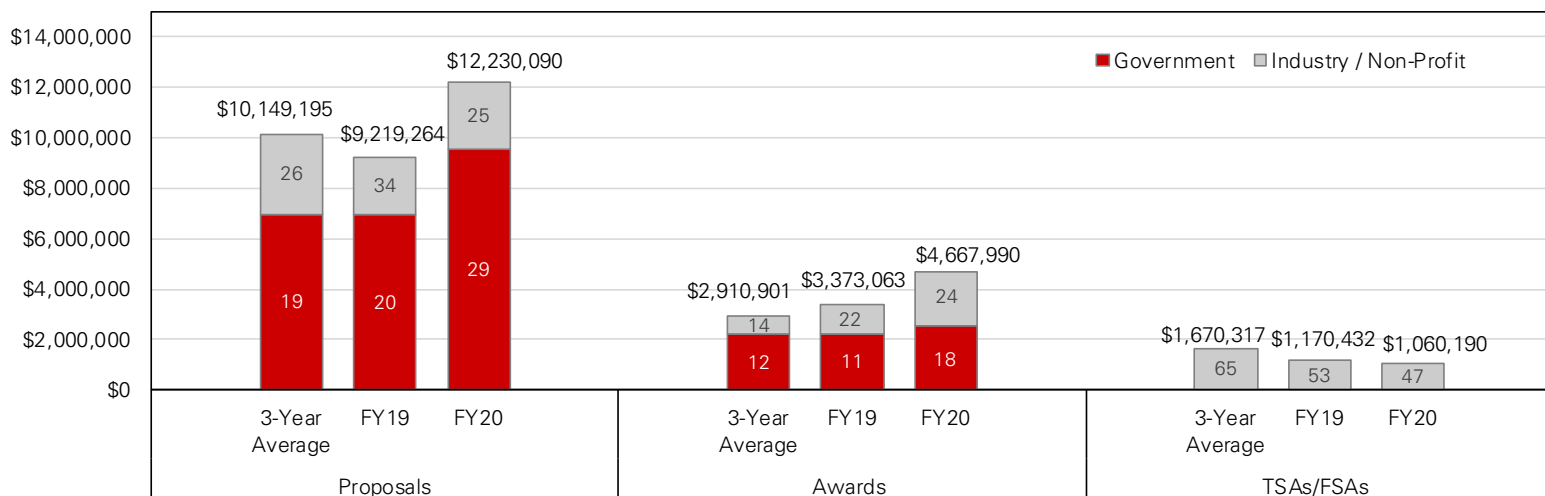


The research programs in the Wilson College of Textiles at NC State University are innovative, life-saving, creative, global and thriving. The College also provides tech service to all stakeholders and supports the economic development of the State and beyond. This newsletter gives a brief overview on the research and tech service activities of the faculty, staff and students during the second quarter of Fiscal Year 2020.

## FY20 vs. FY19 vs. Three-Year Average (Q1 + Q2)

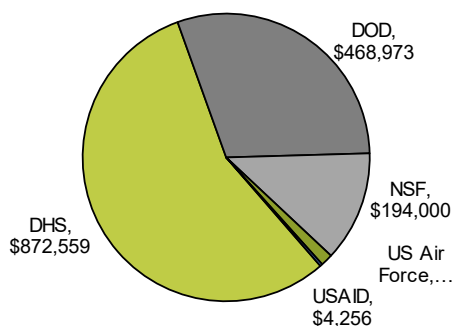


## NUMBERS TO DATE (FY20 Q2)

### Research Awards Received (\$2,551,383)

- Federal: \$1,561,138 | DHS, DOD, NSF, US Air Force, USAID
- Industry/Non-Profit: \$990,245 | Academy of Finland; ATEX; ASU; COMPETE; Cotton, Inc.; Eastman; Kaneka America's Holding Inc.; NC Biotech Center; NWI; SCEYE SARL

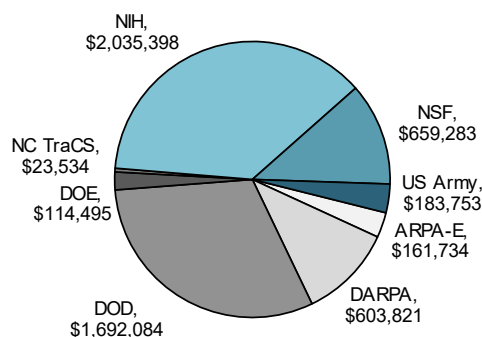
FY20 Q2 Federal Awards by Agency



### Research Proposals Submitted (\$7,661,854)

- Federal: \$5,474,102 | ARPA-E, DARPA, DOD, DOE, NIH, NSF, US Army
- Industry/Non-Profit: \$2,187,752 | American Assoc. of Univ. Women; AHA; ASU; COMPETE; Cotton, Inc.; Eastman; J&J; Kaneka America's Holding Inc.; NC Biotech Center; SCEYE SARL; W.L. Gore & Assoc., Inc.

FY20 Q2 Federal Proposals by Agency



## NUMBERS TO DATE (FY20 Q2) Cont.

### Inter-college Research Proposals (4)

- Wilson College share: \$224,307
- With COE, COS

### Inter-college Research Awards (2)

- Wilson College share: \$71,350
- With COE

### Inter-department/unit Research Proposals (1) \$35,682

### Inter-department/unit Research Awards (3) \$1,267,608

### Graduate Student Support

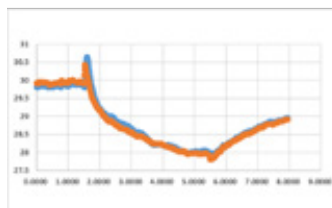
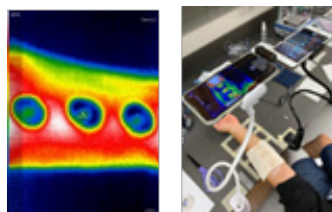
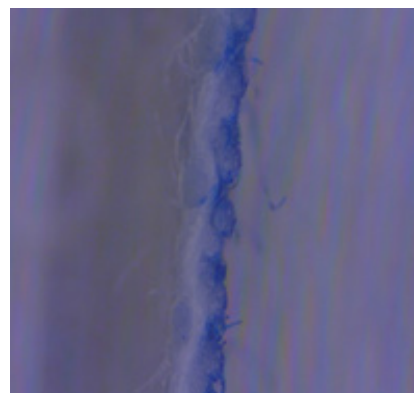
- 77 Ph.D. Student RAs (Avg Stipend: \$17,090 / year)
- 19 M.S. Student RAs (Avg Stipend: \$15,228 / year)

## RESEARCH AWARDS ABOVE \$50,000 (FY20 Q2)

1. Roger Barker, Emiel DenHartog, Robert Ormond, Cassandra Kwon, Donald Thompson, Marc Mathews, Advanced Technology International (US Dept. of Defense), \$468,973.
2. Roger Barker, Robert Ormond, Cassandra Kwon, US Dept. of Homeland Security (DHS), \$750,000.
3. Philip Bradford, Mark Pankow, NCSU Nonwovens Institute, \$50,000.
4. Harold Freeman, Malgorzata Szymczyk, Gisela Umbuzeiro, Academy of Finland, \$400,884.
5. Jesse Jur, ASSIST Center, \$145,000.
6. Cassandra Kwon, Florida State University (US Dept. of Homeland Security), \$122,559.
7. Abdelfattah Seyam, SCEYE SARL, \$263,687.
8. Nelson Vinueza Benitez, Cotton, Inc., \$71,848.

## RESEARCH HIGHLIGHTS

**Optimization of digital print colorant and color management systems** reduces cost, improves performance and reduces or eliminates chemicals in our waterways. Working collaboratively with fellow faculty members such as Profs. Harold Freeman, Marguerite Moore, Kristin Thoney-Barletta and Renzo Shamey, and industry members such as Everlight, HP, Lubrizol Corporation, and Walmart, Prof. Lisa Chapman has secured competitive grants to fund research in digital printing. High-speed digital printers, capable of printing 70 m/min, are now competitive with rotary screen printing in terms of speed and cost and have a competitive advantage when printing shorter runs or multiple colorways. Prof. Chapman's team takes a whole system approach, working to engineer fiber, yarn, substrate, pre-treatment, colorant, and printing systems to develop a highly competitive manufacturing system that delivers a superior product at a value to the customer, ultimately contributing to economic development via the creation of innovative products and services for the global textile complex.



### Clothing Biophysics - physical interaction between human, clothing and the environment.

In most of his career, Prof. Emiel DenHartog has studied thermal physiology and protection such as chemical-biological protection, but also ballistics, heat and flame and camouflage. Recently, his work has focused more on the local interaction of fabrics and materials with the skin and the effects of the local microclimate on skin health. The main focus of research is on using and developing test and evaluation methods for functional textiles to demonstrate and quantify protection, performance, health and comfort of clothing. He is pursuing and enjoying active collaborations with a wide range of scientists providing measurement and evaluation support on anything related to improvements on human health, performance and comfort. His list of publications reflects a large international network of collaboration with widely known experts in this field.