

Updates from NSF SFS & SaTC-EDU Team

CAE Meeting at NICE 2023

Ambareen Siraj, NSF



NSF SFS & SaTC-Edu Team

- Victor P. Piotrowski, Lead Program Director,
- ChunSheng Xin, Program Director
- Ambareen Siraj, Program Director
- Li Yang, Program Director



National Science Foundation
Directorate for STEM Education (EDU)

Preparing a diverse STEM workforce and a
well-informed citizenry



CyberCorps®: Scholarship for Service (SFS) Program

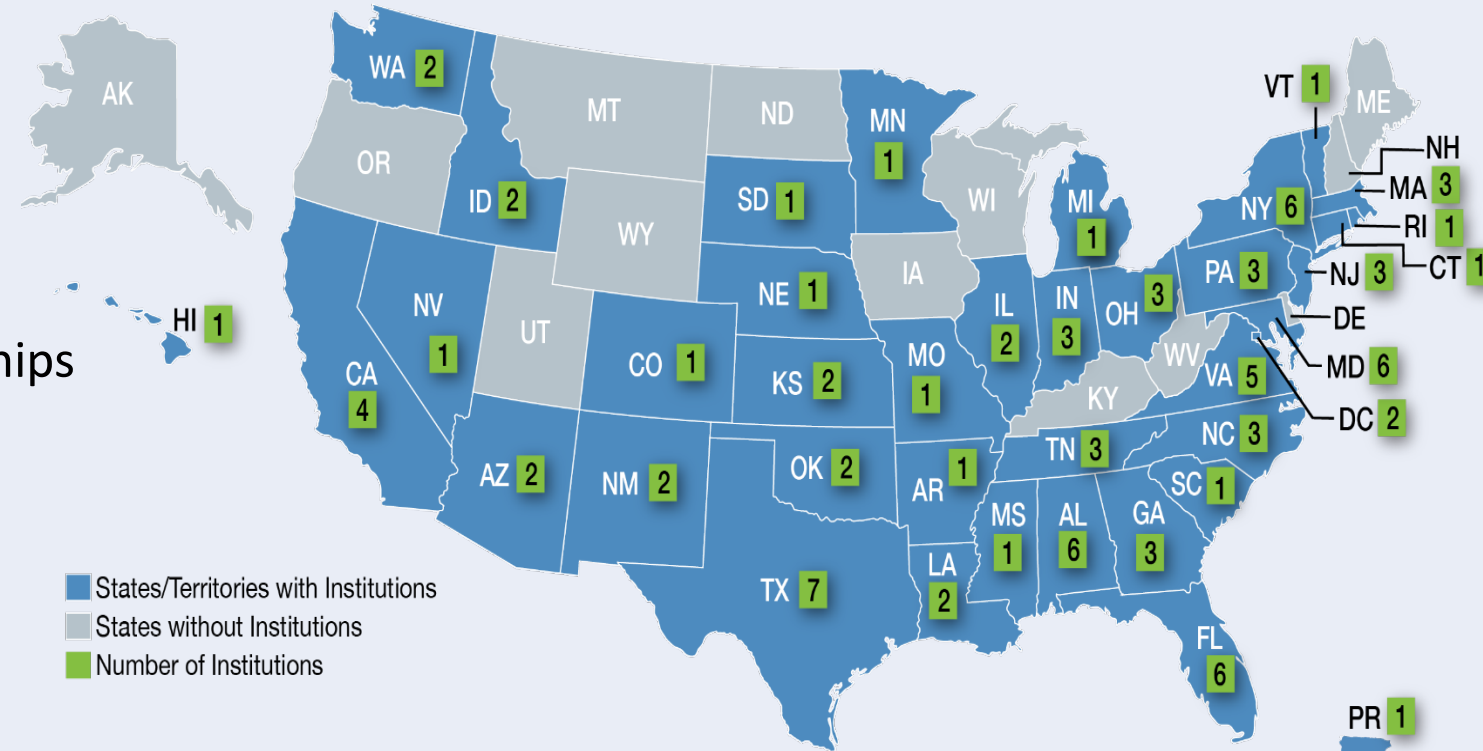
- **Federal scholarship grant program by National Science Foundation (NSF)**
 - recruit and train the next generation of cybersecurity professionals to serve in the cybersecurity mission for federal, state, local, and tribal governments.
 - Interagency partnership between NSF, the Office of Personnel Management (OPM), and the Department of Homeland Security (DHS).



**Cybersecurity
Enhancement Act of 2014**

SFS Program Impact

- 98 institutions with active scholarship awards, plus 8 community colleges in the Community College Cyber Pilot (C3P) and 28 community college Pathway partners
- 39 states + District of Columbia and Commonwealth of Puerto Rico
- 5,110 students have been awarded scholarships with 350-400 graduates each year
- Placement rate 95% in 357 government organizations

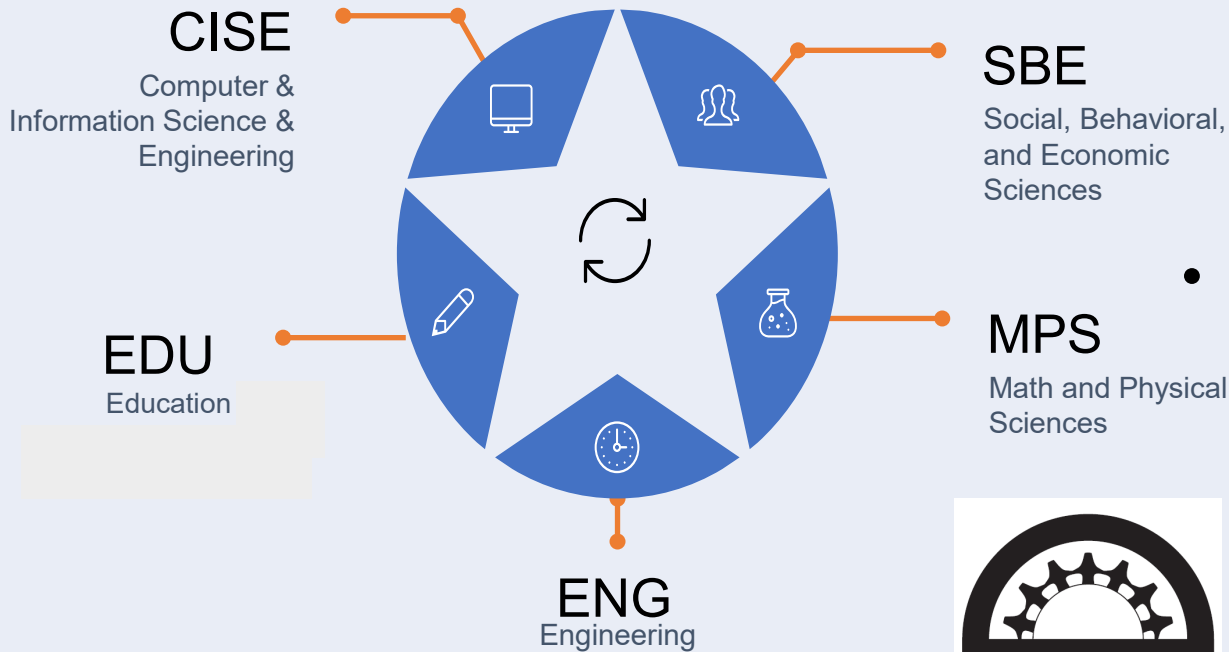


Upcoming Deadline for SFS Grant Application

- CyberCorps(R) Scholarship for Service (SFS) (nsf23574) | NSF - National Science Foundation
 - July 17, 2023
- Major changes in 2023 solicitation
 - More information about institutional obligations
 - Additional solicitation specific review criteria
 - Administrative cost guideline change (12K per scholarship-year)
 - Annual stipend increase (25K to 27K for undergrads and 34K to 37K for grads)
 - Cybersecurity-related aspects of other fields, including artificial intelligence, quantum computing, and aerospace, have been added to the scope
- Questions? Contact SFS Team at sfs@nsf.gov



Secure and Trustworthy Cyberspace (SaTC)



- NSF's flagship research program for interdisciplinary, **foundational research on security and privacy.**
- **EDU Designation:** support the development of evidence-based and evidence-generating approaches that will **improve cybersecurity education and workforce development.**



Project durations can be up to three years;
Budget limits up to \$400,000; *Up to \$500,000 with an education researcher as Co-PI or senior personnel*



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Secure and Trustworthy Cyberspace Education Designation (SaTC-EDU)

- Improve
 - cybersecurity learning and learning environments for students
- Develop
 - and implement activities to help K-12 teachers integrate cybersecurity into formal and informal learning settings
 - new assessment tools to measure student learning
- Investigate
 - approaches to make cybersecurity education and workforce development broadly diverse and inclusive
- Evaluate
 - the effectiveness of cybersecurity competitions and other engagement, outreach, and retention activities



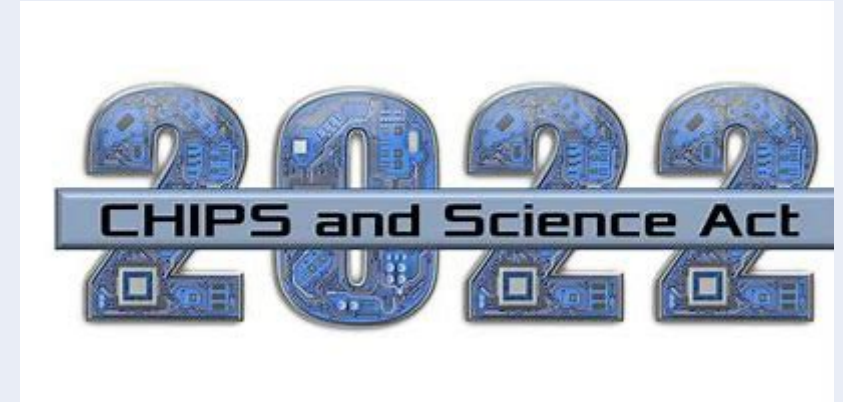
Projects of Interest (Not Limited to)

- **Transition of Research in the following areas into classrooms**
 - Authentication and Access Control
 - Cryptography, Applied and Theory
 - Cyber-Physical Systems (CPS)
 - Data Science, Machine Learning (ML), and Artificial Intelligence (AI)
 - Formal Methods and Language-based Security
 - Hardware Security Architecture
 - Hardware Security Design
 - Human-Centric Computing
 - Information Authenticity
 - Intrusion Detection
 - Mathematics and Statistics
 - Networking, Wired and Wireless
 - Privacy, Applied and Theory
 - Social, Behavioral, and Economic Sciences
 - Software
 - Systems



Cybersecurity Education Projects of Special Interest

- AI and Cyber
- Quantum computing and cyber
- Aerospace and cyber
- Advanced manufacturing and cyber
- Emerging wireless technologies and cyber
- Engineering and Cyber



Upcoming Deadline for SaTC-EDU Grant Application

- [Secure and Trustworthy Cyberspace \(SaTC\) \(nsf22517\) | NSF - National Science Foundation](#)
 - Accepted ANYTIME
- Usually
 - 8-10 panels over a year
 - 8-10 proposals per panel
 - Funding notifications within 6-7 months
- Next panel in August
- Questions? Contact SFS Team at sfs@nsf.gov



Dear Colleague Letter (DCL) for Request for Information (RFI)

- CHIPS and Science Act of 2022 tasked NSF with assessing feasibility of a similar program to SFS
- Request for Information on the **Capacity of Institutions of Higher Education** to produce graduates with degrees, certifications, and relevant skills related to **Artificial Intelligence** to meet the current and future needs of the Federal workforce
 - <https://www.nsf.gov/pubs/2023/nsf23099/nsf23099.jsp?org=NSF>
- **Deadline to respond is June 21st**
- https://www.surveymonkey.com/r/nsf_airfi
- Questions? Contact Li Yang at liyang@nsf.gov



(SFS Community) Request for Information (RFI) for FBI Partnership

- Request for Information on the **exploring a potential** interagency collaboration opportunity with the FBI
 - current working FBI agents can be supported to enroll in SFS institutions and acquire advanced graduate degrees that will help them to transition to academic/scientific careers in cybersecurity
- Need SFS communities' help to gauge the interest in and feasibility of such collaboration
- <https://www.surveymonkey.com/r/SpecialRFI>
- **Deadline to respond is June 11**



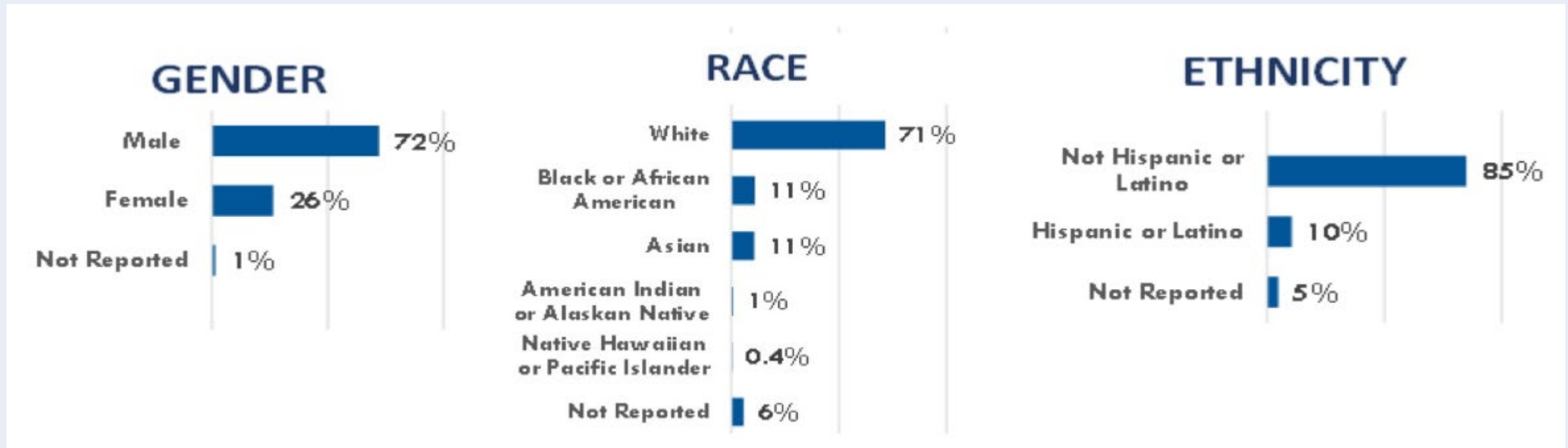
Newly Launched Special Initiatives

- In support of NSF's commitment to attract, retain, and graduate students from diverse backgrounds in cybersecurity workforce
- Announced in [Office of National Cyber Director Hosts Roundtable on “The State of Cybersecurity in the Black Community” | ONCD | The White House](#)
- Three initiatives
 - Bridge to Cyber
 - Jumpstart to Cyber Summer Programs
 - Special engagement program for aspiring PIs from and/or serving underrepresented communities



Bridge to Cyber Motivation

- To increase diversity in SFS scholars



Bridge to Cyber Program

- Three year collaboration between SFS and the Center for Inclusive Computing (CIC) at Northeastern University
- Focused on building bridge programs that connect students from non-computing backgrounds to the graduate degrees in cyber
- Two cohorts of up to 8 SFS institutions in 2023 and 2024
 - 1st cohort of 7 members underway
 - Next cohort call will be in Fall 2023
- Questions? Contact Carla Brodley at c.brodley@northeastern.edu



Bridge to Cyber Program 1st Cohort

Name of School	Primary PI	Degree Bridge Connects To	Target student profile	Target student URG%	Total students served over life of funding	Mode of Bridge	Mode of Degree Program	Duration of Bridge
George Washington University	Arkady Yerukhimovich	<u>Master's in Cybersecurity in Computer Science</u>	domestic recent non-CS graduates + upskilling working professionals	50% women, 25% races/ethnicities historically underrepresented in tech.	25	online, asynch	on ground, synchronous	3 semesters; 12 months
New York University	Nasir Memon	<u>MS in Cybersecurity; MS in Computer Science; equivalent MS degrees at 9 partner schools</u>	non-STEM recent grads + working professionals + upskilling STEM grads	50% women, 25% races/ethnicities historically underrepresented in tech.	1100	online, combo sync/asynch	on ground, synchronous	7.5 months
Oakland University	Huirong Fu,	<u>Master of Science in Cybersecurity</u>	working adults with undergrad degree in something other than CS	50% women, 25% races/ethnicities historically underrepresented in tech.	25	on line, asynchronous + optional in person elements	on line, asynchronous + optional in person elements	up to 12 months
Old Dominion University	Brian Payne, Rafael Diaz	<u>MS in Cybersecurity</u>	Recent graduates and alumni of ODU	50% women, 25% races/ethnicities historically underrepresented in tech.	0	on ground, synchronous with asynch component	on ground, synchronous	projected at 2 semesters; ~9 months
Tuskegee University	Fan Wu,	<u>MS in Information Systems and Computer Security</u>	Third and fourth year UG students + alumni career changers	60% women, 40% races/ethnicities historically underrepresented in tech	10	on ground/synch (UG) + online/asynch (career changers) options	on ground, synchronous	2 semesters; 9 months
University of Alabama at Birmingham	Ragib Hasan	<u>Masters in Cyber Security</u>	Students with no CS background.	50% women, 30% races/ethnicities historically underrepresented in tech	24	on ground	on ground, synchronous	2 semesters; 9 months
University of Rhode Island	Victor Fay-Wolfe	<u>Professional Science Master Degree in Cyber Security</u>	Non-CS undergrads, emphasis on students from pops. historically marginalized in cyber + career changers + those w/economic need.	50% women, 25% races/ethnicities historically underrepresented in tech.	20	on line, asynchronous	on line, asynchronous	6 months

Jumpstart to Cyber Summer Program

- One year collaboration between SFS, Sinclair Community College, NCyTE and SANS Institute
- Exclusive two-step cybersecurity journey specially designed to engage and empower underrepresented student groups, including women, Black, African American, Latino(a), Hispanic, and Indigenous students



Program Overview

■ Step 1: CyberStart

- Online, gamified learning platform designed by SANS experts to teach, inspire and test cybersecurity skills in young people.
 - Over 200 challenges that engages and sharpens anyone's talents
 - No previous cyber security interest or experience needed
 - Students will have access to CyberStart from the Monday after they register for the program until June 19. Students must begin participating in CyberStart no later than June 5.

■ Step 2: SANS SEC275: Foundations training course + GFACT Certification

- The top-performing 250 students in CyberStart will be selected to move on to the SANS SEC275: Foundations training course
 - 65 modules across 13 learning objective areas
 - Hands-on interactive labs platform (60+ labs)
- Upon completion of the course, students will be **prepared, mentored and supported** to test for the GIAC Foundational Cybersecurity Technologies (GFACT).



Jumpstart to Cyber Summer Program Application

- Program was open for public student registration until June 4
 - 900+ applications for 250 seats
 - 65% from under-represented groups
- <https://sinclairwfd.regfox.com/cyberstart>
- Questions? Contact Kyle Jones at kyle.jones4990@sinclair.edu



Engaging Underrepresented Faculty

- To build pool of successful PIs from underrepresented communities who can impact cybersecurity education and workforce development in their institutions
- Special Engagement (2 hour) Intro Session for Aspiring PIs with follow up sessions throughout the year
 - August 1st, 2023
- Overview of session (Informed by two listening sessions held in May)
 - Funding programs overviews
 - Successful project highlights by PIs from target groups
 - Overcoming challenges with Best practices
 - Group brain storming sessions for building peer support groups
- If you identify yourself as a faculty underrepresented in cybersecurity areas or serving those who are, please register here by July 23rd



<https://www.surveymonkey.com/r/EngagePI>



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New Ways to Engage with NSF SFS Team: Panelist Application

- Want to be considered to serve on SFS and SaTC-EDU panels?
 - Please apply here:



<https://www.surveymonkey.com/r/CyberED>



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New Ways to Engage with NSF SFS Team: listserv

- NSF SFS Mailing list server
 - Open to anyone/public
 - To announce updates and opportunities from our programs (SFS and SaTC-EDU)
 - No more than twice a month
- SUBSCRIBE by:
- Sending an email with
 - no subject line
 - a body of "SUBSCRIBE SFS Firstname Lastname" (without quotes)
 - to listserv@listserv.nsf.gov
- and then
 - respond to the confirmation message by typing OK.



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