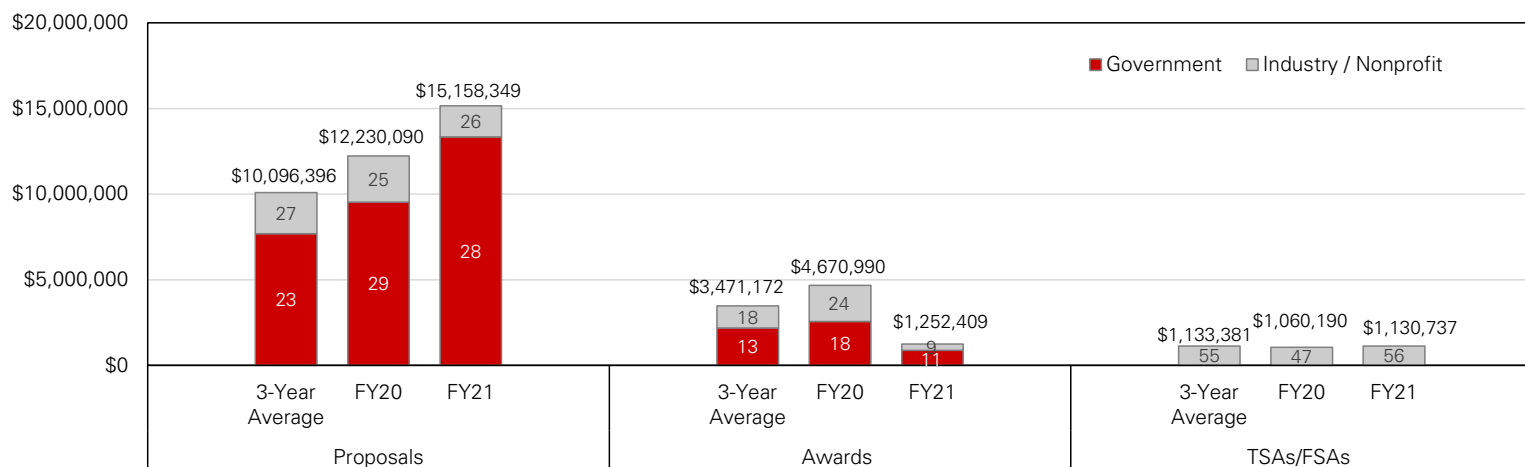


The research programs in the Wilson College of Textiles at NC State University are innovative, life-saving, creative, global and thriving. The college also provides tech service to all stakeholders and supports the economic development of the State and beyond. This newsletter gives a brief overview on the research and tech service activities of the faculty, staff and students during the second quarter of Fiscal Year 2021.

FY21 vs. FY20 vs. Three-Year Average (Q1 + Q2)



NUMBERS TO DATE (FY21 Q2)

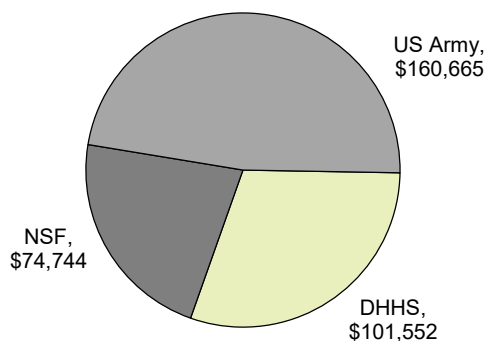
Research Awards Received (\$541,679)

- Federal: \$336,961 | DHHS, NSF, US Army
- Industry/Non-Profit: \$204,718 | EPRO Advance Technology, Lion Group Inc., UlexiTech LLC.

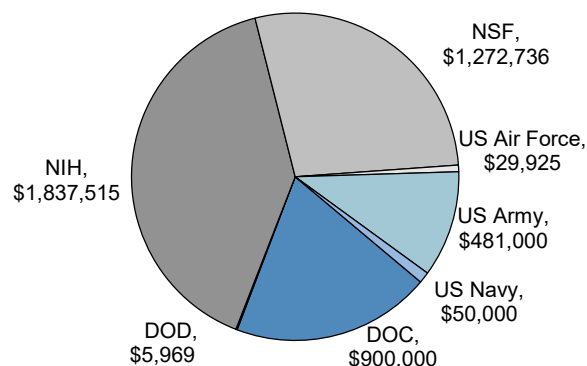
Research Proposals Submitted (\$5,926,444)

- Federal: \$4,577,145 | DOC, DOD, NIH, NSF, US Air Force, US Army, US Navy
- Industry/Non-Profit: \$1,349,299 | American Heart Assoc., Cotton Inc., EPRO Advance Technology, Enduring Hearts Inc., High Fashion Int'l Ltd., Johnson & Johnson, Spencer Foundation, UlexiTech LLC.

FY21 Q2 Federal Awards by Agency



FY21 Q2 Federal Proposals by Agency



NUMBERS TO DATE (FY21 Q2) Cont.

Inter-college Research Proposals (3)

- Wilson College share: \$1,113,679
- With CHASS, CNR, COE

Inter-college Research Awards (2)

- Wilson College share: \$101,552
- With COE, COS, Graduate School

Inter-department/unit Research Proposals (2) \$951,000

Inter-department/unit Research Awards (1) \$160,665

Graduate Student Support

- 72 Ph.D. Student RAs (Avg Stipend: \$17,490 / year)
- 21 M.S. Student RAs (Avg Stipend: \$12,867 / year)

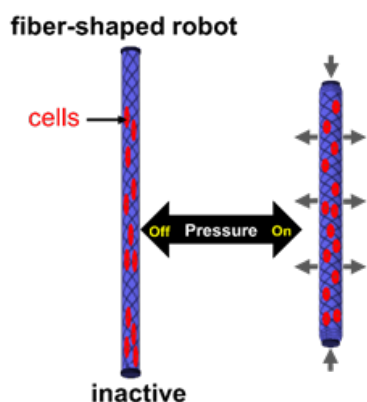
RESEARCH AWARDS ABOVE \$50,000 (FY21 Q2)

1. Wei Gao and Xiangwu Zhang, Storagenergy Technologies, Inc. (US Army), \$160,665.
2. Xiangwu Zhang, EPRO Advance Technology, \$135,144.
3. Emiel DenHartog and Tiegang Fang, Centers for Disease Control & Prevention, \$101,552.
4. Jesse Jur, NCSU Advanced Self Powered Systems of Sensors and Technologies (ASSIST) Center, \$74,744.

RESEARCH HIGHLIGHTS

The Wilson College Research Opportunity Seed Fund (ROSF) was launched in 2017 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 2021.

Aesthetic Impact of Assistive Devices (Kate Nartker, Anne Porterfield, and Katherine Annett-Hitchcock). The use of an assistive device may indicate that one's health status has changed, potentially eliciting feelings of isolation and stigmatization. Undefined stylistic codes and the lack of aesthetics have contributed to stigmatizing designs in the field of Assistive Technology, resulting in negative outcomes such as abandonment or rejection of the device. While research into the development of assistive devices has focused largely on functionality, this study by Professors Kate Nartker, Anne Porterfield and Katherine Annett-Hitchcock aims to assess how aesthetics can be engaged to improve utilization of a device and promote positive user outcomes.



Pneumatic-driven Fiber-shaped Robot as Active Scaffolds for Cell Culture (Xiaomeng Fang and Jessica Gluck). The active scaffold refers to the cell-supporting substrate capable of generating periods of mechanical stimulations throughout cell culture, which has been shown to promote cellular growth, differentiation, survival and proliferation, as well as regulate gene expression and ultimately influence cellular function. Professors Xiaomeng Fang and Jessica Gluck are collaborating to develop a 3D pneumatic fiber-shaped scaffold that is able to generate mechanical stimulus with controlled force/strain/frequency upon pressure actuation, thus mimicking the microenvironment in vivo and providing fibrous support to cells. The developed devices have great potential in enhancing the current tissue generation technology that has recently emerged as an effective therapy to repair or regenerate damaged or malfunctioned tissues.