

2017-2018 Annual Report to the Chancellor

The College of Natural Resources is striving to be a world leader in providing solutions to natural resource challenges and social, economic, and environmental sustainability. Our curricula, our research and scholarship, and our extensive outreach and engagement explore the many ways that the needs of a growing population can be met while stewarding the natural resources that support our planet and our livelihoods. For almost a century, the College has served vital industries in North Carolina, built a world-class portfolio of disciplinary and interdisciplinary research and engagement, and educated the next generation of natural resource professionals – all with an eye towards making our state, our nation, and the world a better place for all.

Strategic Initiatives

Goal 1: Enhance the success of our students through educational innovation.

The College of Natural Resources is working continuously to improve our suite of academic programs, and to recruit, support, and mentor our students in the most impactful ways. To achieve goal one, this year, we focused on new program development and implementing our college-wide recruitment strategy. Specifically we:

- Successfully launched a pilot of the Environmental First Year (ENVFY) program as a collaboration between CNR, COS, and CALS. ENVFY brings students with similar interests together across majors and colleges and encourages students to explore the different pathways to a career in the environmental sciences through real-world case studies. The incoming class of 2018-2019 includes 158 students.
- Successfully launched a new PhD in Geospatial Analytics that attracted 79 applicants for its inaugural cohort. Twelve students will enroll in Fall 2018. Fifty percent of this new cohort are women, and several students are members of underrepresented minority groups. An additional five students transferred to the PhD in Geospatial Analytics from existing NC State programs (MEAS, FER and Psychology).
- Co-hosted a North Carolina Community College Advisor Workshop at NC State for 45 counselors from 20 different community colleges in partnership with the College of Textiles. We also piloted a Western NC Community College and High School Admissions Webinar with the College of Agriculture and Life Sciences.

- Working with the Community College System, restructured the CONNECT Program that allows students who have been denied admission to NC State to enter NC State after one year without reapplying if they meet certain achievement metrics. We also strengthened ties with Community Colleges particularly well suited to our majors, and where we have CNR Articulation Agreements including Haywood, Wayne, and Montgomery Community Colleges. These efforts increased participation in CONNECT from 3 to 12 students for Fall 2018.
- Fully implemented our new college wide recruitment strategy, and as a result, we are welcoming the largest and brightest freshman class, including 236 students with an average SAT of 1250, ACT of 26, and weighted GPA of 4.42.
- Held our first annual college Graduate Research Symposium. The event drew 40 faculty and staff from both CNR and other colleges. Thirty-eight students presented posters, and eight competed in a three-minute thesis competition.

Goal 2: Enhance scholarship and research by investing in faculty and infrastructure and

Goal 3: Enhance interdisciplinary scholarship to address the grand challenges of society.

- The College continues to provide mentoring opportunities for new faculty members, including support in teaching, research and engagement, and programs to help faculty build partnerships across the College and around the University. We have hired 24 new tenure/tenure track faculty members over the last three years, and the College is investing heavily in their start-up packages and early career mentoring opportunities.
- A collaboration between the departments of Forest Biomaterials, Plant Pathology, and Chemical Engineering led to the successful completion of the first phase of a project, funded by the Gates Foundation, to boost crop yields using a novel paper material that protects germinating seeds from nematode predation.
- The Department of Parks, Recreation and Tourism Management and the School of Architecture submitted a successful proposal for NC State to join the highly competitive Design & Health Consortium of the American Institute of Architects and the Association of Collegiate Schools of Architecture. Members of the Design & Health Research Consortium are expected to improve the usefulness and quality of research linking design to health outcomes. One additional recent example of the close collaboration between Natural Resources and Design is a Robert Wood Johnson Foundation sponsored study of how privately funded multifamily development projects are investing in public health initiatives.

Goal 4: Enhance organizational excellence by creating a culture of constant improvement.

- The College invested in space improvements, including office renovations, reconfigurations and moves to bring teams together and better accommodate the Dean's Office staff and their needs.
- The College also provided \$25,000 for a planning study to renovate the Natural Resources Library in Jordan Hall, as a collaboration between CNR, COS (MEAS) and the Libraries. If completed, this renovation would provide significant collaboration space and help to foster cross-college connections on this part of the campus.
- The College's Marketing and Communications team launched a new Forestry and Environmental Resources departmental website after working with faculty to re-write and streamline over 135 pages of content into about 60 pages. They are also using new tools to measure web communications including MOZ (search engine optimization), CrazyEgg (user heat mapping), UTM code generation and tracking (visitor source tracking), and Google Tag Manager (user sources tracking), and Facebook Pixel (user retargeting).

Goal 5: Enhance local and global engagement through focused strategic partnerships.

- First year students in our Engaging Leaders Program work with community partners to design and implement programming that meets their needs. One of this year's projects was a military outreach event for homeschool students of military families at Fort Bragg in partnership with the Rick Herrama Foundation. The project received the 2018 Deborah S. Moore Service Award from CSLEPS.
- Four College of Natural Resources researchers accompanied Dr. Ron Sederoff to Stockholm, Sweden, where he received the 2017 Marcus Wallenberg Prize at a ceremony and banquet in the presence of their majesties, the King and Queen of Sweden. Two Forestry and Environmental Resources post-doctoral researchers and two Forest Biomaterials doctoral students joined 33 other global researchers in the Symposium and Young Researchers' Poster Session leading up to the Wallenberg Prize ceremony. Forestry and Environmental Resources post-doctoral researcher Jack Wang received third place for his poster and three-minute oral presentation outlining the significance and scope of his research on improving wood properties for wood utilization through multi-omic integration of lignin biosynthesis.

Changes in Service Environment

The College assumed full responsibility for the online Professional Masters Program in Environmental Assessment that was formerly shared with CALS. Over the year, the Department of Forestry and Environmental Resources recruited teaching faculty members, and worked to re-invigorate and expand the program to new focus areas that will increase enrollments. In particular, the faculty are linking a new Certificate in Military Lands Sustainability to the program, and building an additional Certificate in Renewable Energy Assessment that should have strong appeal across the state and beyond.

Diversity

Pursuing the goal of recruiting students who reflect the population of North Carolina, the College developed several specific strategies to recruit students of color and students from rural communities.

- Co-hosted Wolfpack Weekend with the College of Sciences for 12 students of color.
- Strategically revised all newsletters and profiles in both print and online marketing pieces to ensure women, African-American, Hispanic/Latinx, and Native American individuals were represented for each major.
- Developed targeted programs in Bladen, Columbus, and Robeson Counties, with a focus on recruiting Native Americans to any of our academic programs. In Rockingham, Caswell, and Stokes Counties, we focused on natural resources and outdoor recreation; and in Northampton, Halifax, and Bertie Counties, in partnership with the Roanoke Electric Cooperative's Sustainable Forestry and Land Retention Project, we led workshops on college access and affordability.
- Hosted Envirokids, TRIO, the Safeguarding Our Natural and Tribal Heritage Youth Program, and a group from Purnell Swett High School during the summer of 2017 to increase awareness of our academic programs.
- Partnered with the SwingPals golf program to promote diversity within the golf industry.

The College also continued to develop a new 3 plus 1 plus 1 program with Tuskegee University. This program would bring Tuskegee students interested in a Master of Forestry or Master of Natural Resources professional program to come to NC State for their senior year, participate in Forestry Summer Camp, graduate from Tuskegee and have up to 12 credits towards their Master's degree. The program MOU should be finalized in Fall 2018, with a potential group of 3-5 students enrolling in Fall 2019.

After our Director of Diversity left for another position in January, the College hosted a series of conversations, and collected data on perceptions of diversity and inclusion in the College. Our intensive

focus on status and needs culminated with a visit from Dr. Marcus Martin, the Vice President and Chief Diversity Officer for University of Virginia and former Dean of the School of Medicine at UVA, who is an alum of our College to share his experiences and advice. In the fall, we will launch a national search for a new Associate Dean for Diversity and Inclusion.

Instructional Program Advances

- Launched a new graduate certificate program, Sport and Entertainment Venue Management in the Department of Parks, Recreation, and Tourism Management. Currently recruiting the first cohort of students.
- Launched a new graduate certificate program, Military Land Sustainability in the Department of Forestry and Environmental Resources. Currently recruiting the first cohort of students.
- The Department of Parks, Recreation and Tourism Management began development of a new certificate program in Park Planning, Design, and Management jointly with the Department of Landscape Architecture in the College of Design.

Research

College faculty submitted 194 proposals for a total of \$43 million and received \$8.4 million in awards. Some highlights include the following:

- **Caren Cooper**, FER and the NC Museum of Natural Sciences, and **Lincoln Larson**, PRTM, were awarded a NSF Advancing Informal STEM Learning (AISL) grant to develop evidence-based principles to guide citizen science project leaders in the coordinated management of project participants and their data using the web-based tool SciStarter. SciStarter is a repository of over 1,500 citizen science projects.
- **Ross Meentemeyer**, is the lead PI on an NSF Smart and Connected Cities (SCC) Research Coordination Network project that will unite researchers and stakeholders to plan the design of a futuristic game called TomorrowNow. The game will enable players to explore the connections between urbanization and associated changes in storm water, a problem of increasing concern across the US.
- **Erin Sills**, FER, and **Jelena Vukomanovic**, PRTM, are combining geospatial analytics and community engaged research to support the Johns Island Community Conservation Initiative, which promotes the conservation of working farm and forest land on Johns Island in order to preserve valued cultural resources and ecosystem services. Funded by the Gaylord & Dorothy

Donnelley Foundation and the Lowcountry Land Trust, the project will establish the groundwork for a toolkit for conserving working landscapes.

- **Jason Delborne**, FER and Genetic Engineering and Society Cluster **and colleagues** received a DARPA grant exploring eradication of invasive rodent populations on islands using gene drive technologies. Delborne's work was featured in the October 2017 issue of Scientific American.
- **Steve Kelley, Ronalds Gonzalez, and Yuan Yao**, all FB, are studying the potential for tall wood buildings to sequester carbon and provide other environmental and forest management benefits. The project is sponsored by the US Endowment for Forestry and Communities, Inc.
- **Duarte Morais**, PRTM, and colleagues in CALS were awarded a USDA grant, "Fork2Farmer: Leveraging the High Visibility of Celebrated Chefs to Increase Small Farms' Direct Product Sales and Farm Visit Sales," which includes both marketing and an Extension program mentoring small farmers on how to pursue new opportunities.
- **Steve Kelley, Erin Sills, and partners** in CCEE and UNC have been awarded a NSF Partnerships for International Research and Education (PIRE) grant to do research and build an interdisciplinary academic research community that will focus on addressing the challenge of energy poverty in Sub-Saharan Africa.

Extension

Forestry, wood products and tourism extension were active across the state of North Carolina and beyond. Some highlights include:

- Assisted the Christmas tree industry in western North Carolina with regulatory challenges in the state of Florida due to the presence of elongate hemlock scale (EHS) on cut trees – a pest not currently found in that state. By helping growers increase quality control measures, we reduced EHS in cut trees by 98% and successfully prevented the potential loss of over \$50 million in revenues for NC Christmas tree growers who ship trees to Florida.
- Worked with the Southern Regional Extension Forestry Program to offer a variety of webinars that attracted over 48,100 live and on demand views, with participants from all 50 states, earning over 16,460 continuing education credits for professional development requirements from at least 10 organizations. By training online, participants saved over \$8.9 million dollars over the course of the year.
- Developed a train-the-trainer wildland fire program in response to the catastrophic wildfires at the end of 2016 in Western, NC. Three trainings were conducted across North Carolina resulting in

32 county extension agents and Master Gardener volunteers being trained. In addition, we offered field days that trained more than 100 private landowners and prescribed fire practitioners.

- Completed an economic analysis of the forest sector in North Carolina, including forestry, logging, and forest product industries, documenting a total economic contribution of \$32.7 billion in industry output to the North Carolina economy, with about 150,000 full- and part-time jobs and a payroll of \$7.8 billion. In support of this sector, Wood Products Extension delivered education and outreach events for 400 participants to enhance the profitability of the wood products industries.
- Collaborated with NC Cooperative Extension Community Development Program to produce a series of videos about women in agritourism. The National Association of Community Development Extension Professionals recognized this project with the Diversity Team award at both the regional and national levels for its impacts.

Faculty and Staff Honors, Awards and Recognition

College - Dean's Office

- Dr. Marian McCord received the John S. Risley Entrepreneur of the Year Award.
- Sam Cook received the Diversity Leadership Award from the Society of American Foresters.
- Lenise Sellars received the SHRA CNR Awards for Excellence Award.

Forest Biomaterials (FB)

- Dr. Steve Kelley was named the Reuben B. Robertson Professor.
- Dr. Richard Venditti was named the Elis-Signe Olsson Professor.
- Dr. Daniel Saloni, Dr. David Tilotta, and collaborators won a 2018 George Marra Award for Excellence in Writing (3rd place) for their publication in the Wood and Fiber Science Journal.
- Dr. Marko Hakovirta, Department Head, was named a TAPPI Fellow.

Forestry and Environmental Resources (FER)

- Dr. Erin Sills was named the Edwin F. Conger Professor, and received the Jackson Rigney Global Engagement Award.
- Dr. Stephanie Jeffries received the Alumni Association Outstanding Teacher Award.
- Dr. Ryan Emanuel received the NC State Green Brick Award.
- Dr. Ronald Sederoff received the Marcus Wallenberg Prize.
- Dr. Jack Wang received 3rd Prize at the Wallenberg Symposium for Young Researchers.

- Dr. Zakiya Holmes Leggett received the Commitment to Human Diversity in Ecology Award from the Ecological Society of America.
- David Schnake was named the NC Conservationist of the Year.
- Renee Strnad received the University Outstanding Extension Service Award.
- Austin Heine receive the EHRA CNR Awards for Excellence Award, and was also recognized at the University level.

Parks, Recreation and Tourism Management (PRTM)

- Dr. Kimberly Bush received the Alumni Distinguished Teaching Professor Award.
- Dr. J. Aaron Hipp was named a University Faculty Scholar.
- Dr. Jelena Vukomanovic received the 2017 National Park Service Science Management Partner Award (along with CGA associates Justin Shedd and Makiko Shukunobe).
- The PRTM Graduate Student Association received the University GSA Best Practices Award.

Center for Geospatial Analytics

- Dr. Ross Meentemeyer concluded a two-year term as president of the U.S. International Association of Landscape Ecology (US-IALE).

Students Honors and Awards

Forest Biomaterials

- Preeti Tyagi & Michael Joyce received the Citrifi Innovation Award in the industrial category.
- Six students won TAPPI Scholarships: Mathew Frink, Trevor J. Gamache, Allison Hellwig, Lillian Humphries, Lindsay Leonard and Jensen Vellaringattu.
- Mary Paz Alvarez Valverde, a senior in Sustainable Materials and Technology, received the 2018 Green Brick Award.

Forestry and Environmental Resources (FER)

- Suzanne Hartley received a Hesse Award from the American Ornithological Society.

Parks, Recreation and Tourism Management

- Derrick Applewhite, Jr. (BS) received The William N. Wasson Student Leadership and Academic Award at the NIRSA 2018 Annual Conference.
- Matthew Jurjonas (PhD graduate) received the García-Robles Fulbright Scholar Postdoctoral Award.

Center for Geospatial Analytics

- Joshua Turner (MGIST student) received a NASA Develop internship for Summer 2018.
- Ashwin Shashidharan (CGA PhD student) received the 2018 ESRI Development Center Student of the Year Award in a global competition.

Fundraising

Raised \$4.5 million, a 62% increase over our previous 3-year average, bringing the College to about 74% of our campaign goal. Highlights include bequests for experiential learning and scholarships, new funds for graduate fellowships and professional development, and a new fund for outreach and support of diversity. Examples include:

- The Terry Shockley Scholarship Bequest for undergraduate students enrolled in the College of Natural Resources who are also in the NC State Reserve Officer Training Corps (ROTC) or are veterans who are not already receiving other scholarship or funding support.
- Two significant commitments from the Ecology/Wildlife Foundation, one increasing its endowment for Fisheries, Wildlife and Conservation Biology undergraduate scholarships and the second establishing a Fellowship for graduate students with research interests in wildlife, global change and urbanization in the Southeastern region of the United States.
- The Michael and Barbara Walters Enhancement Fund supports program enhancements in areas of greatest need, with examples including business skill development, hands on learning opportunities, and new technologies facilitating land management.
- The Sam and Sherry Lynn Cook Fund for recruiting and supporting a diverse student population in forestry and natural resources.

Administration Achievements and Staff Changes

New EHRA Non-Faculty Hires

- Shane Jarvis was named Assistant Dean for Finance and Business after Sandy Jones retired at the end of September 2017.
- Josh Gira was named Director of Information Technology and Operations.
- Alexandria Loflin, Recruiter, Academic Affairs
- Shana McAlexander, Distance Education Program Manager, FB
- James Todd, Instructional Designer, FB

- Gladys Dobbs, Research Associate, FER
- Edwin Lauer, Tree Improvement Analyst, TIP in FER
- Lilian Matallana Ramirez, Research Associate, FER
- Chenmin Yang, Research Assistant, Forest Biotechnology in FER
- Mary Lou Addor, Program Coordinator, Forestry Extension
- Laurel Kays, Extension Assistant, Forestry Extension
- Charlyne Smith, Director of Recreation Resources Service, PRTM
- Kyle Smith, Recreation Resources Service Consultant, PRTM
- Xiao Xiao, Research Associate, PRTM
- Justyna Jeziorska, Research Associate, CGA

New NonTenure-Track Faculty Hires 2017-2018

- Dr. Stephen Graham, Lecturer, FER
- Dr. John Iames, Lecturer, FER
- Dr. Megan Lupek, Lecturer, FER (CALs spousal hire opportunity)
- Dr. Tamara Pandolfo, Teaching Assistant Professor, FER
- Lyra Rakusin, Lecturer, FER
- Dr. Jennifer Richmond-Bryant, Teaching Assistant Professor, FER

New Tenured/Tenure-Track Faculty Hires Starting in 2017-2018

- Dr. Frederik Laleicke, Assistant Professor and Extension Specialist, FB
- Dr. Nathalie Lavoine, Assistant Professor, FB
- Dr. Rajan Parajuli, Assistant Professor and Extension Specialist, FER
- Dr. Jack Wang, Assistant Professor, FER

Faculty Offers Made and Accepted 2018-2019

- Dr. Gary Blank has been appointed Interim Associate Dean for Academic Affairs beginning July 1, 2018, replacing Dr. Adrianna Kirkman, who retired June 30, 2018.
- Dr. Ayse Ercumen, Assistant Professor, FER, Global Wash CFEP
- Dr. Jordan Kern, Assistant Professor, FER, Global Change CFEP
- Dr. Kitt Payn, Associate Professor and Director of the Cooperative Tree Improvement Program, FER
- Martha Brown, Lecturer, PRTM

Recommendations and Concerns for the Future

The future for the College of Natural Resources is bright. We have growing enrollments and 24 new faculty members who are enhancing our core strengths and building expertise in strategic interdisciplinary areas. However, as noted last year, we have become critically short on space, and much of the space we do have is aging and in need of major renovation. Acquiring high quality space for the growing research programs of our faculty is critical to retaining them at NC State and for recruiting and retaining outstanding graduate students in our masters and doctoral programs. The limitations of our facilities have emerged as the number one complaint of faculty, staff and students across the College and will impede our progress unless solutions are identified soon.