

2022-2023 Annual Report to the Chancellor

The College of Natural Resources (CNR) continues to move forward on implementing its strategic plan, *The Planet is Our Classroom*, in close alignment with *Wolfpack 2030: Powering the Extraordinary*. Our new strategy empowers our faculty and students to take our work out into the world around us and to learn from and solve critical challenges facing our environment and our society. This strategy will help us deepen our connection with our environment, our industries, and our communities, helping us fulfill our vision to build a world in which everyone is welcomed and empowered to explore, protect, and enjoy the full diversity of our environment and our communities while building justice and sustainability for all. Over the past year, the college has continued working on implementation, investing in research, teaching, and extension activities and initiatives that align with college and university priorities. We were also pleased to see our students, faculty, and staff thriving as they returned to many of the activities we missed over the last three years.

Goal 1. Empower students for a lifetime of success and impact.

- Total enrollment for Fall 2022 was 2,000, with 44.2% (883) female students, 18.3% (366) ethnic minorities, and 5.1% (102) non-US Citizens.
- Undergraduate enrollment was 1,578 students, with 42.2% (666) female students and 19.5% (307) ethnic minorities. Our graduate enrollment was 422 students, with 51.4% (217) female students and 14% (59) ethnic minorities.
- Over \$1 million in scholarships were awarded to incoming and current undergraduate students across all CNR programs from the Natural Resources Foundation (\$40,000) as well as our numerous endowed scholarships.
- We established a new CNR Coordinator of Advising as well as a Director of Career Advising and Professional Engagement, which will provide discipline-specific career advising to undergraduate and graduate students in CNR and engage industries to connect students with employment opportunities.
- The James Buzzard Leadership Program, made possible by a \$1 million gift from the late Jim Buzzard, launched with 19 students and Dr. Jason Bocarro as the director. The program selected students with demonstrated leadership experience and will give them advanced leadership development opportunities.
- Our graduate certificate in GIS continues to be popular among working professionals and across campus for students looking to supplement their master's/Ph.D. with GIS skills. This year it was recognized by the Graduate School as NC State University's most popular graduate certificate program, producing the most graduates over the 2018–2022 academic years.
- We hosted a second year of the CNR Summer Undergraduate Research Experience, a partnership between ODI and the CNR Research Office. This program is non-residential with 10 students participating from St. Augustine's University, Shaw University, and NC State for 7 weeks during the summer (May 31 - July 27).

- Rebounding from the COVID pandemic, the residential summer camp returned to Hill Forest as a full experience for the forest management and fisheries, wildlife, and conservation biology students.

Goal 2. Ensure preeminence in research, scholarship and collaboration.

- 194 proposals were submitted by CNR faculty totaling \$52.6 million.
- 167 new grants were awarded to CNR faculty in the amount of \$14.2 million.
- 14 proposals submitted exceeded \$1 million.
- We hosted our fifth annual Graduate Research Symposium, which featured ~50 graduate student posters and talks and more than 100 attendees, including several alumni. More than \$7,000 in cash awards were distributed.
- CNR is home to one of six projects focused on decarbonizing paper and forest products to receive funding from the U.S. Department of Energy as part of President Biden's clean energy initiative aimed at reducing carbon pollution from the industrial sector and moving the nation toward a net-zero emissions economy by 2050.
- We launched the CNR Summer Undergraduate Research Experience (CNR-SURE) in collaboration with faculty from throughout CNR, St. Augustine's University, the Doris Duke Program, and the Office of Undergraduate Research (OUR).

Goal 3. Expand and advance our engagement with and service to North Carolina and beyond, defining the standard for a 21st-century land-grant university.

- CNR Extension received approximately \$93,000 in capacity funds from USDA-NIFA, under the Renewable Resources and Extension Act (RREA), to support program delivery related to forestry. These RREA funds, combined with \$573,374 in additional funding and in-kind contributions, helped CNR's Extension programs provide science-based guidance to more than 745,530 landowners, natural resource professionals, and others through 67 educational events and 355 social media products.
- We partnered with the NC Department of Agriculture and Consumer Services to secure \$385,000 from the Tobacco Trust Fund for a new seed research facility for the Christmas Tree Genetics program in the Department of Forestry and Environmental Resources, which supports North Carolina farmers who grow more than 4 million Christmas trees annually (No. 2 in the country).
- Visit NC awarded \$50,444 to Tourism Extension to research the connections between tourism and retirement in North Carolina.
- We raised more than \$91,000 for PRTM Extension's Vacationer Supported Agriculture (VSA) Program, a partnership with 26 vacation realties and 69 farmers from 14 counties, which educated more than 55,000 vacationers about local foods and farms.
- The college hired a Director of Professional Development and Event Management to serve the entire college by coordinating college events, workshops, trainings, and

continuing education programs.

Goal 4. Champion a culture of equity, diversity, inclusion, belonging and well-being in all we do.

- With support from the Provost and in partnership with the College of Education and the Counseling Center, CNR hired an embedded student mental health counselor, a shared position with Education.
- The college continued to sponsor the DIRE (Diversity, Inclusion, and Racial Equity) Dialog Series. This interactive seminar series aims to address the discrimination and systemic inequalities faced by marginalized individuals in fields related to natural resources. To date, 525 students, staff, and faculty from multiple colleges across campus have attended the series (136 participants for FY 22-23).
- ODI, in partnership with the Center for Human Health and the Environment, brought Dr. Kenneth Olden, former head of the National Institute of Environmental Health Sciences, to campus for a presentation. Chancellor Woodson gave the introduction.
- Dr. Corey Johnson, the Karla A. Henderson Distinguished Professor, and PRTM hosted its first Social Justice Symposium. The symposium is organized around Dr. Johnson's graduate course in qualitative methods in social justice research and featured graduate students' research posters and a keynote presentation by Dr. Aishia Brown of the University of Louisville, School of Public Health.
- An ADA Study is ongoing to improve access to Biltmore Hall for students, staff, faculty, and guests; \$350K has been allocated for improvements. This is a collaborative effort with Facilities and Transportation.

Goal 5. Improve university effectiveness through transformative technologies, cutting-edge processes and actionable data.

- Dr. Elizabeth Nichols established the CNR Safety Intern Team (CNR-SIT) composed of undergraduate students from the environmental technology and management program. The interns identified ways to augment University EHS where there were gaps in safety training – e.g., in field safety training, and in particular, the safety training for social science fieldwork. They also assisted in lab safety audits and developing safety communications for the college.

Goal 6. Lead in developing innovative partnerships, entrepreneurial thinking and applied problem-solving.

- Consulting and engineering firm Tetra Tech, Inc. selected CGA to support a five-year, \$100 million contract awarded to the company by the US Environmental Protection Agency (EPA) Office of Research and Development (ORD). The partnership will assess the impacts of global climate change on ecosystems and human health and include modeling risks from future fire, sea level rise, flooding, urbanization, and habitat loss.

CGA is the only academic partner on the contract and one of only two geospatial partners.

Goal 7. Elevate the national and global reputation and visibility of NC State.

- Dr. Whitney Knollenberg was elected to the Travel and Tourism Research Association International Board of Directors. The TTRA is the largest organization in the world dedicated to tourism research.
- Paper Science and Engineering completed a positive review for ABET accreditation. A key observation from the review was the outstanding support for student success coming from the department's academic support staff.
- The Ph.D. in Geospatial Analytics program, now in its fifth year since launching, has over 45 fully funded Ph.D. students.
- A successful national search for the next Department Head of Forest Biomaterials was completed. Dr. Jingxin Wang of West Virginia University will begin his appointment on January 1, 2024.
- We had 382,285 visitors to the College of Natural Resources news site in FY 22-23, and over 84% percent of visitors were new users who came to our site via organic search. 52% of articles written by the CNR Communications team utilizing search engine optimization appear in the top three organic links in Google's search engine results and a number of articles also appear as Featured Snippets and in the People Also Ask section, increasing our reach and brand awareness nationally.
- The College of Natural Resources is ranked nationally as the #1 Best Forest Management/Forest Resources Management School, #1 Best Wood Science and Wood Products/Pulp and Paper Technology School, and #2 Best Parks, Recreation and Leisure Facilities Management School by College Factual.

Highlights From College Units

Academic Affairs

- Efforts to increase first-year enrollment into our under-enrolled majors (Parks, Recreation and Tourism, Environmental Technology and Management (ETM), Forest Management (FOM), and Sustainable Materials and Technology (SMT) paid off as we increased in ETM (86% increase), FOM (55% increase), and SMT (12% increase). We also increased our overall yield by 3%, from 36% to 39%. Within our yield increase, we saw an increase in rural yield (Tier 1 and 2) by 4%, from 55% to 59%.
- Recruitment activities led to a 24% increase in applications from underrepresented students, with Black/African American applications up 32% and Hispanic applications up 23%. Our yield results efforts also showed significant progress by increasing the yield from the past year in Black/African Americans by 38% and Asian students by 145%. Our

rural recruitment efforts showed an increase of 20% in applications with a 4% yield increase.

- In-person and virtual prospective student visitation sessions were held in Fall 2022 and Spring 2023. We offered 46 events with 462 prospective students in attendance. Our recruitment team visited over 45 high schools and community colleges and held over 115 one-on-one student meetings. We participated in five admitted student events that drew 160 students and yielded a 67% confirmation rate.
- In coordination with the Graduate School and the CNR graduate programs, we facilitated the awarding of five Provost's Graduate Fellowships to incoming doctoral students for 2022-2023. We also established new infrastructure for soliciting nominations and making selections for all fellowship opportunities: Provost, Goodnight, and Andrews.
- We continued to cultivate collaborative administration and participation in the Environment First Year Program (ENVFY) by establishing partnerships with EcoVillage, the Science House, and the Sustainability Office; an MOU with University Housing established space for ENFY students in EcoVillage.
- We continue to connect students with employment opportunities and successfully offered our fourth CNR Career Fair on September 29 and 30, 2022. The event drew 202 students and 45 employers in person; virtually, 11 employers posted virtual schedules and 9 students participated.

Research

- We collaborated with the COS to hold a Climate Mixer on April 27, 2023. The event brought together researchers from both colleges to facilitate collaborations, ideate around funding opportunities, and highlight dominant themes where we can collectively spotlight NC State's strengths in climate science.
- The college partnered with CALS, NC Extension, and the Director of Federal Relations, Matt Peterson, to hold a three-day bus tour with approximately 12 congressional aides. The tour included CNR highlights around prescribed fire, Schenck Forest, research initiatives in the Center for Geospatial Analytics with the US Golf Association, and others.
- Selected grants > \$200k funded include:
 - Lincoln Larson and Charlyne Smith, NC Dept of Natural and Cultural Resources, "Recreation Resources Service (RRS)", \$2,712,680
 - Lokendra Pal, US DOE EERE "AI-Enabled Hyperspectral Imaging Augmented with Multi-Sensory Information for Rapid/Real-time Analysis of Non-Recyclable Heterogeneous MSW for Conversion to Energy", \$968,905
 - Fikret Isik, USDA NIFA "Population Genomics of Race Non-specific Disease Resistance in the Endemic Pinus-Cronartium Pathosystem", \$782,568
 - Jason Delborne, US Fish and Wildlife Service "Testing The Waters For Genetic Biocontrol Technologies: Engaging Resource Managers And Key Stakeholders To Understand Decision Landscapes, Information Needs, And Diverse Perspectives", \$499,863
 - Barbara Conkling and Fred Cabbage, USDA "Forest Health Monitoring, Analysis, and Assessment", \$425,474

- Erin Seekamp, US Geological Survey “Examining Diverse Management Objectives and Broadening Stakeholder Engagement for Climate Adaptation Planning of Historic Structures Within the National Park System”, \$399,053
- Roland Kays, NSF “Collaborative Research: Continent-wide Forest Recruitment Change: the Interactions Between Climate, Habitat, and Consumers”, \$333,092
- Chris Jones, Oregon State University (USDA Prime) “US-UK Collab: Long-Distance Dispersal and Disease Spread Under Increased Ecological Complexity”, \$248,162
- Roland Kays, US National Park Service “Density and Movement of Coyotes on the Barrier Islands of Cape Hatteras and Cape Lookout National Seashores to Inform Shorebird and Sea Turtle Management”, \$200,851
- Chris Jones, USDA ARS, ”Developing Integrated Geospatial Architectures to Support Enterprise Deployment of Geographic Information Systems Products at USDA”, \$200,000

Extension and Engagement

- We continue coordination of the NC Sentinel Landscape Partnership, securing \$1.8M from the Department of Defense’s Readiness and Environmental Protection Integration Program to mitigate flooding and wildfires around two military installations.
- More than 570 individuals from around the globe enrolled in a prescribed fire course that will benefit millions of acres of land.
- We increased the awareness of over 235,000 people on invasive species and provided over 600 native trees to replace the Bradford pear trees that were removed.
- We facilitated 21 NC Project Learning Tree program workshops across the state, reaching 383 formal and nonformal educators. Workshops were made possible by over \$13,000 in financial support and 340 in-kind hours from 17 partner organizations. The NC PLT program was also represented at the statewide Environmental Education conference and the NC Science Teachers conference.

Advancement

- We raised \$4,160,147 against a goal of \$4.2M (99%). This compares to a 3-year (FYE) average of \$4,093,958. Annual giving dollars were up 39% from last year (largest increase on campus).
- We had another successful Day of Giving, raising \$1,043,105. We met goals in three challenge matches, securing \$10,500 in donor funds, and also won an additional \$10,365 in leaderboard, social media, and giving challenges. CNR’s Student TAPPI and the Forestry Club placed first and third respectively in the student organization challenges, winning \$2,500 and \$1,000 for their organizations. We placed second in the “Power Your Pack” leaderboard with a 99% increase in total gifts (934) from our next best year (470). Our Natural Resources Foundation Board had 100% participation in the Day of Giving.

Facilities

- Jordan Tower repair is still ongoing, requiring the replacement of brick on all three towers. In collaboration with Facilities, this project moved forward, removing scaffolding and fencing that was in place for almost three years (intended to protect from falling Jennifer does debris). The end result will ensure the safety of employees, students, and guests.
- In partnership with University Libraries and the College of Sciences, three large umbrellas were installed in the Jordan courtyard, adjacent to the Natural Resources Library and Elements Cafe. The umbrellas promote community and safety and create space for outdoor instruction and advising.
- A design study was completed for a new building for teaching, research, and engagement at Schenck Forest. The building would also house our Forest Assets team, serve as a community center for public education on the environment and natural resources, and become an event and gathering space for the college.

Hofmann Forest and Other Forest Assets

- Over the last year, this Sustainable Forestry Initiative/American Tree Farm-certified sustainable forested land base generated approximately \$900K to support active sustainable forest management and resources for student scholarships and faculty support.
- On Hofmann Forest, our monetization strategy for the lands outside of the timber deed area continues to benefit the college, with income of over \$250,000 from the sale of credits in our wetland mitigation banks and over \$250,000 from farm income. The current value of the timber deed income continues to be a significant component of the college budget.

Cumulative List of Major Faculty and Staff Awards

Forest Biomaterials (FB)

- Ronalds Gonzalez - American Cleaning Institute Distinguished Paper Award
- Martin Hubbe - TAPPI Gunnar Nicholson Gold Medal
- Fikret Isik - Fulbright U.S. Scholar Program
- Nathalie Lavoine - Goodnight Early Career Innovator; Sustainability Award - Quanser

Forestry and Environmental Resources (FER)

- Juan Acosta - Outstanding Global Engagement Award Nominee
- Marcelo Ardon - University Faculty Scholar; Outstanding Teacher Award
- Fred Cabbage - Jackson Rigney International Service Award
- Ayse Ercumen - Goodnight Early Career Innovator; Outstanding Global Engagement Award Winner
- Steph Jeffries - Gertrude Cox Award for Innovative Excellence in Teaching and Learning

with Technology; Plant Conservation Educator of the Year Award - Friends of Plant Conservation

- Zakiya Leggett - Goodnight Early Career Innovator
- Larry Nielsen (emeritus) - Sustained Achievement Award - Renewable Natural Resources Foundation
- Rajan Parajuli - Goodnight Early Career Innovator
- Sarah Slover - Award for Excellence
- Robert Scheller - Alumni Association Outstanding Research Award
- Jack Wang - University Faculty Scholar; Excellence in Forest Molecular Biology and Genomics Award - International Union of Forest Research Organizations.

Parks, Recreation and Tourism Management (PRTM)

- Carla Barbieri - Academy of Leisure Sciences Fellow - The Academy of Leisure Sciences
- Jason Bocarro - Owens-Shelton Distinguished Professor in Leadership with a Global Perspective; UNC Board of Governors Award for Excellence in Teaching
- Kyle Bunds - DELTA Faculty Fellow
- Bethany Cutts - Outstanding Engagement Award
- Corey Johnson - Karla A. Henderson Distinguished Professor
- Lincoln Larson - University Faculty Scholar
- Erin Seekamp - Alumni Association Distinguished Graduate Professor Award

Extension

- Jennifer Fawcett- Outstanding Educational Materials Gold Award in Websites – Apps – Educational Technology, awarded by Association of Natural Resources Extension Professionals for Online Prescribed Fire Course for Southeastern Extension Ag Team Award
- Jennifer Fawcett, et. al- The Association of Natural Resources Extension Professionals Achievement Award
- Kelly Oten - Outstanding Extension Award; Academy of Outstanding Faculty in Extension and Engagement Inductee; Outstanding Program in Urban Forestry - North Carolina Urban Forestry Council

Advancement

- Jennifer Piercy - Woman of the Year - TAPPI (Technical Association of the Pulp and Paper Industry)

Academic Affairs Office (AAO)

- Melissa Pasquinelli - Pariser Distinguished Woman in Science Lecturer

Cumulative List of Major Student Awards

Provost Doctoral Fellowships for 2022-2023

- Jorge Franco (FB)
- Chisom Umeileka (FB)
- Shudeepta Sarker (FB)
- Nicole Odell (PRT)
- Austin Lamica (FOR/SECASC)

Global Change Graduate Fellows

- Murry Burgess (FER)
- Austin Lamica (FER)
- Christina Parella (CGA)
- Julianne Reas (PRTM)
- Greivin Ulate (FER)

Undergraduate Students Honors

- Park Scholars: Kairavi Vaibhav Gardé (ES), Niveda Mahesh (ES)
- Goodnight Scholars: Annette Jackson (ES), Gannon Molumby (FER)
- Mathews Medal: Ann Winstead (Environmental Sciences)

Other Notable Graduate Student Awards

- Jenna Abrahamson (CGA) - National Science Foundation Graduate Research Fellowship
- Mollie Gaines (CGA) - named a NASA SCoPE AGU Affiliate
- Shannon McAvoy (CGA) - named an AGU Thriving Earth Exchange Community Science Fellow
- Christina Perella (CGA) - named a Global Change Graduate Fellow through the Climate Adaptation Science Center and received an IALE-NA Travel Award
- Christopher Dunstan (CGA) and Deja Perkins (CGA) - each received a Witherspoon Graduate Fellowship

Administrative Achievements and New Hires

New EHRA Non-Faculty Hires 2022-2023

- William Scott Payne, Extension Assistant, PRTM
- Christopher Johnson, IT Analyst/Programmer I, CGA
- Morgan Alex Godette, Extension Assistant, PRTM
- Sean Bloszies, Research Scholar, FER
- Juliana Regina Quist, Coordinator, CGA
- Swapna Rajarapu, Research Associate, FER

- Karun Pandit, Research Scholar, FER
- Mintewab Bezabih, Research Associate, FER
- Ricardo Cavalheiro, Research Associate, CAMCORE, FER
- James Fouche, Extension Assistant, PRTM
- Jenifer Jones, Academic Advisor, ES
- Jamie Bookwalter, Extension Specialist, FER
- Blake Wilson Covington, Extension Assistant, PRTM
- Mohammad Nasir Shalizi, Extension Assistant, PRTM
- Elliot Nauert, Extension Associate, FER
- Garrett Sumner, Manager, Forest Assets
- Maricar Morales Aguilos, Research Associate, FER

New Professional Track Faculty Hires 2022-2023

- Kwinn Doran, Lecturer, FER

New Tenured/Tenure Track Faculty Hires 2022-2023

- Ivana Mali, Associate Professor, FER
- Kurt Smith, Assistant Professor, FER
- Corey Johnson, Professor, PRTM
- Trevor Walker, Assistant Professor, FER

Offers Made and Accepted 2022-2023

- Stephen Griffin, Program Coordinator, FER
- Jingxin Wang, Department Head, FB