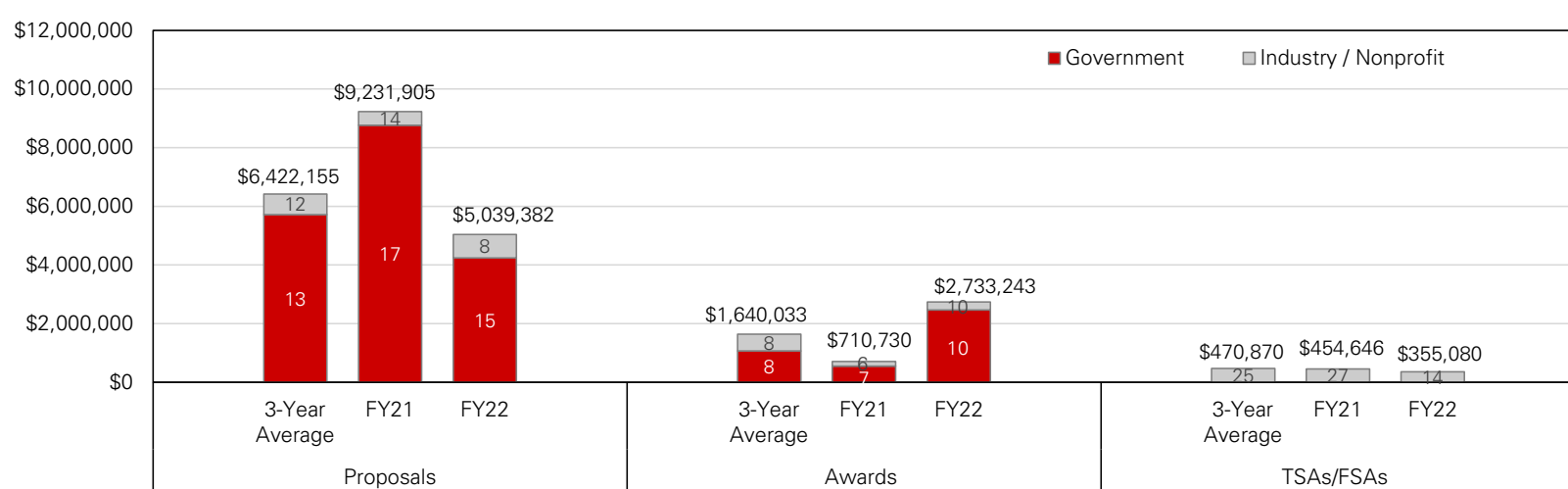


The research programs in the Wilson College of Textiles at NC State University are innovative, life-saving, creative, global and thriving. The college also provides tech service to all stakeholders and supports the economic development of the State and beyond. This newsletter gives a brief overview on the research and tech service activities of the faculty, staff and students during the first quarter of Fiscal Year 2022.

## FY22 vs. FY21 vs. Three-Year Average (Q1)

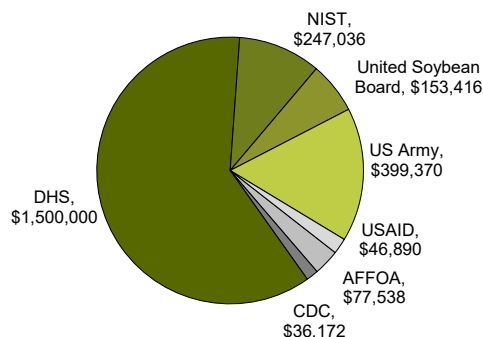


## NUMBERS TO DATE (FY22 Q1)

### Research Awards Received (\$2,733,243)

- Federal: \$2,460,422 | AFFOA, CDC, DHS, NIST, United Soybean Board, US Army, USAID
- Industry/Non-Profit: \$272,821 | Adidas NA, Aja Labs, Daisy Cutter, Environmental Rsch & Education Fdn., Kaneka America's Holding, Manchester Mills, NWI, SmithBucklin & Associates, Wake Forest University

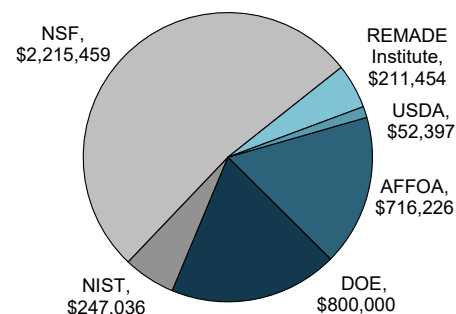
FY22 Q1 Federal Awards by Agency



### Research Proposals Submitted (\$5,039,382)

- Federal: \$4,242,572 | AFFOA, DOE, NIST, NSF, REMADE Institute, USDA
- Industry/Non-Profit: \$796,810 | Adidas NA, Cotton Inc., Daisy Cutter, Eastman Chemical Company, RISF, SCEYE S.A.

FY22 Q1 Federal Proposals by Agency



## NUMBERS TO DATE (FY22 Q1) Cont.

### Inter-college Research Proposals (7)

- Wilson College share: \$978,995
- With CALS, CED, CHASS, CNR, COE, CVM, ORI

### Inter-college Research Awards (7)

- Wilson College share: \$616,659
- With CALS, CED, CNR, COE, COS, CVM

### Inter-department/unit Research Proposals (2) \$272,534

### Inter-department/unit Research Awards (2) \$203, 516

### Graduate Student Support

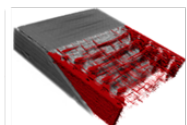
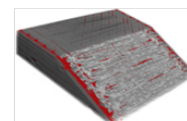
- 58 Ph.D. Student RAs (Avg Stipend: \$16,503 / year)
- 20 M.S. Student RAs (Avg Stipend: \$13,239 / year)

## RESEARCH AWARDS ABOVE \$50,000 (FY22 Q1)

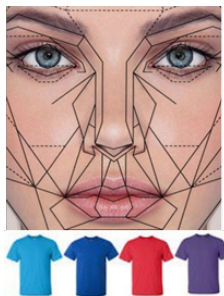
1. Robert Ormond, Roger Barker, Federal Emergency Management Agency (FEMA), \$1,500,000.
2. Robert Ormond, Ronald Baynes, National Institute of Standards & Technology, \$247,036.
3. Andre West, Marian McCord, Richard Roe, Charles Apperson, Emiel DenHartog, US Army, \$234,623.
4. Abdel-Fattah Seyam, Ericka Ford, Marguerite Moore, SmithBucklin & Associates LLC, \$153,416.
5. Melissa Sharp, Advanced Functional Fabrics of America (AFFOA), \$77,538.
6. Jesse Jur, Next Defense Solutions (US Army - Soldier Systems Center), \$164,747.
7. Sonja Salmon, Douglas Call, Nelson Vinueza Benitez, Environmental Research & Education Foundation, \$135,000.
8. Eunkyong Shim, NCSU Nonwovens Institute, \$50,000.
9. Minyoung Suh, Andre West, Adidas North America Inc., \$50,000.

## RESEARCH HIGHLIGHTS

**3D Printing (3DP)** is an emerging technology that provide effective in developing complex 3D structures in layer-by-layer fashion with unlimited design flexibilities, customization, rapid prototyping, and automatic fabrication at relatively low cost and time due to reduction in process steps, which are often beyond the capabilities of traditional technologies. Drs. Abdel-Fattah M. Seyam, Kavita Mathur and S.M. Fijul Kabir (FPS; graduated spring 2021) have been working on exploring the potential of 3D printing technology in the fiber-reinforced composite area in terms of integration of materials, manufacturing processes and design with various matrix systems and reinforcements. The team is not only investigating the infinite variability and optimum utility in terms of mechanical and physical performance, but also exploring its economical, sustainable and accessible approach of material extrusion based 3DP for high-performance applications such as aerospace, automobile, construction, defense and electronics, in comparison with the traditional technologies.



3D sliced images of a 3DP composite (Grey – Matrix and Red – Fiber Reinforcement)



**Color is a ubiquitous stimulus** that is often considered in terms of its aesthetic qualities. Beyond the aesthetic, perception of color influences the psychological functioning of humans, including feelings, cognition, and behavior. The effect of garment colors on the perceived attractiveness of the user is a noteworthy aspect of the human interactions that are currently being investigated by Dr. Renzo Shamey and his team. Interpersonal attraction is one aspect that can be affected by the selected colors. Through an empirical investigation this research seeks to shed some light on the effect of garment colors on the perceived attractiveness of the users and to offer potential theoretical explanations in relation to the role of unique hues, ethnicity, and gender of the observers.