UIDP
Strengthening University-Industry Partnerships

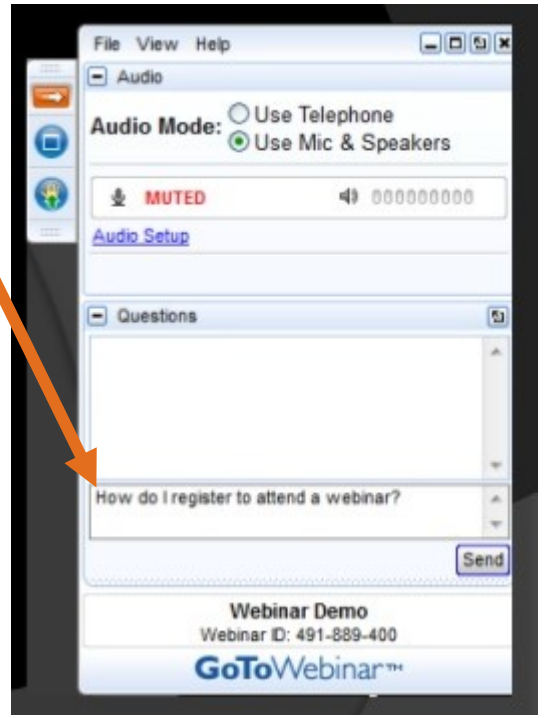
# Skills Training in Advanced Research & Technology (START) for Community College Students and Faculty

Webinar | May 18, 2021, 1 to 2 p.m. EST

**May 18, 2021 | The webinar will begin momentarily**

# How to Participate

## Webinar Logistics




## Audio

- If you have trouble connecting to audio with your computer, or if you prefer to use your phone, select "Use Telephone" after joining the webinar and call in using:

  +1 (562) 247-8422
  Access Code: 247-974-232
  Webinar ID: 991-875-787

## Polls & Questions

- Please submit your questions using the Questions tab on your screen
- A recording and slide deck will be available after the webinar is complete.
- In the event this webinar shuts off due to connection issues, do NOT close the webinar the window. The webinar room will reopen in just a couple of minutes.

Strengthening University-Industry Partnerships

# Disclaimer

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# Skills Training in Advanced Research & Technology (START)

***Building the next generation science and engineering skilled workforce***

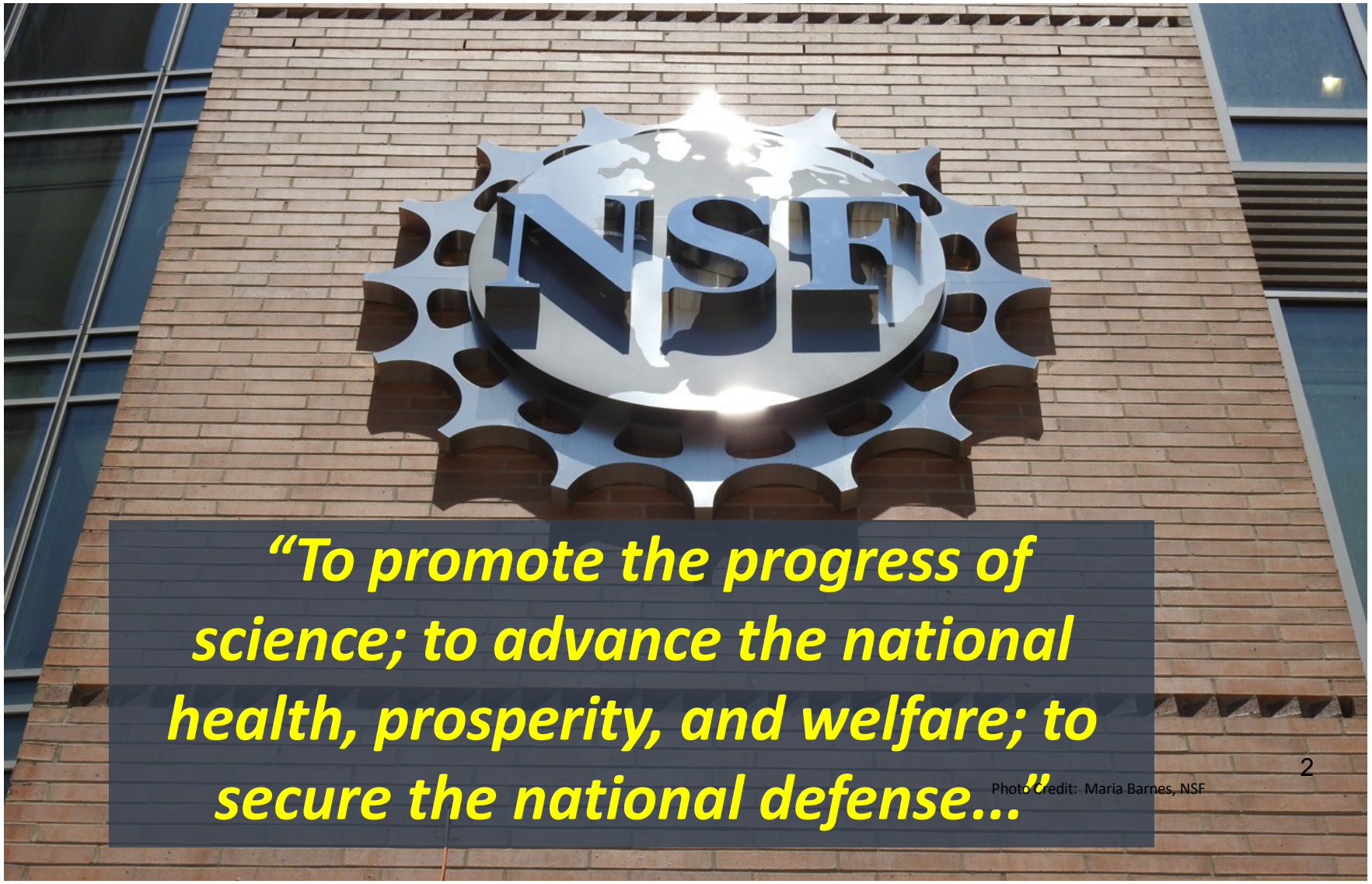
www.nsf.gov/START

Dr. Prakash Balan
IUCRC Program Director

Dr. V. Celeste Carter
ATE Program Director

May 18, 2021

# NSF Mission



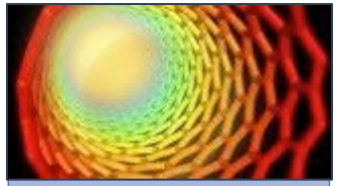

*"To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense..."*

Photo Credit: Maria Barnes, NSF

# *NSF - A quick snapshot…*

- $8.5B Budget
- Supports 24% of all federally sponsored academic research; ~57%, outside of NIH sponsored medical research
- 230+ Nobel Laureates supported
- ~400 startups/small businesses funded each year

# *NSF Funds All Fields of Science & Engineering*



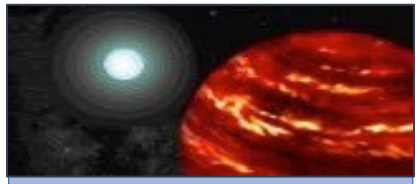
**Engineering**

**Computer Information Science and Engineering**

**Biological Sciences**

**Geosciences**

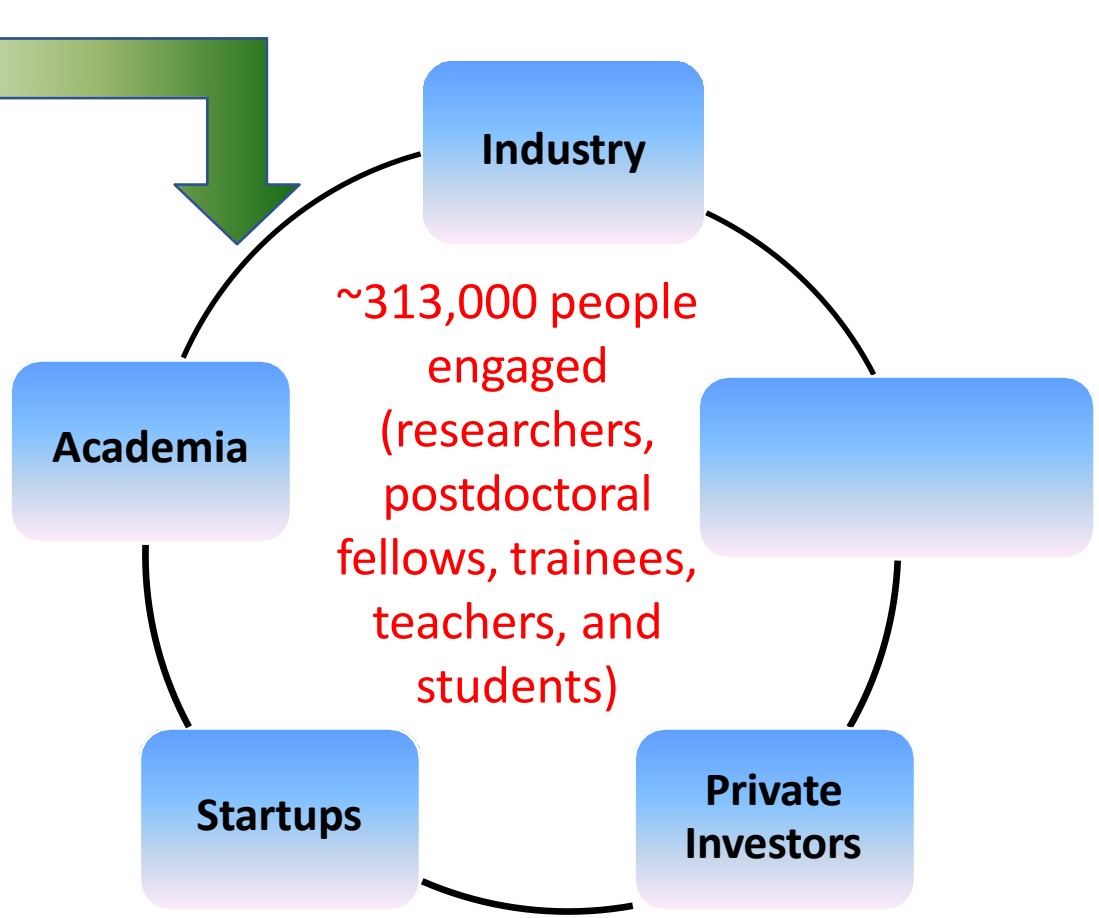
**Education & Human Resources**



**Mathematical & Physical Sciences**

# The NSF Innovation Ecosystem

a key funding catalyst



# An Urgent Need!

- ***A National Academies of Sciences, Engineering, and Medicine report predicts a shortfall of nearly 3.4 million skilled technical workers by 2022***

- R&D-intensive industries that employ a skilled technical workforce, account for approximately 17 percent of U.S. Gross Domestic Product

- Our skilled workforce is *foundational* and *essential* to U.S. leadership in science and engineering (S&E)

# *Dear Colleague Letter: A New Supplemental Funding Opportunity for Skills Training in Advanced Research & Technology (START)*

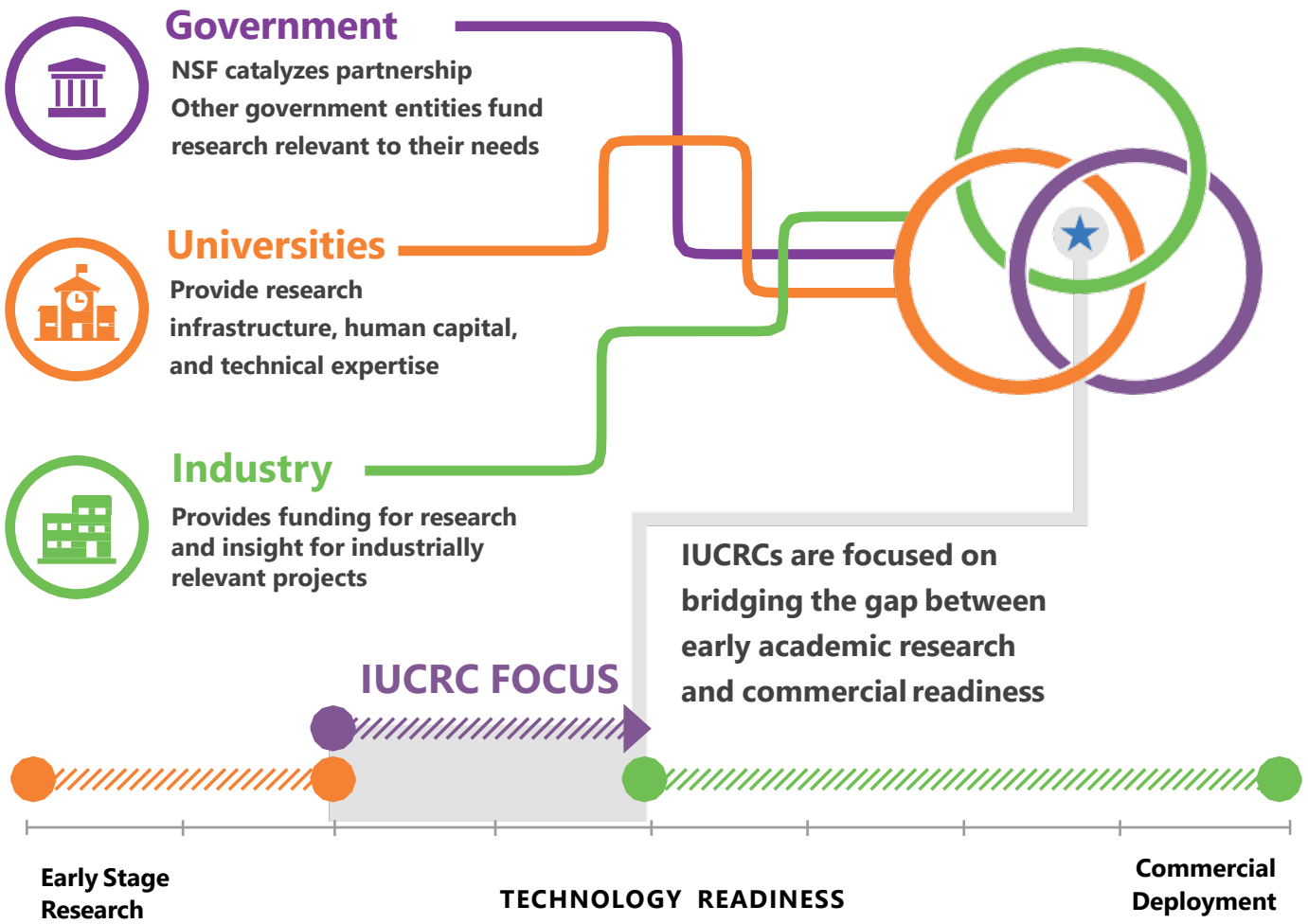
A new partnership between the IUCRC Program and Advanced Technological Education Program (ATE)

*The NSF's ATE program supports the education of the skilled technical workforce in 2-yr Institutions of Higher Education (IHE).*

Community Colleges
Technical Colleges

*ATE covers a wide range of fields, from agriculture to advanced manufacturing to cybersecurity and beyond. During its twenty-eight-year history there have been ATE projects in every state and some territories of the US .*

# Industry-University Cooperative Research Centers (IUCRC)




***Perform cutting-edge pre-competitive basic research in science & engineering to drive innovation and societal impact***

# START DCL: An invitation to IUCRCs to engage

- Offers traineeship opportunities to students/faculty from Community and Technical Colleges
- Access to state-of-the art facilities
- Exposure to Projects of strong industrial value and interest
- Hands-on training on a spectrum of critical science and engineering skills
- Powerful Mentorship from Researchers and Industry Members
- Expands existing networks for all participants.

# An IUCRC Example: ambic.org
# Advanced Mammalian Biomanufacturing Center

***The mission of AMBIC is to develop enabling technologies, knowledge, design tools and methods that apply and integrate high-throughput and genome-based technologies to fast-track advanced biomanufacturing processes.***

Johns Hopkins University

Clemson University

University of Maryland

University of Delaware

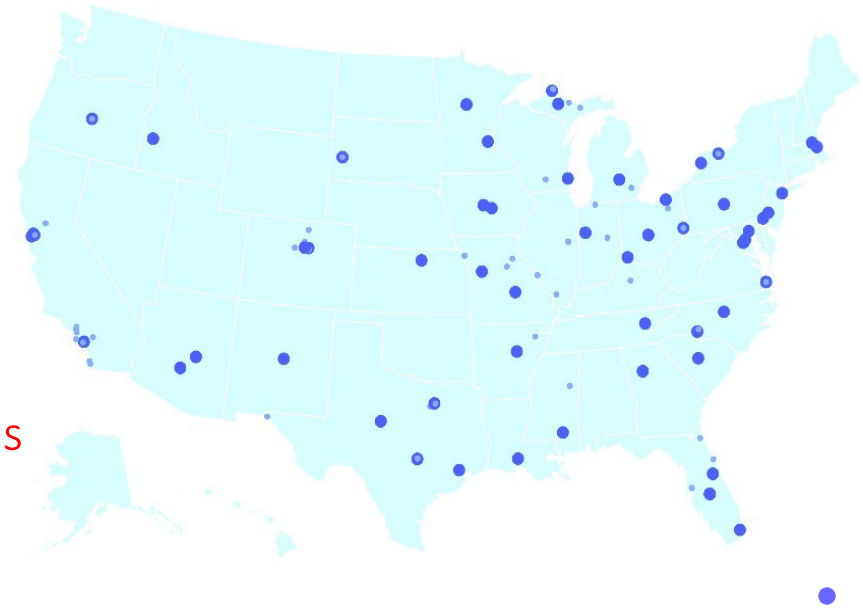
UMass Lowell

# IUCRC – Nationwide Network

## A Powerful training ground for the Skilled Workforce

75
Centers

100+
U.S.
Universities



400+
Large Companies

300+
Small Companies

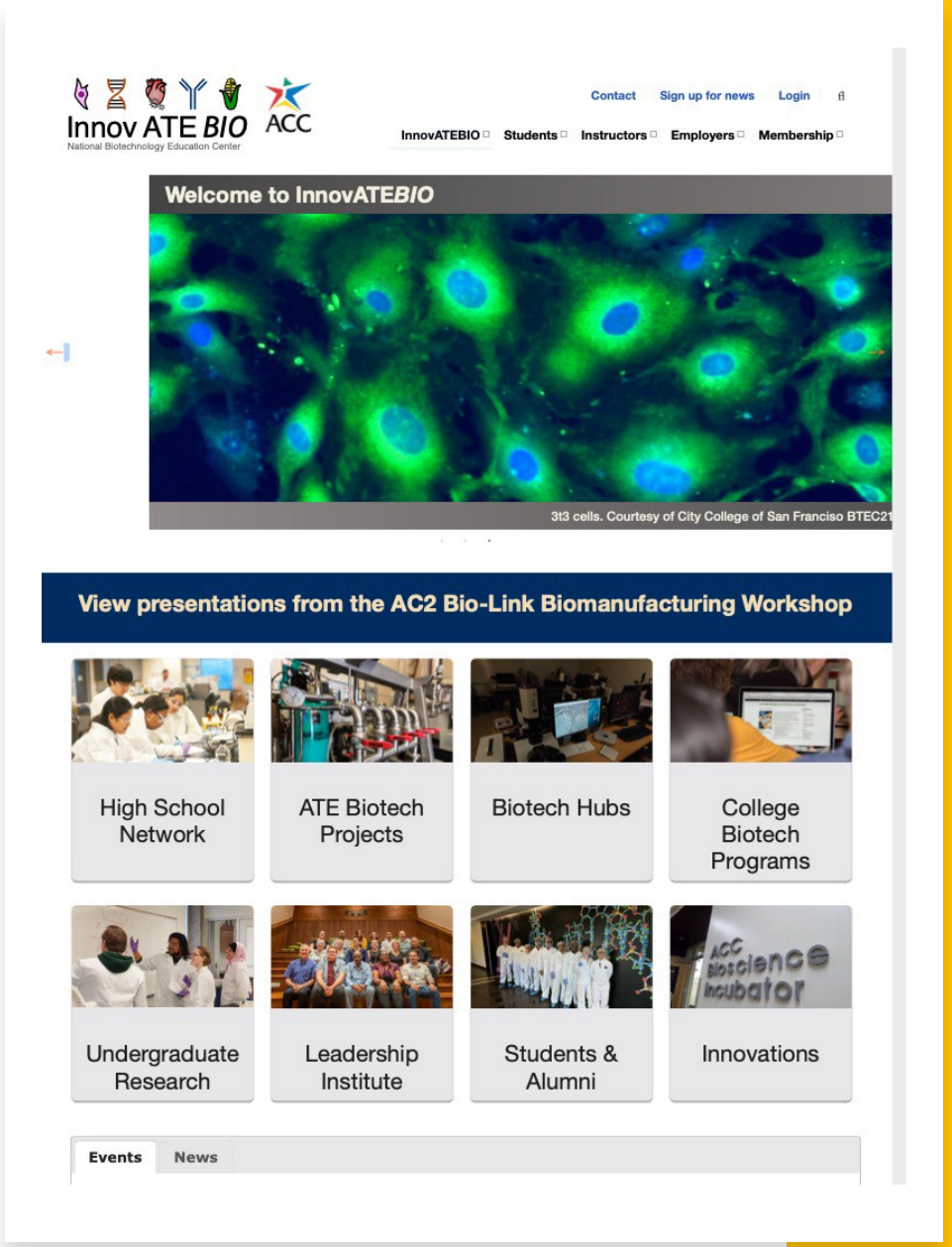
20+
Federal Government
Agencies

- Advanced Electronics and Photonics
- Advanced Manufacturing
- Advanced Materials
- Biotechnology
- Civil Infrastructure Systems
- Energy and Environment
- Forensic science
- Geosciences
- Health and Safety
- IT, Communication, and Computing
- System Design and Simulation

# A random sampling of Organizations in IUCRCs

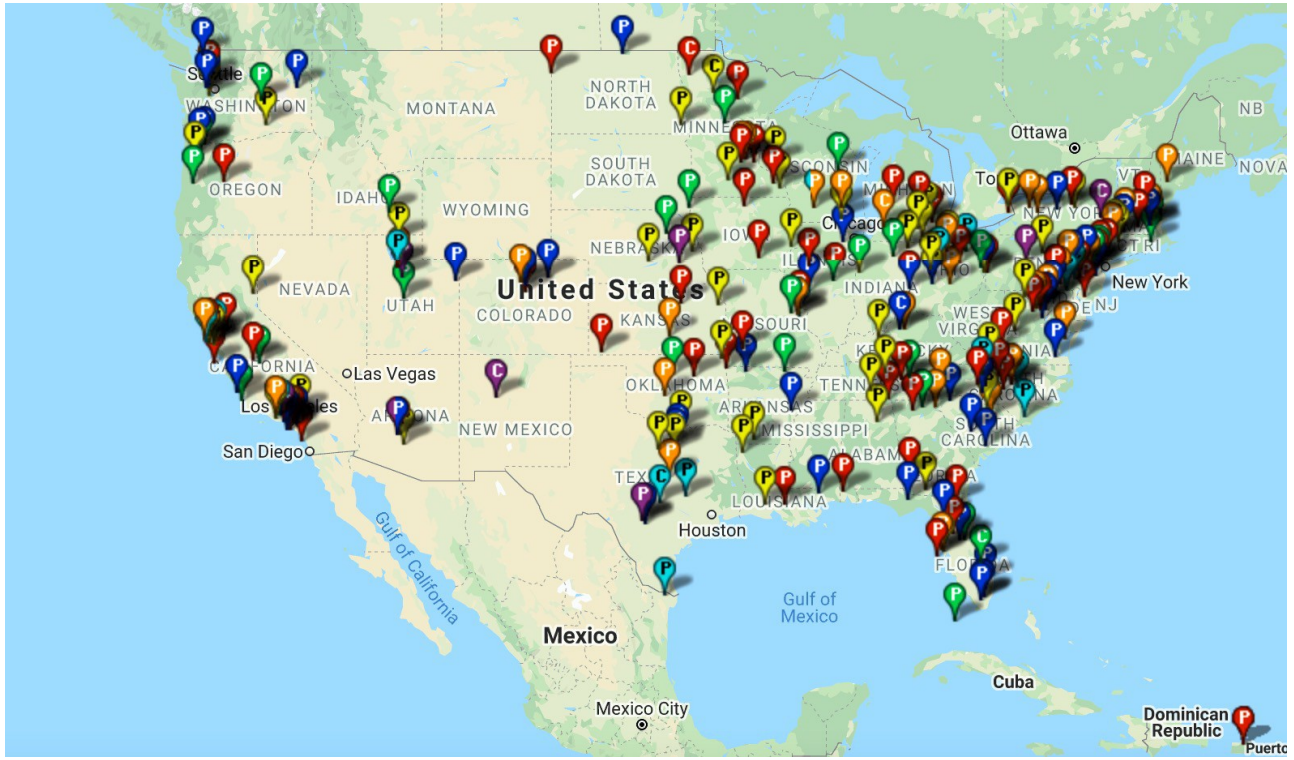
https://innovatebio.org/

ATE Biotechnology Center



# ATE - Nationwide Network

## Active ATE Projects and Centers

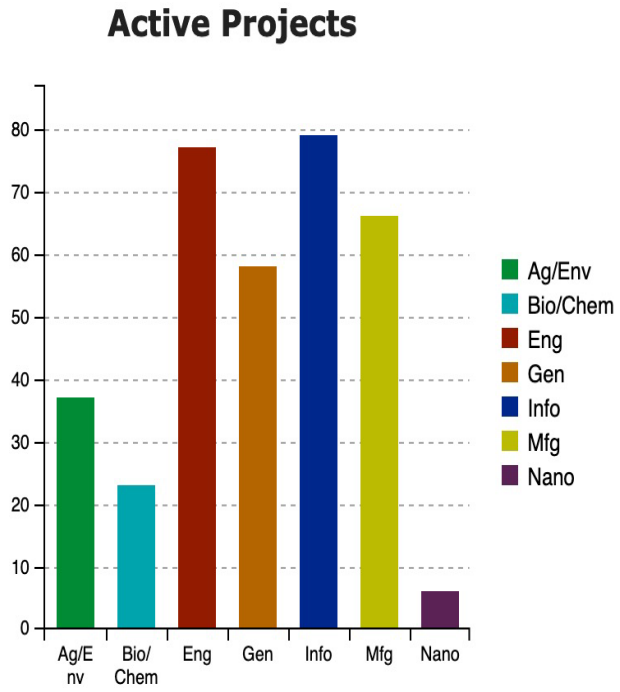


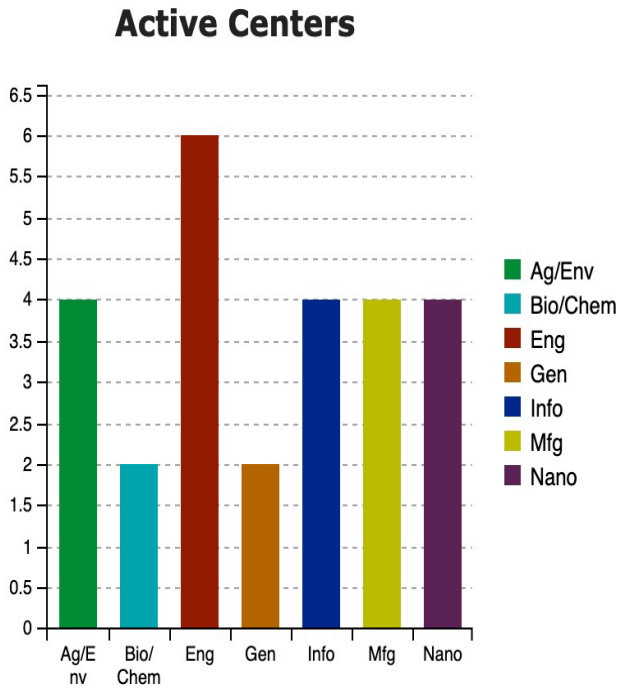

| | | | |
|---|---|---|---|
| All | List | Advanced Manufacturing | List |
| Agricultural and Environmental | List | Bio and Chemical | List |
| Engineering | List | General Advanced Technological Education | List |
| Information and Security | List | Micro and Nanotechnologies | List |

Interactive map at [www.atecentral.net](http://www.atecentral.net)

# Projects and Centers by Focus Area

346 Active Projects/26 Active Centers



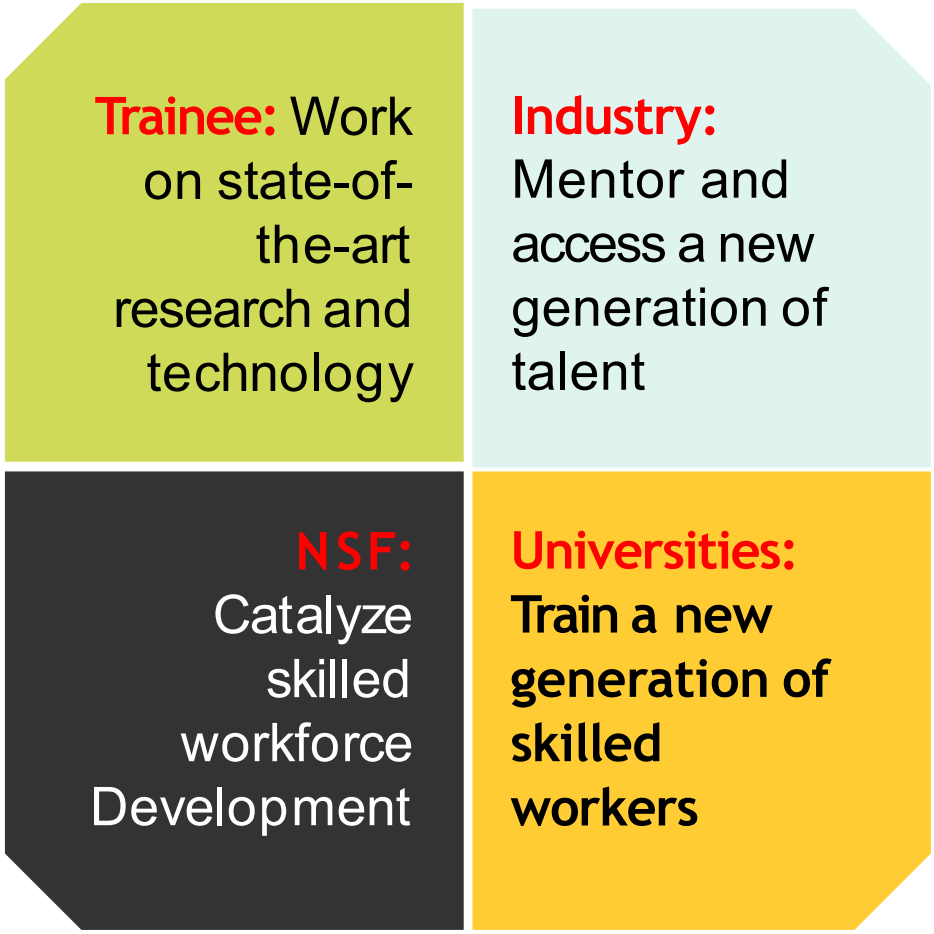




All Centers and Projects have committed Industry Partners

Additional information at [www.atecentral.net](http://www.atecentral.net)

# Overview: Skills Training in Advanced Research & Technology (START)

- Any active IUCRC University site (iucrc.nsf.gov) can serve as the traineeship Host
- ATE Awardees can initiate partnerships with IUCRCs
- Budget : up to 20% of the NSF grant
- Funds for students and faculty from any US based 2-yr IHE
- Support for faculty/graduate student mentors at the IUCRC



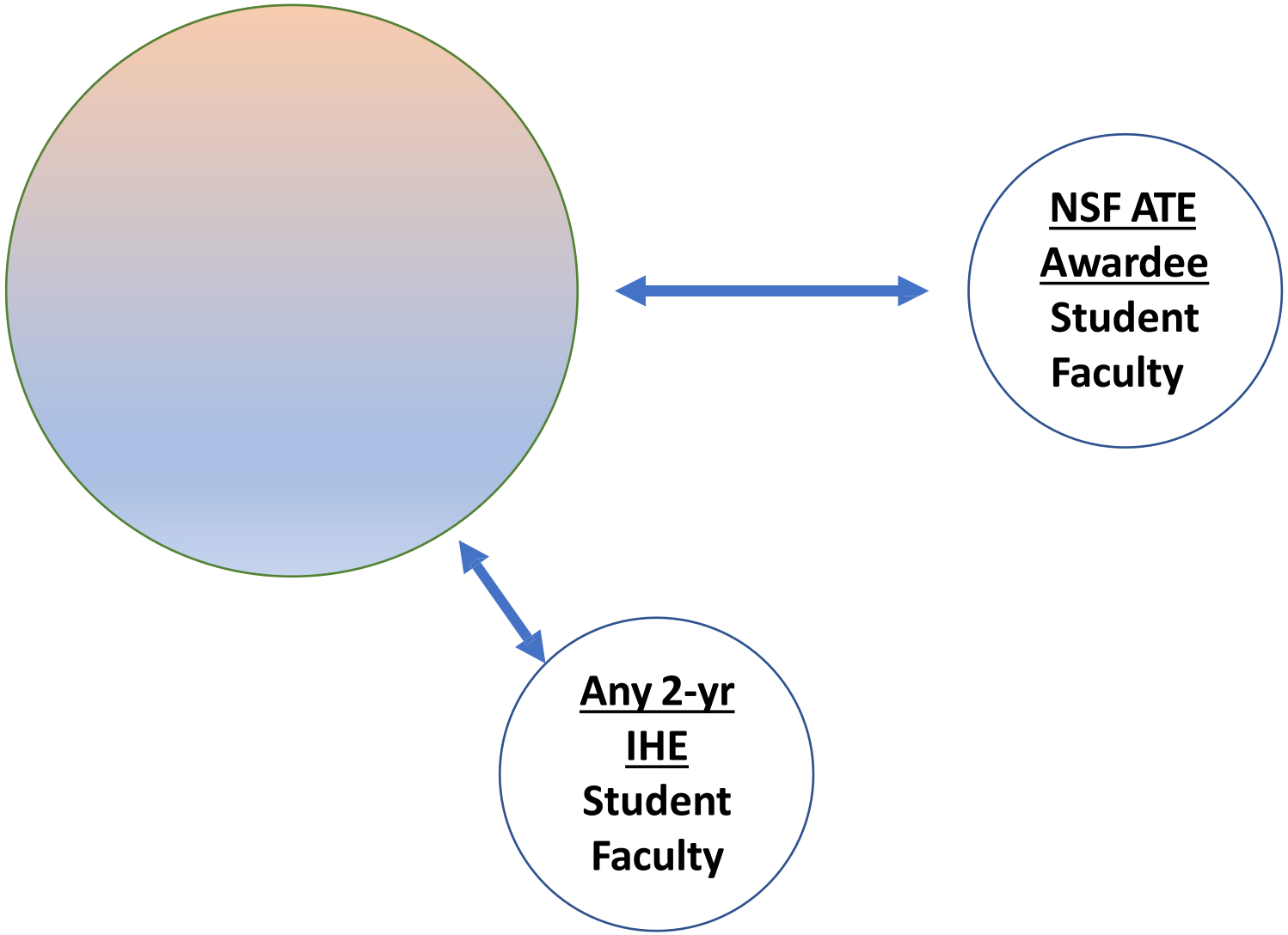

www.nsf.gov/START

# Powerful networking options

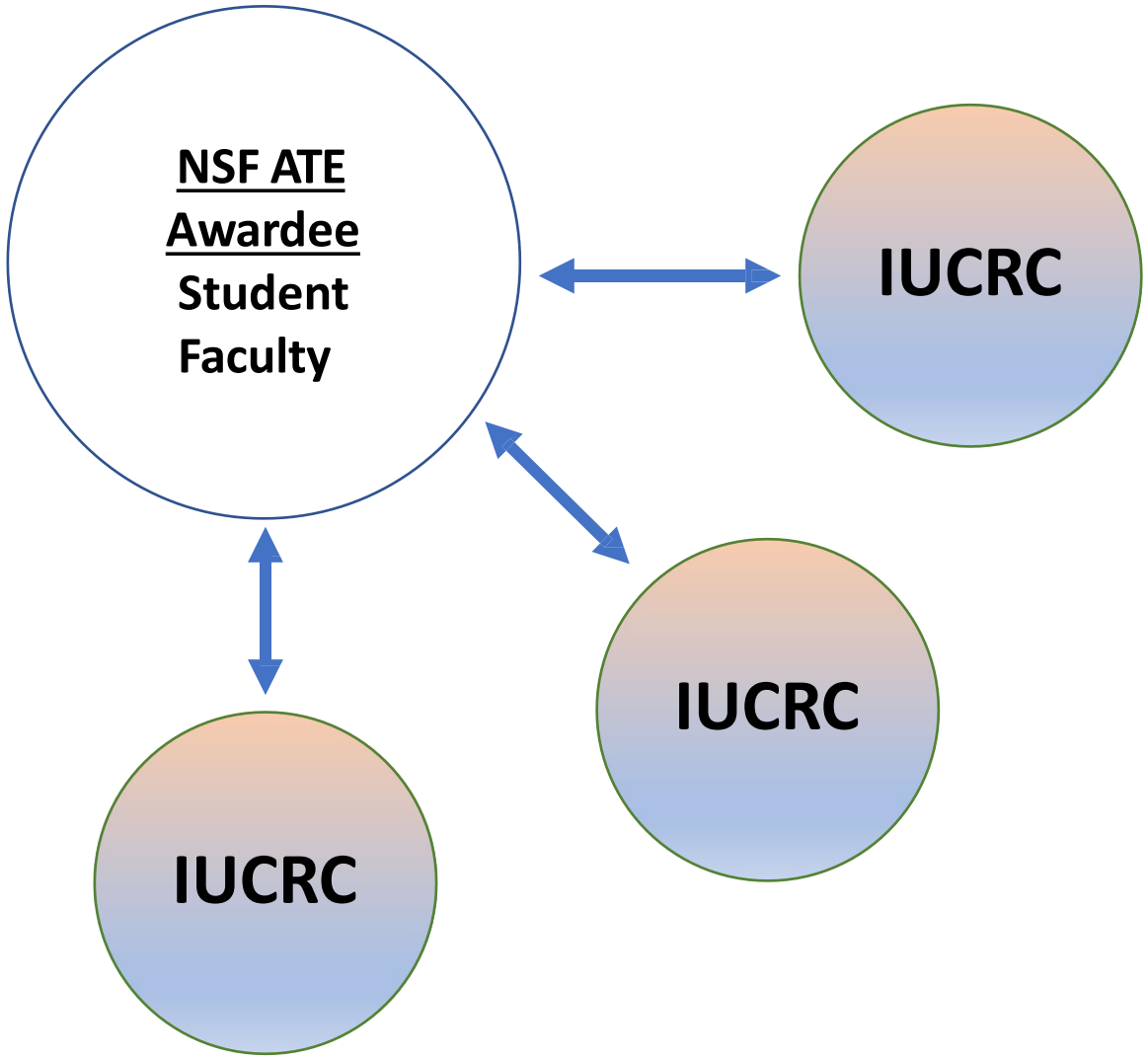
- ATE awardees can partner with one or more IUCRCs

- An IUCRC can partner with any ATE awardee or, reach out to other 2-yr IHEs anywhere in the U.S.

# Partnerships: A closer look



# Partnerships: A closer look




Advanced Electronics and Photonics

Advanced Manufacturing

Advanced Materials

Biotechnology

Civil Infrastructure Systems

Energy and Environment

Forensic science

Geosciences

Health and Safety

IT, Communication, and Computing

System Design and Simulation

..and more!

# START Program: Rolling Submissions & Deadlines

- Target date (not a deadline)
  - June15 in FY21 and April 15th future years
- Supplemental funding requests may be submitted at any time
- Budget not to exceed 20% of NSF grant
- Decisions made on a rolling basis

# START: Broad funding support

- Funds for **travel**, tuition and fees, health insurance, **stipends** and **temporary relocation costs** for the participant(s) from the 2-yr IHE

- Funds for the Host Organization mentor(s) (e.g., **faculty/postdoc/graduate student**)

- Funds may be requested by the Host Institution or 2-yr IHE for **materials and supplies** to support the 2-yr IHE student or student/faculty team participation in the IUCRC project during the internship.

# START Proposal - Nuts and Bolts!

- Two-page summary that describes the proposed traineeship.
- Student Resume
- A bio-sketch of any faculty member from the 2-yr IHE who is participating.
- A letter of collaboration from the IUCRC describing the mentorship, training and involvement in IUCRC supported research.
- The 2-yr IHE student should be enrolled at least part-time in a 2-yr IHE.
- For 2-yr IHE faculty involved as a participant, the faculty's institution must provide a letter of acknowledgement of the participation in the proposed activity.
- An agreement on how intellectual property (IP) will be handled. The NSF is responsible neither for the agreement reached nor the IP information exchanged between participating parties. NSF claims no rights to IP created on START traineeships
- A Budget and a clear justification for all requested budget costs.

# Benefits – 2-yr IHE Students/Faculty

- Engage in advanced industrial significant research projects
- Develop new skills working on state-of-the-art research equipment and technology
- Mentorship from academic and industrial researchers
- A better understanding of career options (academic and industrial)

# Benefits – To the 2-yr IHE Institution

- Enhance student training, recruitment, and placement
- Professional development of Faculty
- Build additional sustainable relationships with industry
- Build strong sustainable relationships with research universities

# Benefits – To Industry

- Contributing to the skilled workforce education and talent pipeline via the IUCRC
- Discover and network with 2-yr IHEs
- Stronger and sustainable pipeline of skilled worker talent

# Get STARTed!
# Share a 1-page summary with the Program Director

- What is the 2-yr IHE you are working with? Or, what is the IUCRC site you will be working with?
- What IUCRC projects will the trainee work on? Will the IUCRC site be supporting students, faculty, or student/faculty teams?
- What mentoring or training and/or research experiences they will receive?
- What critical new technical skills will be developed?
- What % of the total internship period will the student spend at the IUCRC? Is an immersive internship planned? (Same for faculty if involved)
- What is the budget you will be requesting and how will it be spent?

# What Next for IUCRC ?

- Reach out to technical/community colleges (2yr IHE) or ATE Grantee and offer opportunities
- Work with the 2yr IHEs to develop a traineeship program
- Develop longer-term sustainable engagements between your IUCRC and Community/Technical Colleges to develop a pipeline of skilled workforce talent

# What's next for ATE?

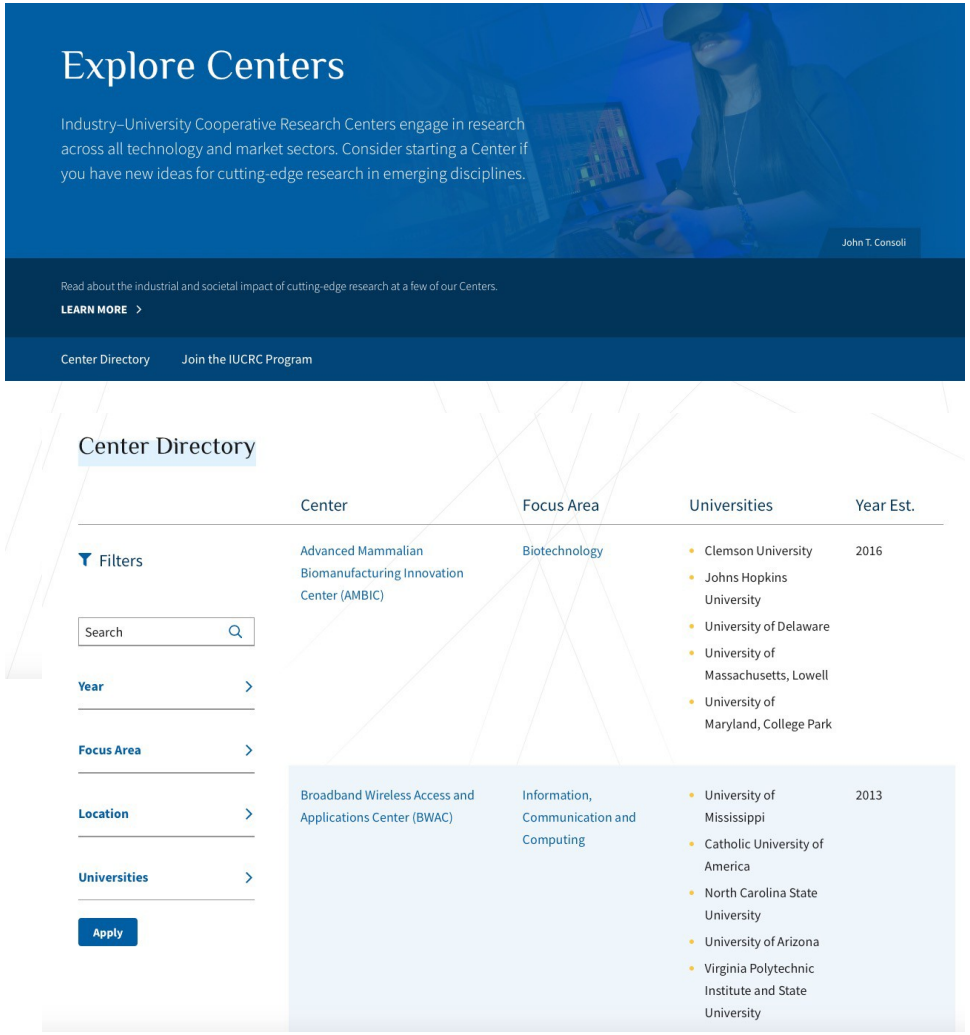
- Reach out to IUCRC sites to discuss developing a partnership

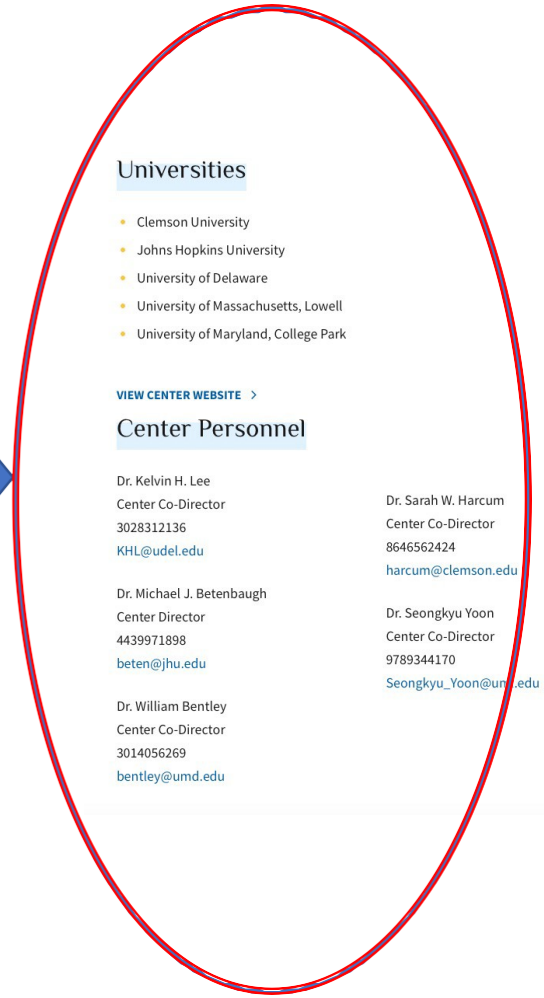
  https://iucrc.nsf.gov/centers

- Discuss existing industry partnerships and provide the IUCRC with details on your program

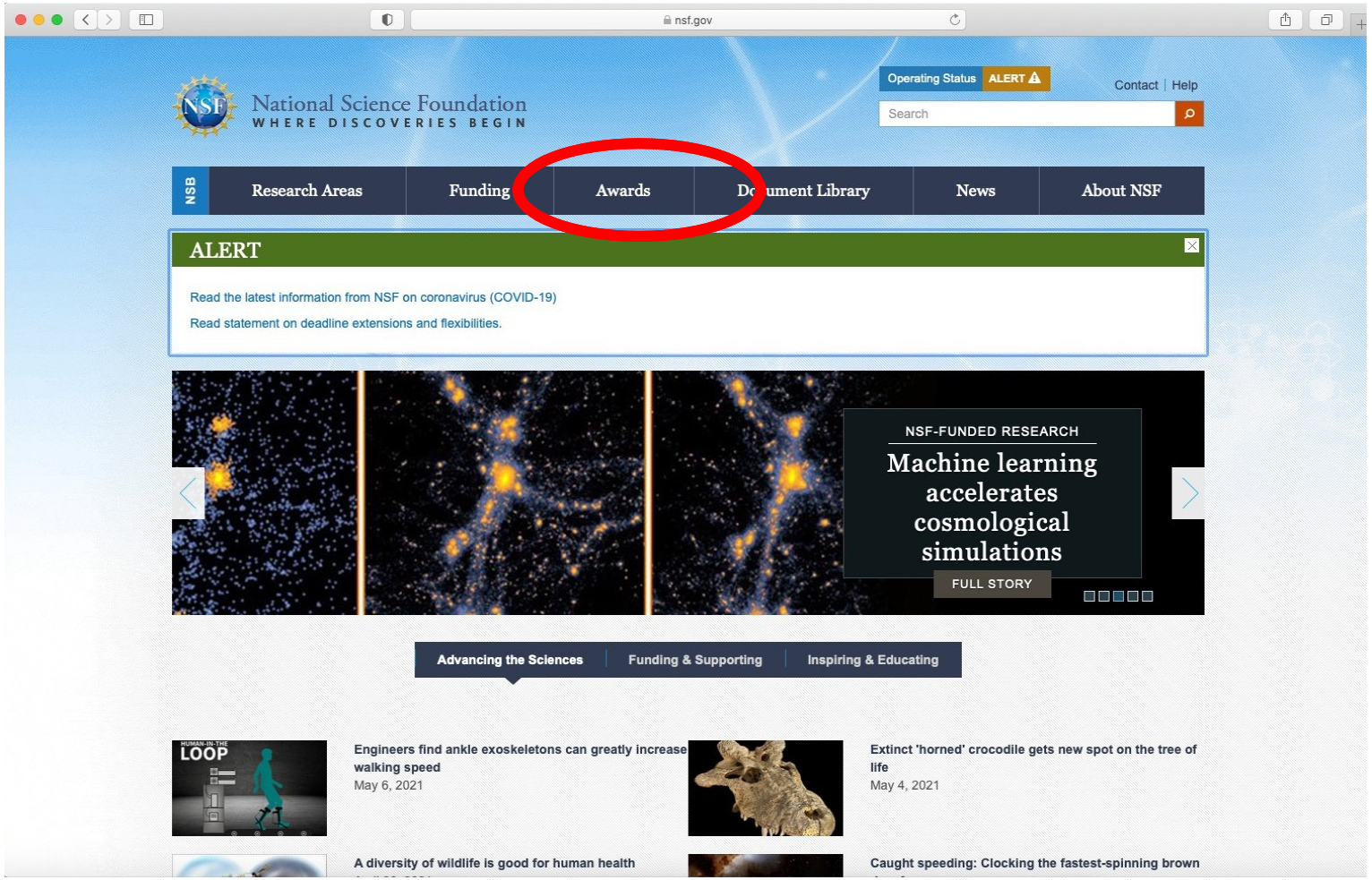
- Develop longer-term sustainable engagements between your institution and the IUCRC to develop a pipeline of skilled workforce talent

# Find an IUCRC : iucrc.nsf.gov/centers



# Find an ATE AWARD



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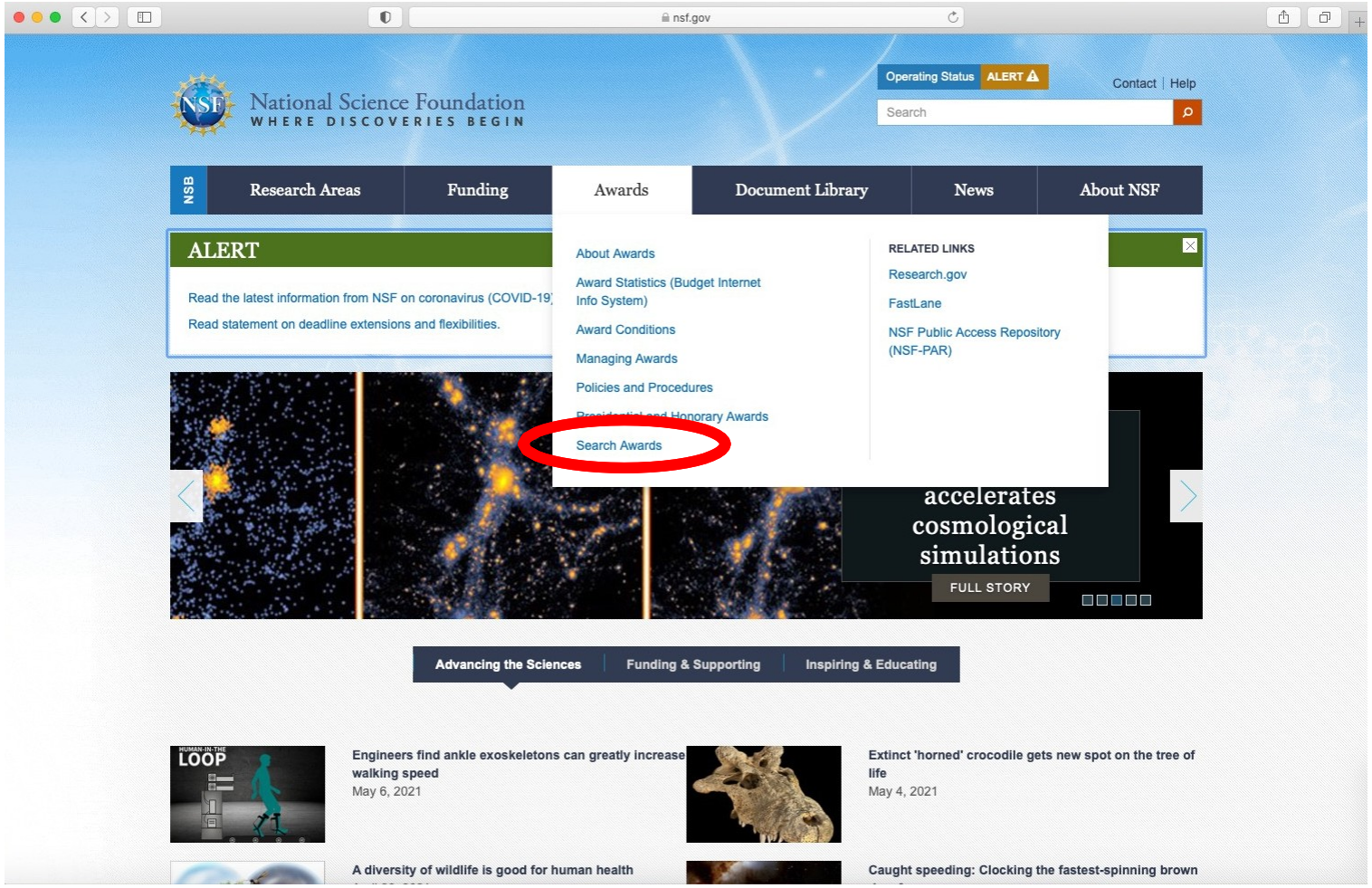
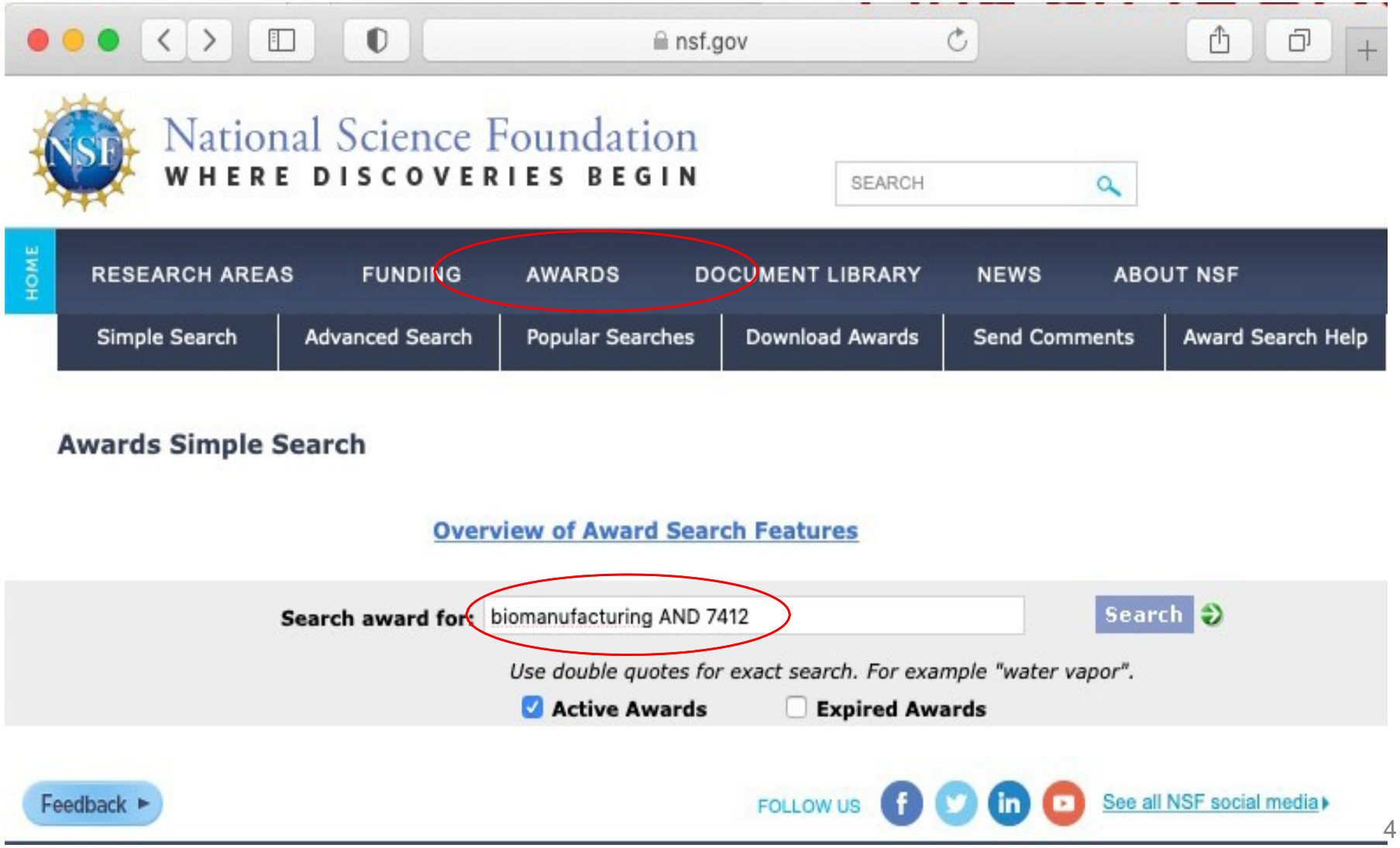


# Find an ATE AWARD: https://www.nsf.gov/awardsearch/

## Search for “Keyword” AND 7412



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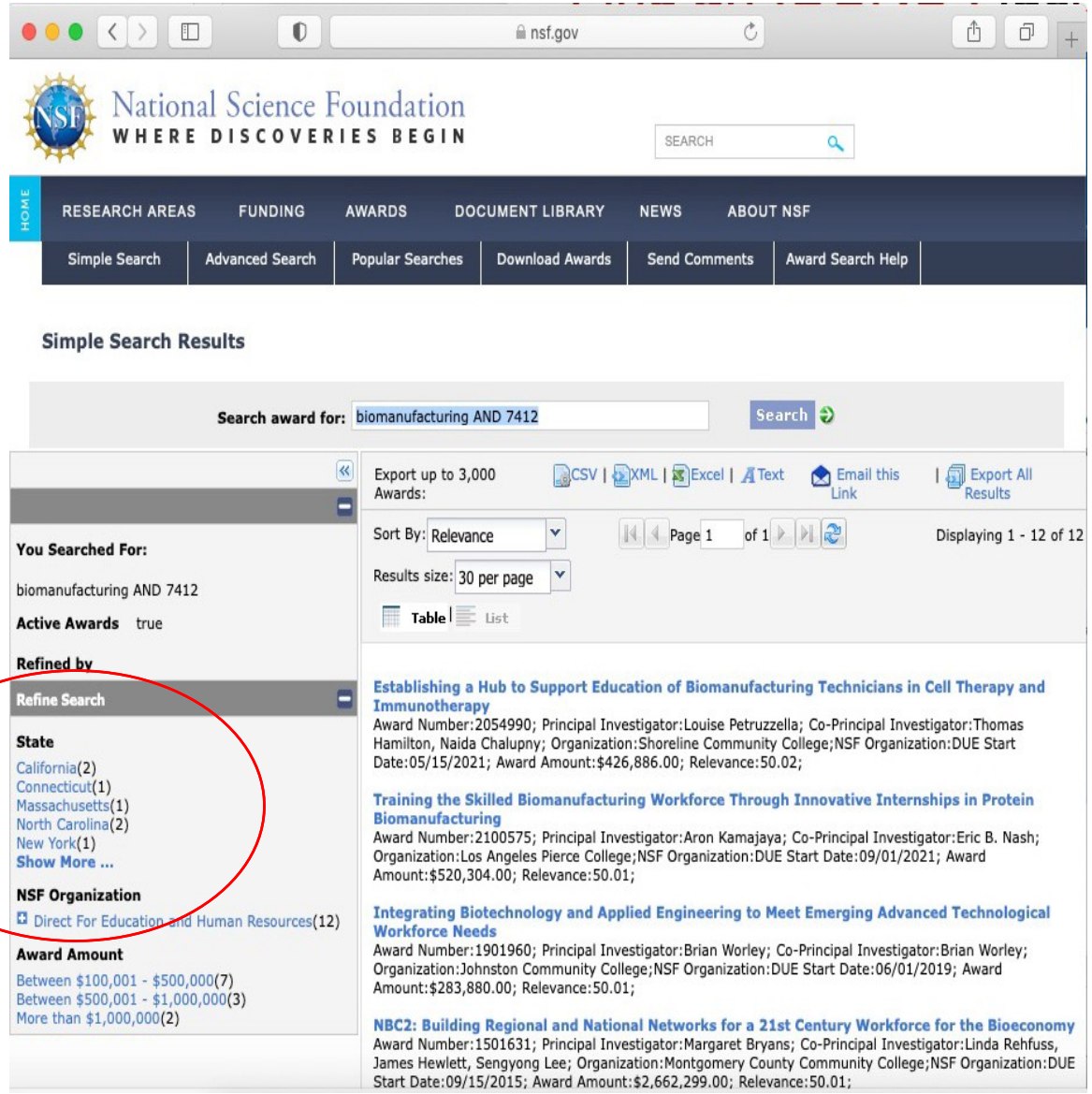

# A cross-NSF Team supports START

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# Thank you!

# Questions?

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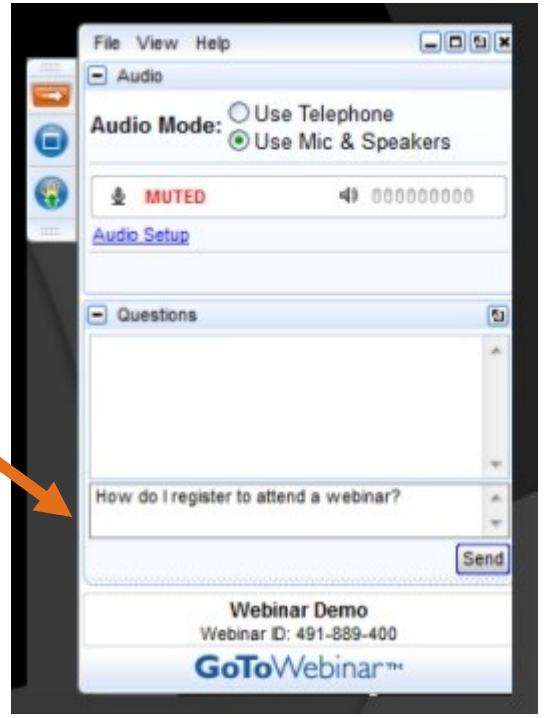
# Q&A

## GoToWebinar

Please submit your questions using the questions tab on your screen.



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GOVERNMENT PARTNERSHIP
GLOBAL PERSPECTIVES

A UIDP WEBINAR SERIES

May 20, 2021 12-1 PM ET

# Gearoid Mooney
## Enterprise Ireland

Moderator
Pete Ellingson
Procter & Gamble

UIDP
Strengthening
University-Industry
Partnerships

# Help shape the future of engineering R&D

NSF Engineering Research Visioning Alliance

**UIDP** is administrative partner, with core partners **Big Ten Academic Alliance** and **EPSCoR IDeA Foundation**

- Inclusive, multi-stakeholder organization
- NSF-funded, five-year initiative

## Get involved!

- Become an ERVA Champion at www.erva.org
- Follow #ERVACommunity on LinkedIn, Facebook, Twitter

# THANK YOU!

Please check your email and complete the survey so UIDP can better meet your needs.