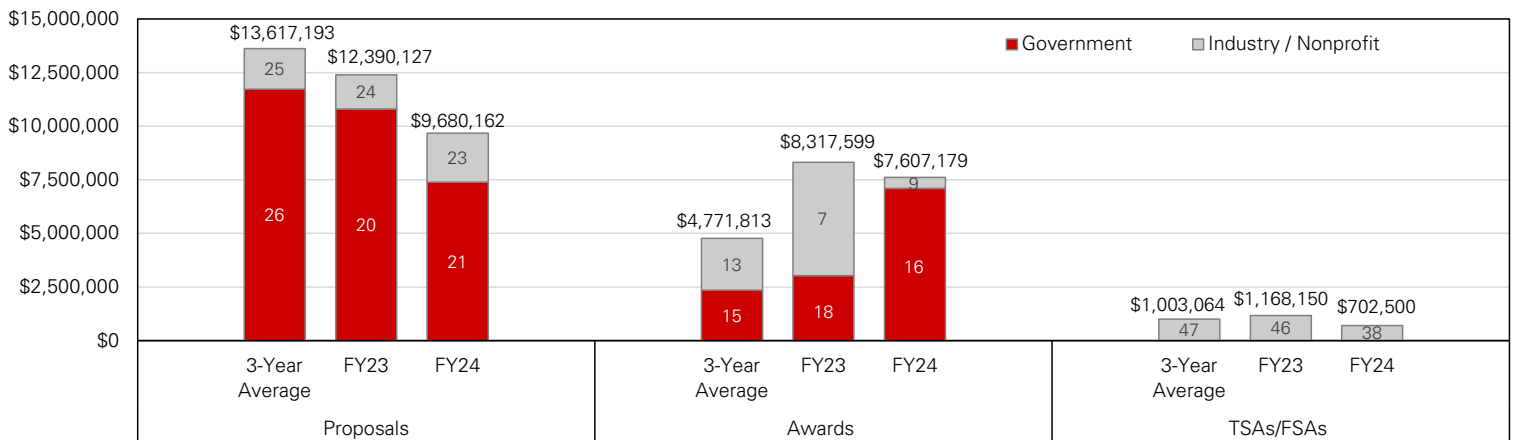


The research programs in the Wilson College of Textiles at NC State University are innovative, life-saving, creative, global and thriving. The college also provides tech service to all stakeholders and supports the economic development of the State and beyond. This newsletter gives a brief overview on the research and tech service activities of the faculty, staff and students during the second quarter of Fiscal Year 2024.

FY24 vs. FY23 vs. Three-Year Average (Q1 + Q2)

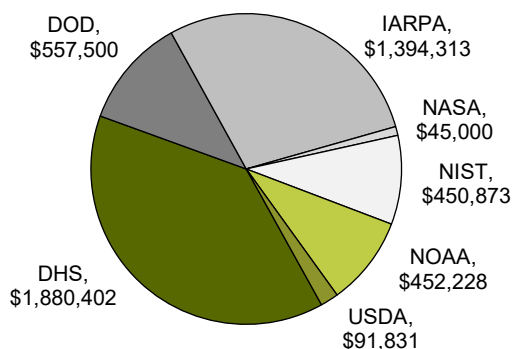


NUMBERS TO DATE (FY24 Q2)

Research Awards Received (\$5,251,382)

- Federal: \$4,872,147 | DHS, DOD, IARPA, NASA, NIST, NOAA, USDA
- Industry/Nonprofit: \$379,235 | American Society for Eng. Education, Center for Human Health and the Environment, Cotton Inc., NanoSonic, New York Sea Grant, IES, SCEYE, Sherwin-Williams Comp., SRI Int'l, Technology Holding, TDA Research

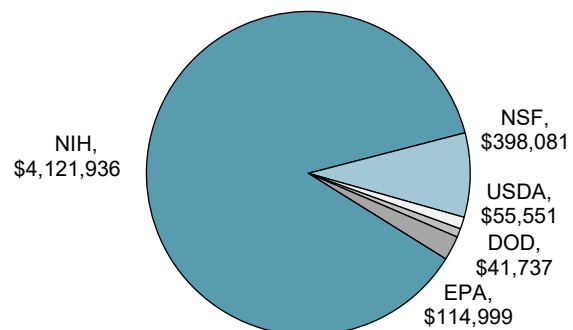
FY24 Q2 Federal Awards by Agency



Research Proposals Submitted (\$6,217,769)

- Federal: \$4,732,304 | DOD, EPA, NIH, NSF, USDA
- Industry/Nonprofit: \$1,485,465 | American Society for Engineering Education, Cotton Inc., Eastman Chemical Company, Epitome Research and Innovation., Gym Rags, Homeworld Collective, Lion Group, Phoenix Group of Virginia, Precision Combustion, SCEYE, Sherwin-Williams Company

FY24 Q2 Federal Proposals by Agency



NUMBERS TO DATE (FY24 Q2) Cont.

Inter-college Research Proposals (2)

- Wilson College share: \$2,353,007
- With CALS, COE, CVM

Inter-college Research Awards (5)

- Wilson College share: \$3,804,923
- With CALS, COE, CVM, UNC Sea Grant

Inter-dept./unit Research Proposals (2) \$74,749

Inter-dept./unit Research Awards (2) \$1,493,313

Graduate Student Support

- 75 Ph.D. Student RAs (Avg Stipend: \$21,577 / year)
- 7 M.S. Student RAs (Avg Stipend: \$15,371 / year)

RESEARCH AWARDS AT OR ABOVE \$50,000 (FY24 Q2)

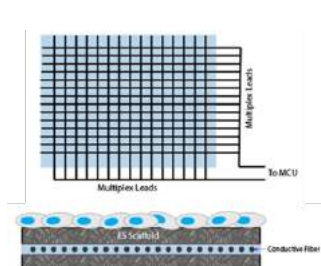
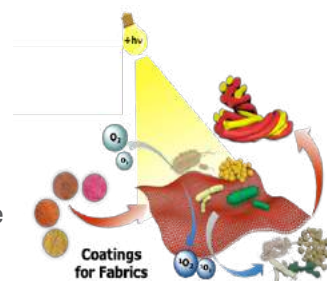
1. Bryan Ormond, Ronald Baynes, FEMA, \$1,465,678. SDG 3 & 8
2. Amanda Mills, Wei Gao, Cassandra Kwon, Veena Misra, SRI International, \$1,394,313. SDG 3
3. Andre West, Technology Holding, LLC (DOD), \$500,000. SDG 12 & 15
4. Karen Leonas, Frank Lopez, New York Sea Grant (NOAA), \$452,228. SDG 12 & 14
5. Cassandra Kwon, Florida State University (DHS), \$414,724. SDG 3 & 8
6. Bryan Ormond, Ronald Baynes, NIST, \$400,873. SDG 3 & 8
7. Abdel-Fattah Seyam, SCEYE Inc., \$112,219. SDG 5 & 9
8. Ericka Ford, Janie Woodbridge, Sherwin-Williams Company, \$99,000. SDG 9
9. Byoungcho Jin, Daniela Jones, Katherine McKee, USDA - NIFA, \$91,831. SDG 9 & 12
10. Jialong Shen, Sonja Salmon, Cotton, Inc., \$76,466. SDG 15
11. Andre West, IES (NIST), \$50,000. SDG 17

Note: UNSDG stands for United Nations Sustainable Development Goals.

RESEARCH HIGHLIGHTS

The Wilson College Research Opportunity Seed Fund (ROSF) targets to promote interdisciplinary, faculty-initiated research projects with potential for extramural support. The following two projects (\$10,000 each) were selected by the College Research Committee for funding in Spring 2024.

Modeling and Deactivating Aerosolized Pathogens (Kavita Mathur, Jessica M. Gluck, Warren Jasper and Frank Scholle). Limited research and a lack of scientific understanding into the modes of transmission of pathogens on soft surfaces, as evidenced by the recent COVID19 pandemic, has led to poor public health outcomes and policies in the US and by the WHO. While vector and vehicle transmissions (soft surfaces and air) are the two major modes of transmission of pathogens, a fundamental understanding (i.e. predictive models) of vehicle transmission is not currently available. Drs. Mathur, Jasper, Gluck and Scholle are working together to evaluate the role of textiles in both the spread and capture of pathogens, deactivate these aerosolized pathogens, and develop effective strategies in combating their growth and transmission. Textiles, they assert, are an underutilized pivotal asset for advancing global health and preventing the spread of future epidemics and pandemics.



Developing a Conductive Fibrous Scaffold with Electrical Feedback Capability (Jessica M. Gluck and Amanda Mills). Developing a fibrous conductive material with electrical feedback capabilities will enable Drs. Gluck and Mills to study the effects of cardiac rhythm disorders in vitro at a cellular level. Currently, it is estimated more than 16.5 million people in the US suffer from a cardiac rhythm disorder, or a disruption in the normal electrical conduction governing the synchronous beating of your heart. This new conductive material will enable us to better understand how that synchronous beating rhythm is established in the developing heart by providing real-time electrical feedback based on individual cell's beating behavior. We will also be able to "pace" cells using this system. This research yields foundational insights into rhythm disorder development, paving the way for durable treatment interventions to correct arrhythmias.