cases Hantavirus pulmonary syndrome have been reported in 31 states since it was first identified in 1993; 36 percent of those cases were fatal. Kelly and her co-contributors to the article seek to inform the public of preventative measures when handling rodents in an effort to reduce the risks of contracting HPS.

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VirginiaTech
College of Natural Resources and Environment

ENGAGEMENT AND OUTREACH

Virginia Master Naturalist Program Blossoms

With 30 program chapters across the state and more than 1,000 active volunteers, the Virginia Master Naturalist Program is a rapidly growing force. Through this program, trained volunteers broaden their own knowledge about Virginia's natural resources while serving their communities and the environment.

"Virginia Master Naturalist volunteers are active statewide, and natural resource agencies and organizations are turning to these volunteers for help with many of their initiatives," said Michelle Prysby, the state's program coordinator. "Educating others about natural resources is one of the most important things the volunteers do." Virginia Master Naturalist volunteers have reached more than 130,000 people through educational programs for parks, community groups, festivals, and schools.

The program received a 2011 Governor's Award for Environmental Excellence, earning a Gold Medal in the governmental environmental programs category.

Award recipients are selected based on criteria including environmental benefit, stakeholder involvement, public outreach, transferability, and innovativeness.

Since the program's inception in 2006, volunteers have contributed 142,300 hours of service valued at more than \$2.8 million. Several hundred new volunteers are trained each year. More than 300 local partners, including nature centers, nonprofits, and local governments, collaborate with the Virginia Master Naturalist Program on efforts to build appreciation for natural resources and restore habitats across the commonwealth.

The program is sponsored jointly by Virginia Cooperative Extension, the Virginia Department of Conservation and Recreation, the Virginia Department of Forestry, the Virginia Department of Game and Inland Fisheries, and the Virginia Museum of Natural History, with additional support from the college's Department of Forest Resources and Environmental Conservation.



Master Naturalist training takes place in the classroom, in the field, and in the water. These volunteers are learning about marine life through hands-on investigations. (Photo courtesy of Tidewater Chapter)

Marion Arbor Day



Evelyn Lawrence (far right) received several national awards, including The President's Volunteer Service Award, during Marion's annual 2011 Arbor Day celebration for her work in telling the story of Sallie's Crying Tree, where Lawrence's grandmother wept for her family as an enslaved six-year-old. Professor Emeritus Jeffrey Kirwan (far left), who included the tree in his Remarkable Trees of Virginia book, was named an honorary Marion Tree Commission member and presented the Marion community with its ninth Tree City USA honor. (Photo by Dan Kegley, Smyth County News and Messenger)

Marketing in a Virtual World

The Virginia Geospatial Extension Program is helping small businesses renovate their marketing efforts by utilizing advances in geospatial technology associated with location- and place-based services. These tools, such as GPS devices and online mapping and database services, can geographically connect customers to businesses. The "Marketing in the Virtual World" workshop shows small-business owners how to apply this new technology to their advantage.

Many small, rural business owners rely upon more traditional and costly forms of publicity, such as print advertising, but free online marketing tools can help them compete with larger businesses. "We are trying to use global positioning to inform people, especially those traveling on highways, about small businesses that are located in close proximity to travel routes," explained John McGee, geospatial Extension specialist and research associate professor. "Local business owners should consider GPS navigation devices as virtual roadside billboards. These applications can help to level the playing field for smaller businesses."

The workshop offers step-by-step instructions on how to register with national business databases that service many popular location-based devices, such as Garmin, TomTom, and smartphones. Participants also learn how to take advantage of free, online advertising approaches to enhance business exposure and revolutionize small business publicity. A vast majority of past workshop participants said they are now better positioned to compete and will change their marketing efforts based on what they learned. Visit cnre.vt.edu/gep/ for details on future workshops.



Small businesses can use geospatial technology to market directly to potential customers.

Alumni Profile

Omid Parhizkar

Omid Parhizkar ('08 Ph.D. in forest products marketing and management) recently stepped into a new position with the World Bank — just a part of the career success he has already experienced since joining the organization in 2008. He credits his early success to his motto of never saying no to an opportunity. "You have to look for what you're hungry for," he affirmed. "Then you just have to be persistent in your goals."

That persistence is what Parhizkar claims has given him the ability to be successful. It led him to leave his native country of Iran to pursue a higher education; he eventually came to Virginia Tech to earn his doctorate. For eight years, he was unable to visit his family because of student visa restrictions, but opportunities continued to present themselves, and his persistence grew stronger.

"I worked on a number of projects, mostly international development for natural resources, with a focus on renewable energy and private sector development," he recalled. "Working on those projects helped me reach a new level of effectiveness and credibility in this arena."

After completing his doctorate, Parhizkar joined the World Bank's International Finance Corporation (IFC), where he was part of a larger global financial and industry specialist team that developed IFC strategy related to climate change and sustainable development. His expertise in climate change led him to his current position as a monitoring analyst with the organization's Global Environment Facility (GEF), a multilateral financial mechanism that provides sustainable development funds to recipient countries.



Omid Parhizkar

"My new job includes helping program teams facilitate their operations and business strategies for projects related to biodiversity, climate change, and sustainable forest management," he explained. His team at the GEF has about \$5 billion in grants currently under implementation, including over 500 projects across the globe. "The World Bank is a fantastic working environment. I work with a very diverse group, and at the same time, I see what's happening around the world."

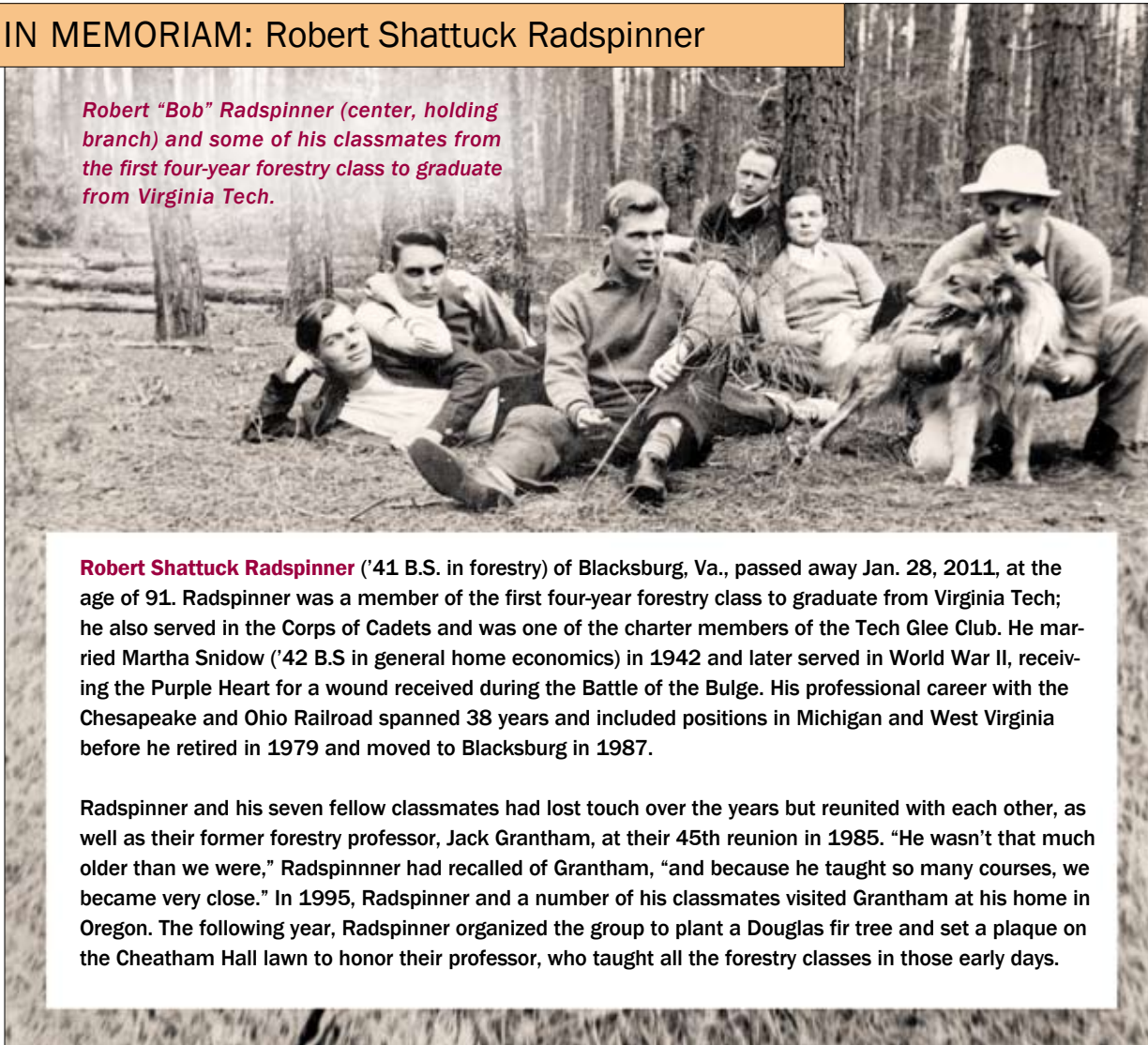
Working for the World Bank has gotten Parhizkar's career off to a great start, but he continues his professional development outside the office as well. He is an adjunct faculty member in Virginia Tech's National Capital Region, teaching a course entitled Sustainability, Clean Energy, and Climate Change for International Development. "I enjoy teaching because it gives me the opportunity to give back the experience that I have learned."

Although Parhizkar is happy with his current professional career, he is unsure about what the future holds for him. "I would love to be an effective contributor to help economic productivity with sustainable practices both nationally and internationally, in the area of natural resources," he noted.

Perhaps that same persistence will lead him to do just that.

IN MEMORIAM: Robert Shattuck Radspinner

Robert "Bob" Radspinner (center, holding branch) and some of his classmates from the first four-year forestry class to graduate from Virginia Tech.



Robert Shattuck Radspinner ('41 B.S. in forestry) of Blacksburg, Va., passed away Jan. 28, 2011, at the age of 91. Radspinner was a member of the first four-year forestry class to graduate from Virginia Tech; he also served in the Corps of Cadets and was one of the charter members of the Tech Glee Club. He married Martha Snidow ('42 B.S. in general home economics) in 1942 and later served in World War II, receiving the Purple Heart for a wound received during the Battle of the Bulge. His professional career with the Chesapeake and Ohio Railroad spanned 38 years and included positions in Michigan and West Virginia before he retired in 1979 and moved to Blacksburg in 1987.

Radspinner and his seven fellow classmates had lost touch over the years but reunited with each other, as well as their former forestry professor, Jack Grantham, at their 45th reunion in 1985. "He wasn't that much older than we were," Radspinner had recalled of Grantham, "and because he taught so many courses, we became very close." In 1995, Radspinner and a number of his classmates visited Grantham at his home in Oregon. The following year, Radspinner organized the group to plant a Douglas fir tree and set a plaque on the Cheatham Hall lawn to honor their professor, who taught all the forestry classes in those early days.

Jones Named Extension Director

Edwin J. Jones ('79 M.S. and '83 Ph.D. in fisheries and wildlife sciences) has been named director of Virginia Cooperative Extension and associate dean of the College of Agriculture and Life Sciences at Virginia Tech. He is also tenured in the Department of Fish and Wildlife Conservation.

"We are extremely pleased that he has agreed to accept this position," said Provost Mark McNamee. "His leadership will be critical to the future of Virginia Cooperative Extension given the challenges facing the organization over the next few years."

Jones held numerous leadership positions during his 23-year tenure with North Carolina Cooperative Extension.

A nationally recognized expert in natural disaster education, he helped North Carolina Cooperative Extension bring its vast network and educational resources to families, communities, and agricultural businesses to help them prepare for and recover from disasters.

North Carolina Gov. Bev Perdue appointed Jones to the Sustainable Local Food Advisory Council in 2010. He is also a co-founder and board member for the North Carolina Agromedicine Institute and serves as an advisor for the National 4-H Wildlife Habitat Evaluation Program. His many awards include the U.S. Department of Agriculture Secretary of Agriculture Honor Award and The Wildlife Society Outstanding Education Group Award for the National 4-H Wildlife Habitat Evaluation Program.

Join us!
College of Natural Resources and Environment Homecoming

Join CNRE alumni, faculty, family, and friends at our pre-game homecoming tailgate. The festivities will take place at the entrance to Cheatham Hall and will start 3 hours prior to kick-off when Virginia Tech will take on Arkansas State.

Saturday, September 17, 2011

To register and for more information, visit www.alumni.vt.edu/reunion/cnre/

Tailgate buffet • College displays • Entertainment • Games for kids • CNRE Scholarship Fund Bingo and more!

Virginia Tech for life

Alumni Events Calendar

SEPTEMBER 4-8, 2011

American Fisheries Society Annual Meeting
 Washington State Convention Center, Seattle, Wash.
afs2011.org/

SEPTEMBER 17, 2011

Homecoming and Tailgate
 Virginia Tech vs. Arkansas State
 Cheatham Hall, Blacksburg, Va.
www.alumni.vt.edu/reunion/cnre/

SEPTEMBER 18-24, 2011

Blacksburg Sustainability Week
 Blacksburg, Va.
www.sustainableblacksburg.org/

SEPTEMBER 19, 2011

Virginia GIS Annual Conference
 Cultural Arts Center at Glen Allen, Glen Allen, Va.
www.vamlis.org/conference.asp

OCTOBER 6, 2011

College of Natural Resources and Environment
 Alumni and Friends Reception
 Virginia Tech Hampton Roads Center
 Email laneg@vt.edu for more information

OCTOBER 12-15, 2011

North American Association for Environmental
 Education Annual Conference
 Raleigh Convention Center, Raleigh-Durham, N.C.
www.naaee.net/conference/program

OCTOBER 22-26, 2011

Southeastern Association of Fish and Wildlife Agencies
 Annual Conference
 Sheraton Music City Hotel, Nashville, Tenn.
www.seafwa2011.org/

NOVEMBER 2-6, 2011

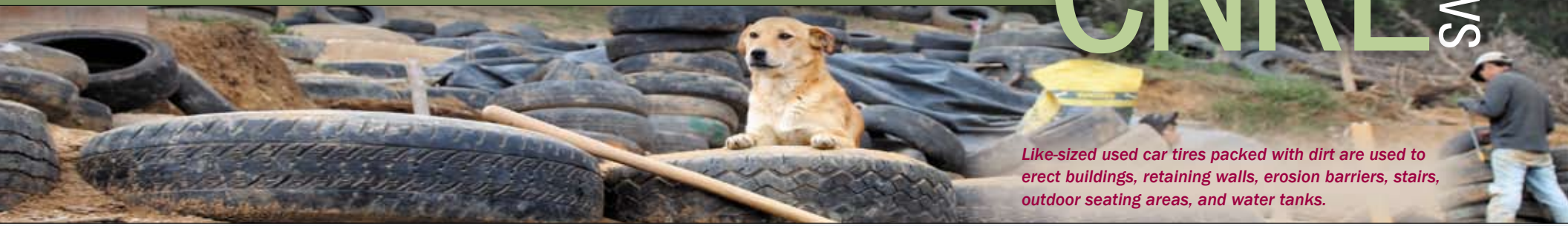
Society of American Foresters National Conference
 Hilton Hawaiian Village Resort, Honolulu, Hawaii
www.safnet.org/natcon11/index.cfm

NOVEMBER 5-10, 2011

The Wildlife Society Annual Conference
 Hilton Waikoloa Village, Waikoloa, Hawaii
wildlifesociety.org/



Edwin Jones



Like-sized used car tires packed with dirt are used to erect buildings, retaining walls, erosion barriers, stairs, outdoor seating areas, and water tanks.

Reduce. Reuse. Recycle. In today's society, people are being urged more and more to follow these principles. Despite advances in sustainability practices and the increasing number of recycling programs, piles of trash get dumped in landfills every day. Litter clogs up ditches and lines streets and highways. Sometimes it seems like whole towns could be built out of the items we throw away. What if there were another way to solve this problem? What if it were actually possible to create buildings out of trash? Thanks to the efforts of the nonprofit organization Long Way Home (LWH), these what-ifs are being turned into realities.

Lars Battle, a student in the Master of Natural Resources program at the National Capital Region campus in Falls Church, Va., is working with LWH on projects in Guatemala, where he had served as a Peace Corps volunteer in 2002. In a predominantly indigenous municipality in the country's northwestern highlands, he helped organize community development councils at the village level and was invited to join the board of directors of LWH in 2007. "The goals of our organization are to break the cycle of poverty through a community development strategy that brings local residents, particularly youth, together to learn about eco-friendly living, appropriate sustainable technologies, and improved waste management solutions," he explained.

Lars Battle with Helen, a local resident and future student at the Escuela Técnico Maya.



Local kids are contributing to their schools construction by packing plastic wrappers into trash bottles, which will then be used as building material.

Battle assisted LWH in building Parque Chimiyá, a recreational and ecological park in the community of Comalapa. The five-acre property, which serves as the principal center of LWH's operations in Guatemala, now has a soccer field, basketball court, playground, community kitchen, tree nursery, nature trail, and terraced organic gardens. While there is a small admission fee, park visitors who bring recycled plastic bottles packed with inorganic trash can enter for free. LWH uses the trash bottles as building materials in their construction projects. "By allowing free admission to those who bring trash bottles, and by building with dirt, trash, and tires, we are demonstrating alternatives to the traditional waste disposal practices," noted Battle.

Battle is currently working on a project to construct Escuela Técnico Maya, a 17-building primary and vocational school in the village of Paxán, using alternative building techniques and reusable waste material. Reused, rammed-earth filled tires form the walls of

the school buildings, glass bottles become skylights, and trash bottle fillers line the roof and seams between the tires. The building strategy is extremely low cost since it utilizes locally sourced waste materials and onsite dirt in construction. "With our material costs greatly reduced, 80 percent of our construction budget pays for local labor, providing employment and keeping more money circulating in the community," Battle explained.

The structures are robust while their flexible elements make them more earthquake resistant. The earthen walls absorb passive solar energy to warm the buildings at night and cool them during the heat of the day. Also, using discarded tires means they can no longer collect standing water, which can serve as a breeding ground for mosquitoes that carry malaria and other diseases. "We believe that by creating a market for useful waste materials, we can change community perspectives of solid waste from something that has traditionally been seen as a societal burden into a resource with potential," said Battle. Most residents cannot easily afford standard homes, but teaching them the skills needed to apply green building techniques will provide much cheaper housing for the community.

When the school opens in 2014, it will offer programs in environmental conservation, skilled trades, small business administration, and alternative construction in addition to a traditional curriculum. The school's rainwater collecting infrastructure will also deliver potable water to the entire village.

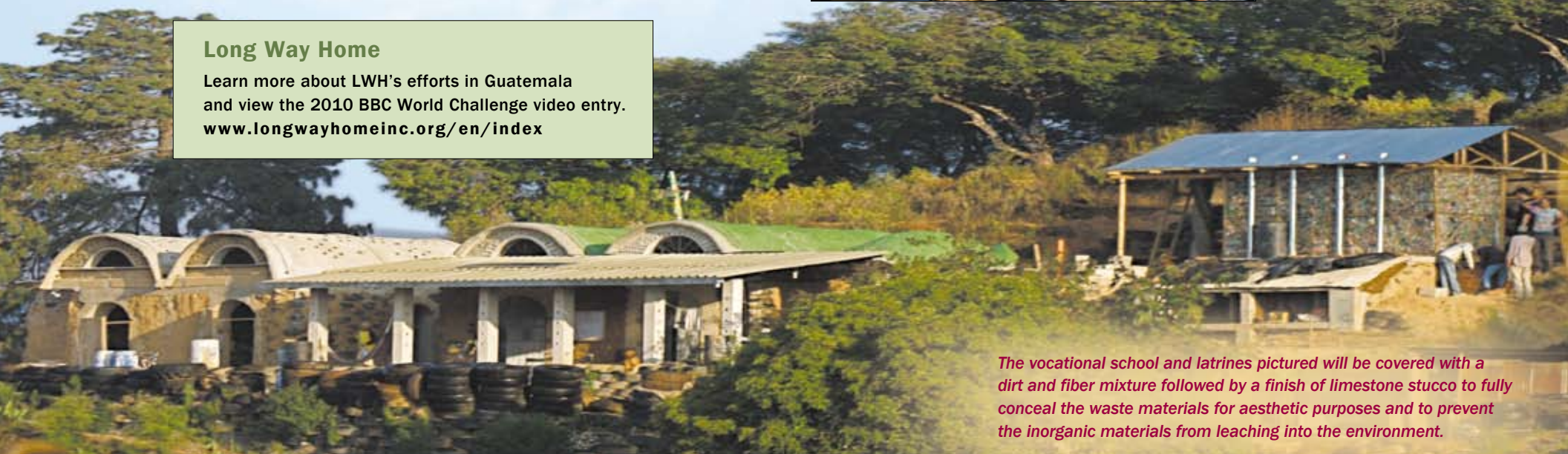
Chosen from 800 nominees, the Escuela Técnico Maya project placed third in the 2010 BBC World Challenge. Now in its sixth year, this global competition is aimed at finding projects or small businesses that have shown enterprise and innovation at a grassroots level. Although the project did not win, the alternative building techniques used in constructing the school have global implications. "With mountains of waste available for reuse, the project is already providing training and employment," noted Battle, who hopes to find opportunities to work internationally on integrated conservation and development projects after he completes his degree.



A worker secures the roof above four composting latrines built from plastic trash bottles, bamboo, and chicken wire on top of a concrete slab. The nutrients in the organic waste are absorbed and assimilated on the property.

Long Way Home

Learn more about LWH's efforts in Guatemala and view the 2010 BBC World Challenge video entry. www.longwayhomeinc.org/en/index



The vocational school and latrines pictured will be covered with a dirt and fiber mixture followed by a finish of limestone stucco to fully conceal the waste materials for aesthetic purposes and to prevent the inorganic materials from leaching into the environment.

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Hokie Nation Network
Sponsored by the Virginia Tech Alumni Association



Want to network with College of Natural Resources and Environment alumni, faculty, and staff without leaving your office?

The Virginia Tech Alumni Association has launched **Hokie Nation Network**, a social and professional networking site designed exclusively for Virginia Tech alumni, faculty, staff, and students.

Log on to www.alumni.vt.edu/hnn to join.