IN PERU’S REMOTE UPPER AMAZON BASIN

Conservation Management Institute Assesses Floodplain Forests for a Carbon Offset Project

Imagine a tropical rainforest that floods for three to five months each year, where villagers travel by boat to visit their neighbors. You’ll find this unique ecosystem, adapted to and dependent upon periodic flooding, in the upper Amazon Basin in Peru. The yearly flooding, caused by spring runoff from the eastern slopes of the Andes Mountains and over 100 inches of annual rainfall, results in an ecosystem with both an aquatic and a terrestrial phase.

This unique combination — coupled with an environment that is geologically and climatically stable and filled with essential plant nutrients deposited by the receding floodwaters — produces an area rich in biodiversity. In fact, the flooded forests of the Peruvian Amazon Basin have the highest species richness of all floodplain forests worldwide.

Visiting this isolated area starts with a flight to the city of Iquitos in northeastern Peru, followed by a 60-mile drive and a three-hour boat ride on the Rio Marañon and the Rio Ucayali.

Scientists from the college’s Conservation Management Institute (CMI) — Verl Emrick, Eric Wolf, Mike St. Germain, and Aaron Teets — embarked on such a journey to reach Yacumama, a field research and education station that includes 7,190 acres of flooded forests on the Rio Yarapa, a tributary of the Rio Ucayali.

Americans Lawrence Bishop and Norman Walters purchased the Yacumama property in 1992 to develop an ecotourism lodge and support a private conservation philosophy, or pursue carbon offset financing, which would enable them to maintain forest cover and preserve the property’s diverse ecosystem.”

Yacumama’s owners sought out scientists at CMI who had performed field and background research for three forest carbon offset projects in Belize. CMI was contracted to measure and assess the biomass, ecology, and biodiversity of 6,043 acres of the property’s flooded forest — tasks required in order to qualify for forest carbon offsets under established standards.

“The overall goal for the Yacumama Forest Carbon Project is to protect and conserve the tropical lowland flooded forest on Yacumama for long-term carbon sequestration,” Emrick explained. “In addition, the project also serves to protect, maintain, and, for some species, improve native biodiversity while supporting local community livelihoods.”

Yacumama will offer forest carbon credits through the voluntary market to individuals and corporations who wish to offset their carbon footprint. The project will meet the voluntary market’s two sets of internationally recognized standards — the Verified Carbon Standard and the Climate, Community and Biodiversity Alliance. These complementary standards ensure that carbon offsets are calculated in a scientifically rigorous and repeatable manner and that project activities do not negatively affect local communities or native biodiversity.

During three different visits to Yacumama during 2013, the CMI research team, with the assistance of local guides, collected forest structure and biomass data in multiple plots, often traveling by boat to access the more remote areas of the property. The team also assessed the native biodiversity, identifying over 200 bird species and confirming the presence of 10 primate species at Yacumama.

The CMI team and Yacumama management met with residents of the local community of Puerto Miguel to review the project and receive input as well as to discuss potential economic benefits to the community, which is a required project component under the established standards. Not only will the project enable employment opportunities at Yacumama to continue or even increase, but staff members will also receive training in a variety of fields, such as carpentry, food preparation, property patrolling, assistance with monitoring, and technical support to visiting scientists and researchers.

Time will tell what impact conservation measures such as the Yacumama Forest Carbon Project will have on the mighty Amazon River Basin.
The college experienced record gift income under Bob Mollenhauer (right), who has moved on after serving five years as director of development. According to Dean Paul Winistorfer (left), Bob helped open a window of donor opportunity into the lives of our college, faculty, and students. Every day, Bob embodied the traits that we’d like to impart to our students. Bob’s actions and the support of our many donors make a difference to us each and every day. So thank you Bob for all you did for us, and thank you donors for your generous contributions in support of our mission and our students.

Warm regards from our faculty, staff, and students.

Paul M. Winistorfer
Dean
pistorfer@vt.edu

Industry Donations Benefit Packaging Program

The Department of Sustainable Biomaterials’ rapidly expanding packaging systems and design program benefitted from a recent donation of ArtiosCAD and Studio suite software from Esko-Graphic, a global supplier of integrated solutions for printing, finishing, and publishing.

ArtiosCAD, one of the most common packaging design software programs in the country, is used by thousands of professionals, including packaging designers, sample makers, and die makers. Its layout and tooling design features are optimized for the production equipment currently used in manufacturing. Students’ access to ArtiosCAD — the gift included 40 licenses to accommodate increased student interest — gives them an edge when applying for jobs and allows the college to implement more competitive programs and curricula.

“The packaging community is an extremely vital part of our company’s existence and future,” said Larry Moore, vice president of Esko’s North American Partner Programs. “Esko is dedicated to the education and development of the future leaders of this great industry. We feel our partnership with Virginia Tech is a vital aspect of the development and strength of the packaging industry.”

Assistant Professor Laszlo Horvath, director of the Center for Packaging and Unit Load Design, incorporated the Studio suite software into his Computer-Aided Design in Packaging course. “The software package provides a great opportunity for us to teach packaging design from the concept idea to final production,” Horvath said.

Professor Robert Bush used the ArtiosCAD software for a project in his fall 2012 Principles of Packaging course in which students developed packaging systems for bicycle helmets. “The project is more than a package,” Bush said. “It represents learning with both mind and hands. I believe that this is an effective and empowering combination for students.”

In addition to the software donation, the college received three pieces of equipment in support of the packaging systems and design program: a polariscope from AGR International and two sample cutting tables, one from the International Corrugated Packaging Foundation and the other from Gerber Scientific.

The polariscope, which is used to detect stress in glass and polymer products, will be used by both students and researchers.

“Those generous donations enable our students to gain experience with state-of-the-art software and equipment that is critical to the packaging industry,” said department head Bob Smith. “Our curriculum stays current because we are using cutting-edge technology. Our students gain real-world experience that they will readily leverage upon graduation.”

Ronald Larry (center, cutting ribbon) represented Esko-Graphic at a recent event to celebrate the donations to the packaging program. Rick Bayer from the Glass Packaging Institute and Steven Gone from Gerber Scientific also attended. Pictured with some of the packaging students are Bob Smith (far left), head of the Department of Sustainable Biomaterials; Dean Paul Winistorfer (third from right); Professor Bob Bush (second from right); and Laszlo Horvath (far right), director of the Center for Packaging and Unit Load Design.
Team Wins National Master Plan Design Competition

An interdisciplinary team of faculty and graduate students representing three colleges — Natural Resources and Environment, Agriculture and Life Sciences, and Architecture — has won the Casey Trees Master Plan Design Competition. Fifty teams from across the country were invited to submit proposals for a master plan for the Casey Tree Farm. After narrowing the field to 14 teams, four teams were chosen to present their designs in the final round. The jury unanimously selected Virginia Tech’s proposal.

Casey Trees is a Washington, D.C.-based nonprofit organization committed to restoring, enhancing, and protecting the tree canopy of the nation’s capital. The organization maintains the Casey Tree Farm, 730 acres of forest and farmland that includes a nursery housing more than 10,000 trees, located along the Shenandoah River in Clarke County, Va.

A rendering from the winning presentation of the renovated historic home at the Casey Tree Farm.

“Life in Nepal is generally pretty sustainable, and most people try to make use of all available resources, using simple but efficient technologies and management that are pretty intuitive but also incredibly innovative,” said Sara Diaz, a junior geography major.

The Virginia Tech team blended expertise, new technology, and practical knowledge with innovative approaches to design. Their proposal placed a heavy emphasis on research, production technology, and whole farm management, and included sustainable methods of nursery tree production, sustainable approaches to food production, and the renovation of historic architecture on the property.

“This project is a perfect example of blending the university’s mission to use research-based knowledge and technology to address real-world challenges for our stakeholders in the commonwealth,” explained team member Eric Wiseman, associate professor of urban forestry. He credits the team’s success to their ability to think critically and creatively, and believes the multidisciplinary background of the team created synergy and challenged members to think outside of their disciplinary paradigms.

Other team members from the college include John Munsell, associate professor and forest management Extension specialist; and forestry master’s student Taylor Chakurbur of Pittsburgh, Pa.

Students were warmly welcomed by their host families in Pokhara, Nepal.

Faculty and students from the college joined with others from the College of Agriculture and Life Sciences to spend their winter break trekking through the Himalayas and learning about the landscape and biodiversity of Nepal. The diverse topography allowed the students in a new study abroad course to explore topics such as cultural approaches to sustainability, the role of gender in agriculture, deforestation, erosion, and the struggles of local Nepalese miners.

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The trip appealed to both colleges because there was an excellent integration of natural resource and agricultural issues, and how they affect the overall environment of Nepal,” said Professor Matthew Eick of the Department of Crop and Soil Environmental Sciences (CSES), who co-led the trip with Professor Tom Hammett of the Department of Sustainable Biomaterials. “There have been nothing but positive comments from both parents and students after this trip — it truly was a lifetime experience for many of them!”

Hammett and Eick were joined by Professor A. Ozzie Abaye and Associate Professor John Galbraith of CSES. The 22 students participating in the course — titled Influences of Agriculture, Natural Resources, and Culture on the Environmental Sustainability of Nepal — were evenly split between the two colleges.

“Life in Nepal is generally pretty sustainable, and most people try to make use of all available resources, using simple but efficient technologies and management that are pretty intuitive but also incredibly innovative,” said Sara Diaz, a junior geography major.

Students examined erosion’s impact on water quality and the effects of deforestation along Nepalese rivers, as the mountains of Nepal are notoriously steep and the rainfall can be harsh. One group of students ventured to Nepalese mines to examine the environmental effects mining has on the community. The other group visited local farms to experience innovative and sustainable ways Nepalese farmers are reducing deforestation, such as using biogas systems to fuel household stoves and solar water heaters for showers. Hospitable Nepalese families in the rural countryside opened their homes so the group could stay and fully immerse themselves in the local culture.

“I went on this trip expecting to use my knowledge of sustainability and natural resource management to analyze the problems Nepal is currently facing, but instead I was surprised to find that Nepal had much more to teach me on those subjects than I could have possibly learned in a classroom,” concluded Diaz.

Watch a video about the trip at www.vtnews.vt.edu/articles/2013/04/040313-cats-nepalvideo.html.

NSF Partnership Grant Expands Geospatial Education

The rapid growth of location-based applications and services has increased demand for technicians with skills in the acquisition and analysis of spatial data. According to the U.S. Department of Labor, employment in geospatial technology is expected to increase 35 percent by 2020.

To help meet this demand, a partnership consisting of four Virginia community colleges, the Virginia Space Grant Consortium, and the Virginia Geospatial Extension Program, which is based in the college, has been awarded an $899,870 grant from the National Science Foundation (NSF) to support community colleges in their efforts to educate and train geospatial technicians.

The Expanding Geospatial Technician Education Through Virginia’s Community Colleges project, known as GeoTED, is a three-year effort that will continue a statewide partnership to establish academic pathways and train faculty to use geospatial technologies such as geographic information systems, global positioning systems, and remote sensing.

“The geospatial industry is causing a social and economic transformation that is impacting almost every sector of society,” explained John McGee, associate professor and geographic Extension specialist.

Virginia Tech will host the regional Geospatial Technology Institute, providing hands-on training to 25 faculty members from community colleges in Virginia and surrounding states. Participating faculty will attend two one-week sessions over two years and receive mentoring and follow-up support from project partners.

Other components of the project include developing distance education courses in geospatial technology, mobile applications, the Virginia Community College Geospatial Portal website, and career awareness information. The Virginia Space Grant Consortium’s GEOTREK12 program will also provide professional development to 45 high school teachers from the service regions of the partnering community colleges.

“Virginia’s geospatial industry has long been considered one of the nation’s most vibrant, and the demand for geospatially literate employees continues to grow,” said McGee. “This project engages stakeholders from many different sectors to ensure that the region is well poised to support the geospatial technology workforce demand of the future.”

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Two Colleges Team Up for Study Abroad in Nepal

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Wings Across the Americas Award

Wings Across the Americas, a U.S. Forest Service program that represents an integrated and collaborative approach to the conservation of our birds and bats, recognizes outstanding work by employees and their conservation partners each year. Doctoral student David Kramar (’04 M.S. in geography), a project supervisor with the Conservation Management Institute, shared this year’s “Research Management and Partnership Award” as a member of the Eastern Golden Eagle Working Group, which was recognized for the development of conservation programs and the group’s outreach efforts.

The objective of the Eastern Golden Eagle Working Group is to ensure the long-term sustainability of already-scarce eastern golden eagle populations and to make the species a flagship for landscape-scale conservation. Started in 2010, the group is an international collaboration of biologists and wildlife managers from over 20 U.S. and Canadian institutions. Their publication of an assessment of the eastern golden eagle in the journal of the American Ornithologists’ Union successfully increased focus on golden eagle conservation in eastern states and provinces.

Among the group’s many successes is a camera-trapping program utilizing around 200 volunteers and 150 trail camera stations. The captured images enable researchers to evaluate the population status of not only the golden eagle, but also other species including the bald eagle, red-shouldered hawk, and several small mammal species.

Burch Places in Woodworking Competition

Recent graduate Cole Burch of Christiansburg, Va., took home second place honors in the reproduction category of the 2013 national Fresh Wood student woodworking competition at the Association of Woodworking and Furnishings Suppliers Fair in Las Vegas. Burch used a balance of modern and traditional methods to complete his entry, a handcrafted Shaker blanket chest. Burch had to hand cut the dovetail corners to achieve the distinguishing custom look of the chest. “I spent many hours gathering information and then testing methods to make sure high quality cuts could be repeated consistently before making the final corner pieces,” he explained.

The biennial competition, the largest of its kind, highlights exemplary design and construction achievements by students. Burch was one of 41 finalists selected from over 130 entries to showcase his work in Vegas, where his work was reviewed and judged by a panel of internationally acclaimed design and woodworking professionals.

Cadet Highlights Colors at Alabama Game

Cadet 1st Sgt. John Rogalo of Stanhope, N.J., a junior environmental resources management major, was selected to travel with the football team and receive the flags during the pre-game ceremony at the University of Alabama game in Atlanta on Aug. 31. Cadets performing this honor are selected based on their performance during training.

Rogalo, a Marine Option cadet in the Naval ROTC program and a recipient of the Renae C. ’90 and James A. Pearson ’87 Emerging Leader Scholarship, was recently honored as the outstanding cadre member during New Cadet Week training, when more than 100 upper-class cadets train the newest members of the corps. He plans to serve as a combat engineer officer in the Marine Corps after graduation.

“Teddy Roosevelt once said, ‘Speak softly and carry a big stick.’ I believe we as Corps of Cadets carry a big stick, and I intend to use mine to spread good news for the Corps of Cadets and our Cadet Golf Company,” Rogalo said.

Surprise Visit! Meteorologist Jim Cantore of The Weather Channel (right) visited the Virginia Tech wind tunnel in September to film an upcoming feature. While on campus, he was persuaded via Twitter by meteorology major Meredith Ellington (front row, second from right) to make a surprise visit to the Introduction to Meteorology class. WDBJ meteorologist Robin Reed, who teaches the course, reports that Cantore brought a rock-star-like quality to the 8 a.m. lecture!

Do You Want To Learn More?

Looking for continuing education, professional development, or online learning opportunities? Visit these websites for more information:

VTalumnNET for Virginia Tech Alumni alumni.iddl.vt.edu
Natural Resources Programs in the National Capital Region clgs.vt.edu
Virginia Tech Extended Campuses vt.edu/where_we_are/extended.html
Virginia Forest Landowner Education Program forestupdate.frec.vt.edu

Masser Manages Student Art Exhibit

Rosemary Masser of Frederick, Md., who graduated from the packaging science program in May, explored her artistic side by serving as an intern to Robin Boucher, curator of the Perspective Gallery in Squires Student Center. This past year, Masser was put in complete charge of marketing, public relations material design, and organizing the submission process for the gallery’s Biennial Juried Student Art Exhibit, A Hokie Perspective, an aesthetic celebration of the talent and diversity of the Virginia Tech community. The exhibit represented seven months of work, with over 70 submissions from 51 students.

“Rosemary’s insights on how to effectively and efficiently achieve our goals of bringing the Hokie community together through this show made the process run smoothly and helped us to achieve our goal,” said Boucher.

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College Bids Farewell to Suzie Leslie

Since first joining the college in 1994 to her retirement in March 2013, Suzie Leslie guided countless students from freshman orientation to graduation. As the college’s coordinator of undergraduate advising, she helped students navigate through the challenges of course selections, changing majors, and credit requirements, while ensuring they were able to graduate on time. Along the way, she developed personal relationships with hundreds of students, many of whom keep in touch with her long after graduation.

Suzie herself had been a master’s student in the college midway through her career, so she knew full well the trials and tribulations faced by students. “She bent over backwards, to put it mildly, to make sure her advisees were on a career path that fit them,” said Dean Stauffer, associate dean for academic affairs. “Suzie truly took care of students and did so at the highest level of excellence.”

Her legacy to the college carries on not only in the many students she advised. Suzie planned and planted (and still maintains!) the butterfly garden outside the entrance to Cheatham Hall; her garden plan has since been replicated elsewhere on campus. In addition, she and her husband have willed part of their estate to the college to create a future outdoor environmental center on campus. Suzie, an avid kayaker and birdwatcher, is also a master gardener and master naturalist, and devotes time to a number of volunteer organizations.

Alumni Awards for Excellence

Two of the college’s employees were recognized with 2013 Alumni Awards for Excellence.

Associate Professor Kathleen Alexander received the Alumni Award for Excellence in International Outreach. Alexander was recognized for “seamlessly connecting” her teaching and research programs to her international outreach work in Africa improving the lives of people in Botswana. Among her most notable work is the creation of the Center for the Conservation of African Resources: Animals, Communities, and Land Use (CARCOL) with her husband, Mark Vandewalle, an adjunct professor.

“Kathy is a brilliant scholar who successfully uses her many skills to connect to people in Botswana,” said Dean Paul Winistorfer. “She recognizes that her most important goal is to improve the lives and livelihood of these people, while respecting the human-wildlife interaction that is coupled with environmental sustainability.”

Project Aquaculturist Jennifer Gagnon received the Alumni Award for Excellence in Extension. As statewide coordinator of the Virginia Forest Landowner Education Program, Gagnon provides the state’s 365,000 landowners with timely, scientifically based information about forest management and related topics via a range of educational programs and courses. One of her newest programs, Real Forestry for Real Estate, is designed to educate real estate professionals about forest management, with more than 450 real estate professionals participating so far.

“Jennifer is a remarkable Extension professional with an impressive list of achievements,” said John Mussell, associate professor and Extension specialist. “She elevates the relevance and reach of both the department and the college. Jennifer is a tireless professional, a pleasure to work with, and a constant inspiration.”

Smith Heads Sustainable Biomaterials Department

Robert “Bob” L. Smith, the college’s associate dean for engagement, has been named head of the Department of Sustainable Biomaterials. “It is an honor to be asked to lead such a renowned group of scientists,” said Smith, who took over as interim head of the department in January 2013. “The faculty members are all leaders in their disciplines, so to be part of this team is a real privilege.”

Smith will focus on advancing the department’s leadership profile nationally and internationally in teaching and research in the sustainable use of natural resources, and preparing students for technological advancements in the forest products and biomaterials industries. He will continue to lead all of the college’s Virginia Cooperative Extension programs, many of which are critical for the sustainable use of natural resources, and preparing students for the workforce.

“Out our goal remains to provide the best education to students and citizens of Virginia in the wise management and utilization of natural resources,” he said.

Smith has taught undergraduate and graduate courses in the areas of wood science, business management, and forest products marketing; published more than 100 scientific articles; and participated in $4 million of research funding.

Schwarz Leads World Aquaculture Society

Michael Schwarz, an adjunct assistant professor in the Department of Fish and Wildlife Conservation and an aquaculture specialist at the Virginia Seafood Agricultural Research and Extension Center in Hampton, Va., is currently serving as president of the World Aquaculture Society, an organization dedicated to the progressive and sustainable development of aquaculture through science, technology, education, and information exchange. During his tenure as president, which runs from February 2013 to June 2014, Schwarz will focus on expanding global representation within the society, with an emphasis on new membership, activities, and interactions within the Middle East and Asia.

“It is indeed an honor and privilege to help guide the World Aquaculture Society, and I fully embrace the trust and responsibility placed upon me to proactively advance the society and its mission during my tenure.” Schwarz said.

Schwarz represents the society as a foundation partner in the Global Forum for Innovations in Agriculture, a solutions-oriented international exhibition and conference that will focus on sustainable food production in arid regions, which will take place in Abu Dhabi in February 2014.

Fraser Receives Mitchell A. Byrd Award

Wildlife Professor Jim Fraser received the 2013 Mitchell A. Byrd Award for outstanding scientific achievement from the Virginia Ornithological Society. Fraser has taught wildlife management, conservation biology, and endangered species management at Virginia Tech for 32 years. His work on student mentorship, and public outreach have aided the conservation of numerous bird species, including the bald eagle, piping plover, and red knot.

“Jim Fraser has demonstrated outstanding scientific achievement in the field of ornithology,” said Research Assistant Professor Daniel Catlin, who was advised by Fraser. “Although his work has spanned the globe, from Madagascar to India and China, from Long Island, N.Y., to southwestern California, he has consistently worked to further our understanding and conservation of species here in Virginia.”

The Virginia Ornithological Society’s annual award was established in 2011 in honor of Mitchell A. Byrd, one of the pioneers of wildlife conservation in Virginia. Although he spent his entire career at the College of William and Mary, Byrd received all three of his degrees in forestry and wildlife from Virginia Tech and is a longtime supporter of the college.

Byrd devoted much of his career to aiding the recovery of the threatened bald eagle and peregrine falcon in Virginia. He recognized the need for habitat conservation and invited Fraser to team with him in working with people around the Chesapeake Bay to protect critical habitat for the species.

“Mitchell has been a mentor and a shining example of how to blend science, education, and conservation,” Fraser said. “I can’t think of anyone who has done more for the conservation of birds in Virginia than Mitchell. If I can be half as good as he is, I will be doing all right.”
Famed Damascus Steel Holds Key to Future Advancements

Professor Barry Goodell’s recent research provides a link to Middle Age weaponry. He aims to discover a process that would incorporate carbon nanomaterials into steel to produce a hybrid of biobased carbon and metal that could greatly enhance the strength of steel products.

Along the way, Goodell and his team hope to uncover the secret behind an ancient steel used to make sword blades. Damascus steel, which was manufactured in the area that is now Syria as far back as A.D. 900, was known for its exceptional strength and sharp blade, while also being able to bend without breaking. While sword smiths have been able to replicate the steel’s distinctive wavy pattern, the exact manufacturing process was lost about 300 years ago.

Recent studies on museum pieces revealed that those ancient blades contained carbon nanotubes, which explains the steel’s famed properties. Similar processes developed by Goodell’s team could hold the key to many modern advancements, ranging from lighter weight vehicles to more wear-resistant engine parts.

Hoping to replicate the long-lost technologies, Goodell and his team experiment with heating pieces of iron and steel with carbonized wood fibers to study how the carbon nanotubes were generated within the steel—a key part of the Damascus puzzle. “We now know that the carbon nanotubes are part of the secret to why the swords were legendarily sharp,” said Goodell.

Once the secret is revealed, Goodell says it has the potential for wide-ranging benefits. The steel could make cars lighter for better fuel efficiency while also maintaining strength and durability.

Professor Barry Goodell (right) examines a Damascus steel sword of Turkish origin from the Smithsonian Museum’s collection under the watchful eyes of his collaborators—Robert J. Koestler (left), director of the Smithsonian’s Museum Conservation Institute, and Jake Hornik, director of the Collections and Archives Program in the Smithsonian Museum’s Department of Anthropology.

Novel Polymers Help Oral Medications Reach the Bloodstream

All too often, when a person takes a pill full of a potent and effective drug, the drug passes straight through the body, not reaching the organ where it is needed—a waste of money and inconvenient if it is a cold medicine, but potentially dire if it is a treatment for a serious illness.

Kevin Edgar’s research on naturally derived polymers will help improve drug bioavailability.

Drugs that are orally administered often do not make it through the digestive tract until the stiff fully potent medicine is released in the small intestine, where it is best absorbed into the bloodstream.

“The small intestine is where many medicines have the best chance to enter the bloodstream,” said Taylor. “If any of it breaks down in the gastrointestinal tract, it breaks down into things that occur naturally in nuts, fruits, and vegetables.”

The final trick, after creating a polymer that binds the medicines so they cannot crystallize, is to make sure that polymer knows when to let go.

“The dark intestine is where many medicines have the best chance to enter the bloodstream,” said Taylor. “So often the ideal polymer will hang onto the drug through the acidic environment of the stomach and then release the medicine in the benzene environment of the small intestine.”

“Most of the polymer just passes through the body unchanged and unabsorbed,” Edgar noted. “If any of it breaks down in the gastrointestinal tract, it breaks down into things that are part of our diet anyway.”

Alexander Continues Research at the Human-Wildlife Interface

Associate Professor Kathleen Alexander’s long-term study of human, wildlife, and environmental health in the Chobe District of Northern Botswana has produced significant results during the past year, landing her four separate appearances on the National Science Foundation’s home page!

Researchers have previously identified leptospirosis—a disease transmitted to humans by animals—as a significant health threat in Botswana. This two-phase disease begins with flu-like symptoms but can cause significant health threat in Botswana. This two-phase disease begins with flu-like symptoms but can cause significant health threat in Botswana. This two-phase disease begins with flu-like symptoms but can cause significant health threat in Botswana. This two-phase disease begins with flu-like symptoms but can cause significant health threat in Botswana. This two-phase disease begins with flu-like symptoms but can cause significant health threat in Botswana.

There is a threat of emerging disease also increases. As humans and animals exchange microorganisms, the threat of emerging disease also increases.

The study, co-authored by master’s student Risa Pesapane, reveals that humans and mongoose appear to be readily exchanging feral microorganisms, increasing the potential for disease transmission. The researchers recommend closed sewage systems, wildlife-proofed trash receptacles, and prohibiting feeding poultry and livestock products from kitchen waste to either wildlife or domestic animals.

“As we change our natural environments, the modifications we make can in turn impact our own health,” said Alexander. “We are working with the Botswana authorities to minimize these impacts and develop sustainable approaches to the protection of human, wildlife, and ecosystem health.”

Kathleen Alexander (second from left), shown with residents of Kasane, Botswana, works with communities to understand connections between the environment, water quality, and human disease.
Jay Pinsky: Retired Serviceman, Active Agent of Change

When Jay Pinsky entered the college’s Executive Master of Natural Resources program in 2012, the lifelong outdoorsman wanted to develop his leadership skills, but after 20 years in the Navy, he was casting around for what he should do with the rest of his life.

“If Professor Bruce Hull said, ‘You can be an agent of change,’ and I embraced it as my focus,” said Pinsky, a former combat photographer who received his degree in May, “I can’t just say that ‘they’ — whoever ‘they’ are — should do something; I have to make it happen.”

Pinsky’s first project after entering the program was to persuade Faquier County, Va., where he lives, to get state approval to name county bridges in honor of military veterans. No simple task. It involved forming a council, researching 20th century military records, and persuading state legislators as well as county officials to support the measure. He did, and before long, veterans’ names will appear on bridges across the county.

“The executive master’s program made me sensitive to opportunities where I could take a leadership role to make something happen,” Pinsky said. “I started several big projects at about the same time.”

An avid hunter, Pinsky noted the diminishing number of deer in the county and a corresponding decline in license-fee contributions to state game commissions. As a capstone project, he took steps to found the Green Bow Foundation, a nonprofit organization with the primary goal of giving youth interested in hunting the education, mentorship, and advocacy opportunities necessary to mature into natural resource sustainability leaders within the outdoor sportsman community.

Partnering with organizations as diverse as the Piedmont Environmental Council, the Farm Bureau, and the National Rifles Association, Green Bow is training its first 10 participants this fall.

Pinsky also proposed instituting student internship/advisory positions within the Faquier County government, a move that was accepted by both the schools and county planning officials. Soon, teacher-nominated students from the county’s three high schools will learn about county planning while making officials aware of the youth perspective on issues. Pinsky is also working to set up a college scholarship linked to the program.

As if that were not enough, Pinsky, a government reporter with the Faquier Times Democrat in Warrenton, Va., has taken on another project. Leveraging his Navy photojournalism skills, Pinsky is creating a coffee table book of images and stories of Faquier County farmers to promote support for local agriculture and raise funds for the Faquier Education Farm public agricultural education site.

“I may be retired from the military,” he said, “but I’m not done serving.”

Alumni Profile

Jay Pinsky talks to students about nonnative invasive plants in the Whitney State Forest in Faquier County, Va., during an education day workshop. Photo by Bart Bauer, The Green Bow Foundation

IN MEMORIAM: Charles “Ted” Bush

Charles Edward “Ted” Bush III (’62 B.S. in forestry) of Washington, Ga., passed away on Aug. 23 at the age of 72. Bush began his professional forestry career as an area manager with Continental Can Co. Inc. in Warrenton, Ga., in 1966 after serving as an officer in the U.S. Army, and worked for the company for 20 years. He went on to become president and CEO of Canal Forest Resources Inc. in Charlotte, N.C., in 1987, and co-founded Bush & Conney LLC in Charlotte in 1999. In 2000, he published Bush Forest International as an independent forestry consulting organization. He was an active member of the Georgia Forestry Association, the Forest Landowners Association, and the Association of Consulting Foresters of America.

Bush completed the Education for Ministry program through the University of the South’s School of Theology and was involved with Prison Fellowship Ministry for many years. He published his first book, “Saved Is Not Home Free,” in 2010, donating all profits to his favorite charities.

“Ted served on the school’s advisory committee as an effective leader of the program for many years and was recognized as the key alumni leader in getting the school elevated to college status in 1992,” said John Hosner, retired director of the School of Forestry and Wildlife, which later became the college. “He made things happen”.

“Ted Bush was a highly successful graduate and staunch supporter of the forestry program here at Virginia Tech,” added University Distinguished Professor Harold Burkhart. “He excelled in his profession and served his alma mater in numerous ways. His life exemplified the university motto Ut Prosim (That I May Serve).”
Geography Department’s Field Experience Enriches Undergraduates’ Education

Zach Robinson, a May 2013 geography graduate, calls himself “a homegrown Appalachian boy from Hillsville,” so introducing visiting international Humphrey Fellows to his region’s culture by interning with Virginia Tech’s Language and Culture Institute was a perfect fit for him.

Robinson changed focus within his major after an earlier GIS field experience revealed that his true interest was in the human side of geography rather than the technical side. Giving cultural presentations and planning trips to Reynolds Homestead, the Appalachian Trail, and other sites came easily for Robinson, who hopes to pursue graduate work in education. “It was awesome to see the Fellows line dancing and flat footing at the Floyd Country Store,” he said.

All geography and meteorology majors are required to complete a field experience or internship to extend their education and increase their marketability. The experience also helps students clarify career goals. “A supervised internship, study abroad, service learning — they all help students see what they like, where they shine, and what they aren’t so suited for,” said Maureen Delainger, the Department of Geography’s academic advisor.

Students are acquiring field experiences across the country and around the world for government agencies, nonprofit organizations, and private corporations.

For Cara Curran (’13) one of the best parts of working as a management intern at the U.S. Consulate General in Milan, Italy, was exposure to the staff. “I’ve never met smarter people. My boss was a Jeopardy champion, and the Consulate General spoke eight languages. Foreign Service is the hardest U.S. government sector to enter, so I felt honored to work with these gifted people.” Despite the challenges she faced arranging housing for her time abroad, Curran said it was worth it to put government Foreign Service work on her resume. “I loved the experience,” she affirmed.

Junior Megan Dulamal participated in The Green Program in Costa Rica one summer to learn about renewable energies such as wind, geothermal, solar, hydro, and biomass. “Wind energy was my favorite; the extraction process is so pure,” she said. Dulamal’s group installed water-conserving plumbing fixtures and painted a school. For her capstone project, she researched permaculture, finding cases where it transformed arid landscapes.

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Many students gain their field experience on the Hokie Storm Chase trip to the Midwest offered each spring.

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Bonnie Long looks forward to seeing the fruits of her labor at the Santa Monica National Recreation Area, where she did conservation and revegetation work for the Student Conservation Association.

Amanda Leitz (second from left) appeared on a local news show during her internship at Ball Aerospace in Boulder, Colo.

Starting Young! Over 100 first-graders from Christiansburg Primary School visited campus last spring to learn about natural resources and agriculture. Their tour included a stop at Stadium Woods, where they heard about the need to sustainably manage forests as well as the goods, services, and value forests provide. The students also got a lesson on fire safety from Charlie Yopp of the Virginia Department of Forestry, accompanied by Smokey Bear. Photo by Amelia Tuckwiller.