



# The Pinetum

Journal of the College of Natural Resources  
2006-2007 72nd Edition

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# The College of Natural Resources at NC State University

## Vision

We desire to improve the sustainability of the world's natural resources and the economic and social condition of its people through education, innovation, and the discovery and dissemination of new knowledge.

## Mission

Our mission is to serve as a leader in our disciplines in North Carolina, the nation and the world. We seek to strengthen natural resource management, enhance environmental quality and conservation values, increase the sustainable yield of forestland goods and services, increase the value and competitiveness of the forest products and natural resource-based industries, expand recreation and tourism opportunities, and enhance the health and well being of our citizens through superior professional education, innovative scientific research, and dissemination of credible and timely information.

## Values

We value:

- Academic excellence in all of its forms—the scholarships of discovery, teaching, information transfer and scientific integration.
- Both cutting-edge research in fundamental science and translational research to address practical problems in North Carolina, the nation and the world.
- Diversity of disciplines, people, places and ideas.
- Our students, staff and faculty and are committed to nurturing all.

We admire:

Academic and scientific rigor and dedication.

We seek:

Innovative and creative solutions to today's problems.

We strive for:

Collegiality and appreciate friendly service.

We aspire to:

Leadership in all of our disciplines.

We intend to:

Make the world a better place for this and future generations.

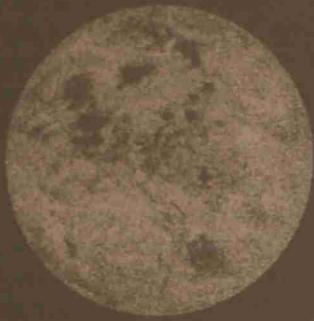


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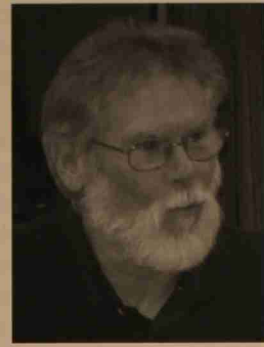
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## Credits

This document is the work of faculty, staff, and students who have taken extra time out to give a little more to the graduating class of 2007. This is not easy for those contributing, considering the ever-busy schedules everybody has. I would like give my whole hearted appreciation for meeting deadlines with great stories about the "goings-on" of this graduating class. To all who contributed—a big THANKS!!!

The 2007 Pinetum Editor



Dr. Phil Doerr

## Dedication

The 2007 *Pinetum* is dedicated to Dr. Phil Doerr, an outstanding professor, researcher, and mentor. Dr. Doerr started his long career at NC State in August 1973 teaching General Zoology, Wildlife Field Studies, Principles of Wildlife Science (teaching the latter course for its 34<sup>th</sup> time in Fall 2006) and has been going strong ever since.

Over the years, he added Fisheries and Wildlife Administration/Policy and Law and numerous special topics seminars to the list. His teaching turned exclusively to wildlife courses and his research efforts grew. Dr. Doerr's accomplishments and service throughout his career towards the profession of wildlife management are represented by a few of the awards and recognitions below:

- 1982 NC Wildlife Federation Conservationist of the Year, Governor's Award
- 1985 National Wildlife Federation Award for Contributions to Wildlife Conservation
- 1985 National Wildlife Federation Visiting Scientist
- 1985 NC Chapter of The Wildlife Society Annual Award
- 1988 The Wildlife Society, North Carolina Chapter President
- 2003 NC Chapter the Wildlife Society Annual Award
- 2004 College of Natural Resources Outstanding Advisor
- 2006 Wildlife Society Outstanding Student Chapter Advisor

He has authored or co-authored 66 peer-reviewed papers, three book chapters, 24 major reports, one technical review paper and one position paper for The Wildlife Society (TWS). He has presented papers at professional/technical meetings 58 times. Three times he has served as Associate Editor for the Proceedings of the Southeastern Association of Fish and Wildlife Agencies (1986, 1987 and 2000) and served as Associate Editor for The Wildlife Society Bulletin, 2005–2006. He also served on the TWS Technical Review task force on Baiting and Supplemental Feeding of Game Wildlife. Since 1976, Dr. Doerr has served as Trustee for the North Carolina Conservation Education Foundation which provides funding for conservation education groups throughout NC, and scholarships for wildlife/natural resources students in NC colleges. To add to the list, for 32 years, Dr. Doerr hosted the Barkow Lecture series.

His dedication to the profession of wildlife management research is outstanding. As the Fisheries and Wildlife Science program grew, his research program expanded, emphasizing endangered species conservation, specifically red-cockaded woodpeckers and the American alligator. He also expanded research on game species management, such as the northern bobwhite quail, American woodcock, white-tailed deer, and American black bear as well as non-game species like eastern bluebird, raccoon, spotted skunk, and box turtles, among others. During his tenure, he supervised 8 PhD students, 32 Master's students and served on more than 200 Doctoral and Masters committees. To date, his research grants/contracts have totaled over \$3.2 Million as PI or co-PI.

He continues to be very active in his research and currently has seven papers in progress. He is co-PI on a research project to re-evaluate the status of the American woodcock in coastal North Carolina, repeating studies his students and he conducted 30 years ago. This work would assess the impacts of major land management and agricultural practices that have occurred in the last quarter century on a valuable migratory game bird.

This prestigious career and the contributions Dr. Doerr added to the body of scientific knowledge has not gone to his head though. He has never lost sight of his true mission as a faculty member at NC State. The attributes that define Dr. Doerr in the eyes of his peers and his students are his passion and enthusiasm for teaching. These have not diminished over the decades of teaching, but have only grown. Dr. Doerr is passionate about wildlife, and infuses that passion in his students. During class lectures, chapter meetings, and individual discussions, his passion for wildlife is contagious. He does not hide his excitement, but instead yells and jumps around to emphasize the important points. As he shares his concern about the future of conservation in our country, he emphasizes how important each one of us in natural resources is to that future. He has taken

what is a hobby for so many students and turned it into a life calling. To him, wildlife is a gift that we all have the responsibility to nurture and protect. Students soon realize how fortunate they are to have wildlife available to them and are inspired to recommit to this profession. His passion for wildlife is most evident when discussing politics. He is confident in his stance on issues and politicians related to wildlife, and he is not afraid to share his opinion with others.

As busy as he is, he always has time to talk with students and give advice about school, chapter activities, and professional opportunities. Every student in the program feels comfortable approaching Dr. Doerr with concerns and questions. He treats everyone with respect and as one of his professional equals. He encourages each student to think for themselves and to trust their ideas and intuition, but he sets high expectations for students, and gives each one the support needed to meet those expectations.



*Jennifer Catalano presenting Dr. Phil Doerr with the Endowment Plaque.*

He always states that luck is "only a meeting of opportunity and preparation", and his students know that with his support, they are prepared for any opportunity that presents itself.

Outside the classroom, Dr. Doerr maintains a deep concern for students and promotes their professional career development in and out of the academic setting. After serving for 33.5 years, he recently stepped down as faculty advisor to the Leopold Wildlife Club (which became The Wildlife Society Student Chapter in 1989). He encouraged participation of all wildlife students (and all CNR students) to become involved in the chapter. He has devoted many hours arranging trips for students to various meetings, participating in fundraising activities for students and encouraging them to present their research at state and international TWS meetings. Through his encouragement and example, students realized the need to participate and help shape the future of TWS (as he called it "our voice of the profession").

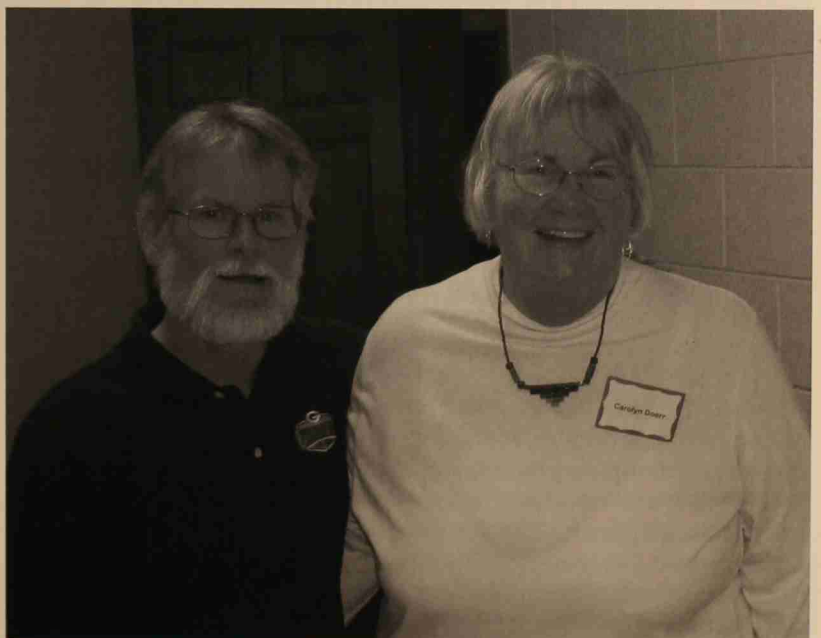
Inspiring many of his students, numerous graduates remain involved with TWS, including Jonathan Shaw who finished his PhD in the spring of 2005 and is the current Chair of the Student Affairs Committee for TWS. Each year, Dr. Doerr would also devote countless hours helping the chapter prepare for the annual Southeastern Conclave. He would prepare simulated competitions, holding extra meetings for students to practice and prepare not only for the competition but for the real world.

Although Dr. Doerr officially retired December, 2006, he is still active with the college and students in many ways. There are graduate students still under his guidance and he has numerous active projects. He also expects he will offer his "sage advice (i.e., 'butt in')" with his former colleges on issues concerning the FWS program for some time to come. But his teaching and guidance in the classroom will sorely be missed by the students and his peers. It will truly be missed by him as well. He states: "I valued the opportunity to share my passion for asking questions about wildlife and the way the natural world works and also to figure out methods for achieving sensible management of wildlife resources. My teaching model was always to share my excitement for the material with students; I figured if I'm not enthusiastic about the subject matter how could I expect the students to be interested. I found it especially rewarding to work with graduate students and challenge them to excel intellectually and professionally." Recently, when asked what he felt was his most significant contribution he answered, "Encouraging students to aspire to their dream job, and then helping guide them there."

With a warm heart, the Class of 2007 would like to congratulate you, Dr. Doerr, and thank you for your service and dedication to your students and your life-calling. Although, you will probably be busier than ever, we wish the best for you and yours during "retirement"!

Class of 2007

*Dr. Phil and Carolyn Doerr celebrate the retirement reception.*



# The Dean's Perspective

As the new dean, I've had less than a year to absorb the magnitude and diversity of our College's programs, faculty, and students; and recent weeks have seen the college's leadership envisioning and mapping the college's future. Nearly a year ago, as I pondered the decision to move from Texas A&M to NC State, many of my colleagues and friends at both institutions asked why I would want to make this move. My quick answer was, "If you've ever spent a summer in Texas, you wouldn't ask that question." The real answer is more complex, but simply put—I came here for the same reasons that most of you came.

First of all, *NC State has a great reputation* amongst the Land Grant institutions. NC State has at its roots the Act of 1862. Signed by President Lincoln in the midst of the Civil War, the act insured our country would have an educated public. The Act called for a university in each state that would teach "the sons and daughters of farmers and mechanics" in such areas as "agriculture and engineering", but also in the "humanities and military science." NC State and her sister land grant institutions were and are "the people's universities." Over time, additional investments were made to set up the experiment station system, the Extension service, veterinary colleges, and yes, forestry schools and natural resources extension programs. While some Land Grant universities have moved away from that original mission, NC State has proudly stayed the course—modernizing into fields like gene splicing and nanotechnology, but remembering to produce "society ready" graduates who can find employment and have an immediate impact on society. Today NC State's leaders embrace our roots while keeping this ship on a steady course for the future.

Secondly, *this College has a great reputation* as one of the two or three top natural resources colleges in the country, with each of its departments also within the top three to five in the country. The diversity of disciplines makes working and studying here very attractive. We have forestry, wildlife and fisheries, environmental sciences, wood science, paper science and engineering, park management, recreation and sports management, and even a professional golf management program. And our faculty and staff work every day to make this a place where all are welcome.



Dr. Robert D. Brown

Third, *employers like our graduates*—so for you that means jobs; for me, that means encountering our alumni everywhere I travel. It's exciting to see them leading the world to a sustainable future and proudly supporting our College on their way. OK, I guess that's four.

Despite our never-ending quest for more space, *our facilities are really impressive*. How many universities have their own paper mill—right in the building, so that students can put into practice what they learn in the class and lab? Or nearly 90,000 acres of forests, which provide opportunities for student learning and research, as well as income to the College? As I write this, we are completing the addition to Jordan Hall, which will give us 20,000 square feet of new teaching, research and office space. Our new "virtual" computer lab can be reconfigured for different classes, projects and teaching styles, and our new "fly space" allows students to work in teams and link their laptop computers to our server and larger screens. As we move into Jordan Hall, we will refurbish some of Biltmore and Robertson Halls, both to make them more attractive, useable and comfortable (think Biltmore coffee shop—at last!), and so that they really look like the home of a world class college of natural resources.

Yet another reason, across the way the *Centennial Campus* is a model of industry-university cooperation that other university presidents travel here to see. This spring we will break ground for a new golf course designed by Arnold Palmer and certified by Audubon. At last our PGM students will have their own place to practice and learn! Another Centennial Campus project is called the "America Home at NC State", a planned \$ 20 million facility where home construction and design, and woods product research and teaching will take place, surrounded by five model houses where new ideas on insulation, siding, roofing materials and energy efficiency can be tested.

Good students, faculty, and facilities need support if they are to be successful, and we really have that here. This college is blessed with two support groups, the *NC Forestry Foundation* and the *Pulp and Paper Foundation*. The individuals on these boards volunteer their time and resources to support our many programs and to provide scholarships for our students.

With all of these opportunities, it was impossible for me to turn down this job, just as it was impossible for you to pass up your opportunity to be a student of the CNR.

I was particularly fortunate when I arrived to find that the college had been so well managed since Dr. Nielsen was

chosen to be Interim Provost 18 months earlier. Drs. J.B. Jett, Adrianna Kirkman, and Dan Robison deserve special thanks for the extra efforts they put in during that time.

A look at the reasons to come here would not be complete without looking at the future. Soon after I arrived, we began our triennial "Compact Planning" effort, completed just recently. Plans are important, because they tell us who we are, where we are going, and why. You'll see our new mission, vision, and values statements in the front of the Pinetum. Our goals are lofty, but practical. And with your help—whether as student, faculty, staff, alumni or friend—we can achieve them.

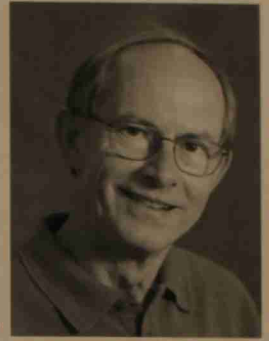
## What's Ahead

- Over the next few years we want to expand our academic offerings and research into new areas like biofuels, geoinformational sciences, and applied conservation policy.
- Add new faculty in forest health, urban forestry, conservation biology, wildlife management, housing engineering and business, sports management, and cellulosic ethanol production.
- Increase our Extension field staff to better assist landowners in their land management and business development.
- Offer full semester-abroad opportunities for our students, especially in South Africa, China, Chile and Sweden.
- Improve our web site for better internal and external communication, and enable our entire building complex to be wi-fi capable.
- Enhance our distance education offerings with new courses and on-line graduate degrees.
- Explore a scholar-in-residence and an executive education program, as well as an Intern program, where students spend a semester working with Congress in Washington D.C. or the General Assembly in Raleigh to learn the ins and outs of government first hand.
- Finally, we want to expand our K-12 EnvironMentors program to help improve scientific literacy in our schools and enlighten high school kids from inner city areas to the possibilities of careers in science.

Our students have benefited from our previous plans and efforts, and helped make this College what it is today. Our future is challenging yet bright, and I appreciate the opportunity to lead this College toward its future goals. As we move to embrace our future, I welcome your thoughts and ideas.

# Development and Foundations

For the better part of a century, the preferred business model for a forest products company was vertical integration—from the forest to products sold to consumers. With Temple-Inland's announced plan to sell its timberlands and separate into three publicly traded companies, Weyerhaeuser becomes the last of the integrated forest products companies.



David Ashcraft

## The End of an Era

At its peak in the 1970s, the forest products industry owned or controlled about 22 percent of the commercial forestland in the South.<sup>1</sup> The restructuring now underway in forest products probably includes more positives than negatives on the macro level although individual company and/or local changes can be individually devastating. There is no question that the changes in our industry mark the end of an era and will have significant impact on landowners as well as universities.

Although some profess surprise at the changes, and others complain and would prevent the changes if they could, the new business models in forest products are the result of applying non-changing Guiding Principles to today's business system:

- A business exists to improve the operating results of customers.
- A business must earn at least the weighted average cost of capital.
- Manufacturing activities occur where the perceived total cost is the lowest.
- Products are sold where the margin is the highest or largest.
- For the most part, the largest cost item for forest products is labor and not fiber, despite what cost accounting shows.

- The customer evaluates the performance of the supplier.

Although the raw material (trees) has not changed, nor have the traditional products, other components of the business system have changed and for the past 20 years, these changes have resulted in consolidation, mergers, buyouts and the sale of forest lands.

Individual businesses segments—forestry, land development, chemical manufacturing, paper making, panels and lumber, have dissimilar economic drivers, and Wall Street has not determined how to properly value an integrated company that includes diverse businesses. In many cases, the value of land is much higher for uses other than lumber or pulp—for example land development near the large metropolitan areas along the I-40, I-85 or I-95 corridors. The prevailing investment community view is that the traditional forest products company does not have the skill set or mind set to extract the value from the non-traditional activities such as land development, mortgage banking or chemical manufacturing and rewards those companies that simplify their business model. One way many companies have simplified is the sale of timberlands. Demands on the forest will continue to increase, resulting in a continuing need to evaluate the optimum business structure.

All of the changes in the business system of today drive the integrated company to restructure in order to improve financial performance. The net result of the restructuring of forest products companies is more emphasis than ever before on forest lands as stand-alone business systems. Restructured forest businesses—primarily REIT's and TIMO's, will provide after tax returns that exceed the weighted average cost of capital. Portfolio's of land assets will constantly be in play in the financial marketplace as differencing uses for the land necessitate divergent activities from land for urbanization to intensive management of forestland for high quality lumber production. All costs in land management will be carefully examined to make certain that incremental costs earn a return. There will be less emphasis on "growing trees" and more emphasis on return per acre to satisfy a variety of needs.

The traditional forester might see these changes as negative, but close analysis shows that forests can earn the cost of capital when successful guiding business principles are applied to current business systems. Continuous application of the principles will result in continuing changes in the forest products industry. The 25 year growing cycle for southern pine versus the 2-3 year cycle for changing business conditions is a major complication but a fact of life, but that's another story.

1-Kellison, Bob. Unpublished Paper, "Forestry in MML."



# Highlights from Academic Affairs

The CNR Academic Affairs Office is a place of service to students, faculty and staff, a place of support for innovation in teaching and learning, and a place for showcasing the successes of the CNR academic family. Comprised of Academic Services, Enrollment Management, and Informational Technology groups, the department is an integral part of the college's educational activities. It is our hope that as students you leave us with much added value, and that your achievements have been accomplished on a path that we helped to smooth—at least as much as we could. CNR students have bright futures and the prospect for rewarding careers. Our congratulations go to those graduating, and to those who have made achievements in their academics as well as in personal and professional growth over the past year.

## CNR Student Accomplishments

- Enrollment: 1219 students, 1012 undergraduates and 207 graduate students.
- Dean's List of Fall 2006: 204.
- 4.0 GPA as of Fall 2006: 17.
- Invited to Phi Kappa Phi National Honor Society of Science and Engineering: 6.
- Invited to Xi Sigma Pi, national forestry honor society: 120.
- Invited to Rho Phi Lambda, national parks and recreation honor society: 65.
- CNR Honors Program completion: 1.
- Honored at Multicultural Center Freshman Convocation of 1<sup>st</sup> semester performance: 4.
- Honored at Gamma Sigma Delta, national honor society for agriculture and natural resources, for 1<sup>st</sup> year performance: 51.
- Graduated 78 in December, 2006 and approximately 140 are expected to graduate in May, 2007.

## Faculty Recognitions for Teaching

- Dr. Med Byrd (WPS): Outstanding Teacher.
- Dr. Roger Moore (PRTM): CNR Board of Governor's Award recipient.
- Ms. Annette Moore (PRTM): CNR Alumni Distinguished Undergraduate Professor recipient.
- Dr. Lee Allen (FER): CNR Alumni Distinguished Graduate Professor recipient.



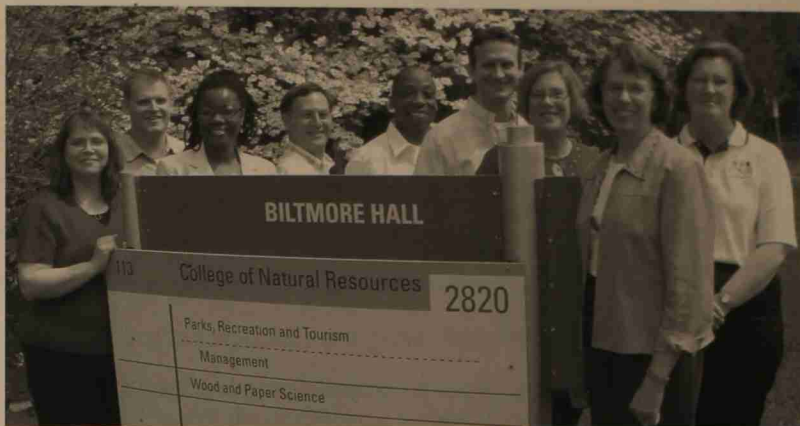
Dr. Adrianna G. Kirkman

## Academic Affairs and Information Technology Personnel

- Adrianna Kirkman: Associate Dean.
- Yvonne Lee: Director of Academic and Student Services
- Angie Barefoot: Student Services Assistant
- Joanne Urbanski: Student Services Assistant
- Vonda Easterling: Director of Recruiting and Enrollment Management
- Greg Robinson: Director of Information and Instructional Technology
- Aparicio Clifton: Technology Support Specialist
- Josh Gira: Technology Support Specialist
- Bill Swint: Education Media Specialist
- Richard Norris: Technology Support Specialist



Richard Norris in Jordan #5103.



(All are named from left to right unless otherwise noted.) Yvonne Lee, Joshua Gira, Vonda Easterling, William Swint, Aparicio Clifton, Dr. Gregory Robinson, JoAnne Urbanski, Dr. Adrianna Kirkman and Angie Barefoot.

## CNR Ambassadors

The College of Natural Resources Ambassadors are a select group of students who participate in recruitment efforts for prospective students of the College of Natural Resources. CNR Ambassadors usually experience first contact with future students and parents in university-wide recruitment events and college recruitment events. They keep busy throughout the semesters with various recruitment activities such as CNR Visitation Day for admitted students, Women and Science and Engineering Visitation Day (WISE), First Year College Academic Networking Fair, Majors Fair, individual phone calls to admitted students, University Open House and College Open House. CNR Ambassadors also participate in student shadowing where prospective students are allowed to visit the college and shadow a current CNR student for the day. Congratulations goes out to our graduating Ambassadors, Jane Anderson and Michael Brafford.



CNR Ambassadors: (front row) Vonda Easterling, advisor; Jane Anderson, Amber Bruk, Candice Sylvan, Amanda Williams and Dr. Adrianna Kirkman, Academic Dean. (back row) Michael Brafford, Brent Cassell, Dane Grismer and Danny Lovell. Other Ambassadors are Hannah Litzenberger, Latoya Price, Jessie Birkhead, Matt Barksdale, Brittney Eustache and Jeremy Diner.

## CNR Council

The CNR Council's main focus is to provide guidance and representation for each of the CNR clubs. Representatives from each CNR club and the CNR Council Executive Team work to appropriate funds for clubs, organize interdepartmental activities, and create the Pinetum publication.

Over the past year the Council developed an action plan to increase student participation for the 2007/08 academic year. A partnership with Service Raleigh will bring students from all of the clubs together to give back to the local community. A CNR Barbeque will be re-initiated during the Fall 2007 semester to encourage student interaction in a multi-departmental event. The 2007/08 academic year will be an exciting one for the CNR Council.

### Council Officers

- Jarrod Tucker: President
- Tim Ward: Vice-President
- Blake Sawyers: Treasurer
- Dr. Adrianna Kirkman: Advisor



(above) Jarrod Tucker, CNR Council President; (below) Blake Sawyers, Council Treasurer; officer not shown: Tim Ward.



(front row) Jarrod Tucker, CNR Council President; Katie Caldwell, International Society of Tropical Foresters; Michael Brafford, Forestry Club; (back row) Michael Naber, Natural Resources Organization of Graduate Students; William Peete, Xi Sigma Pi; Austin Keating, Society of American Foresters, NC State Student Chapter; Dr. Adrianna Kirkman, Advisor.

Other members include:

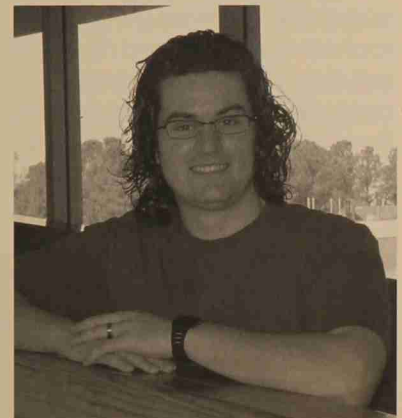
- Chris Jones: Forest Prod. Soc.
- Chris Barfield: Forestry Club
- Rodrigo Arriagada: ISTF
- Brandon Bridges: Leopold Wildlife Club
- Candice Sylvan: MANRRS
- Fereby Bryant: Rho Phi Lambda
- Matt Miller: Soc. Am. Foresters
- Andy Cibils: TAPPI/PIMA
- Jeff Gluck: Student Senate
- Branden Templeton: Student Senate Representative

## CNR Undergraduate Research Program

Some of the most rewarding activities for students in the College are those that involve collaborations with faculty outside of the traditional classroom settings. One such activity is undergraduate research projects, in which students work with a faculty advisor in their research area. These projects provide growth in problem solving and experimental planning skills, as well as satisfaction of carrying out the research and presenting the research in professional settings. Students can get a feel for research as a career option and the larger collegiate community. The following features 2 students who are working with professors in the College on independent research projects.

### Carter W. Reeb— Sophomore in Environmental Technology

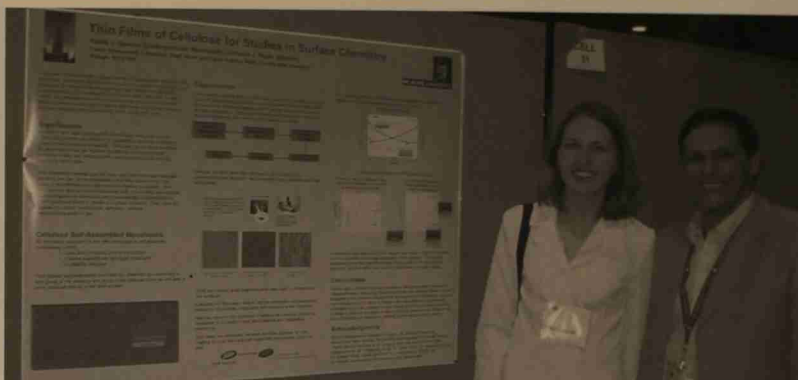
My initial interest in conducting research as an undergraduate stemmed from a conversation I had with my advisor about the possibility of scholarships or work/study programs. It seemed a little daunting at first, the idea of carrying out actual research in a lab. I found out, however, that I actually have what it takes to understand the research and accomplish the goals for the project. I conducted research pertaining to the possibility of using Phragmites, the common reed plant, to phytoremediate petroleum contaminated sites. I worked for Dr. Nichols in the Hydrology lab from August, 2006 until August 2007. I was able to work with advanced technology and new science to identify the potential of microbial degradation of contaminants with increased vegetation, especially Phragmites.



In this study, we investigated soil quality, growth rates of the vegetation, and overall impact of the contaminants on the environment with and without the new phytotechnologies. I learned a lot about the scientific method and gained knowledge about water, soil, and air quality, the use of technology such as GC-Mass Spectrometry, FTIR Spectroscopy, and Elemental Analysis. This experience taught me a lot about science, and even more about how humans impact their environment. This has definitely been a very positive experience for me and has added to the quality of my college education more than many of the other experiences.

## Kelly Spence—Senior in Paper Science and Engineering

Over the past 4 years, I have had several research experiences, each giving me new opportunities for growth above and beyond the traditional academic program. As a sophomore, I obtained my first industrial internship at a local biotechnology company, Novozymes, where I was a summer research intern in the forest products division. While I was there, Dr. Rojas of the WPS faculty gave a presentation to the division about his research and his research group. I was on co-op the following fall semester with Kimberly-Clark, but when I returned in the spring, Dr. Rojas contacted me and said Novozymes was willing to give his research group a grant, if I would be one of the undergraduates participating in the project. I agreed to participate in the project, but I had no idea what I was getting into.



When I started my research, I assumed that Dr. Rojas would give me instructions for some simple experiments and I would spend all semester performing the experiments. But instead, he handed me a conference abstract and said “no one has ever published anything on this topic and I want to repeat it.” The topic, self-assembled monolayers of cellulose, would be used in the Novozymes project to look at enzyme activity. It took me almost a year to obtain good results from my research, but in the meantime, I presented at the Undergraduate Research Symposium, where I won a best poster award for Engineering. I subsequently received a state funded research grant to continue my research. The initial experience taught me the difference between experimentation done in an undergraduate course and the more open-ended work done in a research lab. It also helped me understand the perseverance needed to explore a scientific problem.

The following spring, we were confident with my results so I presented at the ACS conference in Atlanta. It was definitely the most popular poster in the cellulose division; people from all over the world wanted to discuss my research, many of whom had attempted to replicate the original work but had failed. Even after the conference, many people contacted Dr. Rojas who were impressed with my research, particularly for an undergraduate.

For my senior research, I chose to work with MeadWestVaco on a corporate research project, pulp-bleaching pretreatments. Our results are going to be published in the TAPPI Journal sometime this spring. This joint project has also provided me with a research opportunity with the company while I am in graduate school, pursuing my PhD. The best part of the corporate research versus fundamental research is the potential for industrial application.

Finally, this year I am participating in a research project for an Environmental Protection Agency competition that is going to be held in Washington DC at the end of April. For this project, the research group is experimenting with various types of surfactants to determine if the current industrial surfactants can be replaced with more environmentally friendly ones in paper recycling.

Overall, these research projects have been a beneficial experience for me as an undergraduate, particularly helping me determine what career path I hope to take. It has also given me many more opportunities than my traditional academic courses and work experiences alone, particularly being able to communicate with many people from other universities around the globe who are interested in the same types of research topics that I am.



## Minorities in Agriculture, Natural Resources and Related Sciences

The North Carolina State University (NCSU) chapter of Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS) began the year with numerous recruitment activities to increase membership. A Fall cookout was also held to introduce new individuals to MANRRS and welcome back previous members. In addition, MANRRS participated in NCSU Welcome Week which helped introduce incoming freshman to the various clubs at NCSU. The overall goal of these events was to increase the awareness for MANRRS on campus.

Monthly meetings have been held to uphold the ideals of the NCSU-MANRRS chapter which include professional development, personal development, and community development. For example, the chapter hosted Monsanto, a world renowned agricultural company.

Monsanto has undertaken an effort to increase their relationship with universities and minority groups within them.

In addition, the chapter attended the Region II Workshop held at South Carolina State University, October 20<sup>th</sup> and 21<sup>st</sup>, 2006. The workshops included sessions on leadership skills, professional development and financial management.

The NCSU-MANRRS chapter also participated in various community outreach services. Members participated in the Walnut Creek Wetland Clean-up project. This was an opportunity for members to help restore a local wetland, which assisted in restoring the surrounding community. For the holiday season, the chapter donated cold weather accessories (scarves, gloves and hats) to a local adult daycare facility. The garments helped the elderly to stay warm throughout the winter season.

The NCSU chapter continues to maintain the standards set by the National MANRRS organization and strives to reach our chapter's goals and objectives.



*Joan Louie, Mallorye Lovett and Jeffrey Greene attending the Region II Workshop at South Carolina State University.*



MANRRS students delivering cold weather accessories to a local adult daycare facility.

## MANRRS Officers and Advisors

- President: Mallorye Lovett
- President Elect: Candace Sylvan
- Secretary: Jeffrey Greene
- Treasurer: Jose Luis Zerpa
- Parliamentarian: Stephanie Freeman
- Historian: Michael Nwachukwu
- Dr. Leon Boyd, Professor, College of Agriculture and Life Sciences
- Dr. Edwin Lindsay, Assistant Professor, College of Natural Resources
- Thomas Easley, Director of Community Diversity, College of Natural Resources

# CNR Study Abroad

One long-term objective for the College, as well as the University, is to help students grow in the global community that is our reality. One way that CNR is providing opportunities for students to learn about other cultures and the global perspective is through study abroad programs. In the spring and summer of 2006, CNR faculty offered 4 programs in which students take coursework in conjunction with travel to a country outside of the US. The locations offered last year were to China (FER), Namibia (FER), Ghana (PRT), and Australia (PRT). In addition, the long-running Nicholson Endowment in the Department of Forestry and Environmental Resources provides for collaborative SAB trips for NC State, Purdue University, and Swedish University of Agricultural Sciences, and will sponsor a trip to the Arctic Circle in Summer 2007. The Wood and Paper Science department sends a student to Japan to work with Nippon Paper each summer, and several donors provide subsidy support for students taking international internships. At least 5 programs are planned for Summer 2007. Here are some highlights from CNR study abroad trips.

## Course Schedule

### 2005-06: 41 Students

#### Spring 2006

- Monash University, Australia
- SIT Botswana
- University of the Sunshine Coast, Australia

#### Summer 2006

- Cairns, Australia
- Forestry and Environmental Resources in China
- Ghana Eco-Tourism
- London Experience Summer
- Namibia
- Perugia, Italy

### 2006-07: 62 Students

#### Fall 2006

- Florence, Italy

#### Spring 2007

- Chile Forestry Study Tour

#### Summer 2007

- Ghana Landscapes in Ecotourism
- Cairns, Australia
- Florence, Italy
- Bolivia
- Agroecology in Tropical America, Costa Rica
- Above the Arctic Circle
- Sweden and Forestry
- Forestry and Natural Resource Management in Turkey
- University of the Sunshine Coast, Australia



Namibia

## Past Study Abroad Trips

### Hannah Litzenberger in China

I had the opportunity to visit China for two weeks in May on a study tour through the Department of Forestry and Environmental Resources. The trip was a unique experience because it was a mix of science and culture. We were able to learn about China from a natural resources perspective, which few tourists get to experience. China is at a real crossroads as the people and the government balance scarce natural resources with lifestyles of increased consumption. Seeing firsthand China's challenges with water, soil and forest resources—and then meeting with those who are developing solutions—was a unique privilege.

We also had the wonderful opportunity to experience China's rich history and culture. It was amazing to see the Great Wall, Tiananmen Square, the Forbidden City, the Terracotta Warriors, the Summer Palace and many other sites.

The best part about my experience in China, though, was interacting with the Chinese people, especially the students. We had students from Beijing Forestry University and the Northwest Agriculture and Forestry University travel with us on our daily excursions. Each of us on the trip became very close to the students we met. The stu-

dents were extremely motivated to talk with us and practice their English. I loved talking with them about their interests, school, music, TV and movies and comparing and contrasting the American student lifestyle with the Chinese student lifestyle. I still keep in contact with many of the students I met, and one even just arrived to join us at NC State this August to pursue her Ph.D.

China is a country on the verge of extreme growth and progress. It is up to the rest of the world, and especially America, to pay closer attention to China so that both of our countries can grow cooperatively and progress in harmony. Partnerships among students and universities, like those that we were able to build this summer, are by far the most successful way to foster such international cooperation successfully.

There is no question about it in my mind: I most certainly want to go back to China. I only visited two cities, and though we did get to visit more rural areas, China is such a large country with much more to see and discover. It would be like coming to America and only visiting New York and Chicago. I would love to live in China for an extended period of time; I would even like to teach English there.

### Cairns, Australia with Dr. Moore and Annette Moore

This 25-day study tour with Dr. Roger Moore and Annette Moore is the 6-credit, PRT 491M course, Sustaining Human Societies and the Natural Environment. It was offered in summer of 2006 and again this summer, the course is based out of Cairns, Australia and includes a two-week study tour of tropical far Northeast Queensland involving snorkeling on the Great Barrier reef, hiking the Daintree Rainforest and exploring the aboriginal culture of the Outback. Last year 15 students took advantage of this exciting trip and this summer 20 students will be attending.

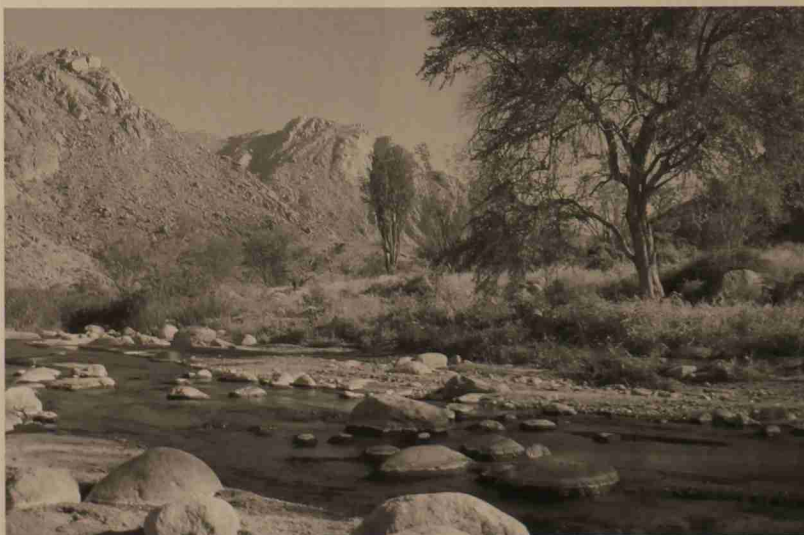




Photo courtesy of Dr. Mats Olssen.

### Sweden Forestry with Dr. Gary B. Blank

During odd-numbered years NR350 travels to Sweden, where each year the course focuses on different aspects of the topic Sustainable Use of Natural Resources. During even numbered years the course brings Swedish students to the United States, and in 2006 the course was hosted at NC State. Two students from Purdue University joined eight Swedes in visits to the South Carolina coast and Western North Carolina. Development pressure and the alternative ways to deal with that pressure were the salient themes of the 2006 course. We visited the abandoned rice plantations in the low country, visited wood stork management in the ACE Basin, looked at the ravages of the balsam wooly adelgid in the mountains, observed the elk herd at Great Smokey Mountain National Park, rafted on the Nantahala, and played on the beaches of South Carolina's Grand Strand. Altogether we considered the variety of ways people have experimented with sustainability in the Carolinas and fashioned opinions about what the future holds.



### Namibia 2006 with Dr. Werner Dörgeloh

After the first successful study abroad program to Namibia in 2005, the word has spread amongst students and in the second year, a total of 14 students have registered. A few changes had been made to the itinerary to accommodate previous student's recommendations and to upgrade the academic standard. Students were exhilarated about this great program and it was an even greater success.

On the 2006 study abroad program with Dr. Werner Dörgeloh, we were extremely fortunate to have witnessed the effect of a very good rainy season that has ended a month earlier. In this dry land, and especially in the desert, a high rainfall up to three times above normal, resulted in unusual sightings seen only once in about 50 years. The desert had turned into a grassland and students initially could not believe that we were actually in a desert. The high abundance of food (grass seeds and insects) was exploited by thousands of birds. Many dry river beds still had some trickles of water. A small stream in one of the ravines of the highest mountain in Namibia, was still flowing strongly. This stream has been dry for the last 40 years. The timing, from an ecological perspective was perfect.

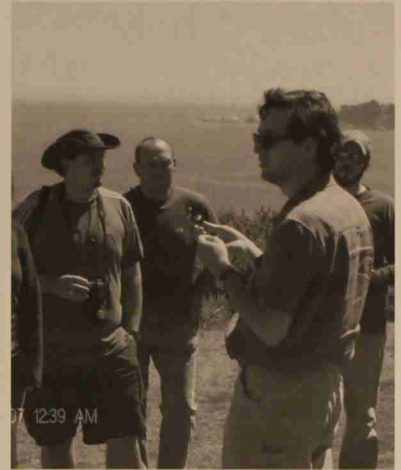


## Chile Forestry Study Tour with Dr. Lee Allen, Dr. Susan Moore and Dr. Rafael Rubilar

Chile, a narrow strip of western South America is an amazing country in terms of forest production. The central portion of this incredibly diverse country, with its deep, rich, Andes-volcanic ash soils, and its moderate climate results in phenomenal growth rates for radiata pine and eucalypts. This area has become a very important source of wood fiber in Chile and worldwide. This past Spring Break, with supporting funds from the USDA International Science and Education Competitive Grants Program, 13 students toured this region of Chile to examine how forest industry performs in this region.

Two major forest industries, Forestal Mininco, and Bioforest (the research branch of Arauco) showed us every aspect of industrial forestry operations from the genetic improvement and biotechnology through nursery operations, silvicultural treatments, cable-yarding harvesting systems, and community/family based sawmill operations. The tour included some of Chile's top industrial foresters and academics of numerous natural resource disciplines to give us in-depth insight into forestry issues in Chile and in particular—this region of Chile.

This tour is a must for any student desiring to see forest industry at its best and what can be done when incredible edaphic factors are combined with good genetics and management. We also spent time in the native forests of the Andes and hiked calderas and *Araucaria araucana* forests. The tour also allowed students to meet with numerous contacts in the industry and Universidad de Concepción and to get a splendid taste of Chilean culture, history and beauty. Next year, the tour is planning on concentrating on Chile's beautiful native forests and exploring some of the country's watershed management issues.



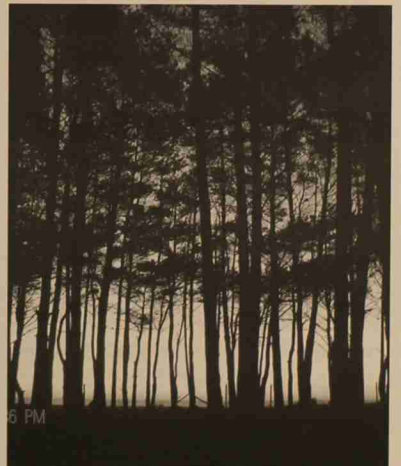
*Dr. Anibel Paucard of Universidad de Concepción discusses native plants at Haulpen Park on Chile's coast.*



*Cable yarding operation in the Andes.*



*Intense silviculture and rich volcanic ash loams contribute to incredibly fast growth on this 14-year-old Eucalyptus nitens stand near Hacienda Rucamanqui in the foothills of the Andes.*



*Late summer sun setting through the radiata pine stand on Bioforest property along the Chilean Coast.*

## Future Study Abroad Trips



### Paper Science and Engineering Students to Tour Mills in China

Twenty-two students majoring in Paper Science and Engineering at NC State have an exciting educational experience planned for early summer. Accompanied by faculty and sponsors, they will spend ten days in May, touring paper mills in China. Dr. Hou-min Chang, retired professor in the paper science program at NC State and a Tappi Fellow arranged the mill visits. The upcoming visit is the direct result of contacts established in November 2006 when several NC State faculty and Directors of the Pulp and Paper Foundation traveled to Nanjing, China to participate in the organization of the Pulp and Paper Foundation at Nanjing Forestry University. "This visit to China by our students is a great opportunity for them to see first-hand the new mills in China and to meet industry peers," said Steve Kelley, Department Head for Wood and Paper Science at NC State. In addition to touring several mills, students will visit Nanjing Forestry University, home to one of the larger paper science and engineering programs in China.



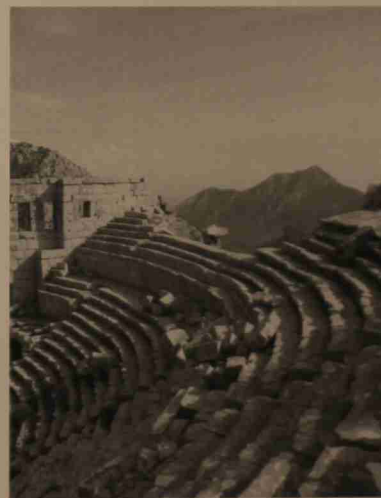
Turkey

### Forestry and Natural Resources in Turkey with Dr. Isik, Dr. Frampton and Dr. Bullock

Turkey is a cross road of cultures, a blend of the east and west. There are many historic sites from very early human settlements, to the Greeks, Romans, Byzantium and Ottomans. Our objective is to blend the history and culture of a modern country with the science and education aspects of Turkish forest and natural resource management.

The course encompasses the study of historical and current forestry and natural resource management in Turkey. Dr. Fikret Isik, Dr. John Frampton and Dr. Bronson P. Bullock will include site visits to ongoing forestry operations (harvests, planting/regeneration, thinning, site preparation, site restoration, etc.). There are also visits to national parks and forests to

assess management techniques incorporating various interests (aesthetics, recreation, wildlife, timber, hunting, etc.) and visits to active research trials with Turkish scientists (forest genetics, management, silviculture, sampling, wildlife, etc.). Students are exposed to practical forestry topics in Turkey along with a thorough introduction to the historical and rich cultural aspects of this amazing and beautiful country.



# Service-Learning at CNR —the Engaged College

Service-learning is a collaborative teaching and learning strategy housed in the Provost's Office that is designed to promote academic enhancement, civic engagement, and personal growth. Students provide meaningful service in the community that present them with experiences related to their coursework. The program incorporates a feedback loop by which students reflect on, articulate, and compare their experiences with specific learning outcomes, thus enhancing the quality of their learning and of their service. Service-learning helps students to deepen their understanding of what they have learned and how they learn. They gain a better sense of who they are and who they want to become while developing "place" in and responsibility to the world around them.

The College of Natural Resources is home to several faculty who have been leaders in with the Service-Learning Program by integrating service-learning into their teaching and scholarship. Two departments (Parks, Recreation and Tourism Management and Forestry and Environmental Resources) have faculty with several years of experience in service-learning teaching and scholarship. These faculty, and their department chairs, are eager to move beyond single-course implementation of service-learning and to explore possibilities for larger scale curricular transformation, partnership development, and scholarship. The following articles are just a few examples of how service-learning is incorporated into coursework.

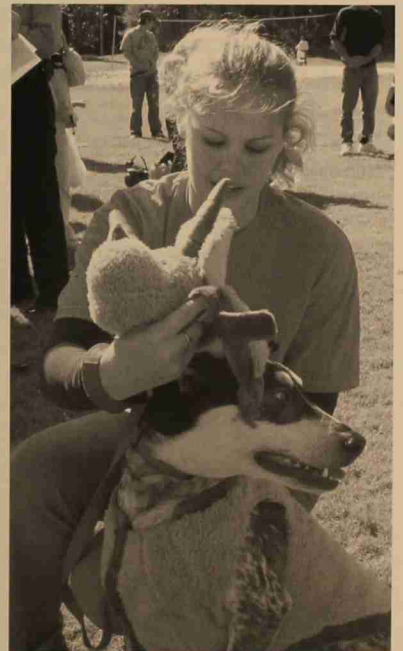
## Service-Learning in Parks, Recreation and Tourism Management

### Orientation to Parks, Recreation and Tourism Management with Barbi Honeycutt

The course, PRTM 150, provides an introduction to the PRTM department, programs and facilities, the profession and opportunities in the delivery of park, recreation and tourism services. Students are introduced to the profession through a semester-long service-learning experience. PRT 150 is not project based. Instead, students are immersed within a PRTM organization to gain a "big picture" perspective of how this agency functions within the community. Students serve the community based upon the specifics needs of the partnering agency. Past community partners include: YMCA, Be Active NC, Raleigh Convention and Visitors Bureau, Broadway Series South, and Cary Parks and Recreation Department.

### Recreation Program Planning with Annette Moore

"I can't imagine learning this material any other way!" Students in PRT 358, Recreation Program Planning, spend much of the semester working in the community with a partnering agency. During their weekly lab periods, students meet on-site, designing and developing two recreational programs, which they implement for the agency's clientele. Service-learning is more than simply community volunteer work. Integration of course material, practical related experience in the community and guided reflection all combine to maximize learning in this full-immersion service-learning course.



Kendra Quiggs readies a contestant for the Dog Costume Contest at Crowder District Park's Howl-O-Ween Festival.



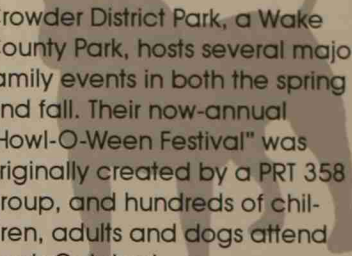
*Adam Dunn and Erica Porter battle it out in 3018 in preparation for activity leadership in the community.*

Learning in this course focuses in three main realms: academic enrichment, personal growth, and civic engagement. Students, faculty / leadership team members, and community partners work cooperatively together, with each party playing a vital role in the success of service-learning.

Each community agency partner offers unique opportunities to PRT students. Some, like Communities-In-Schools sites Heritage Park and the SAS Learning Center in Kentwood, provide PRT students with regular contact with elementary or middle school students as our students tutor theirs. Participants at Cary and Garner Senior Centers delight in their contact with "those great NC State students," especially as they enjoy interacting with them at BINGO or casino-style events.



*Jessie Tuckey and Buzz Lightyear stand in front of contestants in the Kids' Costume Contest at the Howl-O-Ween Festival at Crowder District Park.*



Crowder District Park, a Wake County Park, hosts several major family events in both the spring and fall. Their now-annual "Howl-O-Ween Festival" was originally created by a PRT 358 group, and hundreds of children, adults and dogs attend each October!

Many City of Raleigh Parks and Recreation facilities serve as agency partner sites for PRT 358 students. They include: Lake Johnson Park, Lake Lynn Community Center, Pullen Park, Briar Creek Community Center, Peach Road Neighborhood Park, and Chavis Community Center. Programs offered vary greatly depending on the site, the clientele, and the particular season. Events designed by PRT 358 students range from field days for children and family trips to NC State ball games for both senior adults and youth.

PRT 358 Service-learning students are appreciated by our agency partners, and by members of the community. The continued support of our partners is extremely valuable for facilitating learning by our students. Both Lake Lynn Community Center and Lake Johnson Nature Park have been partners with PRT 358 since we began utilizing Service-Learning in the course, Spring 2001.

It's been an exciting year for Service-learning students in PRM. Our students have served thousands of people in the community through their nearly 40 programs this year. These future recreation professionals are going to make an incredible positive difference in the world as they take what they've learned here to the community!

# S-L in Forestry and Environmental Management

## Natural Resources Measurements with George Dr. Hess

All 12-18 students in course NR300 collaborate on a single, semester-long project around which the course is built. The technical focus is on statistically valid approaches to measuring characteristics of natural resources. The course also has a large professional development component addressing through experience issues such as articulating project goals, organizing work teams to accomplish them, time management, communication, collaboration, and leadership. In 2005, students examined trends in the amount of impervious surfaces around Falls Lake, in partnership with Wake County's Environmental Services Department. Their findings about impervious surfaces helped break an impasse on Wake County's Water Quality Committee, with representatives of homebuilders and citizen environmental protection groups, who were attempting to craft updated regulations for water quality. During the continuation of this partnership in 2006, students found that the proposed new regulations would lead to large differences in runoff in commercial areas but little difference in residential subdivisions. In 2007, students are working with personnel in the City of Raleigh's Stormwater Management Division to improve measurement techniques used to collect data for the Bank Erosion Hazard Index.



FOR 172 sophomores who participated in the service-learning experience.

## FOM Program with Dr. Bronson Bullock

Service-learning is engaged sequentially in the FOM program through three courses, Forest Systems Mapping and Mensuration I and II and Forest Measurements, Modeling, and Inventory.

### Forest Systems Mapping and Mensuration I

In FOR 172, the students work with approximately 200 6<sup>th</sup> graders from Centennial Middle School to teach them basic forest and tree measurements. The service-learning experience helps the students to internalize the academic material by having them teach the basic components to others, while also exposing the students to the principles of environmental education.

### Forest Systems Mapping and Mensuration II

In FOR 273, the students participate in a half day of activity of 'camp enhancement' at Slocum Camp in the Hill Demonstration Forest. This year, the students worked on a wide range of projects as shown in the following photos.



FOR 273 students painting a cabin at summer camp.



FOR 172 students working with the 6<sup>th</sup> graders.



FOR 273 students placing and securing a bridge over a swampy area.



FOR 374 students taking measurements on a young genetics field trial.

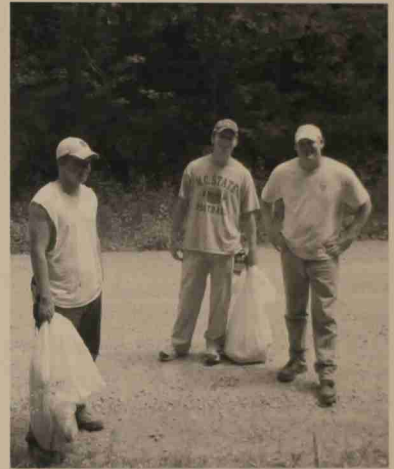
After the service, we spent time reflecting on the impacts we had on Slocum Camp that day and then expand the discussion further into the forestry profession and their personal choices for choosing forestry as a career.

#### Forest Measurements, Modeling and Inventory

In FOR 374, the students work on a semester long service-learning project with a community partner. The objective of the service-learning project is to have the students research, design, implement, analyze, report, and reflect on the application of forest inventory and modeling techniques in conjunction with a service-learning community partner. Service-learning helps the students achieve the course objectives by placing them in 'real-world' situations where they apply the academic methodology learned in lecture and use active learning, teamwork, and critical thinking skills to complete their projects. Community partners for this year included Natural Systems Engineering and the NCSU Tree Improvement Cooperative.



FOR 273 students repairing stairs on a commonly used trail.

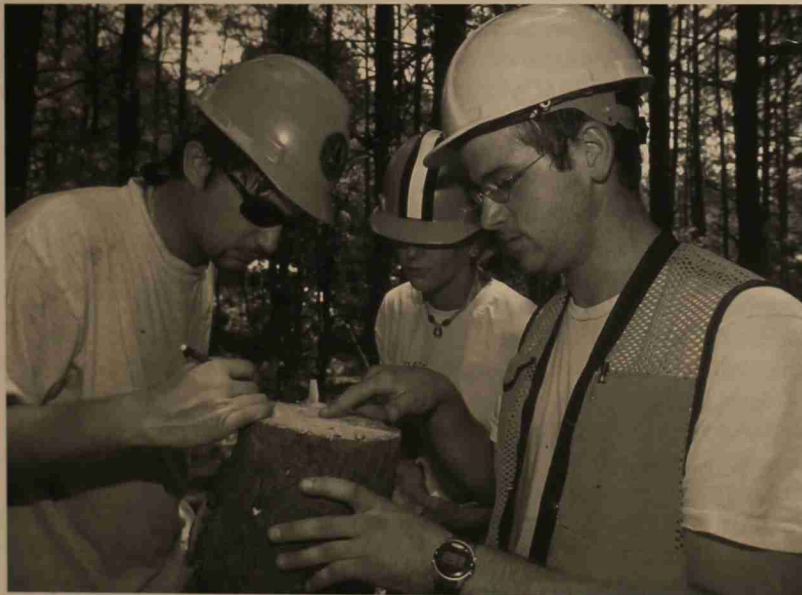


FOR 273 students picking up trash.



FOR 374 students collecting data on an older genetics field trial.

# Department of Forestry and Environmental Resources



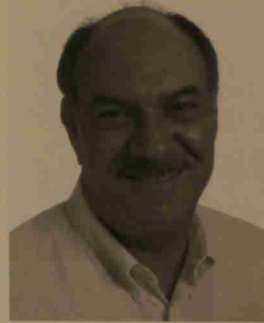
# Department Head's View

It has been a busy and exciting year for our department. One obvious sign of this activity is the construction of the new wing of Jordan Hall that is nearing completion. This spring, we look forward to filling the much-needed office space, state-of-the-art classrooms and teaching laboratories, and two new research laboratories.

The new facilities are a mark to our continued commitment to providing high quality instruction and innovative programs. This year, the department has 313 undergraduate students and 115 graduate students. Growth has been strong in the Fisheries and Wildlife Science and Environmental Technology undergraduate curricula, and in our graduate programs. We are anticipating bringing in even greater numbers and talent with the additions of the new Ph.D. program in Fisheries and Wildlife Science, and the new undergraduate concentration in Urban Forestry. The job market is quite strong this year, with starting salaries rising, and employers competing for our graduates. Application numbers are on the rise for Fall 2007, and we have more scholarship funding than ever.

We are aggressively recruiting more students through a variety of means. In addition to participating in on-campus open houses, we are taking our message to the street by attending more recruiting fairs and creating recruitment events across the state. Our most creative (and extremely successful!) approach was the development of the Department of Forestry and Environmental Resources Summer Exploration Camp for high school rising juniors and seniors. Offered for the first time last summer, thirty-five students came to campus for five days and got first-hand experience measuring, analyzing, and reporting on multiple aspects of the environment. A great time was had by campers, students, faculty, and staff alike. We will be welcoming a number of the Exploration campers as freshmen in the department this fall and look forward to our second annual Camp this summer!

Word is getting out about the wonderful experiences available through Study Abroad and National and International Exchange programs. A new and exciting exchange program with the University of Concepción, located in Chile's second largest city, promises to be a tremendous asset to our department. Our relationship with the Swedish University of Agricultural Sciences (SLU) continues to be strong. This past summer, we hosted students from SLU and Purdue University on a forestry and natural resource tour of North and South Carolina.



*Dr. Barry Goldfarb*



Eleven students in the world forestry study tour course went to China for two weeks in May. In addition to learning about daunting environmental problems and a long and fascinating history, our students met and traveled with several Chinese students. The international wildlife study abroad course went to Namibia to study cheetahs and wildlife habitat. During Spring Break, several students earned credit while having a great time during the Chile forestry study tour. Other great Study Abroad programs offered this year are: Turkey, Explore Forestry and Natural Resources Management, June 2007; and Sweden, Climate Change Impacts in the Arctic, July 2007.

The department is delighted to welcome several new faculty members this year. William Winner, Professor of Ecophysiology, joins our faculty and will have additional responsibilities to the Provost on improving the Environmental Science and Natural Resources undergraduate curricula throughout campus. Also joining us are Kathi Beratan, Research Assistant Professor in Environmental Policy and Decision-Making, and Asko Noormets, Research Assistant Professor, who is also with the Southern Global Change Program. Sarah Slover, as our new Graduate Program Coordinator, has greatly increased services provided to our faculty and graduate students.

Retiring this year (but not off our radar) are Rick Hamilton, who served us as Department Extension Leader and Extension Forestry Specialist for many years; Phil Doerr, Professor of Forestry and Zoology in the Fisheries and Wildlife Sciences Program, who was Advisor to the

NC State Leopold Wildlife Club for 33 years; and Henry Amerson, Associate Professor of Forestry, who worked for many years with industry partners on the Tissue Culture Project and, more recently, on the Fusiform Rust Project. All three have touched the lives of students, staff and faculty, and we are indebted to them for their years of outstanding service and commitment to excellence.

Speaking of excellence, our faculty have been bestowed with numerous honors this year. Phil Doerr received The Wildlife Society 2006 Student Chapter Advisor of the Year award. Rick Hamilton received the 2006 Henry Hardtner Award from the Southern Group of State Foresters. Bailian Li was appointed Interim Vice Provost for International Affairs. Vincent Chiang received the 2006 Alumni Outstanding Research Award and was elected Fellow of the American Association of the Advancement of Science (AAAS). Steve McKeand was selected as the first recipient of the College of Natural Resources-College of Agriculture and Life Sciences Joint Award for Service to Society and the Environment. Todd Steelman was appointed by the Institute for Emerging Issues to its GlaxoSmithKline Faculty Fellowship Program. Bill Dvorak was asked to serve on the Food and Agriculture Organization of the United Nations (FAO) Panel of Forest Genetics Resources. Susan Moore was inducted into the Academy of Outstanding Faculty Engaged in Extension and was awarded with the 2006 Outstanding Extension Service Award. Lee Allen will be presented with the prestigious Alexander Quarles Holladay Medal for Excellence in May.

The Holladay Medal is the highest award made by the University in recognition of faculty achievement. Congratulations to all for these wonderful accomplishments.

A number of programs have drawn special attention this year. Extension Forestry and its partners are continuing the Working Forest Summits series across North Carolina. In addition to providing extremely valuable information to NIPF landowners, the Summits also collect data about NIPF landowners, allowing us to best serve the citizens of our state. Interest sparked by the potential of biofuels is attracting attention to the department from scientists, environmental organizations, energy consumers, and lawmakers.

Each year, we are excited to catch up with our alumni at various gatherings across the state and nation. For the second year in a row, FER won the Best Alumni Reception at the Appalachian Society of American Foresters (APSAF) meeting, held this year at Pinehurst. We are proud of all of our alumni and their accomplishments, professional or personal. Of particular note this year is the retirement of Stan Adams ('57) as Director for the NC Division of Forest Resources, and the announcement of the division's new director, our own Wib Owen ('78). Congratulations, too, to Earl Deal ('66), who was named the College of Natural Resources Distinguished Alumnus and honored at the university's Evening of Stars Ceremony.

2006-07 has been a very rewarding year and we look forward to another year of providing outstanding education, outreach, research, and service.



*(left) Dr. Stacy Nelson with students Whitney Vinson and Jacob Pearce in the lab performing tests after a day of Environmental Technology sampling experiments.*

## Summer Camp for High School Students

Last summer the College along with the Department of Forestry and Environmental Resources hosted the first Summer Exploration for rising high school juniors and seniors. The College hosted 36 students from NC and MD for a week-long residential summer program. The students learned about topics such as air and water quality, GIS, wildlife, and traditional forestry, to name a few. It was an excellent opportunity for students who are interested in natural resources to spend a week exploring the programs within the Department of Forestry and Environmental Resources. The camp was designed to raise awareness of the impact of natural resources on our world.

DFER professors and CNR students helped the students with projects involving various disciplines, including Fisheries and Wildlife, Forest Management, Environmental Technology, Natural Resources Ecosystems, and Environmental Science. The camp projects allowed the participant teams to be creative and to think critically about the environment and its resources, and present their project results to the faculty and their parents on the last day.

—Vonda Easterling



## Faculty Participants

- Dr. Barry Goldfarb
- Dr. Joe Roise
- Dr. George Hess
- Dr. Heather Cheshire
- Mrs. Terrie Litzenberger
- Mrs. Lisa Schabenberger
- Dr. Lee Allen
- Dr. Ted Shear
- Dr. Stacy Nelson
- Mr. Joe Cox
- Mr. Jimmy Dodson
- Dr. Chris DePerno
- Dr. Chris Moorman

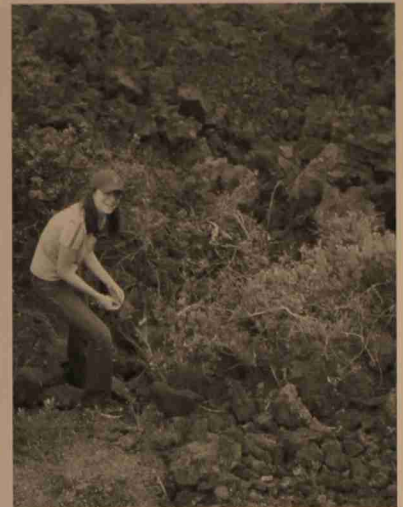
## Student Participants

- Jessie Birkhead
- Jennifer Miller
- Latoya Price
- Keith Nesbitt
- Ashley Sides
- Rachel Zajac
- Hannah Litzenberger
- Brandon Sherrill
- Rafael Estevez
- Kyle Whitehurst
- Adriana Cerbin
- David Carr

*(left) Graduate student Brandon Sherrill helping a camper identify birds after rising at 5:30am for an early morning of mist netting.*



*NC Senator Janet Cowell, Brigid Belko and NC Representative Linda Coleman.*



*Brigid Belko during a semester at University of Hawaii as part of the National Exchange Program at NC State.*

## Student Leader Profile

### Making Service a Way of Life

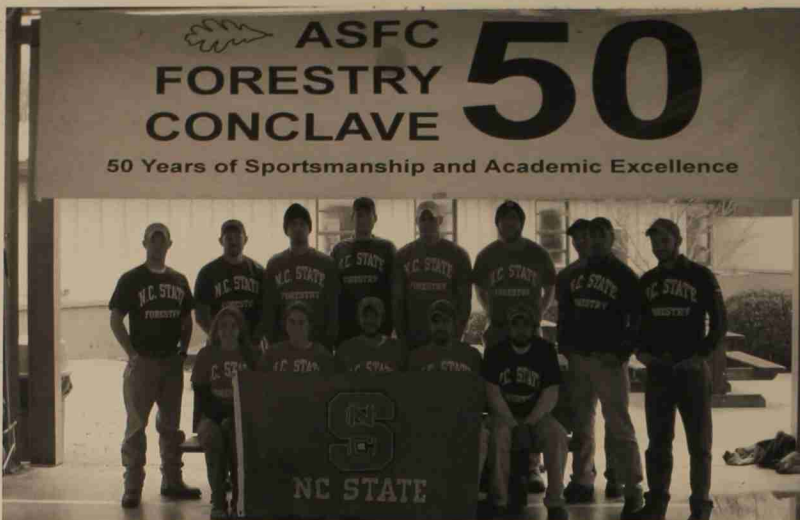
As an out-of-state freshman, Brigid Belko anticipated there would be many opportunities to get involved in campus life over the following four years. In fact, that's why she chose NC State University. She didn't expect, however, that the intensity and path of her life would be changed forever so early in her academic career. What happened? Between her freshman and sophomore year, Brigid attended the LeaderShape Institute, the flagship program of NC State's Center for Student Leadership, Ethics and Public Service (CSLEPS). Brigid was inspired and motivated by the Institute's leadership camp, during which she developed a personal goal to empower others to seek opportunities and obtain the resources they need. The intensive leadership development camp lasts six days. "The seventh day goes on forever," she explains, "and I take that to heart. I know service is a part of my life, and it always will be."

Brigid is a senior majoring in Natural Resources-Ecosystems Assessment, with minors in Forest Management, Environmental Science-Watershed Hydrology, and Nonprofit Studies. She combines the knowledge and skills she has learned in her courses with her desire to serve. And her commitment to service is evident. She was part the NC State Tsunami Blitz Build 2005 that raised money for and then sent Wolfpack students and faculty to Sri Lanka to build new homes for villagers devastated by the Asian tsunami. She is an ambassador and peer educator for CSLEPS, and she was on-site coordinator of LeaderShape last year and program coordinator this year. Stemming from a 2006 internship for the Nonprofit Studies minor, Brigid volunteers for Stop Hunger Now, a non-profit, international relief organization headquartered in Raleigh.

Together with fellow Wolfpack student Deepti Vanguri, Brigid won a Jimmy and Rosalynn Carter Academic Service Entrepreneur (CASE) grant for \$1000. They used their CASE grant to expand a

partnership between the university and Stop Hunger Now during NC State's annual Martin Luther King Jr. Service Challenge. Brigid and Deepti's project united NC State students with Ligon Middle School students to discuss worldwide hunger issues and package meals for shipment to developing nations. Brigid also received the inaugural North Carolina Campus Compact (NCCC) Community Impact Student Award in 2006 for significant and innovative contributions to campus-based efforts to address community needs.

Following graduation this year, Brigid will return to her home state to begin graduate studies at Rutgers-Camden. Her program will combine a concentration in International Public Service and Development with placement as a Peace Corps volunteer. Brigid is looking forward to using the strong foundation she built from her studies and experiences at NC State to continue her service to people and the environment.



## NC State Forestry Club

The NC State Forestry Club attended the 50<sup>th</sup> Annual Association of Southern Forestry Clubs Conclave this spring at the University of Tennessee. The Forestry Club performed extremely well in the competition and did an excellent job representing the NC State University Forestry Department. Of the 15 schools that attended, our team came in 3<sup>rd</sup> place overall in highly competitive events such as Axe Throw, Men and Women's Crosscut, Log Role, Dendrology, and Speed Chop. The team finished in 2<sup>nd</sup> place overall in Technical Events just 3.75 pts behind Stephen F. Austin University for 1<sup>st</sup> place. The team also finished in 3<sup>rd</sup> place overall in Physical Events behind 2<sup>nd</sup> place University of Arkansas and only 22 points behind 1<sup>st</sup> place Stephen F. Austin University.

The strong 3<sup>rd</sup> place overall showing was just 7 points behind the University of Arkansas for 2<sup>nd</sup> and only 26 points behind Stephen F. Austin University for 1<sup>st</sup> place. This was the best Forestry Club accomplishment since 2000, raising the bar for next year's club members.



All the awards at Conclave!

## Member Rankings

### 1<sup>st</sup> Place

- Axe Throw: Mike Brafford
- Pole Fell: Mike Brafford

### 2<sup>nd</sup> Place

- Wood Identification: Mike Sweat
- Underhand Speed Chop: Mike Brafford

### 3<sup>rd</sup> Place

- Compass and Pacing: Mike Adams
- Photogrammetry: Mark Reiland
- Pole Climb: Chris Barfield
- DBH Estimation: Korey Meadows

### 4<sup>th</sup> Place

- Dendrology: Aaron Chamblee
- Men's Crosscut: Mike Brafford and Chris Barfield
- Women's Crosscut: Allison Dunn and Dakota Paris

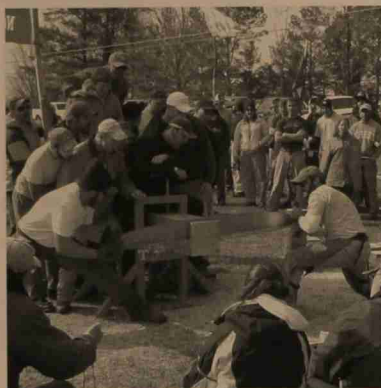
Also at the Conclave, Mike Brafford, NC State Forestry Club President, represented the club in the highly competitive "Stihl Competition" hosted by the Stihl Company. For the past four years, this separate event occurs on the night before Conclave is covered by the sports station ESPN-U. This year's event will be airing on ESPN-U sometime during May. This special program allows only one competitor from each university to compete in a series of three events. The competitor with the highest overall point total in all three is deemed the winner. The three timed events include an underhand chop on 13-inch white pine, a stock chainsaw cut on 16-inch white pine and a single-buck "one man" crosscut on 19-inch white pine.

Brafford represented NC State very well with a 1<sup>st</sup> place time in underhand chop, a 3<sup>rd</sup> place time in stock chainsaw and a 4<sup>th</sup> place time in single-buck crosscut. With those times, Brafford finished in 1<sup>st</sup> place overall against the 13 other forestry school competitors from the Southern region. His victory secured the NC State Forestry Club a \$1,000 award from Stihl. With this 1<sup>st</sup> place title from the Southern region, he is now qualified for an invitation to compete in the Professional Stihl Timbersports Series at the Stihl Collegiate Finals. He will be competing against the other 5 winners from their respective regions in Stillwater, Minnesota during July. If Brafford can pull out a victory in Stillwater then we could possibly see him competing on the Professional Stihl Timbersports Series someday. He will represent NC State Forestry to the fullest in this competition and hopefully will be bringing back a victory. Look for Mike Brafford on ESPN-U this May for the footage from the Association of Southern Forestry Clubs Conclave and also look for him in late July at the Collegiate Final in Stillwater, Minnesota on ESPN. Good Luck Mike and Congratulations to the whole NC State Forestry Club.

The Conclave competition was a huge success for the NC State Forestry Club. The Club would like to express thanks to all who help make their participation possible in these competitions, through the funding and support. We urge the younger Forestry students to get involved with the Forestry Club and take advantage of these opportunities to compete in events such as The Association of Southern Forestry Clubs Conclave.



(above) The 2007 Conclave team. (below left) Mike Brafford and Chris Barfield in saw competition. (below right) Mike Brafford at the Stihl Competition.

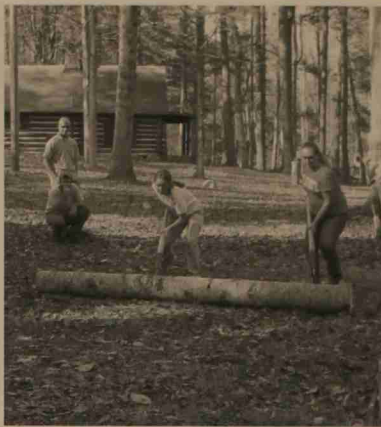


## 50<sup>th</sup> Annual Rolleo Timbersports Competition

The NC State Forestry Club hosted its 50<sup>th</sup> Annual Rolleo Timbersports Competition this past school year at the Hill Forest. Thanks to all the hard work from club members, and help from business's such as American Woodyards of Raleigh and J. Keith's Barbeque of Wake Forest, this great event was made possible. Virginia Tech's Forestry Club came down and put up some stiff competition. Both teams along with alumnus competed in a series of 8 technical events, 10 physical events and 3 non-point events. Although, the competition was neck and neck throughout most of the day, the NC State Forestry Club pulled out the overall win. The Club ended up winning 10 of the events while Virginia Tech's Forestry Club won the remaining 8. After the events concluded, everyone sat down and enjoyed a large barbeque plate thanks to J. Keith's Barbeque. With the events over for the day, awards were given out by the NC State Club to the winners of each event and we also presented a new trophy for the overall winning school in the Rolleo competition. This trophy will have the winning schools name engraved on the front and they have to return it at the next Rolleo to pass on.



*Matt Miller and Mike Miller on the Crosscut Saw at Rolleo.*



*Allison Dunn and Liz Montgomery doing Log Roll.*



*Mark Reiland and Michael Sweat doing Log Roll.*

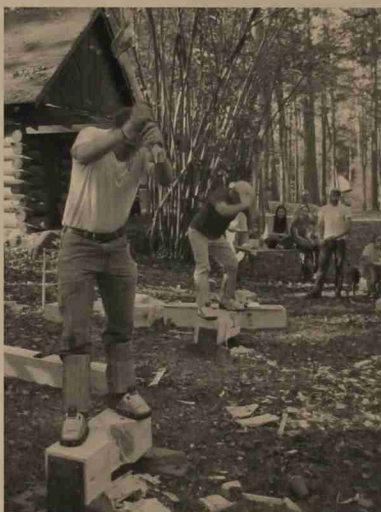
## 1<sup>st</sup> Place Events

### Physical

- Axe Throw: NC State, Jimmy Dodson
- Knife Throw: NC State, Dr. Bullock
- Men's Bow Saw: Va Tech
- Women's Bow Saw: Va Tech
- Men's Crosscut: Va Tech
- Women's Crosscut: NC State, Allison Dunn, Liz Montgomery
- Jack and Jill Crosscut: Va Tech
- Logroll: Va Tech
- Archery: NC State, Korey Meadows
- Underhand Chop: NC State, Mike Brafford

### Technical

- Timber Estimation: Va Tech
- Wildlife I.D.: Va Tech
- Dendrology: NC State, Aaron Chamblee
- Compass and Pacing: Va Tech
- Photogrammetry: NC State, Mark Reiland
- Wood I.D.: NC State, Mike Sweat
- Pole Class: NC State, Matt Miller
- DBH Estimation: NC State, Korey Meadows



*Mike Brafford and Korey Meadows doing Log Chop.*



*Chris LeTourneau doing Axe Throw.*

## VA Mini Conclave

In February, the NC State Forestry Club traveled to Blacksburg, VA for Virginia Tech's Mini Conclave Timber Sports Competition. The club members competed against Virginia Tech, West Virginia University, Haywood Community College and Dabney Lancaster Community College in a variety of technical and physical events in preparation for Conclave. The Forestry Club was only able to muster 4 participants: Mark Reiland, Mike Brafford, Mike Sweat and Logan Scarborough, but they performed very well with what skills they had. The team was unable to participate in 3 events due to lack of female participants. The Forestry Club was able to overcome the DQ's in these events and place 3<sup>rd</sup> overall out of 5 teams. The NC State Forestry Club competitors who achieved 1<sup>st</sup> place in their events are:

- Mike Brafford: Axe Throw
- Mike Brafford: Dendrology
- Mark Reiland: Photogrammetry
- Mike Sweat: Wood Identification

## Fundraising

The Forestry Club annually participates in NC State University's Earth Day festivities held on the brickyard. At this event, the club has a plant/bake sale. The sale helps generate much needed funding for the functions hosted and attended by the Forestry Club, such as refreshments at meetings, travel costs and most importantly, keeping our equipment in good condition so that we can be competitive in events such as Conclave. The club sells a wide variety of plants, trees and shrubs as well as homemade pies, brownies, cupcakes and cookies.

The NC State Forestry Club also splits and sells seasoned hardwood firewood to help generate additional funds.

Our wood is acquired by the felling of hazardous, dying or dead trees from the Schenck Forest and the Horse Farm. Hardwood logs are also donated to the club by Brafford Tree Service Inc. from Wake Forest, who removes trees in and around the Raleigh area. All wood is cut, split and stacked by the Forestry Club at the Schenck Forest in Raleigh. The firewood is cut to a length of 16-18 inches and in easy-to-handle pieces. The wood is sold by the 1/2 cord, 1 cord or larger quantities, if needed. The club delivers and stacks the firewood at any desired location. Firewood prices will vary depending on the distance from the Schenck Forest to your location.

For more information on firewood orders you can contact NC State Forestry Club President, Michael Brafford at 919-369-4497.



*AJ Keating, Michael Sweat, Mike Brafford, Chris Barfield and Mark Reiland.*

## Society of American Foresters

The Society of American Foresters is the national scientific and educational organization representing the forestry profession in the United States. It was founded in 1900 by Gifford Pinchot and it is the largest professional society for foresters in the world. According to the SAF website, [www.safnet.org](http://www.safnet.org) "The mission of the Society of American Foresters is to advance the science, education, technology, and practice of forestry; to enhance the competency of its members; to establish professional excellence; and, to use the knowledge, skills, and conservation ethic of the profession to ensure the continued health and use of forest ecosystems and the present and future availability of forest resources to benefit society."

At NC State we have our own student SAF chapter comprised of students who obey and teach these codes of ethics. The student chapter attends local meetings as well as the National Convention which was held in Pittsburgh, Pennsylvania in October of 2006.



*The NCSU-SAF chapter at the National Convention in Pittsburgh, Pennsylvania.*

The meetings and conventions provide the students with a great opportunity to meet people in their profession from all over the world and allow them to catch up on current forestry related issues. Every year at the National Convention the students compete with students from other forestry schools in a quiz bowl. Each school has its own 4 person quiz bowl team and the students are asked forestry related questions. Also at the National SAF Convention is a job fair that allows students to apply and interview for jobs that they may be interested in following graduation.

### Officers

- Chair: A.J. Keating
- Vice-Chair: Matt Miller
- Secretary: Korey Meadows
- Treasurer: Joanne Lennert



*ISTF members attending a monthly potluck seminar.*

# International Society of Tropical Foresters

The International Society of Tropical Foresters (ISTF) is a club for students who are interested in tropical and international forestry issues. The objectives of ISTF are:

- To advance the science, technology, education and practice of professional forestry in the tropics and to use the knowledge and skills of the profession to benefit society as a whole.
- To encourage and support the activities of the international programs of the CNR and the Department of Forestry and Environmental Resources at NC State.
- To encourage and support ISTF members in their personal and professional development while undertaking their degree programs at NC State.

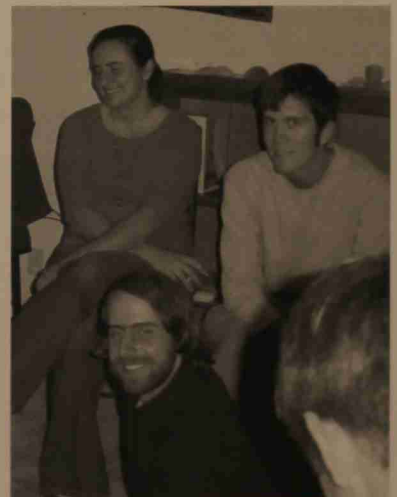
In order to achieve these objectives, ISTF sponsors a wide variety of activities, which are open to all NC State students, faculty and staff and other community members.

This year, ISTF helped with the preparation of the International Week Celebration at CNR. The celebration included an international dance demonstration, an international photo contest, a sale of crafts from various countries around the world, as well as a seminar, potluck and movie screening.

The club hosted a diverse lineup of speakers for its monthly potluck seminar series. These seminars took place in the homes of club members and featured a wide variety of home-cooked traditional and ethnic dishes, as well as North Carolina favorites.

## Fall Seminar Speakers

- Simone Bauch: Non-timber forest product markets and communities in the Brazilian Amazon.
- Dr. Fikret Isik and Dr. John Frampton: Perspective on Turkey and Natural Resources.
- Varun Swamy: Poaching in the Peruvian Amazon.
- Dr. Bill Dvorak: Biological, social, and economic forces that will shape plantation forestry in the tropics and subtropics for the next 50 years.
- Sadharga Koesbandana: Advancing Conservation Goals in Mount Halimun-Salak National Park, Indonesia.
- Greg Frey: Perceived Advantages and Disadvantages of Silvopasture Systems among Adopters of Varying Scales in north-east Argentina.



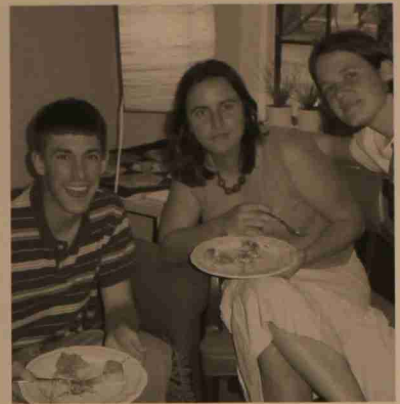
*ISTF meeting at a member's home for a pot-luck dinner and seminar.*



We also helped with film presentations, which were funded by CNR:

- *The Charcoal People*: Depicts the lives of impoverished people struggling to earn a living by making charcoal for pig iron companies close to the Amazon frontier of Brazil.
- *Buyer be Fair*: How retailers and consumers can use their purchasing power and market choice to make the world better for people and the environment.

In April, ISTF took a road trip to Washington, DC to visit the headquarters of many organizations and agencies that work in tropical countries. It was an eye-opening experience, and we hope the opportunity will open doors for us to work with some of these agencies in the future!



(above) Greg, Simone and Haley at an ISTF pot-luck and meeting.  
(left) ISTF members on a recent trip to Washington DC.



## Leopold Wildlife Club

Over the past year, members of our club have had opportunities to see and do lots of fun, interesting things dealing with wildlife.

### Experience and Educational Opportunities

Throughout this year, in keeping up with a long going project, members have been doing weekly monitoring of wood duck boxes at Yates Mill Pond. Members check each of the twelve duck boxes in and around the pond and record data on what they see each time. Last spring, we observed two clutches of screech owls and one clutch of wood ducks being raised in the boxes. This is a very hands-on project because members are actually able to pick up and hold some of the many screech owls that use the duck boxes throughout the year.

In late winter of this year, a group of members went to Lake Mattamuskeet to observe large flocks of waterfowl. They saw thousands of birds of several species, including swans, pintails, mallards, teal, ruddy ducks, shovelers, and canvasbacks. The students were even able to help setup and shoot a rocket launched net, used as a management tool for trapping and banding waterfowl.

During club meetings, members have been able to hear from many knowledgeable speakers from Dave Davenport (an ecotourism guide to the Galapagos), to biologists from the North Carolina Wildlife Resource Commission who work with Chronic Wasting Disease, to Tim Langer who is doing a Ph. D. black bear study.

## Conclave

Conclave is a large wildlife related competition between universities from all over the country, which is put on by The Wildlife Society. Events range from wildlife art and photography, game calling, archery, orienteering, radiotelemetry, canoeing, pistol shooting, obstacle course, lab practical, and quiz bowl. Last year, Conclave was hosted by Tennessee Tech University, where our club won first place in orienteering and radiotelemetry. A large group of members is attending Conclave this year at the University of Georgia, where we hope to place in even more competitions than last year.

## NC State Takes 3<sup>rd</sup> Place Overall

The 2007 Southeastern Wildlife Conclave was hosted by the University of Georgia and was held at the Rock Eagle 4-H Center near Athens. Congratulations to the 23 club members who attended the event and placed 3<sup>rd</sup> Overall out of 18 southeast student chapters.

### Event Placings:

- 2<sup>nd</sup> in Essay: Chris Ayers
- 1<sup>st</sup> in Free Form Art: Liz Jones
- 3<sup>rd</sup> in Painting: Jane Anderson
- 2<sup>nd</sup> in Lab Practical: Liz Jones
- 3<sup>rd</sup> in Canoe: Chris Ayers and Amy Shepherd
- 3<sup>rd</sup> in the Team Competition

### Members with Strong Showings:

- Art and Photography: Jane Anderson, Shannon Bowling, Liz Jones, Gabe Karns, Paden Kepley, Chris Summerlin and Miranda Wood
- Game Calling: Chris Ayers, Adam Byrd, Paden Kepley, Will Ricks, Chris Summerlin and Tim Ward
- Obstacle Course: Cody Burnett, Jonathan Garrow, Brian Lee and Will Ricks
- Archery: Preston Hughes and Tim Ward
- Dendrology: Chris Summerlin and Sarah Watts
- Radiotelemetry: Brandon Bridges and Preston Hughes
- Orienteering: Jimmy Dodson and Hope Bryant
- Pistol Shooting: Adam Byrd and Ross Carver
- Quiz Bowl: Jane Anderson, Liz Jones, Gabe Karns and Chris Summerlin

## Fundraiser

Our major fundraiser each year to raise money for Conclave is at the Dixie Deer Classic. This year, we had a club booth where we raffled off a Stoeger double barrel shotgun and various other outdoor and camping prizes. Also at the booth, we gave kids the chance to have their picture taken with a live snake and we sold club shirts and coozies.



2007 NC State Conclave team: (front row) M.S. student Gabe Karns, Brandon Bridges, Adam Byrd, M.S. student Liz Jones, Hope Bryant, Miranda Wood (second row) M.S. student Jimmy Dodson, Brian Lee, Paden Kepley, Jane Anderson, Amy Shepherd, Cody Burnett, Bonnie Eamick, Sarah Watts (back row) advisor Dr. Chris DePerno, Chris Summerlin, M.S. student Chris Ayers, Billy Paugh, Ross Carver, Tim Ward, Shannon Bowling, Will Ricks, Jonathan Garrow, Preston Hughes.



# Xi Sigma Pi

The only national forestry academic honor society is Xi Sigma Pi. It held an annual spring banquet and an initiation of 34 new members on Wednesday, March 28.

## Officers

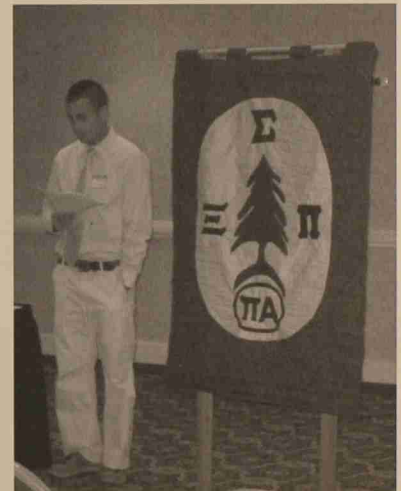
- William Foote, President
- Mike Aspinwall, Vice-President
- Amie Rockhill, Ranger.

## New Members

- Leha M. Andres
- Liz Aspinwall
- Eric C. Bowen
- Jason S. Brown
- Katherine I. Caldwell
- Aaron Chamblee
- Cristin A. Conner
- Allison Dunn
- Bonnie Eamick
- Jesus A. Espinoza
- Edward W. Evans III
- Donta' J. Fairey
- Dorothy M. Goodwin
- Amy L. Graul
- Sarah E. Greene
- Denise C. Grubert
- Mary Lovell Hall

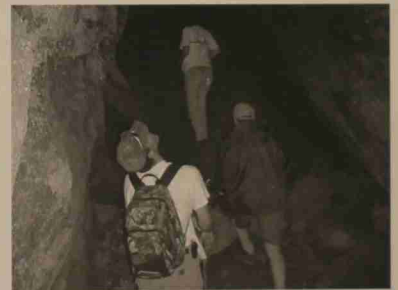


- Brad Hamill
- Michael A. Harris
- James A. Jeuck
- Elizabeth R. Jones
- Adrianna Kirkman
- Shelby G. Laird
- Rodrigo T. Lourenco
- Matthew V. Lubejko
- Michael S. Martin
- Matthew T. Miller
- Michael J. Miller
- Mary B. O'Brien
- Tyler A. Pendry
- M. Ryan Spidel
- Jessica L. Tisdale
- Cassandra N. Williams
- Megan S. Willis





# Department of Parks, Recreation and Tourism Management

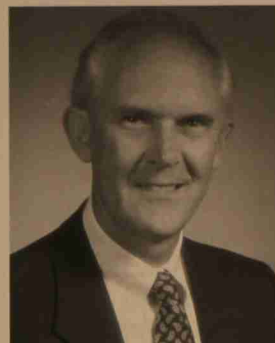


# Department Head Reflections

Now in its 72<sup>nd</sup> year, the *Pinetum* annually provides those of us who write for it an opportunity to recount some of the past year's events and reflect on the things that make us proud of the organizations we represent. PRTM is a great department with lots of good things going on, so it's a pleasure for me to compose my contribution each year.

Working with undergraduate and graduate students to prepare them for success as professionals is our number one job, so let's begin there. Increasing numbers of students have selected our programs. In the past five years, departmental enrollments have increased by over 50 percent, making ours one of the fastest growing units in the university. As of the Fall 2006 census, 627 students—568 undergraduate students, 41 masters students, and 13 doctoral students—were enrolled in departmental degree programs.

The size and rapid growth of our undergraduate enrollments are impressive, but they are only part of the story. PRTM students' academic quality and professional engagement are also noteworthy. Last Fall, 97 undergraduate PRTM students were named to the Dean's list (3.25 or better for students with 15 or more hours). In 2005–06, the latest academic year with full information, 6 students—Hudson Callaway, Lindsay Cotton, Joy Van Riper, Justin Doroshenko, Bryanne Senor, and Catherine Marvill—participated in study abroad programs. Three undergraduate students—Matt Anlyan, Keith Crawford, and Trevor Hudspeth—received undergraduate research awards; they will be mentored by Carol Kline, Aram Attarian, and Jason Bocarro, respectively. Graduate students Holly Bosley, Ben Hickerson, Dena Justice, Kevin Lavin, Timia Thompson, and Stacy Sanders served in NRPA student leadership capacities. Graduate students Georgia Davis and Chad Menefee served on a faculty search committee. Eight students presented at the annual Southeastern Recreation Research Conference, and Dena Justice and Matt Whitman won the award for best poster. Doctoral student Jessica Robinson received an award from the NSF East Asia and Pacific Summer Institute for her research with Yu-Fai Leung in Australia. These are only a few of our student's many activities and achievements; in listing them, I've probably overlooked many other accomplishments equally worthy of note.



*J. Douglas Wellman*

Most of the enrollment growth over the past five years has been in the area of sport management. The explosive growth of student interest in this area led us to create a new Sport Management degree, and with that new degree college and university leaders provided additional faculty members. Since 2002–03, nine new professors have joined the PRTM family. Four of them—Jonathan Casper, Heidi Grappendorf, Ed Lindsay, and Judy Peel—are core members of the sport management faculty; Jason Bocarro and Karla Henderson add strength to our program management faculty; Myron Floyd bolsters the team in natural resources recreation; and Stacy Tomas and Carol Kline head up our young Tourism Extension program. This coming August, Michelle Harrolle will join the sport management faculty group, bringing the total expansion of the faculty to ten—an increase of over 50 percent in the past five years.

Even with the growth in faculty numbers, we still must rely on part-time instructors and doctoral students to meet our instructional needs. We are blessed with wonderful cadre of part-time instructors, a number of whom have taught here for years with great excellence. Joyce Shields, David Carter, John Connors, Phil McKnelly, Barbi Honeycutt, Amy Hayes, Janell Henderson, and Melissa Campbell are accomplished professionals with a wealth of practical experience, and we are very lucky to have them on our team. Of course, it's not all luck; our department's 60-year history, loyal alumni, and strong relations with practitioners help create a strong pool of part-time instructors. This past year doctoral students Ben Hickerson, Holly Bosley, Leon Mohan, Jason Swanson, and Catherine Dorwart served as lead faculty for undergraduate courses. They were terrific, not only delivering high quality instruction but also adding energy to our faculty dialogue about scholarly teaching.

This year, two illustrious faculty careers reached turning points. Phil Rea, a member of the faculty for 28 years and department head for 16 years, completed his three-year phased retirement in June 2006. Fortunately, we were able to convince him to continue his exemplary service to the department and profession by serving as part-time liaison to the professional development programs at Oglebay Park, WV. For many years, we have co-sponsored three of these highly successful programs—the Revenue Resources Management School, the Maintenance Management School, and the Supervisors School. This year, in

partnership with the National Association of State Park Directors, we developed another program, the New Superintendents School, led by Aram Attarian (this is part of a larger partnership with NASPD that also involves Yu-Fai Leung and Chris Siderelis). In addition, with Phil Rea's leadership, a fifth continuing professional development program is being planned. Because of Phil's long experience with these schools and the great respect he commands among practitioners, he was a natural for the job of providing departmental oversight for these five programs.

"Dr. Beth" Wilson, another pillar of the PRTM family, will enter phased retirement this coming July. As PRTM's Director of Graduate Programs, Beth has played a critical role in the development of our graduate programs, particularly our young and successful Ph.D. program. Beth has many things she wants to do in retirement, but one key part of a good retirement for her is to continue her connection with the department in some way. After exploring a number of possibilities, we settled on a part-time assignment she found suitable. She will lead efforts to strengthen the interdepartmental Masters in Natural Resources program. In its review of the program this past year, the NC State Graduate School found it to be a program that has not achieved its potential because of the organizational weaknesses that often plague interdisciplinary programs. Beth will work with the Graduate School and faculty from PRTM, Design, Soil Science, Forestry and Environmental Resources to re-think the program's organization. With her combination of great

experience in graduate affairs and extraordinary interpersonal skills, she is well prepared to revitalize this program.

Speaking of program reviews, this was the YEAR OF THE REVIEW. At the end of this year, we will have undergone external reviews of the MNR, PGM, and PRTM undergraduate and graduate programs. All completed reviews were positive, and all provided guidance on future improvements. If academic programs are basically sound, as ours are, these reviews are good experiences. In the midst of these program reviews, we worked as a department on strategic and compact (budgetary) planning, and we are hopeful that our requests for additional faculty positions and graduate stipends will be favorably received.

Amidst all the head-scratching associated with planning and preparing for reviews, our remarkable faculty maintained their steady focus on providing students with high-quality educational experiences. The vast majority of course evaluations are above 4.0 on a 5.0 scale, and most student comments are full of praise for the care their professors give to their teaching. Annette Moore was named Alumni Distinguished Professor of Undergraduate Teaching, while husband Roger Moore was the CNR nominee for the prestigious Board of Governors Award for Teaching Excellence (final selection not yet announced). Jason Bocarro provided outstanding mentoring for two doctoral students teaching in PRT 152. PRTM faculty members Annette Moore and Barbi Honeycutt joined with faculty from other CNR departments and the university's service-learning program in developing a college-wide service-

learning program, the first of its kind in the nation. Heidi Grappendorf and Jonathan Casper are leading preparations for having our Sport Management program accredited by NASSM/NASPI. A faculty committee led by Beth Wilson has completed work on a new core curriculum for the doctoral program. And a number of PRTM faculty members are leading study abroad programs—in Ghana (Carol Kline), Australia (Roger and Annette Moore), and Scotland (Michael Kanters), with additional programs in Grenada and Peru on the drawing boards.

Faculty research and creative activity expanded in 2006–07. Here are a few highlights. First, a group of about a dozen faculty members, led by Karla Henderson, has met through most of the past year under the banner of “IPARC”, which stands for “Investigating Places for Active Recreation in Communities.” Their goal is to focus research on the alarming problems overweight/obesity and related medical problems. They seek to understand better how people use recreation resources for physical activity and what factors restrict use. IPARC has gotten off to a good start. Myron Floyd and Jason Bocarro are part of a sizeable grant from the Robert Wood Johnson Foundation aimed at better understanding how people use parks for active recreation. Michael Kanters, Jason Bocarro, and Jonathan Casper are working on the development of middle school intramural programs. Myron Floyd is evaluating a health promotion strategy for increasing local residents’ use of the Cuyahoga Valley National Park for physical activity. The IPARC group is currently conducting a survey of municipal and county recreation agency needs in the area of physical activity programs, and they are planning a statewide “summit” to bring together possible partners and explore future directions. The potential for this line of research and outreach is enormous. Second, with colleagues from NC State and Carolina, Yu-Fai Leung received a substantial grant from the Burroughs-Wellcome Foundation for a study on ways to enhance middle-school students’ interest in natural resources and geosciences. Third, Hugh Devine continued his long commitment to improving teaching through the wise application of technology. On the fifth floor of Jordan Hall, Hugh created a flexible-use, technology-assisted learning space. He is now developing a “Virtual Computer Lab” (VCL). With the VCL, all the software currently available on the machines in the Biltmore computer lab will be stored in high-capacity servers maintained by the NC State Computing Center. Using wireless connectivity, students with laptops will be able to call up those programs from any location in the CNR complex, so any classroom will be able to serve as a computer room. In recognition of his longtime leadership in teaching with technology, Hugh was asked by university leaders to serve this year as director of LITRE (“Learning in a Technology-Rich Environment”), the university’s signature teaching improvement program for its next reaccreditation.

PRTM is truly a remarkable place—great people doing great things. As you begin your careers, I hope you will stay tuned in to the exciting new directions your department is pursuing. You can stay in touch through our quarterly electronic newsletter, edited by our wonderful new PGM administrative assistant, Susan Colby, herself a loyal PRTM alumna. Copies of past newsletters are available via the PRTM web page. You can also send Susan an email at [susan\\_colby@ncsu.edu](mailto:susan_colby@ncsu.edu) and she will send you newsletters directly.

# Study Abroad: Ghana

Study Abroad, the educational experience of a lifetime! That is the way many students express themselves after studying in a country other than the United States.

Amanda Williamson, a senior in Parks, Recreation and Tourism Management with a concentration in Tourism, studied in Ghana the summer of 2006. She says she heard other students speak of their experiences when she attended some First Year College seminars and that sparked her interest. After speaking with professors and her academic advisor, Dr. Larry Gutske, of PRTM, Williamson knew she wanted to study abroad. Careful thought went into her decision and she decided she wanted to study somewhere she may never have the chance to visit again. That place was The Republic of Ghana in Africa.

Cate Marvill graduated in 2006 with a Masters of Science degree in PRTM. She was given the opportunity to study abroad based on her research assistant position within the department of Parks, Recreation and Tourism Management's graduate program. She, too, was interested in the chance to visit Africa because she also felt it was a once in a lifetime opportunity.

Both women say that interacting with the people of Ghana and learning their culture hands-on was a wonderful experience. "We were welcomed as friends and family in each village or town we visited," states Marvill. A real treat was traveling to various regions of the country which focused on different trade skills and arts, such as fishing and handicrafts. Williamson adds, "This is something I wouldn't have been able to do if I was on my own. We had an excellent tour guide. He would tell us stories, cater to our group, and he was very interactive." Both agree that students gain so much more by being immersed in a new culture.

Williamson's advice to students interested in seeking a study abroad experience is to start looking and asking questions early. There are study abroad scholarships available to many who apply by November

prior to the experience for the following semesters. She, however, was unable to receive these funds because she waited too late to decide to study abroad. She did receive some funding from a scholarship given by the TIA (Travel Industry Association) because her concentration is Tourism. Her parents were able to contribute a portion as well.

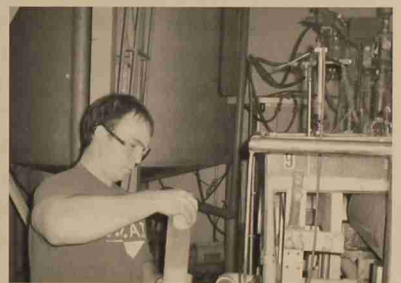
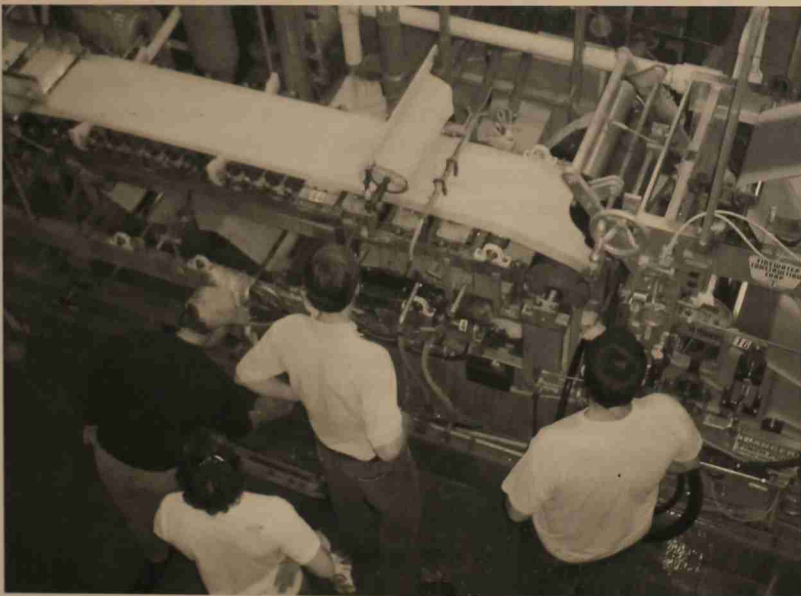
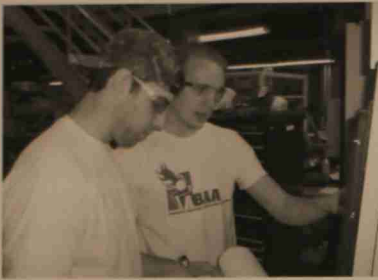
Marvill advises students to "really get to know the culture and environment of the country they wish to visit and make sure it is what they want to experience." She encourages students to "just go for it and go with it, fully accept the entire experience as an adventure, good, bad and different."

Other PRTM study abroad programs have been in Australia. Future trips to Scotland and revisiting Ghana and Australia are being planned. Come and join the group for an educational experience of a lifetime!



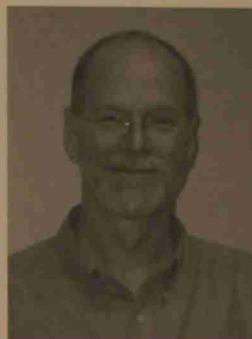
*Amanda Williams on the shores of the Gulf of Guinea, Ghana.*





# Department Head's View

## 2006-07: A Year of Progress and Excitement



Dr. Steve Kelly

One major highlight for the 2006–07 academic year has been the hiring of two new Assistant Professors in Wood Products.

Dr. Sidupta Dasmohapatra earned her PhD from Penn State in Wood Products Marketing. She also has an MS in Forest Economics from the Indian Institute of Forest Management and a BS in Physics. For the past two years she has been working for a market research firm conducting value-chain analyses. Dr. Dasmohapatra will teach a new class in Wood Products Business Management and Marketing, and is planning to develop an additional class in business management that can attract students from WPS and FER.

Dr. Daniel Saloni earned his PhD in Wood and Paper Science from NC State. He also has an MS in Integrated Manufacturing Systems Engineering from NC State, and a MBA and a BS in Industrial Engineering from Andres Bello Catholic University in Venezuela. He was an Assistant Professor in Industrial Engineering prior to coming to the US. Dr. Saloni will teach wood products manufacturing classes and develop a research program in housing systems and materials.

With the addition of Drs. Dasmohapatra and Saloni we now have in place all the faculty resources to continue improvement and focus on the Wood Products Program. We continue to produce high quality undergraduate students that are valued by industry.

In addition, Ms. Carrie Hanayik has joined us as the Undergraduate Recruiter for the Department. She brings a wealth of skill and a high energy level to this critical position. We are seeing the results of her skill and energy in the quality and number of freshman committed for the Fall of 2007.

This has been a very exciting year in the research arena. The concept that we can feed wood into a "Forest Biorefinery" and produce fuels or power, in addition to wood and paper products, has captured the attention of government officials, policy makers and the general public at the state and national level. The idea that North Carolina has the ability to grow its own fuels and reduce imports is a very attractive vision for the future.

But there are many technical challenges that must be overcome for this vision to become reality. These challenges include improved biomass production, biomass conversion and technology integration, and education and training of the workforce that will lead this new industry. Wood and Paper Science has new research and development projects in all these arenas.

Housing and efficient utilization of wood products continues to be a focus of our Extension, Engagement and Economic Development work. We are particularly excited that our Wood Products academic program and Extension activities are focused on this area, which is crucial to some many people in North Carolina.

This has been another great year for the Department of Wood and Paper Science. Graduates from both programs are in high demand and getting exciting, well-paid jobs. Most of the students have tremendous opportunities for summer intern and coop experiences, within the state and region, and internationally.

## Academic Highlights

The Paper Science and Engineering degree, which is now accredited by the Accreditation Board for Engineering and Technology (ABET), is producing high quality engineers with a suite of valuable and practical skills. About 75% of PSE students are in the dual degree track which allows them to earn a degree in Paper Science and Engineering and a second degree in Chemical Engineering. The professionally accredited Wood Products degree is broadening its value and impact with the inclusion of more business skills and training.

Domestic and international graduate students continue to be attracted by the high quality and diverse research and development projects lead by NC State faculty. Several new opportunities for collaboration with research groups in Finland, Chile and China have been developed this year. These opportunities will only grow in the years ahead. New classes in Biomaterials, Bioenergy and Business Management were offered this year.

## Research Highlights

The Department continues to develop cutting edge science and technology, and to use this science and technology to answer real world questions. Research activities span the range of new scientific breakthroughs in nanomaterials and chemical transformation of biomass, developments in wood material for housing, and process developing and modeling that will drive the Forest Biorefinery.

We are very excited to have MeadWestvaco announce the location of their Center for Packaging Innovation on the NC State Centennial Campus. They have provided the Department with a

\$435,000 gift to help us improve our facilities, donated equipment and invested in our future. We are already seeing the benefits of this collaboration in terms of opportunities for graduate and undergraduate students, and new research projects. We are working to develop similar relationships with other companies who recognize the value that we can provide them.

The Department has played a leadership role in the recent announcement of a Biomass to Ethanol pilot plant that will be built at NC State. This pilot plant is just one example to the interest in converting biomass, which in North Carolina is dominated by woody biomass, into fuels and value-added products. This pilot plant will be used for graduate research and development projects, and as a laboratory for demonstration of advanced technologies for undergraduate classes.

## Extension and Engagement

Our Extension and Engagement activities continue to serve the businesses in North Carolina. These activities include our leadership role in the "American Home at NC State" project that will bring state of the art demonstration housing to the Centennial Campus. These houses can be used for extension programs, teaching and research. We continue to offer short courses, both on-campus and off-campus, for a variety of industrial clients.

# TAPPI

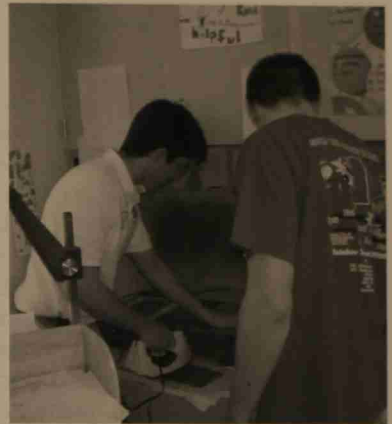
The Technical Association for the Pulp and Paper Industry (TAPPI), at NCSU is a student organization designated for the improvement of technical knowledge among and professional development of students interested in a career in the paper industry. The main functions of the club are to help students to attend conferences, facilitate interviews, and provide service to the local community.

This year, NCSU TAPPI has been very busy. Our students have attended two national conferences and one local conference: the Engineering, Environmental, and Pulping Conference in Atlanta, GA, the Student Summit in Charleston, SC, and the local TAPPI section meeting in Raleigh. Also, TAPPI has hosted over 30 companies for pre-nights and interviews this year. Many companies have actually returned for a second set of pre-nights and interviews, looking for more permanent, co-op and internship students. TAPPI has also hosted Paper Express, a group of service activities for elementary school students designed to help teach the value of forest material science and engineering education.

TAPPI has more service plans lined up for the spring semester, including participation in Service Raleigh with CNR to help clean up Shank Forest. And, as always, we'll end with our annual Spring Fling in April to celebrate one more year accomplished.

## Officers

- President: David Abrecht
- Vice President: Amber Nettles
- Secretary: Susan Short
- Treasurer: Tabatha Blalock
- Programs Chairs: Niral Patel and Jarrod Tucker
- Activities Chair: Genevieve Pike
- Service Chair: Andrew Reep
- Publicity Chair: Catherine Currence
- CNR Rep.: Andy Cibils
- E-council Rep.: Jesse Daystar



David Abrecht demonstrates papermaking techniques.

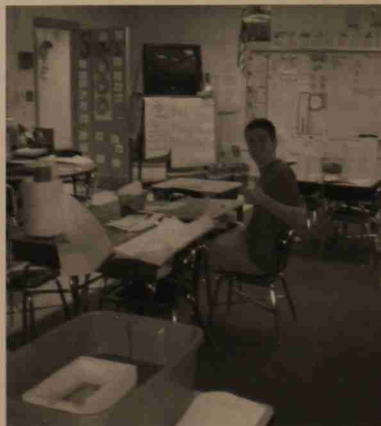
## Paper Express

This year TAPPI participated in two Paper Express events. These were held at Joyce Joyner Elementary School and Apex Elementary School. For these events, our students use recycled pulp to make handsheets with the elementary school students and teach a little of the science behind papermaking. We hope to show how papermaking and science and engineering education in general can be fun and exciting.

This year our events went well. Four presenters attended each event, and the elementary students were excited and full of questions. The TAPPI members were surprised at the level of understanding the students exhibited, especially the second graders. Many had specific concerns about the environment and the papermaker's role in environmental ethics, and many students wanted to know how they could make paper at home. Overall, the students and our members enjoyed the events and had a nice break from regular class work to participate in the service-learning activities.



(right) Nick King shows the students how to make paper.



## Athletics

Intramural sports are an activity many of our students choose to participate in. With very demanding coursework in the Paper Science curriculum, it is important to have enough downtime to relax and remove some stress. Intramural sports provide a venue for students to do this and at the same time build team communication skills and work toward a collective goal.

The Papermakers, TAPPI's intramural team, participated in co-recreational flag football and men's basketball this year. The football team had an outstanding year, with a record of 2-1 which earned them a spot in the playoffs. Billed as the underdogs entering the playoffs, our team won their first two games before being eliminated in the third round of the playoffs. Even though the team was eliminated, the season was considered a success and good sportsmanship won out.

The men's basketball team was very diverse this year in their range of talent levels. The group struggled through their first two games but was able to coordinate much better for the third game to get their first win. The momentum didn't last, however, and the Papermakers lost their final game for an overall record of 1-3. The team learned a lot from this season and hopefully will be fired up to make an impression next year.

*(front row) Curtis Powell, Graham White, Andy Rutledge, Sam Lipes and Brandon Shannonhouse. (back row) Paul Fox, Will Long, Johnson Scarboro, Wes Johnson and Hunter Morris.*

## Engineering, Pulping and Environmental Conference

Students from the student TAPPI chapter attended the 2006 Engineering, Pulping, and Environmental Conference in Atlanta, GA. The conference was packed with technical sessions, tutorials, round tables, new technology, workshops and networking events. Students attended sessions explaining the latest trends in recycled fiber processing and power boiler and recovery operations.

The conference highlights included the table top trade fair with companies and vendors that provided networking opportunities. Also, the keynote speaker, John Luke, Jr. Chairman and CEO of MeadWestvaco Corp, and the 24<sup>th</sup> Annual Paper Chase 5k run were focal points for the conference.

Students were able to learn technical information, network, and socialize with one another. The trip was both fun and very beneficial to the student chapter.

## Annual Student Summit

The Student Summit is an annual event led by industry professionals that teaches and sharpens professional development skills for paper science students from across the nation. This year the Summit was held in Charleston, SC, and sixteen students from NC State attended.

The activities for the event began with a photographic scavenger hunt around historic Charleston. Students were split into groups consisting of different schools, and allowed to learn the city and get to know each other. After the scavenger hunt, industry professionals gave presentations on networking, presentation and resume-building. Also, they held a panel discussion from recent graduates on making the transition from school to work. The conference ended with tours of Jacobs Engineering and MeadWestvaco facilities in the area, and an engineering challenge designed to build team skills and improve communication techniques.



# Seniors and Graduates



## Environmental Technology

### Seniors

(top to bottom, left side)

Benjamin Watson

Rick Behbehani

Aaron Thomas

Renee Berry

A.J. Frantz

Denise Grubert

Steven Horton

(top to bottom, center)

Candace Sylvan

Dorothy Goodman

Amy Graul

(top to bottom, right side)

Chris Dionne

Alan Westerman

Ricky Ebersol

Rachel Zajac

Savannah Poole

Palymyra Romeo

Bo Cappleman



## Spring Graduates

(from the bottom left)

Renee Berry

Denise Grubert

Rachel Zajac

A.J. Frantz

Chris Dionne

Amy Graul

## Fisheries and Wildlife

### Spring Graduates



*Amy Shepherd, Gabriel Karns, Timothy Ward, Barndon Bridges, William Ridgeway, Tyler Averett and Ryan Spidel.*

## Parks, Recreation and Tourism Management

### Spring Graduates

*PRT 477, Section 3*

*(in alphabetical order):*

*Jerrod Allan,*

*Zachary Angle*

*Joshua Bridges*

*Chad Chriscoe*

*Marquette Dickens*

*Justin Hickman*

*John Hudson*

*Billy Keown*

*Jennene Lausier*

*Jennifer Patterson*

*Orrick Quick*

*Liz Richardson*

*Catherine Snell*

*Corey Staak*

*Lola Woodworth*





*PRT 477, Section 1 (in alphabetical order):*

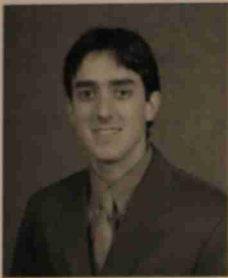
- |                         |                           |                           |
|-------------------------|---------------------------|---------------------------|
| <i>Alan Brenneman</i>   | <i>Jennifer Henderson</i> | <i>Justin Schamberger</i> |
| <i>Martrel Brown</i>    | <i>David Hicks</i>        | <i>Crystal Scronce</i>    |
| <i>Dana Cardillo</i>    | <i>Stephen Horne</i>      | <i>Kelly Shook</i>        |
| <i>Brent Cassell</i>    | <i>Elizabeth Mitchell</i> | <i>Munford Smith</i>      |
| <i>Jamie Curtis</i>     | <i>Molly Mitchum</i>      | <i>David Spagnola</i>     |
| <i>Melissa Daughtry</i> | <i>Ryan O'Quinn</i>       | <i>Jimmie Sutton</i>      |
| <i>Kevin Deaton</i>     | <i>Nigel Oates</i>        | <i>Jarod Warsofsky</i>    |
| <i>Benjamin Dineen</i>  | <i>Walter Plunkett</i>    | <i>Ryan Williams</i>      |
| <i>Shaina Ervin</i>     | <i>Erica Porter</i>       | <i>Amanda Williamson</i>  |
| <i>Blake Frenier</i>    | <i>Eric Rackley</i>       | <i>Gabriel Wilson</i>     |
| <i>Lance Hall</i>       | <i>Le Rue Rumph</i>       | <i>Cameron Yates</i>      |



*PRT 477, Section 2 (in alphabetical order):*

- |                          |                        |                           |
|--------------------------|------------------------|---------------------------|
| <i>William Aubut</i>     | <i>Justin Goad</i>     | <i>George Pridgen</i>     |
| <i>Joshua Balogh</i>     | <i>Matthew Greenan</i> | <i>David Puffer</i>       |
| <i>Dereck Brinkley</i>   | <i>Jeremy Hartrum</i>  | <i>Teresa Rouse</i>       |
| <i>Jason Bright</i>      | <i>Kalani Heppe</i>    | <i>Megan Sadler</i>       |
| <i>Charles Cohen</i>     | <i>Ty Johnson</i>      | <i>Dillon Silver</i>      |
| <i>Thurston Crawford</i> | <i>Crystal Jones</i>   | <i>Kenneth Simpson</i>    |
| <i>William Deitrick</i>  | <i>Corey Millett</i>   | <i>Danielle Stallings</i> |
| <i>Blair Dougher</i>     | <i>Eric Mitchell</i>   | <i>Andrew Stock</i>       |
| <i>Samantha Fujimoto</i> | <i>Nance Joshua</i>    | <i>Branden Templeton</i>  |
| <i>Ryan Gavigan</i>      | <i>Shira Parrish</i>   | <i>Rebecca Wescott</i>    |





David Abrecht  
WPS



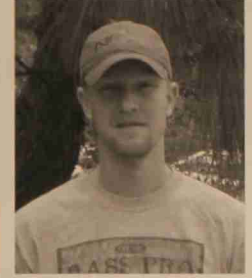
Chris Barfield  
FER



Michael Brafford  
FER



Jantzen Brantley  
FER



James Caddy  
FER



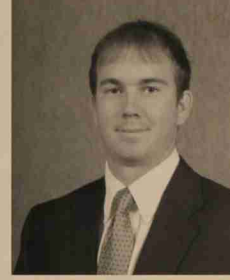
Sarah Greene  
FER



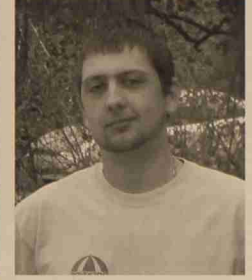
Jeremy Haddock  
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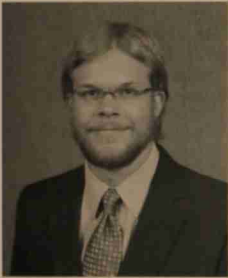
Jeffrey Harke  
WPS



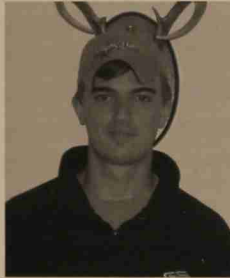
Jason Harman  
WPS



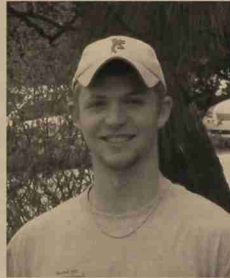
Aj Keeting  
FER



Joel Love  
WPS



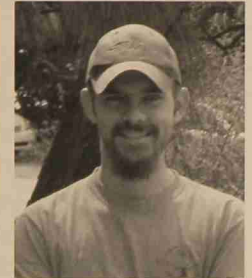
Davis McGowen  
FER



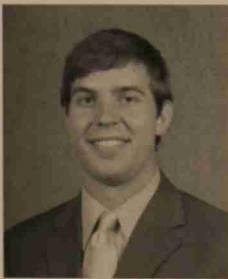
Korey Meadows  
FER



Matt Miller  
FER



Mike Miller  
FER



Hunter Morris  
WPS



Dakota Paris  
FER



Niral Patel  
WPS



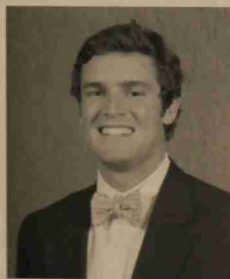
Jason Roberts  
FER



Kelley Spence  
WPS



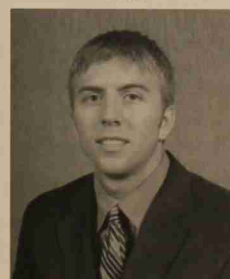
Cary Strickland  
WPS



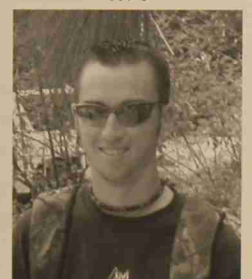
Stephen Stroud, Jr.  
WPS



Jarrod Tucker  
WPS



David Watts  
WPS



Neil Weaver  
FER

**Summer 2006****Forestry and Environmental Resources**

- Bachelor of Science in Environmental Technology  
Thomas R. Crawford  
John W. Gray  
Jason V. Pierce  
Ryan P. Smith
- Bachelor of Science in Natural Resources (Ecosystem Assessment)  
Gregory V. Roane
- Master of Forestry  
Ross L. Andrews  
Richard D. Quinn
- Master of Natural Resources (Forest Economics and Management)  
Melissa E. Dumond
- Master of Science in Forestry  
Nevin S. Dawson  
Bary C. Jackson
- Master of Science in Natural Resources  
Melissa E. Dumond
- Doctor of Philosophy in Forestry  
Kevin M. Potter

**Parks, Recreation and Tourism Management**

- Bachelor of Science in Parks, Recreation and Tourism Management  
Richard B. Agner  
Jason D. Bone  
James B. Hawkins III  
Timothy J. Hiller  
Sarah M. Keener  
Emira Kote  
Nicholas S. Matthews  
Nicole L. Metesky  
Christopher L. Moore  
Kaylah D. Nance  
Michael S. Stedman  
Robert A. Sturge  
Allen G. Sutton  
Jessica L. Wine  
Banks M. Wood Jr.  
Robert J. Yeager
- Master of Natural Resources (Outdoor Recreation Management)  
Andrew R. Downs
- Master of Parks, Recreation and Tourism Management  
Philip M. Ledford
- Master of Science in Parks, Recreation and Tourism Management  
Catherin L. Marvill

**Wood and Paper Science**

- Master of Science in Wood and Paper Science  
Lambrini Adamopoulos  
Zhoujian Hu  
Yun Wang

**Fall 2006****Forestry and Environmental Resources**

- Bachelor of Science in Environmental Science (Watershed Hydrology)  
Melissa Lynn Dills
- Bachelor of Science in Environmental Technology  
Christopher K. Blackmon  
Katie R. Levin  
Lauren E. Vincent
- Bachelor of Science in Fisheries and Wildlife  
Aaron J. Bunch  
John R. Cooney III  
Jennifer W. Harrod  
Gabriel R. Kams  
John R. McFadyen  
John H. Rochevot  
William D. Sellers  
James M. Seubertling  
Jason B. Smith  
Sabrina N. Smith
- Bachelor of Science in Forest Management  
Thomas J. Deschriver  
Nathan P. Gatlin  
John A. Shipley
- Bachelor of Science in Natural Resources (Policy and Administration)  
Jason B. Lewis
- Bachelor of Science in Natural Resources (Ecosystem Assessment)  
Chad A. Broadway  
Leah J. Frenzel  
Michael A. Jennings  
Cody A. Paul  
Nathan M. West
- Master of Science in Natural Resources  
Bryan J. Berenguer
- Doctor of Philosophy in Forestry  
Thomas P. Colson

**Parks, Recreation and Tourism Management**

- Bachelor of Science in Parks, Recreation and Tourism Management  
Mary E. Bailey  
Lamart A. Barrett  
Leah M. Bartlett  
George C. Batts  
Michael O. Baxter  
Landon T. Carroll  
Jonathan S. Davis  
Nicole E. Dennington  
Christopher J. DesNoyer  
Grant J. Dom  
Justin D. Doroshenko  
Deandra R. Duggans  
Patrick A. Dux  
Stefani T. Eddins  
Samuel P. W. Groce  
Jason W. Hall  
Leroy Harris Jr.  
Andrew W. Hawley  
Jonathan L. Haygood  
Paul G. Hicks  
Daniel B. Hovis  
Zachary R. Kessell  
Patrick T. Lowery  
Amanda C. Mangum

- Christin N. Matthews  
Christopher B. McLendon Jr.  
David A. Melvin  
Matthew C. O'Bryant  
Michelle L. Pesavento  
Nirvana H. Roman  
Brian T. Simorka  
Nathan K. Stephenson  
Latoya M. Stewart  
Vanessa N. Vreeland  
Jonathan A. Wall
- Professional Golf Management  
Robert M. Greene Jr.
- Master of Natural Resources  
Edward G. Shipman
- Master of Parks, Recreation and Tourism Management  
Justine D. Gainey  
Mavreen Jean-Baptiste  
James M. McCall  
Mary J. Yemma
- Master of Science in Natural Resources  
Robert K. Nesbitt
- Doctor of Philosophy in Parks, Recreation and Tourism Management  
Jerusha B. Greenwood  
Debra M. Savage

**Wood and Paper Science**

- Bachelor of Science in Paper Science and Engineering  
Niral B. Patel
- Bachelor of Science in Wood Products  
Andrew H. Bulik  
Robert D. Houston  
Yancey G. Williams
- Master of Science in Wood and Paper Science  
Maurice E. Deaver  
Lucia M. Ramirez  
Teofisto C. Saralde Jr.
- Doctor of Philosophy in Wood and Paper Science  
Jung M. Lee  
Sa Y. Lee

**Spring 2007****Forestry and Environmental Resources**

- Bachelor of Science in Environmental Technology  
Renee N. Berry  
Christopher L. Dionne  
Richard D. Ebersohl  
Andrew J. Frantz  
Amy L. Graul  
Denise C. Grubert  
Anna E. Mangum  
Rachel E. Zajac
- Bachelor of Science in Fisheries and Wildlife  
Carolyn J. Anderson  
Tyler W. Averett  
Brandon L. Bridges  
Michael B. Home  
William N. Ridgeway  
Amy R. Shepherd  
Michael R. Spidel  
Timothy A. Ward
- Bachelor of Science in Forest Management  
Christopher T. Barfield

- Michael E. Brafford  
James M. Caddy  
Sarah E. Greene  
Harry A. Keating  
Thomas D. McGowen  
Korey W. Meadows  
Matthew T. Miller  
Michael J. Miller  
Jason S. Roberts  
Adrian E. Stenhauer  
Chester A. Tinkham  
Walter N. Weaver
- Bachelor of Science in Natural Resources (Ecosystem Assessment)  
Zachary S. Barfield  
Brigid Belko  
Eric C. Brown  
Robin G. Eddy  
Joshua J. Steiger
- Bachelor of Science in Natural Resources (Policy and Administration)  
Jason B. Lewis  
Robert D. Moreton
- Master of Natural Resources  
Anthony Mason  
Sou Moua  
John G. Schuster
- Master of Science in Fisheries and Wildlife  
Tracey B. Champlin  
James W. Tomberlin
- Master of Science in Forestry  
Michael J. Aspinwall  
Heather B. Dreps  
Alicia Peduzzi
- Master of Science in Natural Resources  
Melonie B. Allen  
Sean P. Doig  
Jennifer S. Musella

**Parks, Recreation and Tourism Management**

- Bachelor of Science in Parks, Recreation and Tourism Management  
John K. Amanchukur  
Jonathan A. Bazemore  
Alan D. Brenneman  
Dana M. Cardillo  
Brent L. Cassell  
Charles E. Cohen  
Jamie L. Curtis  
Wesley S. Damerom  
Kenya C. Davis  
Kevin D. Deaton  
William M. Deitrick  
Marqueeta D. Dickens  
Jason L. Duncan  
Jonathan B. Edwards  
Shaine M. Ervin  
Dieu-Merci Falaise  
Jade Feliciano  
Blake E. Frenier  
Samantha Y. Fujimoto  
Matthew J. Greenan  
Stephen H. Home  
Ty W. Johnson  
Crystal T. Jones  
Jennene P. Lausier  
Lori E. McMillan  
Corey J. Millett  
Elizabeth M. Mitchell  
Eric L. Mitchell  
Molly M. Mitichum  
Joshua R. Nance

- Jason P. Neville  
Shira B. Parrish  
David R. Percival  
Walter C. Plunkett  
George W. Prigden  
David C. Puffer  
Eric L. Rackley  
Elizabeth A. Richardson  
Teresa L. Rouse  
Meghan A. Sadler  
Crystal T. Sprance  
Kelly A. Shook  
Dillon C. Silver  
David A. Spagnoda  
Jeffrey K. Spanner  
Danielle A. Stallings  
Jennifer C. Staton  
Michael B. Templeton  
Scott C. Trudgen  
Rebecca Y. Wescott  
Ryan T. Williams  
Gabriel M. Wilson  
Lola J. T. Woodworth  
Cameron B. Yates
- Professional Golf Management  
William D. Carver  
Megan M. Dunn  
Brandon D. Earl  
Timothy J. Ellenson  
Gregory B. Hassell  
Adam M. Walker
- Master in Parks, Recreation and Tourism Management  
Kendra T. Bell  
Lindsay J. Bray  
Shannon L. Clonch  
Christopher T. Kaldon  
Thiago S. Miranda  
Nowell L. Steider
- Master of Science in Parks, Recreation and Tourism Management  
Jan E. Trask

**Wood and Paper Science**

- Bachelor of Science in Paper Science and Engineering  
David G. Abrecht  
Valerie R. Goins  
Jeremy A. Haddock  
Jeffrey J. Harke  
Jason M. Haman  
Joel S. Love  
Kelley Lynn Spence  
Cary T. Strickland  
Jarrod A. Tucker  
David K. Watts
- Bachelor of Science in Wood Products  
Aaron A. Creech  
Bradford T. Hamill  
Christopher M. Jones  
Andrew J. Webb  
Samuel P. Wheeler
- Master of Wood and Paper Science  
Marc Y. Azzi  
Carlos Garcia  
Jeffrey S. McKee  
Christopher J. Moriarty  
Susan D. Stewart
- Doctor of Philosophy in Wood and Paper Science  
Qirong Fu  
Mathias E. V. Lindstrom  
Daniel E. Saloni

# The College of Natural Resources

## —by the Numbers

### Academic Departments

- Forestry and Environmental Resources.
- Parks, Recreation and Tourism Management.
- Wood and Paper Science.

### Academic Programs/Students

- 12 Bachelor's, 27 Master's and Doctoral degree programs including a Distance Education Master's of Wood and Paper Science.
- Graduates from all CNR departments are future ready, knowledgeable, industry savvy, multidisciplinary, problem-solving professionals.
- Nearly 1000 undergraduate and 200 graduate students enrolled in a typical year; approximately 210 earn Bachelor's degrees, and more than 65 earn graduate degrees annually.
- Partnerships with community colleges offer an alternative route to a four year degree from CNR.
- Partnerships with historically black colleges and universities (HBUC) promote diversity in natural resource fields.
- Approximately \$3.5 million in scholarships, fellowships and program support awarded annually.
- Hands-on, technology-rich learning through residential summer camps, undergraduate research, internships and co-ops, undergraduate research, and study abroad opportunities.

### Faculty, Staff and Alumni

- 174 faculty and staff dedicated to ensuring a sustainable tomorrow.
- More than 75 years as a leading force in natural resource education, research and service.
- 7,507 living alumni.
- 1<sup>st</sup> African American female Ph.D.s in forestry and in pulp and paper in the nation.

### Financials and Private Support

- Total annual budget: \$28.3 million
  - State and Federal Appropriations: \$13 million
  - Foundation Support: \$6.3 million
  - Grants and Contracts: \$ 6.8 million
  - Sales, Services and Co-ops: \$2.3 million
- Total endowment: \$20 million

### Research, Extension and Service

- Supports 3 of the top 5 industries in North Carolina—forestry, wood and paper products, and tourism.
- Annual research expenditures of \$11 million.
- Faculty, support personnel and students annually conduct approximately 224 sponsored research projects spanning the natural resource arena.
- Outreach specialists in forestry; wildlife; wood products; and parks, recreation and tourism annually respond to more than 10,000 requests for information and consultation from individuals, communities, state and local governments, and businesses across the street and around the world.
- Lifelong learning offerings, including distance education, certificate programs, workshops and short courses reach more than 3000 natural resource professionals each year.
- Fosters sustainable prosperity through nature-based tourism—78% of NC's counties now have a tourism community development program.
- Delivers crucial leadership in biomaterials and bio-fuels in partnership with the colleges of Engineering and Agriculture and Life Sciences.
- Provides research and guidance to more than 2000 Christmas tree growers across NC who harvest more than 19% of the nation's Christmas trees.
- Leaves a global footprint in graduate education, and sustainable forest productivity and conservation through the work of 3 research cooperatives—Camcore, Tree Improvement, and Forest Nutrition.

### Other

- 90,000 acres of college forests provide the largest university-owned forestland for teaching, research and demonstration in the nation.
- Home of the Center for Earth Observation computing and geoinformatics research and training facility.
- Extensive biotechnology facilities and expertise for tree improvement through genetics.



**This publication is funded by the Forestry Foundation.**