A Few Words from Bob Smith

“...second lesson all of you at Virginia Tech have taught us — and that is the power of service. Service is truly at the core of the Virginia Tech experience. It’s in your motto — Ut Prosim, ‘That I may serve.’ It was your founding purpose as a land-grant school designed to open the doors of higher education to people from all walks of life. It’s the mission of your Corps of Cadets, men and women who have served this country in every armed conflict right from the beginning. And every year, Virginia Tech students do tens of thousands of hours of community service here in Virginia and around the world.”

First lady Michelle Obama
Virginia Tech Commencement 2012

Last weekend I had the pleasure of attending the graduation of 5,000 students in Lane Stadium and over 150 from our college. Our first lady addressed the audience with a presentation on the power of community and service. She not only spoke the words, but she herself has chosen a life of service over that of a highly paid corporate lawyer. I strongly believe that is the purpose of our engagement programs on campus and in the College of Natural Resources and Environment.

We recently completed a study of stakeholders’ perceptions of the college. When we asked students why they selected a particular degree, the third highest rated item out of 15 was that they believed they could make a difference with the degree. When our freshman students were asked what factors impacted their choice of an academic program, the fact that it contributes to community and society ranked second out of 14 choices. The results strongly indicate that this generation believes that Ut Prosim is not only the university motto, but the way that they want to lead their lives.

Therefore, this issue of Engagement Matters focuses upon what our students are doing. We have 17 student clubs in the college that regularly contribute to service activities in the community, along with our service-learning classes and other student volunteer activities. As I have mentioned before, our goal is to help develop in our students a lifelong commitment to serving our communities. Students spent time during spring break helping clean up the Chesapeake Bay, and they have volunteered in local schools to explain the importance of geography. A new student club in meteorology assisted with the Virginia Tech Relay for Life, and interns in the LEAF program help develop outreach programs while gaining partnership experience.

I would be remiss if I did not acknowledge that this is the 150th

Continued on page 2
In 2010, fisheries science major Scott Riley set up a service trip for himself and six of his peers with the Chesapeake Bay Foundation (CBF) over spring break. This idea was the beginning of the student-organized Virginia Tech Alternative Spring Break, hosted by the Chesapeake Bay Foundation, which is now in its third year.

Virginia Tech students, many from the college, forgo a typical academic break and dedicate their time off to restoring the Chesapeake Bay. They participate in restoration efforts, center preparation, and advocacy, all while learning from professionals from the Chesapeake Bay Foundation. Throughout the trip, students of diverse backgrounds contribute creative ideas regarding challenges and solutions facing the bay.

The Chesapeake Bay Foundation exposes the group to a wide range of communities involved in enhancing bay quality. Students not only learn from watershed scientists, but are immersed in the rich culture of Chesapeake Bay watermen as well. With each day, the group gains a better understanding of the complex network that exists between human communities and the bay’s resources.

During the initial trip in 2010, the group was based out of the beach campsite at CBF’s headquarters in Annapolis, Md. They traveled to Port Isobel Island for trail maintenance and explored cooperative agricultural extension and best management practices with Rob Schnabel, a CBF stream restoration biologist. The group planted over 100 trees along a local streambank.

In 2011, Lorelai Mackenzie, an environmental resources management major, worked to expand and develop the experience into an annual program. Students that year spent time out in the Chesapeake Bay at the island education centers owned and operated by CBF. They spent the week hearing from the voices of the Tangier Island watermen. For decades, Tangier has been an icon of the Chesapeake Bay seafood industry. The island’s shores are lined with dozens of crabhouses, making it the soft-shell capital of the world. Students witnessed firsthand the dismal effects pollution has placed on Tangier’s crabs, oysters, and people.

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In order to ensure continued leadership of the trip, Lorelai recruited and selected two new coordinators for the 2012 program. Anthony Brickey, an environmental resources management major, and Hope Wentzel, an animal and poultry sciences major, have been working closely with current leaders to learn strategies for the program. John Haworth, a participant and one of the trip’s founders, serves as media coordinator for the program, taking photographs, writing accounts of the trip, and even developing a website for recruitment and development purposes. Scott Riley attended this year’s trip again as a lead mentor and helped to coordinate logistics on site.

Lorelai Mackenzie introduced the program to Dean Paul Winistorfer in early 2012, realizing that the trip could be an integral part of the College of Natural Resources and Environment experience. Eight of 15 trip participants in 2011 and 17 of 25 participants in 2012 were from the college. Dean Winistorfer was very enthusiastic about the trip, taking pride in the number of his students who were participating, and provided funding to assist students in lodging costs this year.

The 2012 trip was based out of YMCA’s Camp Letts, near CBF’s headquarters at the Phillip Merrill Environmental Center in Annapolis, Md., and participants drove to different sites around the Annapolis area each day. The group gained insight into oyster aquaculture at CBF’s Oyster Restoration Center in Shady Side, Md. On the final morning, the group traveled to Frederick County, Md., to conduct planting maintenance with a former member of the Chesapeake Conservation Corps, a program that students learned about as a career track option. The participants also spent a day in historic downtown Annapolis learning advocacy and policy issues regarding implementation of total maximum daily loads (TMDLs) and watershed implementation plans (WIPs), as regulated by the EPA. A career panel of CBF’s leadership collaborated with students on current issues and employment strategies.

CBF gets requests from dozens of other universities each year for an alternative spring break, but they have limited their selection to the group from Virginia Tech and a group from the University of Maryland; William and Mary started their own program in 2012. CBF rewards participants with a free one-year membership and other kindnesses such as t-shirts and hats, free lodging when the trip is held at the island centers, and even a seafood dinner at a local restaurant.

In light of the current job market, academic breaks have become a time for students to show employers their commitment and dedication. The networking that occurs during this alternative spring break is not only a way for students to find their place in the field, but for CBF to find the future of their workforce. Scott Riley earned an internship in oyster restoration with CBF in Gloucester, Va., in 2010. Lorelai Mackenzie interned as an environmental educator with CBF at Port Isobel Island and on day programs at Clagett Farm and the Phillip Merrill Environmental Center in the summers of 2010 and 2011. John Haworth served at the Phillip Merrill Environmental Center as a community building and digital media intern during the summer of 2011. At Virginia Tech, good ideas are abundant, yet these ideas must be acted upon and communicated to professionals in the field. The alternative spring break represents an opportunity for outreach, which is valued by organizations like CBF. The demand for this program is evident from the overwhelming number of applicants and the number of students signing up for the trip two or even three years in a row. Students will continue to organize and provide this experience for their peers and the Chesapeake Bay Foundation, and will hopefully become an integral part of CNRE in the future.

Scott Riley shovels oyster shells into a shaker to clean them of silt for use in constructed reefs. Photo credit: John Haworth
Geographic Society Engages Virginia Middle School Students

Tammy E. Parece, Geospatial and Environmental Analysis Major
Graduate President, Geographic Society at Virginia Tech
College of Natural Resources and Environment

On February 25, the Geographic Society participated in Kid’s Tech University (KTU), a program at Virginia Tech that seeks to create the future workforce in science, technology, engineering, and mathematics (STEM) by sparking kids’ interest in these fields. KTU, which has been active since 2009, invites middle school students from across the commonwealth to participate in a university research experience. Geographic Society members have participated on an individual basis in the past but decided to be involved as a society this year.

The title of our program was “Looking down is looking up: Why do we work with aerial photography?” The GIS portion of the program was designed by John McGee, associate professor and geospatial Extension specialist in the Department of Forest Resources and Environmental Conservation, who has presented it at KTU over the past three years. This year, he asked if the Geographic Society could staff the event, and society members jumped at the chance.

The program introduced participants to some common geospatial tools — geographic information systems (GIS), global positioning systems (GPS), and remote sensing — to provide these young minds with a new understanding of the earth. In this activity, the students used GIS to identify changes on the earth’s surface. They also examined aerial photography from several different time periods. The students explored, estimated, and measured general changes in land use during these periods.

Our display was the first one the students saw when they walked through the door of the Lane Stadium West Club Box. At our first table, we had two laptops with GIS programs running. The students were shown how to display the different layers in GIS, zoom in and out to obtain different scales, and view the changes between aerial photos of the New River Valley Mall area. The students were awed at the changes between 2002 and 2008, but flabbergasted when they saw 1962. In most instances when they saw the 1962 aerial photos, they commented, “Nothing is there.” When they looked closer, however, they were able to identify farm fields, trees, streams, and the Virginia Tech Horticulture Research Center, which was located on land now occupied by a strip mall.

At our second table, Professor James Campbell of the Department of Geography had set up various types of stereoscopic equipment. On a portable light table, students could look at a glass plate of a 1968 aerial photo of Chicago and a 1980s high-altitude color infrared aerial photograph depicting the Roanoke, Va., metropolitan area. Using a large mirror stereoscope, students could examine coastal landforms near a Minnesota lake, using stereoscopic capability to see subtle variations in landforms and vegetation cover.

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The Meteorology Club has been very involved throughout the development of the geography department’s new meteorology major, which was initiated in January 2012. While the club has only been official since fall of 2011, the members have long been active in publicity for the geography department and are always willing to volunteer time and work for the community. The club recently became an official chapter of both the National Weather Association and the American Meteorological Society. The official designations were the first big step in the future of the club and its chosen direction.

The club — now known as the Blue Ridge Chapter of the National Weather Association and the American Meteorological Society — is an excellent way to network with fellow students, enthusiasts, professionals, and community members. The popularity of the club has grown since its official beginning and has provided opportunities for members to gather, share ideas and experiences, and learn about future jobs and technology in a meteorology career field.

This year the club became involved with Virginia Tech’s WUVT-FM radio station. Club members forecast and broadcast the weather for the New River Valley community, offering an opportunity for students looking into the broadcast meteorology field as well as gaining forecasting experience. “Forecasting in the WUVT Weather Center has been very helpful in terms of both forecasting and media dissemination,” said senior Aaron Davis. “Writing a forecast for radio is different than writing for a newspaper or actual forecast offices. You have to get your point across in a limited time, so you have to focus on the big picture in terms of weather players.”

The club also works closely with weather enthusiasts and professionals from the local area as well as from around the state. Guest speakers have included Kevin Myatt, a weather columnist from the Roanoke Times; Keith Huffman, a winter weather aficionado; and Chris White, a local storm chaser. Many of the club members have volunteered time at the National Weather Service (NWS) Forecast Office in Blacksburg, which is a great opportunity to see the operational forecasting side of

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On our third table, we set up a laptop and a large
monitor, as we wanted parents to be involved in our
program. At this table, participants could view episodes
of “Geospatial Revolution” (http://geospatialrevolution.
psu.edu/), short videos that introduce key applications of
geospatial technologies in today’s world. We discovered
that parents were not the only ones extremely interested
in the videos — many of the middle school students could
not believe the capabilities of geospatial technologies
and their significance for our society to illuminate
interrelationships between the physical and human
worlds.

Meteorology continued from page 5

meteorology as well as to learn the tools and programs
used to forecast for the local area. It also provides the
opportunity to experience the interactions and close
communication between offices. Volunteering at the NWS
is truly a good first step for prospective meteorologists.

The club has also volunteered for and been involved
in the local community. The club sells peanut butter and
gel sandwiches at Virginia Tech’s Relay for Life to raise
funds and awareness for cancer research. A group of
students talked to elementary and middle school students
about significant weather events and how they form. Last
year, club members set up a booth at Virginia Tech’s
Scout Day in Lane Stadium.

Most club members also participate in storm spotter
courses hosted by the National Weather Service.
SKYWARN training classes focus on storm formation and
identification, and how to report severe weather in the
local area. Criteria such as hail size, cloud formations,
winds gusts, and precipitation rates and amounts,
as well as proper communication protocol for NWS
spotter reporting, prove crucial during severe events.
Members also take courses to be licensed to operate
ham radios, which are a useful tool when other means of
communication are unavailable due to severe weather.
Club members recommend that those who are pursuing
careers in meteorology obtain a ham radio license.

The Great Plains Storm Chase is an event in which
most members participate either as students or as
teaching assistants. It is an incredible opportunity for
getting firsthand forecasting experience. The storm
chase is a fast-paced trip that spans the entire Midwest.
Members participate in chase discussions and forecast
on the road. Chase days often involve long hours but are
educational and exciting days spent with other weather
enthusiasts. Two years ago, the storm chase team
witnessed the first EF4 tornado in South Dakota in 50
years. Another storm produced four to six tornadoes,
making it a very successful forecast. Last year, the team
experienced the power of a squall line and damaging
hail. The educational experience is invaluable in terms of
predictive and preventive measures.

The Meteorology Club is truly an exceptional
organization with big plans for the future. The student
members and faculty are very passionate and have the
vision to create an exceptional new meteorology program
in which students prepare for and are enthusiastic about
taking on careers in meteorology or making their passion
in meteorology a reality.

Observing these kinds of changes helps us
understand how landscape changes influence our local
communities and environments. The activity was co-
sponsored by VirginiaView, a state-level organization
within AmericaView — a national consortium that focuses
on research, outreach to K-12 and community college
education, and distribution of imagery to a spectrum of
users at state and local levels.

At the end of the day, we were thanked by Kathleen
O’Hara and Professor Reinhard Laubenbacher of the
Virginia Bioinformatics Institute, who told us that they
were looking forward to our continued participation. The
range of topics that we’ll address from session to session
highlights the essence of geographic inquiry, which seeks
to illuminate interrelationships between the physical and human
worlds.
Building Extension’s Capacity Via Undergraduate Student Internships
Adam Downing, District Extension Forester, Northern District
John Munsell, Extension Specialist and Associate Professor
Department of Forest Resources and Environmental Conservation
College of Natural Resources and Environment

The talents of student interns are brought to bear on the success and growth of the LEAF program.

The need for natural resources outreach is growing. We are transitioning to a more urban society while also demanding more environmental goods and services. The result is that citizens often are disconnected from the management necessary for sustainable provision. Thus the question about how to effectively reach citizens in an era of declining resources is an important one.

At the same time, there is a need to continue providing high-quality outreach for traditional private forest landowner constituents. While the amount of forestland in Virginia has remained relatively stable over the past several decades, the number of owners has not. In addition to a jump in the number of owners, national landowner surveys (Butler 2008) reveal that there are ever-increasing numbers of white-collar owners with urban and suburban backgrounds.

In 2007, the authors discussed this issue and agreed that time was the primary limitation, to which a commitment was made to find ways to creatively “make time” by increasing partnerships and human resources. Shortly thereafter, an opportunity surfaced to partner with James Madison’s Montpelier to develop an outdoor forest management classroom. A new model began to form regarding audience engagement and capacity building in field-based Extension.

Virginia’s Link to Education About Forests (LEAF – valeaf.org) partnership is an outreach and education program that, among other initiatives, augments natural resources experiences at heritage tourism sites with technical information and management demonstrations (Munsell et al. 2010). One aspect of this model regards undergraduate students who have an interest in sustainable natural resources management and upper-class standing in a related field. The talents of student interns are brought to bear on the success and growth of the LEAF program.

Undergraduate internships via the LEAF program are as much about increasing efforts to develop outreach programming as they are about providing students with partnership experiences and career-building opportunities. A secondary, but critical, objective is to sustain partner interests in LEAF by diversifying their experience through shared learning and student mentoring.

With the help of 10 student interns over the past four years, outdoor LEAF programs have occurred at James Madison’s Montpelier, Arlington County, the Powell River Project, Cyrus McCormick Farm, the Appomattox-Buckingham State Forest, Manassas National Battlefield Park, Conway-Robinson State Forest, and Reynolds Homestead. Over 750 stakeholders have directly benefited from their efforts. The interns also add a unique interdisciplinary facet, coming from the departments of Forest Resources and Environmental Conservation, Fish and Wildlife Conservation, and Geography. Moreover, two students have used LEAF internships to conduct undergraduate research projects.

One project was a formative program evaluation focused on outdoor learning at James Madison’s Montpelier. The results were published in the Journal of Natural Resources and Life Sciences Education, and the manuscript was covered nationally with two pages in the education section of CSA (Crops, Soil, Agronomy) News (Munsell et al. 2009). Lastly, a series of undergraduate interns are slated to work through LEAF and its role in a five-year, $1.5 million National Science Foundation project, which will use interns and partners to engage...
landowners, practitioners, and youth about genomic scale tree adaptation in relation to climate change.

Not only has Extension benefited from LEAF’s internship program, but the interns themselves have gained a great deal. For example, Kevin Riedel, a 2009 Montpelier LEAF intern and 2010 Virginia Tech forestry graduate, said, “I still think that my time working on the Montpelier Demonstration Forest was one of the best experiences I’ve had. Working independently encouraged me to put my education to the test, while I still had connections with Virginia Tech faculty, Extension agents, and Virginia Department of Forestry foresters that could help me troubleshoot or brainstorm ideas. Without a doubt I would do it again.” In terms of career development, Jeremy Falkenau, a 2011 Virginia Tech forestry graduate and last year’s Manassas intern, stated, “Unlike other internships I have held that focus on a singular organization and project, this one was broad and demanding, with several projects. Beyond general interactions with each, I got to learn how the organizations operate, how they expect work to be done, and what they expect of their employees. It helped me realize what I ultimately want to do with my degree. The experiences and projects I worked on during the summer of 2011 were some of the most valuable to my education at Virginia Tech.” Student contributions have exceeded expectations and have brought unique perspectives, contemporary skills, and enthusiasm to internship assignments.

LEAF partnerships are significant and make the program possible. The authors would like to thank the National Science Foundation, Manassas National Battlefield Park (National Park Service), Montpelier Foundation, Virginia Cooperative Extension, Virginia Department of Forestry, Virginia’s Sustainable Forestry Initiative’s Implementation Committee, Reynolds Homestead, Arlington County, Powell River Project, Shenandoah Valley Agriculture and Research Extension Center, and Virginia Tech’s College of Natural Resources and Environment. These partners have provided support for interns, operating funds, equipment, field-work oversight and guidance, summer housing, office space, ideas, and more.

Future goals include the continuation of internships and expansion of LEAF initiatives to achieve independence and permanence. The benefits are capacity to meet current and future needs and encouraging a new generation of natural resources professionals.

Citations


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