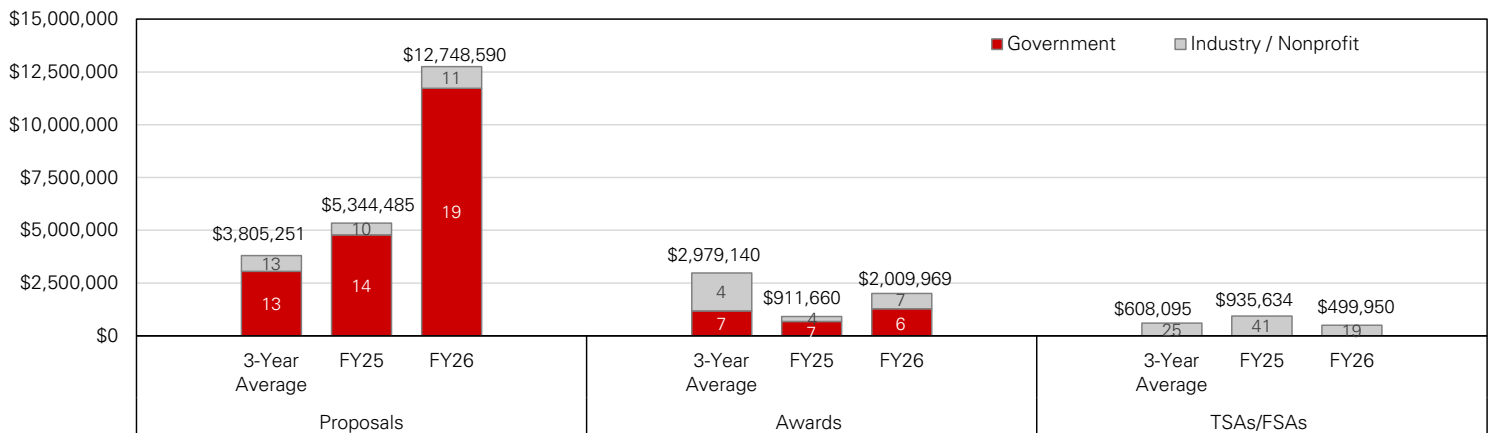


The research programs in the Wilson College of Textiles at NC State University are innovative, life-saving, creative, global and thriving. The college also provides tech service to all stakeholders and supports the economic development of the State and beyond. This newsletter gives a brief overview on the research and tech service activities of the faculty, staff and students during the first quarter of Fiscal Year 2026.

FY26 vs. FY25 vs. Three-Year Average (Q1)



NUMBERS TO DATE (FY26 Q1)

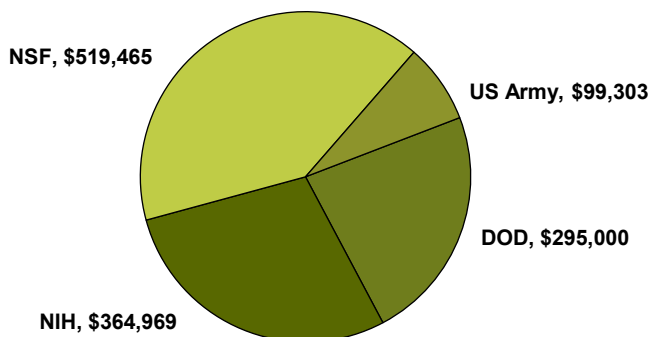
Research Awards Received (\$2,009,969)

- Federal: \$1,278,737 | DOD, NIH, NSF, US Army
- Industry/Nonprofit: \$731,232 | American Chemical Society, NC Innovation, New Jersey Firefighters Mutual Benevolent Association (NJFMBA), Peerless Adversary Enterprises Inc., Stryker Corporation, Tecomsys, University of Miami

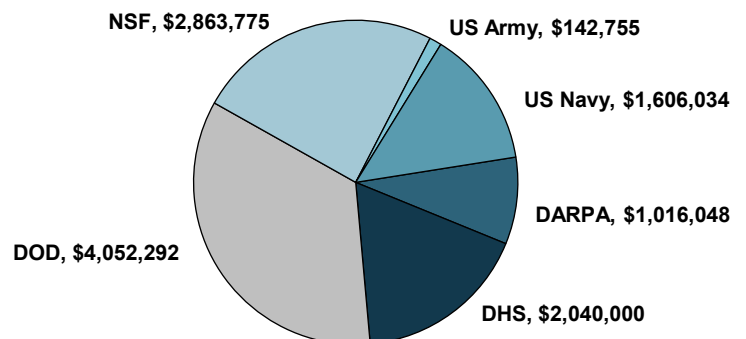
Research Proposals Submitted (\$12,748,590)

- Federal: \$11,720,904 | DARPA, DHS, DOD, NSF, US Army, US Navy
- Industry/Nonprofit: \$1,027,686 | Cotton Inc., Exxon Mobil Corporation, Magnera Corporation, Milliken and Company, New Jersey Firefighters Mutual Benevolent Association (NJFMBA), North Carolina Biotechnology Center, Peerless Adversary Enterprises Inc., Tecomsys, YKK Corporation

FY26 Q1 Federal Awards by Agency



FY26 Q1 Federal Proposals by Agency



NUMBERS TO DATE (FY26 Q1) Cont.

Inter-college Research Proposals (4)

- Wilson College share: \$5,392,611 | With COE, COS, CVM

Inter-college Research Awards (1)

- Wilson College share: \$84,078 | With COE

Inter-dept./unit Research Proposals (1) \$295,000

Inter-dept./unit Research Awards (3) \$1,176,210

Graduate Student Support

- 69 Ph.D. Student RAs (Avg Stipend: \$25,183 / year)
- 8 M.S. Student RAs (Avg Stipend: \$20,338 / year)

RESEARCH AWARDS AT OR ABOVE \$50,000 (FY26 Q1)

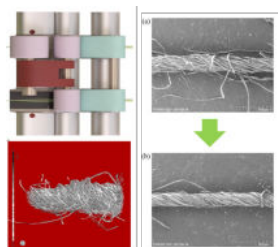
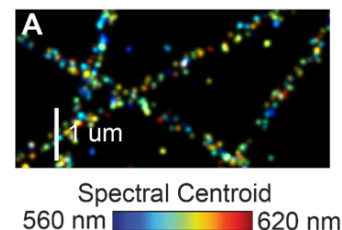
1. Ericka Ford, Karen Leonas, NC Innovation, \$445,823.
2. Jeff Joines, Amanda Mills, Tova Williams Cherry, NSF, \$435,387.
3. Yang Zhang, NIH, \$364,969.
4. Andre West, Melissa Sharp, Rong Yin, Next Defense Solutions (DOD), \$295,000.
5. Thomas Schroeder, American Chemical Society, \$110,000.
6. Mengmeng Zhu, Karen Chen, NSF, \$84,078.
7. R. Bryan Ormond, Leidos Inc. (DEVCOM Chemical Biological Center), \$54,503.
8. R. Bryan Ormond, NJFMBA, \$50,000.

RESEARCH HIGHLIGHTS

The National Science Foundation (NSF) CAREER Award is one of the most prestigious honors for early-career faculty. It recognizes outstanding researchers who demonstrate the potential to serve as academic role models through innovative research and integrated education. This year marks a historic milestone for the Wilson College of Textiles: for the first time ever, two faculty members have received NSF CAREER Awards in the same cycle. These awards not only reflect the groundbreaking work being done in the college but also elevate our national reputation for excellence in research and education.

Understanding and Controlling Single-Molecule Fluorescence Spectral Heterogeneity of Organic Fluorophores (Yang Zhang).

Rooted in the Wilson College of Textiles, this NSF CAREER project investigates the chemical mechanisms driving variability in single-molecule fluorescence spectra of dyes across space and time. Led by Professor Yang Zhang, it connects dye chemistry, single-molecule imaging, and deep learning to advance understanding and develop next-generation fluorescent probes for super-resolution microscopy. The long-term goal is to characterize and control single-molecule fluorescence spectral heterogeneity (smFLUSH) in dye families such as Rhodamine, BODIPY, Cyanine, and Squaraine. Core efforts include building a high-throughput spectroscopy platform with deep-learning analytics and synthesizing model compounds to validate structure–property relationships. The project will address questions about smFLUSH measurement precision, molecular structure and environment, and strategies to chemically modulate spectra. In parallel, education and outreach will integrate color chemistry and machine learning into K–12 through graduate curricula, with statewide engagement through the North Carolina Science Olympiad, positioning the project as a catalyst for interdisciplinary science and innovation.



Reinventing Hemp as a Premier Sustainable Textile Fiber (Rong Yin).

This NSF Career Project advances Wilson College's leadership in sustainable fiber development through the reinvention of industrial hemp as a high-performance textile material. Hemp offers a renewable and environmentally friendly alternative to cotton and synthetics, yet challenges in fiber quality and processability have limited its broader adoption. Dr. Rong Yin's team is addressing these challenges through a multi-pronged approach: developing scalable hemp fiber separation and spinning technologies, applying machine learning and micro-CT imaging to model fiber behavior, and engaging students in STEM outreach through hands-on hemp yarn production activities. This integrative research supports

innovation across the hemp textile value chain and fosters new collaborations between academia and industry, ultimately aiming to establish hemp as a cornerstone of sustainable textile manufacturing.