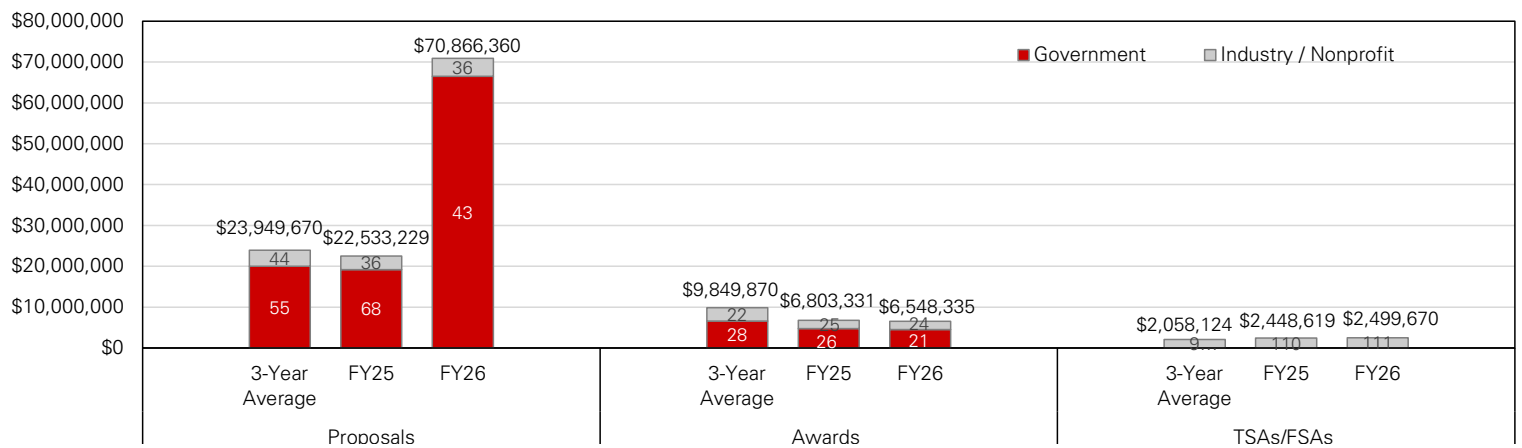


The research programs in the Wilson College of Textiles at NC State University are innovative, life-saving, creative, global and thriving. The college also provides tech service to all stakeholders and supports the economic development of the State and beyond. This newsletter gives a brief overview on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

FY26 vs. FY25 vs. Three-Year Average (Q1 - Q4)



NUMBERS TO DATE (FY26 Q4)

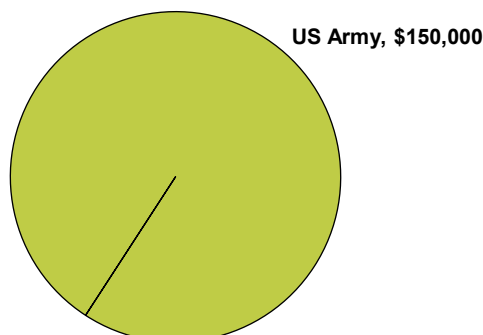
Research Awards Received (\$930,742)

- Federal: \$150,000 | US Army
- Industry/Nonprofit: \$780,742 | American Heart Association, KITECH, National Endowment for the Humanities, Henkel Corporation, North Carolina Biotechnology Center, ReliftMD LLC, ROSF

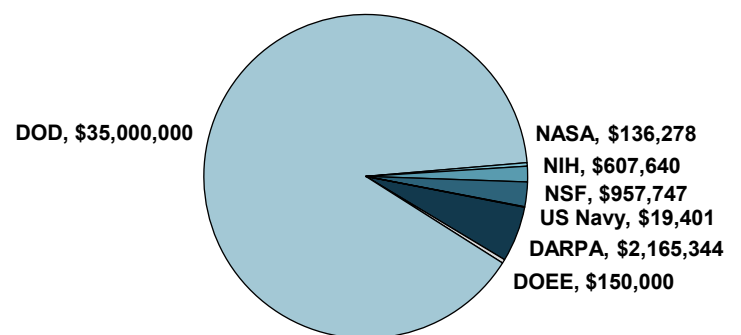
Research Proposals Submitted (\$40,397,914)

- Federal: \$39,036,410 | Defense Advanced Research Projects Agency, Department of Energy and Environment, Department of Defense, National Aeronautics and Space Administration, National Institutes of Health, National Science Foundation, US Navy
- Industry/Nonprofit: \$1,361,504 | American Chemical Society, CARE, Cotton Inc., H&M Foundation, Industrial Hemp Research Foundation, Kern Family Foundation, Puck Enterprises, ReliftMD LLC, ROSF, UL Fire Safety Research Institute

FY26 Q4 Federal Awards by Agency



FY26 Q4 Federal Proposals by Agency



NUMBERS TO DATE (FY26 Q4) Cont.

Inter-college Research Proposals (1)

- Wilson College share: \$2,165,344 | With COE

Inter-college Research Awards (2)

- Wilson College share: \$262,150 | With CHASS, CVM

Inter-dept./unit Research Proposals (2) \$85,000
Inter-dept./unit Research Awards (4) \$35,296,278

Graduate Student Support

- 76 Ph.D. Student RAs (Avg. Stipend: \$24,768 / year)
- 11 M.S. Student RAs (Avg. Stipend: \$21,065 / year)

RESEARCH AWARDS AT OR ABOVE \$50,000 (FY26 Q4)

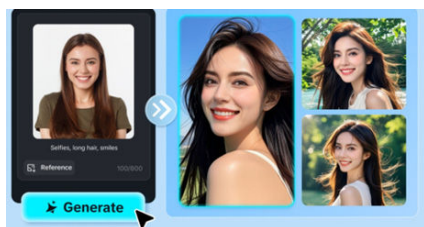
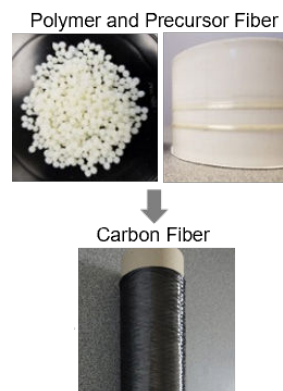
1. Eunkyong Shim, Sonja Salmon, KITECH, \$287,838.
2. Jessica Gluck, Brian Gilger, North Carolina Biotechnology Center, \$135,377.
3. Kate Nartker, Alicia McGill, Anne Porterfield, Janie Woodbridge, David Zonderman, National Endowment for the Humanities (NEH), \$126,773.
4. Nelson Vinueza Benitez, Henkel Corporation, \$106,311.
5. Jessica Gluck, Brian Gilger, American Heart Association, \$77,000.
6. Xiangwu Zhang, Janie Woodbridge, Storagenenergy Technologies, Inc., \$75,000.

Note: One confidential project valued at \$75,000 is not included in this list.

RESEARCH HIGHLIGHTS

Preparation of Sustainable and High Quality Carbon Fiber Precursor Polymers and Fibers.

Carbon fibers are low density high-performance materials that have the potential to transform the automotive, aerospace, and construction industries by making them more energy and fuel efficient through lightweighting, without sacrificing mechanical performance. The production of carbon fiber involves three key steps: 1) precursor polymer synthesis, 2) fiber spinning, and 3) thermal treatment of the precursor fiber into a graphitized material. About 90% of carbon fibers are produced from polyacrylonitrile (PAN), a petroleum-derived polymer that emits approximately 38,000 kilograms of carbon dioxide (CO₂) per ton through its synthesis and conversion into precursor fiber. To enable the production of low CO₂ emission carbon fiber from bio-renewable feedstock, Dr. Januka Budhathoki-Uprety and Dr. Ericka Ford are investigating polymeric materials from carbon-negative sources. Dr. Budhathoki-Uprety's team is investigating the chemical synthesis of polymers from the bio-renewable acrylonitrile and other comonomers, and Dr. Ford's team is investigating fiber spinning technology to convert those polymers into high quality fibers. This research is supported by The Textile Innovation Engine.



Understanding Adolescent Digital Identity and Well-Being in the Age of

Generative AI. Understanding Adolescent Digital Identity and Well-Being in the Age of Generative AI. Generative artificial intelligence is transforming how young people construct and express their digital identities. By enabling highly personalized self-representations, generative AI creates new opportunities for creativity and identity exploration while raising important questions about authenticity, self-evaluation, and consumer

well-being. Professor Yingjiao Xu and her team are investigating how adolescents interact with AI-generated selfies and negotiate their identities in digital environments. The project examines how these AI-generated images become personalized reference points that influence self-perception, encourage exploration of possible selves, and shape digital self-presentation. In doing so, it offers new insights into identity development and human-AI interaction during a critical stage of adolescence. More broadly, this work advances the understanding of consumer behavior and well-being in AI-mediated environments, providing a foundation for future research on digital consumer behavior while informing the design of consumer-centered AI experiences that promote authenticity, healthy self-expression, and positive digital experiences.conditions.