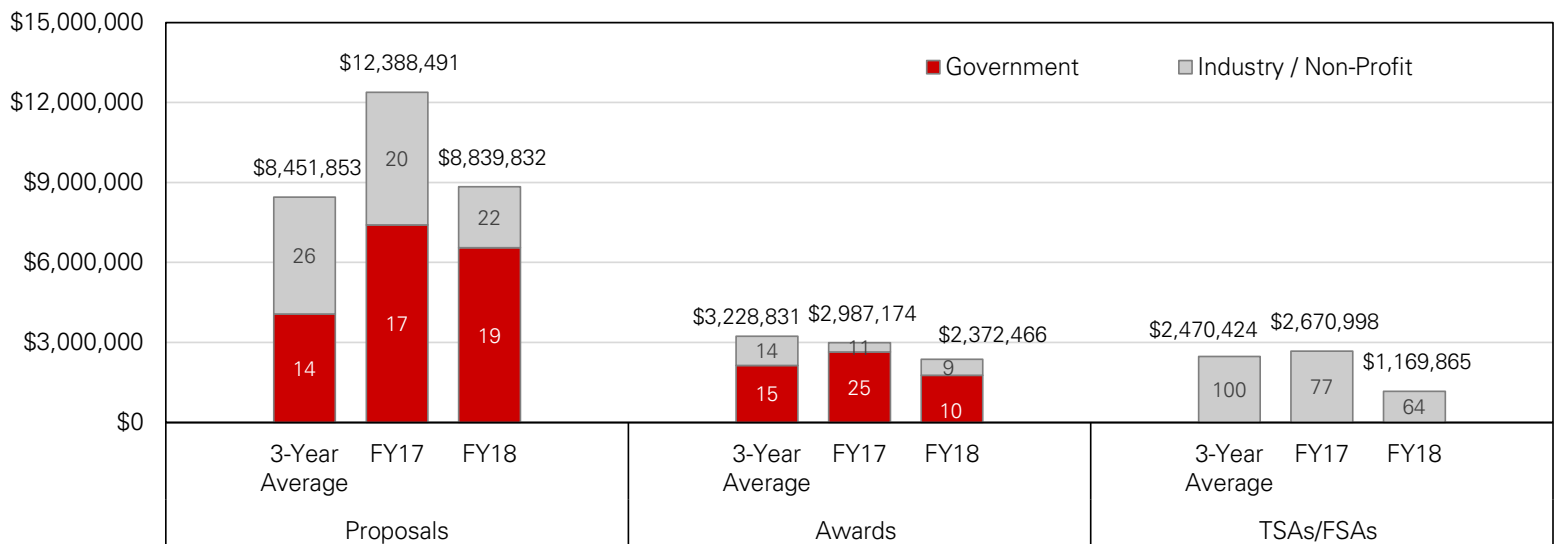


The research programs in the College of Textiles at NC State University are innovative, life-saving, creative, global and thriving. The College also provides tech service to all stakeholders and supports the economic development of the State and beyond. This newsletter gives a brief overview on the research and tech service activities of the faculty, staff and students during the second quarter of Fiscal Year 2018.

## FY18 vs. FY17 vs. Three-Year Average (Q1 + Q2)

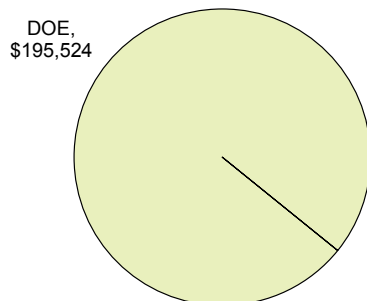


## NUMBERS TO DATE (FY18 Q2)

### Research Awards Received (\$732,168)

- Federal: \$195,524 | DOE
- Industry: \$536,644 | ECSI Fibrotools, FUJIFILM, Hanesbrands, IVCC, SCEYE SARL, Thermo-Flex Technologies

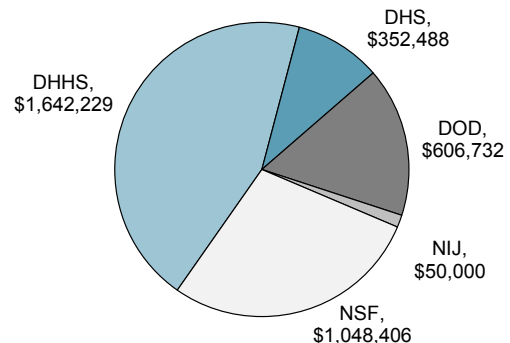
FY18 Q2 Federal Awards by Agency



### Research Proposals Submitted (\$5,223,293)

- Federal: \$3,699,855 | DHHS, DHS, DOD, NIJ, NSF
- Industry: \$1,523,438 | Circulex, Cotton Inc., CRDC, Eastman, ECSI Fibrotools, FUJIFILM, Fortified Textiles, ITG, Johnson & Johnson, Luna Innoations, Morse

FY18 Q2 Federal Awards by Agency



## NUMBERS TO DATE (FY18 Q2) Cont.

### Inter-college Research Proposals (2)

- COT share: \$1,737,470
- With CALS, COE, NCICS

### Inter-college Research Awards (1)

- COT share: \$108,522
- With CALS, CNR

### Inter-department Research Proposals (2)

- \$658,426

### Graduate Student Support

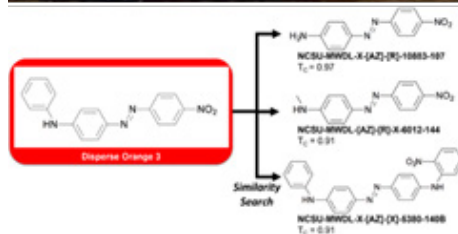
- 52 Ph.D. Student RAs (Avg Stipend: \$18,242 / year)
- 18 M.S. Student RAs (Avg Stipend: \$15,528 / year)

## RESEARCH AWARDS ABOVE \$50,000 (FY18 Q2)

1. Xiangwu Zhang, \$240,048, SCEYE SARL
2. Xiangwu Zhang, \$195,524, West Virginia University (DOE)
3. Andre West, Charles Apperson, Marian McCord, Richard Roe, \$108,522, Innovative Vector Control Consortium (IVCC)
4. Jesse Jur, \$80,000, Thermo-Flex Technologies, Inc. (Simmons Bedding Co.)
5. Jesse Jur, \$50,000, FUJIFILM Corporation

## RESEARCH HIGHLIGHTS

The use of advanced analytics in a big data society is essential to the creation of actionable information for the textile and apparel industry. Dr. Rothenberg and her team of graduate students have applied machine learning to analyze data from around the world in order to better understand consumers, workers and companies. With a focus on economic competitiveness, they have studied topics including corporate social responsibility, reshoring and entrepreneurship. Through the use of software such as SAS Text Miner, IBM Watson Analytics for Social Media, and JMP Pro, they were able to analyze data from newspapers and social media posts, as well as large secondary datasets.



**Synthetic dyes** are central to coloring synthetic fabrics in various textile and manufacturing products. However, certain dyes have shown to induce detrimental toxic effects to exposed individuals, such as allergic contact dermatitis (ACD). Dyes such as Disperse Orange 3 or Red 11 have proven to induce ACD resulting into severe skin rash, itching, and local swelling. Little is known about the toxicity potential of other analogs of these known toxicants, even though those analogs are used in manufactured products. Professors Nelson Vinueza (Textiles), Denis Fourches (Chemistry) and Ronald Baynes (Veterinary Medicine) are working together in developing cheminformatics tools to virtually screen more than 3000 diverse dyes from the Max Weaver dye library to identify possible disperse analogs that cause dermatitis. The modeling results will determine the dye analogs that will be used to perform in vivo pig skin studies for a better understanding of the potential toxicity of these disperse dyes.