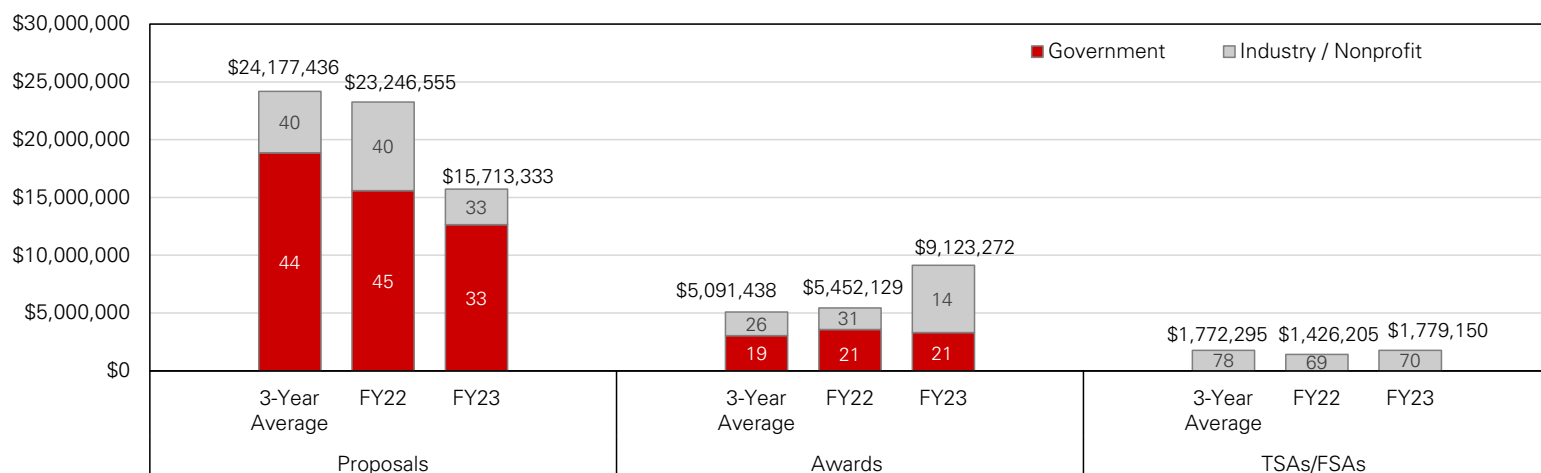


The research programs in the Wilson College of Textiles at NC State University are innovative, life-saving, creative, global and thriving. The college also provides tech service to all stakeholders and supports the economic development of the State and beyond. This newsletter gives a brief overview on the research and tech service activities of the faculty, staff and students during the third quarter of Fiscal Year 2023.

FY23 vs. FY22 vs. Three-Year Average (Q1 - Q3)



NUMBERS TO DATE (FY23 Q3)

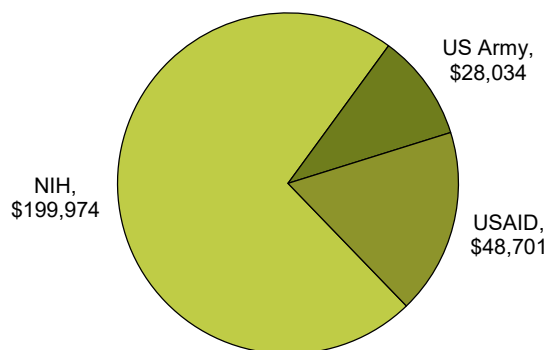
Research Awards Received (\$805,673)

- Federal: \$276,709 | NIH, US Army, USAID
- Industry/Nonprofit: \$528,964 | Australian Wool Innovation Limited, Cotton, Inc., Duke University, KITECH, SCEYE Inc., Under Armour

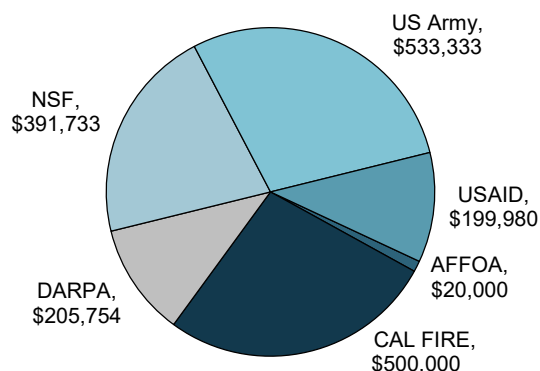
Research Proposals Submitted (\$3,323,206)

- Federal: \$1,850,800 | AFFOA, CAL FIRE, DARPA, NSF, US Army, USAID
- Industry/Nonprofit: \$1,472,406 | Aarhus University (Novo Nordisk Foundation), Australian Wool Innovation Limited, Chancellor's Innovation Fund, Eurasia Foundation, KITECH, SCEYE Inc., Walmart Foundation

FY23 Q3 Federal Awards by Agency



FY23 Q3 Federal Proposals by Agency



NUMBERS TO DATE (FY23 Q3) Cont.

Inter-college Research Proposals (3)

- Wilson College share: \$122,786
- With CALS, CED, COE, COS

Inter-college Research Awards (2)

- Wilson College share: \$154,858
- With COE, CVM

Inter-department/unit Research Proposals (2) \$2,500,000

Inter-department/unit Research Awards (2) \$215,795

Graduate Student Support

- 52 Ph.D. Student RAs (Avg Stipend: \$20,078.23 / year)
- 12 M.S. Student RAs (Avg Stipend: \$14,804.17 / year)

RESEARCH AWARDS AT OR ABOVE \$50,000 (FY23 Q3)

1. Emiel DenHartog, and Minyoung Suh, Under Armour, \$219,688. UNSDG 3 & 9
2. Abdelfattah Seyam, SCEYE, Inc., \$152,183. UNSDG 9 & 13
3. Yang Zhang, National Institutes of Health, \$199,974. UNSDG 6

Note: UNSDG stands for United Nations Sustainable Development Goals.

RESEARCH HIGHLIGHTS

The Wilson College Strategic Collaborative Research and Innovation Fund (SCRIF) intends to support strategic research and innovation initiatives that help Wilson College to remain globally competitive, to secure and nurture research leadership, to enter new research areas. SCRIF fosters collaborative efforts among faculty from different departments/units and disciplines within Wilson College that lead to sustained interdisciplinary research programs and projects. This competitive funding opportunity helps identify areas of Wilson College interdisciplinary strengths that present opportunities for cross-department/unit collaboration and sustainable future external funding. The following project was selected by the College Research Committee for funding in spring 2023 (\$150,000 for three years).

Novel Textile-based Wearable Systems for Human-Machine Interaction (Rong Yin, Kristin Thoney-Barletta, Amanda Mills, Warren Jasper, Yang Liu, and Andre West). Human-machine interfaces are one of the most critical emerging technologies identified by the federal government as particularly important to national security. Unlike conventional interfaces that are typically made of hard materials and can be uncomfortable to use, textile-based interfaces, on the other hand, are soft, flexible, and conformable to the user's body or clothing, and offer new possibilities for sensing and actuation. But designing high-experience and human-centered smart wearable devices poses fundamental challenges (materials and fabrication, noise and interference, and so on) that have not been solved by existing approaches. Professors Rong Yin, Kristin Thoney-Barletta, Amanda Mills, Warren Jasper, Yang Liu, and Andre West are collaborating across disciplines to help overcome these challenges by developing a novel embroidery-based paradigm, predictive models with high accuracy, and system-level integration and applications. Innovation in this emerging area fits exactly with the fundamental research and education mission of the Wilson College, and it positions us as a global wearable research partner for the long term.

