



DIRECTOR'S REMARKS

Sethuraman Panchanathan
National Science Foundation

National Science Board Meeting

August 3, 2021

It Has Been a Full Year



Updates From the Hill

American Rescue Plan

NSF received **\$600 million** to prevent, prepare for, and respond to coronavirus.

Since June 23:

- Approximately **266** awards made
- Roughly **\$91** million
- Highly-Impacted Groups
 - Women
 - Underrepresented Groups
 - Early Career Faculty
- Vulnerable Career Transition Points
- Broad Distribution
 - MSIs and less-affluent institutions
 - EPSCoR jurisdictions

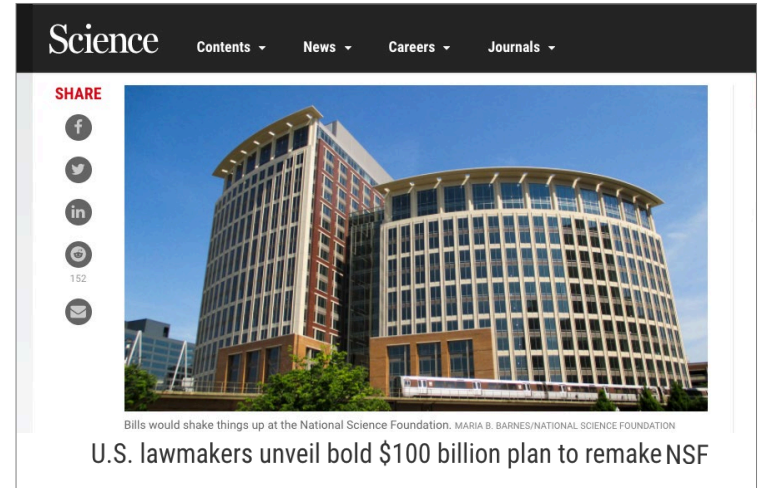
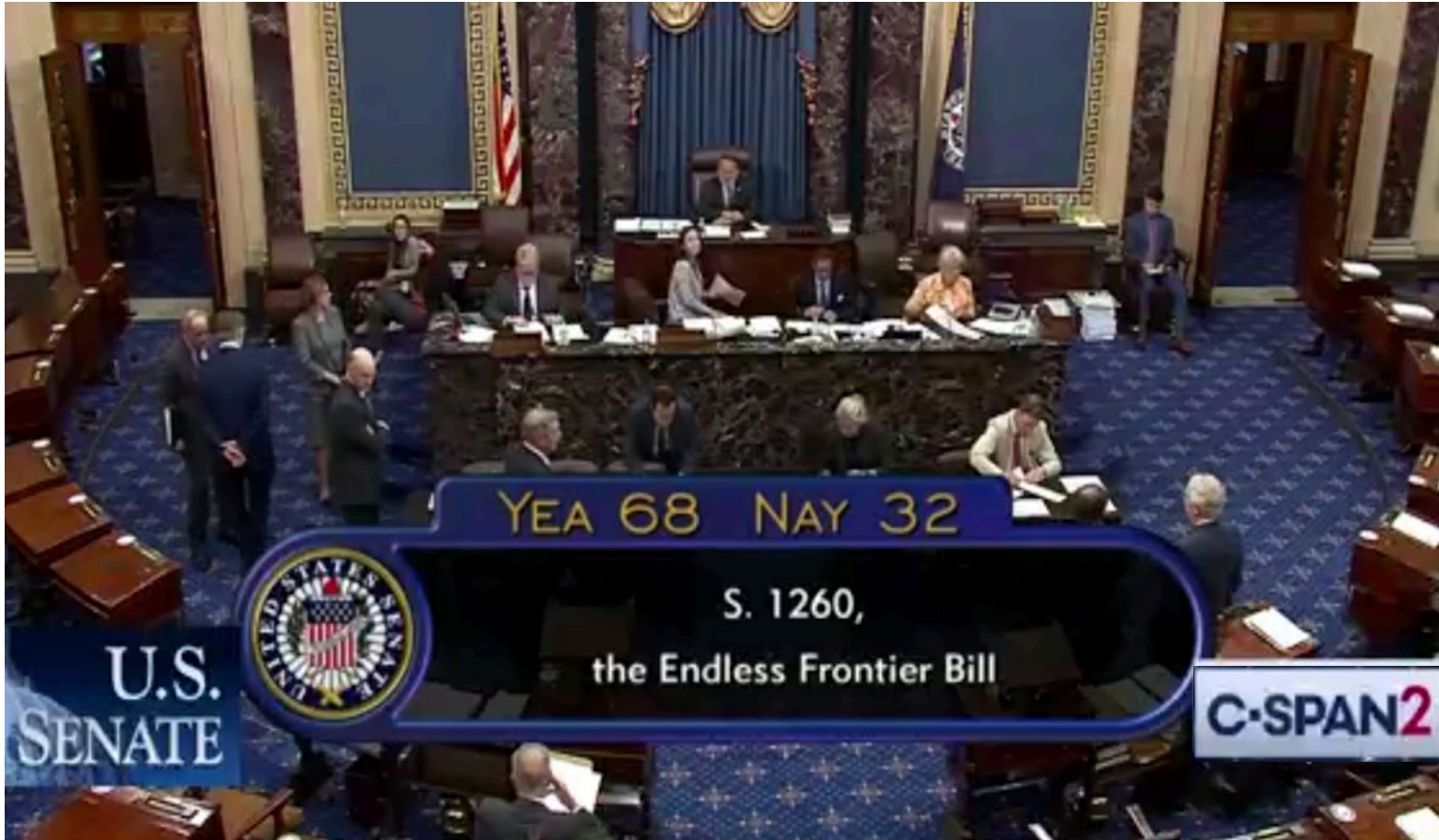
FY22

House Appropriations Committee proposed **\$9.6 billion** for NSF in FY22 – a **\$1.2 billion increase** from FY21 enacted.

- R&RA: **\$7.7** billion
- EHR: **\$1.27** billion
- MREFC: **\$249** million
- AOAM: **\$390** million
- Support for TIP



United States Innovation and Competition Act (USICA)



NSF for the Future Act



MeriTalk
Improving the Outcomes of Government IT

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House Passes Research Funding Bills That Track With Senate's USICA Measure

The House of Representatives on Monday evening passed by wide margins two potential and complementary alternatives to the Senate-approved **United States Innovation and Competition Act of 2021 (USICA)**, both of which would funnel tens of billions of new research funding to Federal government agencies.

The first bill – the **National Science Foundation (NSF) for the Future Act** – passed on a vote of 345-67, and the second measure – the **Department of Energy Science for the Future Act** – was approved 351-68.

THE WALL STREET JOURNAL.
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House Passes Bipartisan Bill to Boost Scientific Competitiveness, Following Senate

WASHINGTON—The House on Monday approved its version of a legislative package aimed at boosting U.S. scientific competitiveness to keep pace with China, setting the stage for final negotiations with the Senate, which passed its own \$250 billion bill earlier this month.

The House approved the main piece of its package by a vote of 345-67. That bill, known as the **National Science Foundation for the Future Act**, provides major increases for federally-funded science and technology research, and establishes a new division within the NSF for advanced technologies and other cutting-edge research.





“...the turning point for American leadership...”

- **Senator Majority Leader Chuck Schumer (D-NY)**



“...the legislation of the future...”

- **Chairwoman Eddie Bernice Johnson (D-TX)**



“...we built a brighter tomorrow for Americans...”

- **Senator Todd Young (R-IN)**



“...we must redouble our commitment to federal R&D...”

- **Ranking Member Frank Lucas (OK-03)**





ADVANCING SCIENCE AND TECH
TO ADDRESS NATIONAL NEEDS



ENABLING OPPORTUNITY
EVERYWHERE



GLOBAL LEADERSHIP AND
COMPETITIVENESS



Climate Mitigation and Adaptation

1950s:
**INTERNATIONAL
GEOPHYSICAL YEAR**



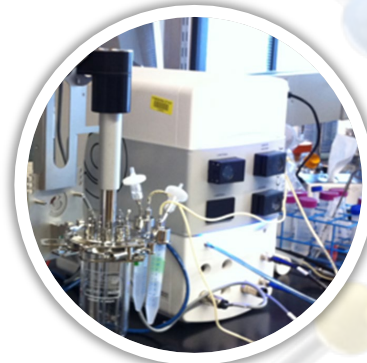
1970s:
**CLEAN ENERGY
TECHNOLOGIES**



1980s-1990s:
**THE TROPICAL OCEAN
GLOBAL ATMOSPHERE**



2010s:
**BIO
MANUFACTURING**



2000s-2020s:
**UNDERSTANDING
CHANGING ARCTIC**



**NSF
INVESTMENTS**

**CURRENT
IMPACTS**



**CARBON DIOXIDE
MONITORING**



**UBIQUITOUS ENERGY
STARTUP**



**CLIMATE
FORECASTING**



**MANGO MATERIALS
STARTUP**

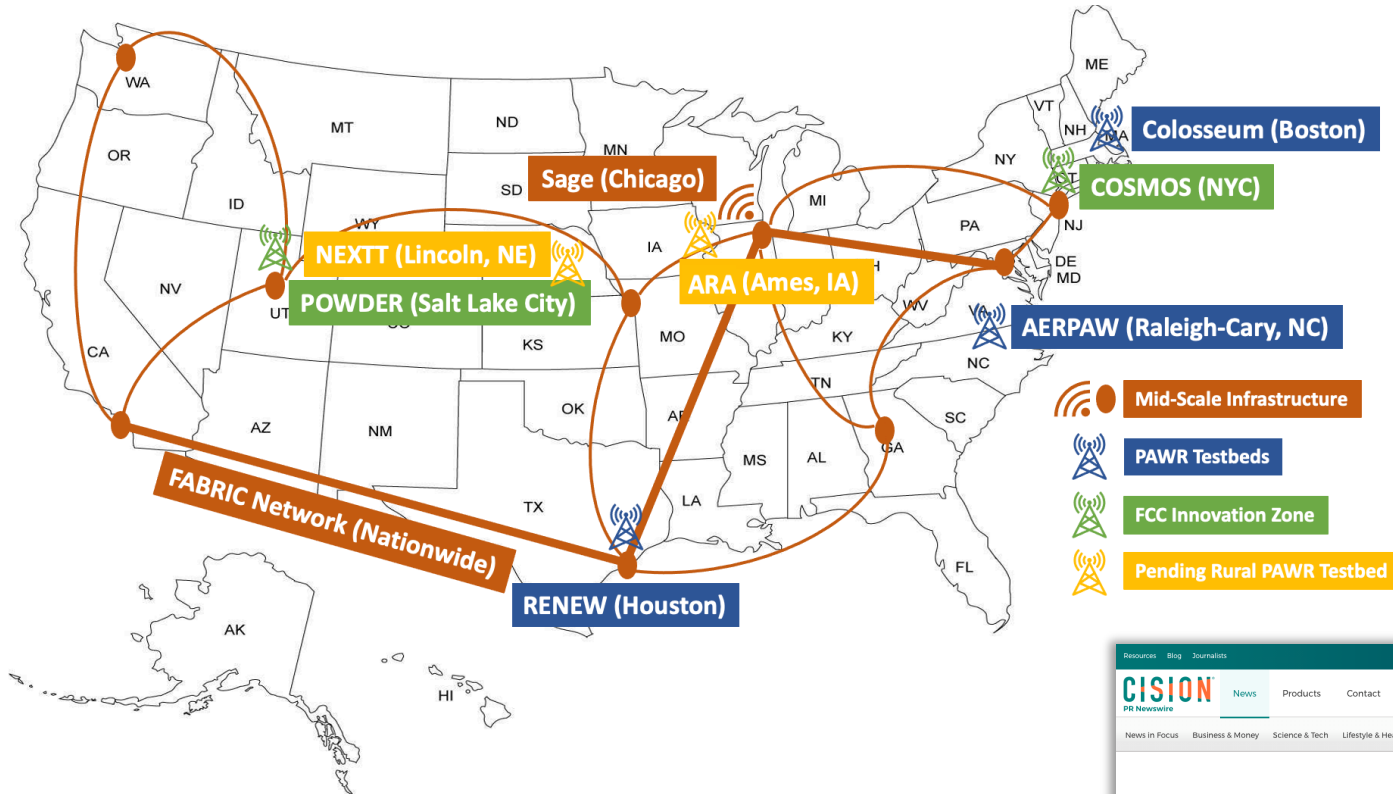


**RESILIENT ARCTIC
COMMUNITIES**



Platforms for Advanced Wireless Research (PAWR)

NSF-Funded Advanced Systems testbeds



IOWA STATE UNIVERSITY News Service

NEWS RELEASES VIDEO RESOURCES MORE NEWS CONTACT US

Iowa State University and partners receive major National Science Foundation research grant to drive innovation in rural broadband connectivity

Posted Jun 21, 2021 11:55 am



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The Platforms for Advanced Wireless Research (PAWR) Program Announces Fourth Wireless Research Platform in Central Iowa to Drive Innovation in Rural Broadband Connectivity

Iowa State University will lead development of the new testbed with funding from the U.S. National Science Foundation, a consortium of industry partners, and the U.S. Department of Agriculture's National Institute of Food and Agriculture



Broadening Participation/STEM Education

Women



Hispanic or Latino



Black or African American



American Indian or Alaska Native



 x 100,000 people in 2021 in the S&E workforce

 x 100,000 additional people needed in 2030 for the S&E workforce to be representative of the U.S. population

Broadening Participation/STEM Education: CCIC Winners

1st

Pasadena City College

Nano-Bioconjugate Immunotherapeutic

2nd

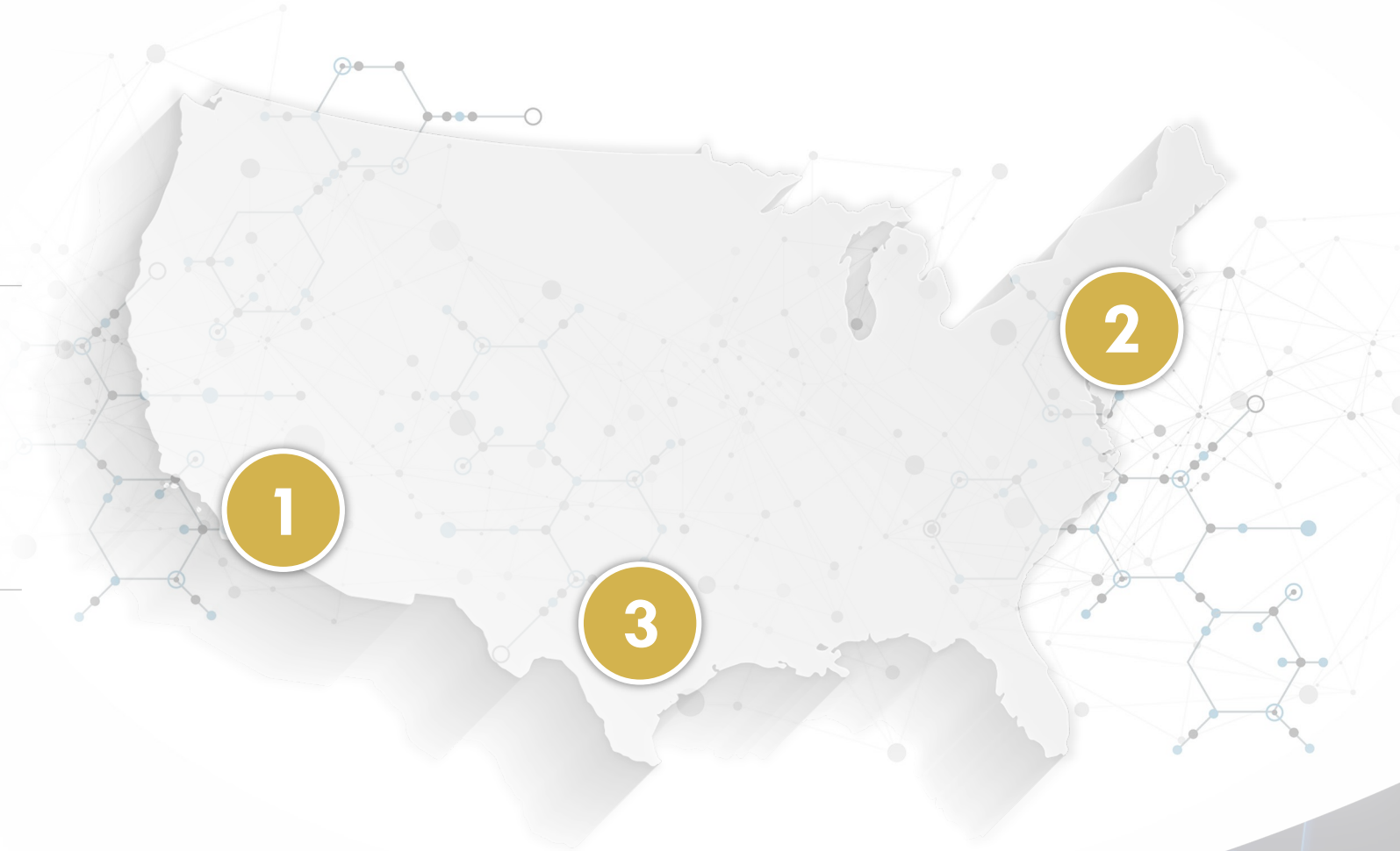
Borough of Manhattan Community College

Designing Virtual Reality Application
for Autistic Children

3rd

Austin Community College

OASIS – the Officer Aptitude & Stress
Information System



Broadening Participation/STEM Education: PREM Awards

1. NSF PREM for Vision of Excellence applying Navajo Traditions and Understanding with Research and Education in STEM (NSF PREM VENTURES)
2. NSF PREM for Fostering the Next Generation of Nanofiber Systems and Student Success
3. NSF PREM for Advanced Interface Materials
4. NSF PREM Southwest-Pacific Collaboration in Machine Learning Design, Synthesis and Applications of Metalorganic Hybrid Biomaterials
5. NSF PREM for Hybrid Nanoscale Systems
6. NSF PREM Center for Intelligent Materials Assembly (NSF PREM CIMA)
7. NSF PREM for Device Innovation through Inclusive Research and Education
8. NSF PREM for Innovations in Materials, Processes, and Applications for Quantum Technologies (NSF PREM IMPAQT)





NSF **JERRY GOSS**
OLIN COLLEGE OF ENGINEERING

Strengthening Diversity, Equity, Inclusivity, and Accessibility

Discrimination, racism, or bias of any kind have no place at NSF, in the research community, or in any corner of science and engineering.

Executive Order 14035 of June 25, 2021

Diversity, Equity, Inclusion, and Accessibility in the Federal Workforce

By the authority vested in me as President by the Constitution and the laws of the United States of America, including sections 1104, 3301, and 3302 of title 5, United States Code, and in order to strengthen the Federal workforce by promoting diversity, equity, inclusion, and accessibility, it is hereby ordered as follows:

Section 1. Policy. On my first day in office, I signed Executive Order 13985 (Advancing Racial Equity and Support for Underserved Communities Through the Federal Government), which established that affirmatively advancing equity, civil rights, racial justice, and equal opportunity is the responsibility of the whole of our Government. To further advance equity within the Federal Government, this order establishes that it is the policy of my Administration to cultivate a workforce that draws from the full diversity of the Nation.

As the Nation's largest employer, the Federal Government must be a model for diversity, equity, inclusion, and accessibility, where all employees are treated with dignity and respect. Accordingly, the Federal Government must strengthen its ability to recruit, hire, develop, promote, and retain our Nation's talent and remove barriers to equal opportunity. It must also provide resources and opportunities to strengthen and advance diversity, equity, inclusion, and accessibility across the Federal Government. The Federal Government should have a workforce that reflects the diversity of the American people. A growing body of evidence demonstrates that diverse, equitable, inclusive, and accessible workplaces yield higher-performing organizations.



Artificial Intelligence (AI)

NSF INVESTMENTS

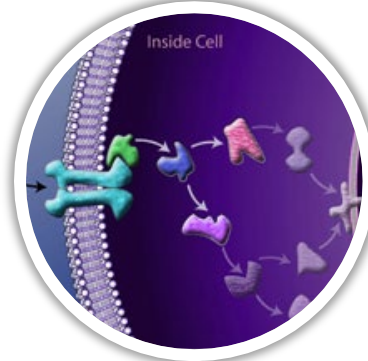
**1970s:
MACHINE
LEARNING**



**1970s:
NATURAL LANGUAGE
PROCESSING**



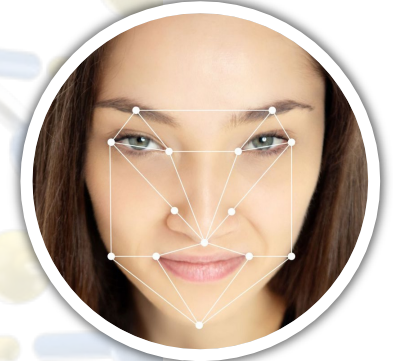
**1980s:
BAYESIAN
NETWORKS**



**1980s:
INTELLIGENT TUTORING
SYSTEMS**



**1990s:
MEASURING FACIAL
EXPRESSIONS IN SBE**



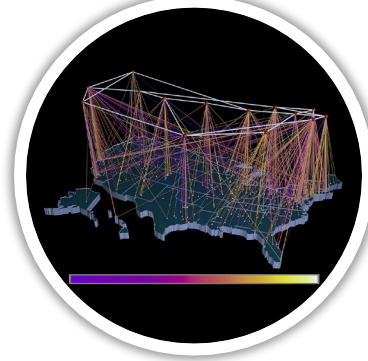
**CURRENT
IMPACTS**



**DEEPSCALE: VISION
SYSTEMS FOR SELF-
DRIVING CARS**



**SPEECH RECOGNITION
SOFTWARE**



**MEDICAL DIAGNOSIS,
TRAFFIC PREDICTION
AND ROUTING,
SPAM FILTERS**



**AI INSTITUTE FOR
STUDENT-AI TEAMING**



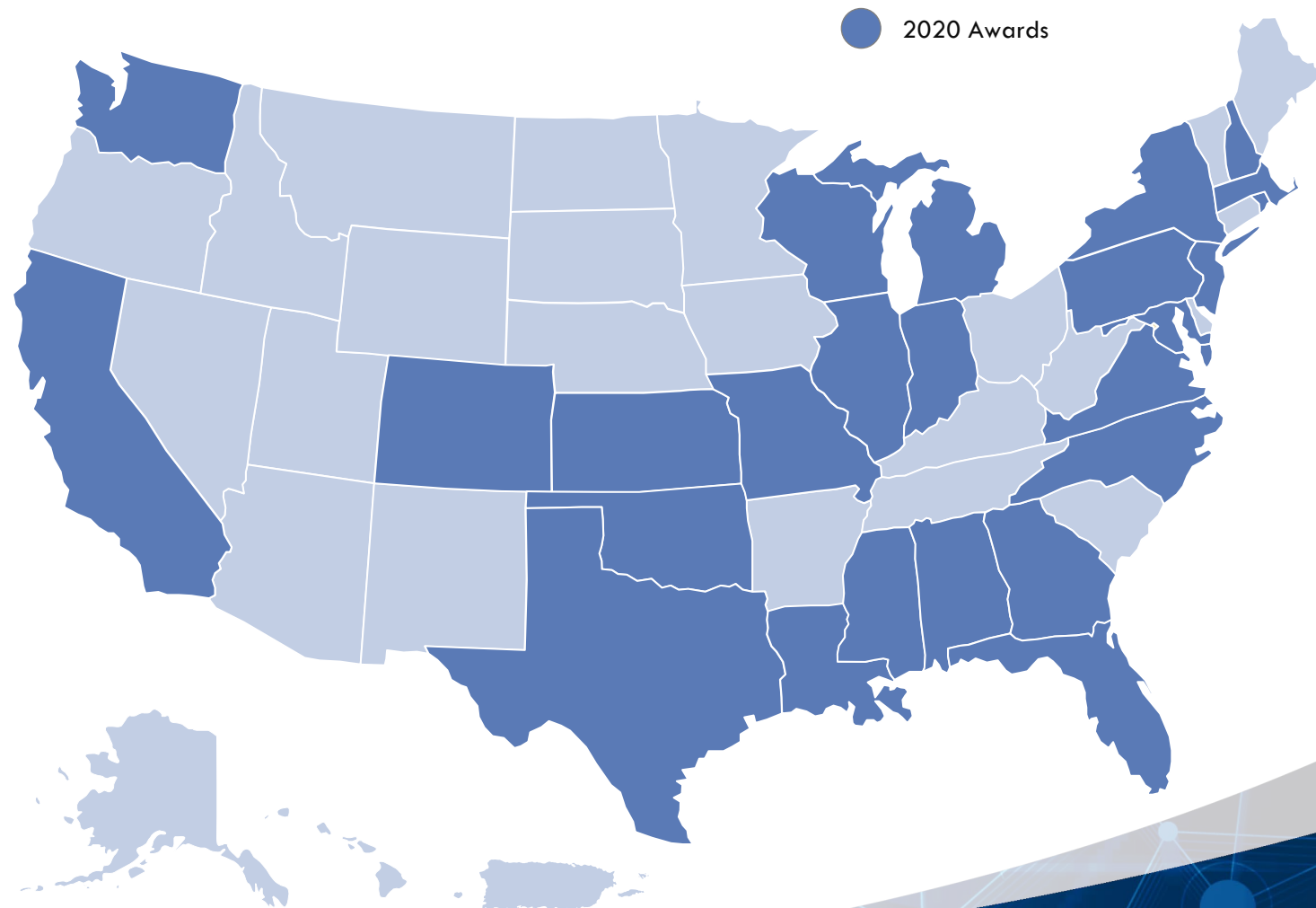
EMOTIENT STARTUP



AI Research Institutes

2020 AWARDS

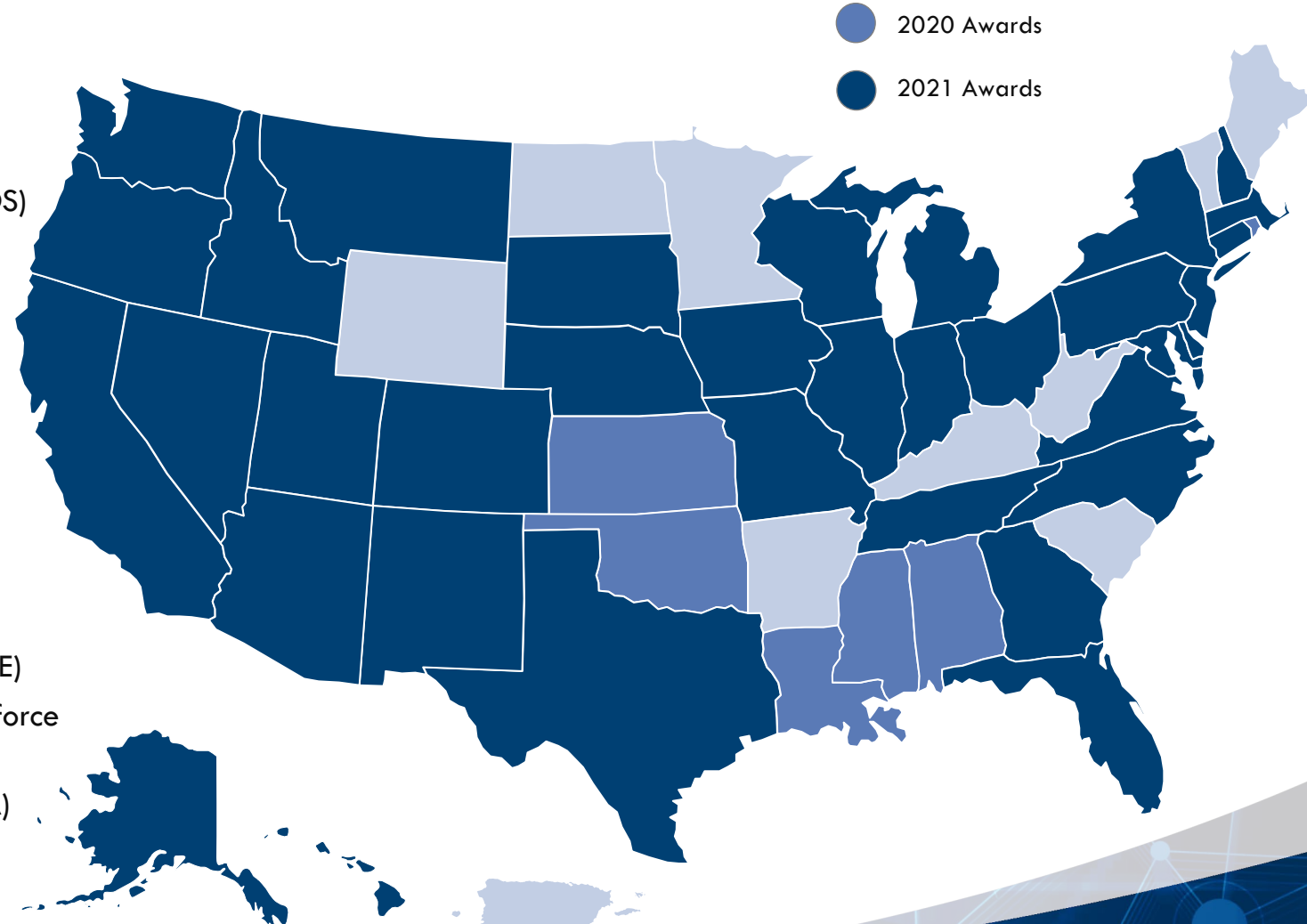
- NSF AI Institute for Research on Trustworthy AI in Weather, Climate, and Coastal Oceanography
- NSF AI Institute for Foundations of Machine Learning
- USDA-NIFA AI Institute for Next Generation Food Systems
- USDA-NIFA AI Institute for Future Agricultural Resilience, Management, and Sustainability (AIFARMS)
- NSF AI Institute for Student-AI Teaming
- Molecule Maker Lab Institute (MMLI): NSF AI Institute for Molecular Discovery, Synthetic, and Manufacturing
- NSF AI Institute for Artificial Intelligence and Fundamental Interactions



AI Research Institutes

2021 AWARDS

- NSF AI Institute for Collaborative Assistance and Responsive Interaction for Networked Groups (CARING)
- NSF AI Institute for Learning-enabled Optimization at Scale (TILOS)
- NSF AI Institute for Optimization
- NSF AI Institute for Intelligent Cyberinfrastructure with Computational Learning in the Environment (ICICLE)
- NSF AI Institute for Future Edge Networks and Distributed Intelligence (AI-EDGE)
- NSF AI Institute for Edge Computing Leveraging Next-generation Networks (Athena)
- NSF AI Institute for Dynamic Systems
- NSF AI Institute for Engaged Learning
- NSF AI Institute for Adult Learning and Online Education (ALOE)
- USDA-NIFA AI Institute: Agricultural AI for Transforming Workforce and Decision Support (AgAID)
- USDA-NIFA AI Institute: AI Institute for Resilient Agriculture (AIIRA)



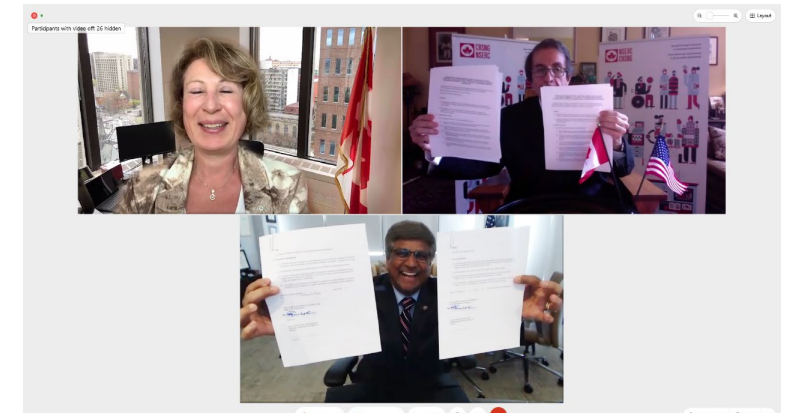
Engagement Highlights



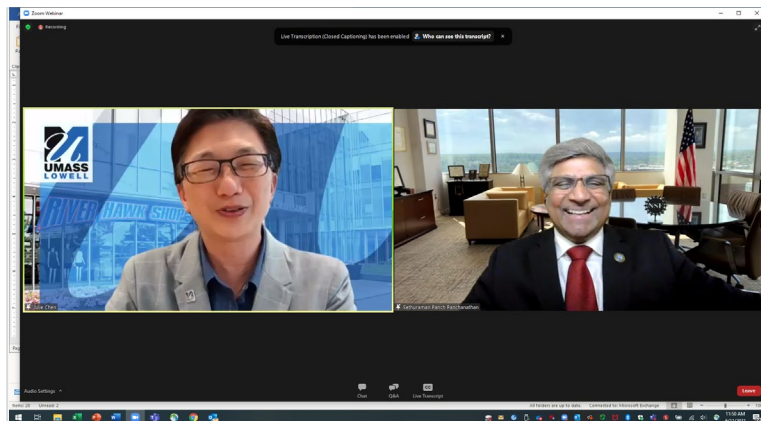
APLU



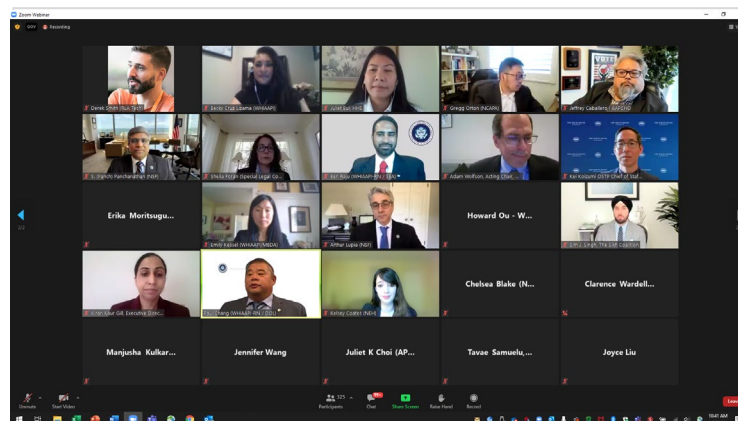
Juneteenth and Pride Month



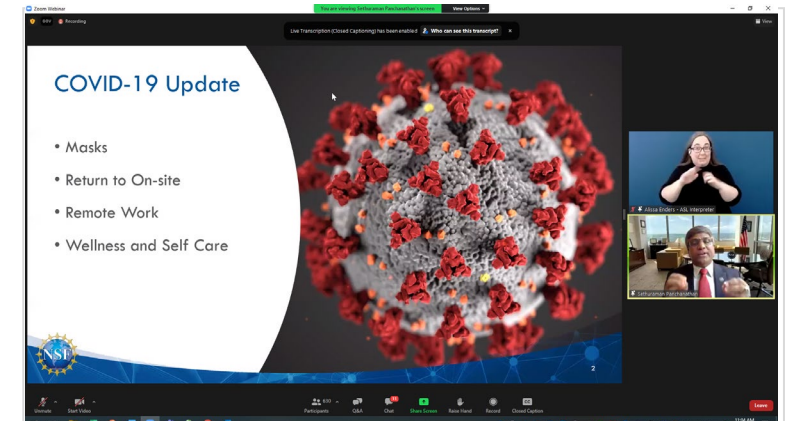
NSF and Canada's NSERC sign MOU



Deshpande Symposium



WH AAPI



NSF Town Hall Meeting



Expanding NSF's Reach

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WSJ NEWS EXCLUSIVE | U.S.
U.S. Launches Task Force to Study Opening Government Data for AI Research
Task force to develop plans, which would require congressional approval, for sharing data on health, driving, demographics and more

PHOTO: STEPHEN VOSS/NATIONAL SCIENCE FOUNDATION

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June 17, 2021
UConn gets largest-ever \$40M grant to fund molecular research

UGA TODAY
Today's Top News from the University of Georgia

Campus News Business & Economy Science & Technology Arts Health & Wellness Society & Culture Georgia Impact Great Commitments

Science & Technology
UGA part of \$40M grant for NMR network
June 16, 2021

COLUMNS
The online newspaper for the University of Georgia

@UGAResearch
Research news from across the University of Georgia

Tweets by @universityofga

UGA Retweeted Georgia Golf @UGAGolf
Eight Bulldogs will be in action in the @SPORTS and @ChampsOnTheWeek events this week. #UGATour #GoDawgs

FIELDS

UGA Retweeted UGA Alumni @UGAalumni
Campus looked different this year but that did not limit our gratitude. Thank you for your commitment to UGA and for making this campus a place that all Gears can call a home away from home. youtube.com/watch?v=K3PQ...

Events

GTSC Government Technology & Services Coalition's
HOMELAND SECURITY TODAY.US

Industry Federal Pages Subject Matter Areas Events The Editors HS Jobs

New U.S.-Canada Partnership Announced for Collaboration in Research and Innovation
June 15, 2021 — Homeland Security Today

The U.S. National Science Foundation and the Natural Sciences and Engineering Research Council of Canada, or NSERC, announced the first formal partnership between the agencies that support fundamental discovery research in the U.S. and Canada. The partnership paves the way for new collaborations between researchers in both countries to build inclusive partnerships at the frontiers of science and emerging technologies and fosters a shared commitment to equity, diversity and inclusion within the research enterprise.

UConn HEALTH

By Zachary Vasilis
The U.S. National Science Foundation has awarded the University of Connecticut's School of Medicine a \$40 million grant — the largest in the university's history — to set up and run a state-of-the-art molecular research hub.

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U.S. Government Launches National Artificial Intelligence Research Resource Task Force
In AI by Olivier Blanchard / June 17, 2021 / Leave a Comment

The News: The White House Office of Science and Technology Policy (OSTP) and the National Science Foundation (NSF) have announced the creation of the National Artificial Intelligence Research Resource Task Force. As directed by Congress in the National AI Initiative Act of 2020, the Task Force will serve as a federal advisory committee entrusted with drafting a roadmap and implementing a blueprint for the National AI Research Resource (NAIRR). NAIRR will itself serve as a shared research infrastructure to provide AI researchers and students with access to educational tools, data, and computational resources. [Read the full White House press release here.](#)





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PARTNERSHIP FOR PUBLIC SERVICE

Partnership for Public Service recognizes...

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IN THE FEDERAL GOVERNMENT

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We make Science happen!



Partnership for Public Service recognizes...

DIRECTORATE FOR BIOLOGICAL SCIENCES
5TH BEST PLACE TO WORK
IN THE FEDERAL GOVERNMENT

NSF **BCG** BOSTON CONSULTING GROUP **PARTNERSHIP FOR PUBLIC SERVICE**



Hawaiian bobtail squid at Marine Biological Laboratory Woods Hole Credit: Tom Kleindinst



NSF IS READY, AGILE AND ADAPTABLE.

NSF WILL STRENGTHEN AT SPEED AND SCALE.

**NSF IS THE PLACE.
THE TIME IS NOW.**



