Vision Implementation Working Group:

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NSB Quarterly Meeting
February 23, 2021

Vision 2030 Updates – External Engagement

- American Chemical Society
- AAAS Fireside Chat
- UTEP
- HIBAR Alliance
- HBCU VPRs/BEYA 2021 Annual STEM Conference
- CEOSE Meeting
- Tennessee, Texas, New Mexico listening sessions
- APLU Council on Research
- AIP Assembly of Society Officers
- American Chemical Society Annual Spring 2021 Meeting

FOCUS ON THE FUTURE: NSB ROADMAP

DELIVER BENEFITS FROM RESEARCH

DEVELOP STEM TALENT FOR AMERICA

EXPAND THE GEOGRAPHY OF INNOVATION

FOSTER A GLOBAL S&E COMMUNITY

DELIVER BENEFITS FROM RESEARCH

NSB has endorsed the principle that "all [NSF]-funded research and education must further the national interest by contributing to the [NSF's] mission."

While several agencies invest in fundamental research, NSF is the only agency whose sole mission is to do so across a wide breadth
curiosity-driven research has provided the bas
could not have been anticipated at the time of
to U.S. taxpayers from these investments and
entrepreneurs to compete globally, the U.S. m
improve coordination, a

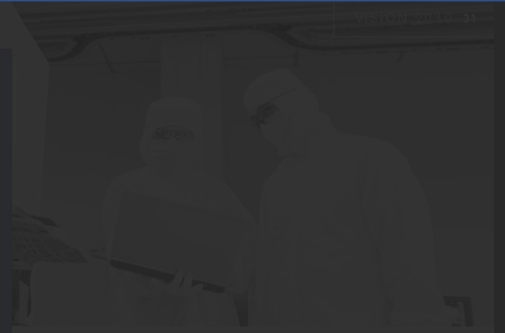
PROGRESS

In the last decade NSF
significant steps to ensu
and its taxpayers benefi
it supports, including thi
on research in the natio
accountability and trans
broader impacts criterio
process. The agency has also created new programs (e.g., INCLUDES, I-Corps, National Artificial Intelligence Research Institutes, and Convergence Accelerators) targeting national priorities and societal challenges.

NSB Actions:

- Evaluate how NSF's broader impacts merit review criterion could better meet societal needs.

To leverage America's lead in basic research, the country must find ways to speed the path from discovery to innovation.



COORDINATION

- In partnership with NSF leadership, undertake an organizational review and

- Evaluate how NSF's broader impacts merit review criterion could better meet societal needs.

inspired by societal problems.

implements an agency-wide partnerships strategy that includes industry and federal mission agencies.

speed the path from discovery to innovation, through partnerships among governments, universities, and the private sector.

NSB Actions:

- Encourage the exchange of people, and with that the exchange of ideas and expertise, among federal agencies, universities, and industry, including through programs like the Industry – University Cooperative Research Centers and Convergence Accelerators.

- Identify and make strategic recommendations on emerging areas of S&E research where the U.S. must be
rnment actions are
leveraging *Science*
ors and NSF's deep
ca's colleges and

- Convene university, industry, and state partners to identify best practices and barriers (regulatory, structural, administrative) to partnerships and translation of NSF-funded basic research.
- As part of a review of NSF, develop options for structures and processes that would magnify translation of discoveries, including consideration of a new NSF directorate focused on translation.

Vision 2030 Implementation: Committee Sessions

- **Oversight:** Broader Impacts
- **Science and Engineering Policy:** NSB policy products
- **Strategy:** Strengthening Foundational Research; the Missing Millions; Translation and Innovation; NSF's next strategic plan; Budget
- **External Engagement Committee:** Roadblocks to STEM Graduate Education panel

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Vision Roadmap:
Expand the Geography of Innovation

- **Conduct a review of NSF strategies to expand S&E capacity in all states.** In this effort, NSB will obtain input from state and industry stakeholders and examine NSF's investment in research, research infrastructure, and education with an eye toward **identifying mechanisms that can best develop capacity and further establish a network of S&E hubs across the country.**

Question: How should the Board approach this commitment?

EPSCOR: Established Program to Stimulate Competitive Research

MISSION

EPSCoR enhances research competitiveness of targeted jurisdictions (states, territories, commonwealth) by strengthening STEM capacity and capability.

VISION

EPSCoR envisions its jurisdictions as recognized contributors to the national and global STEM research enterprise.

GOALS

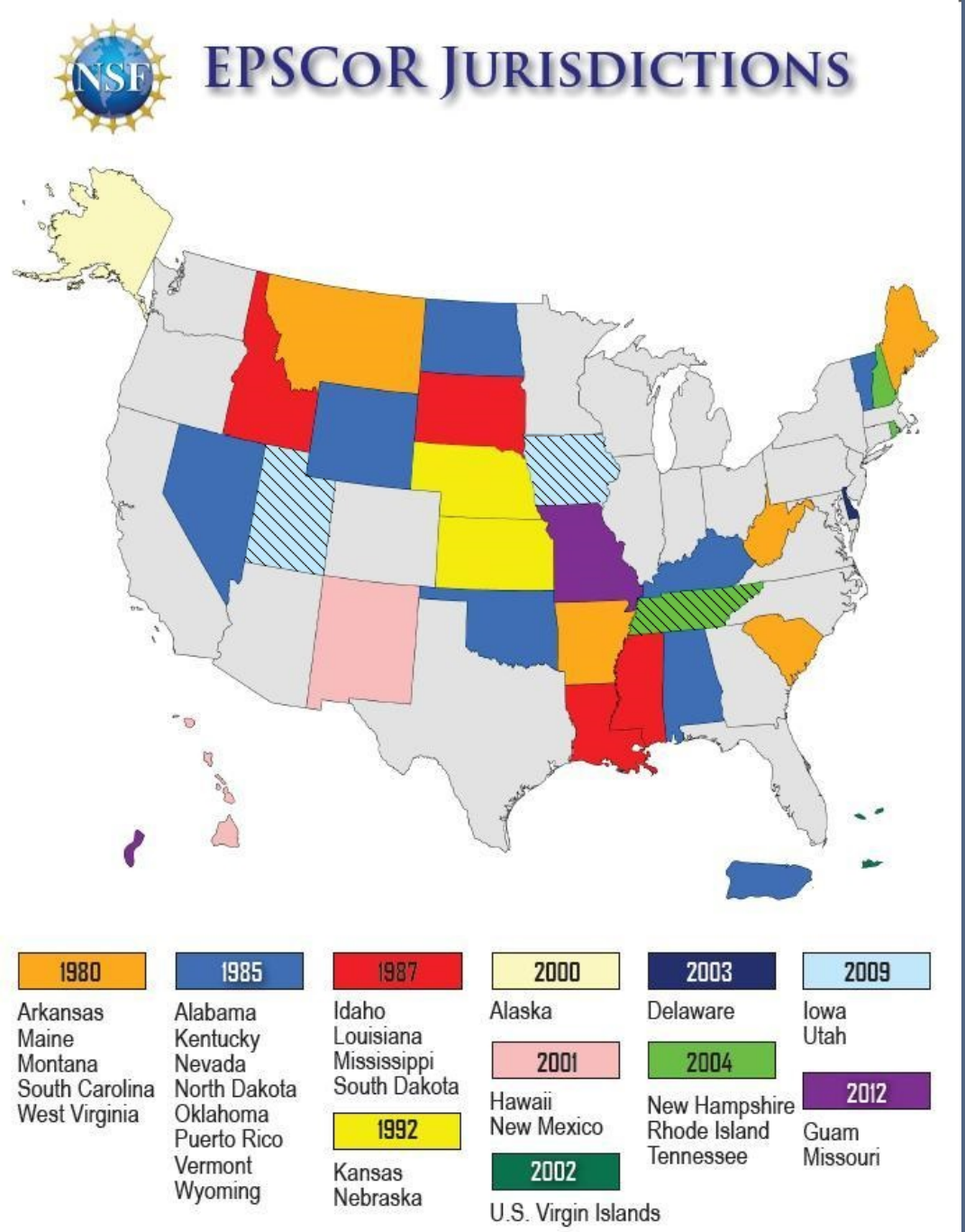
Catalyze research capability across and among jurisdictions;

Establish STEM professional development pathways;

Broaden participation of diverse groups/institutions in STEM;

Effect engagement in STEM at national and global levels; and

Impact jurisdictional economic development.



Current Eligibility Threshold: 0.75% NSF RR&A

Five jurisdictions have crossed the threshold and lost eligibility:

– IA, TN, UT (FY 2013)
– MO (FY 2015)
– NM (FY 2018)

NSF Funded Centers – A key investment

- **STC**: Science and Technology Centers
- **MRSEC**: Materials Research Science and Engineering Centers
- **CCI**: Centers for Chemical Innovation
- **ERC**: Engineering Research Centers
- **IUCRC**: Industry/University Cooperative Research Centers

Basic Research → Applied Use-inspired

STC	MRSEC CCI	ERC	IUCRC
1987	1994, ‘98	1985	1973

75+ IUCRC Centers

225 University sites, 876 Industry members

Broad Research Themes

• Advanced Electronics and Photonics	(7 centers)
• Advanced Manufacturing	6
• Advanced Materials	11
• Biotechnology	6
• Civil Infrastructure Systems	1
• Energy and Environment	12
• Health and Safety	6
• IT, Communication, and Computing	24
• System Design and Simulation	3

*Data from 2015

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VISION FOR THE FUTURE

The U.S. has made the investments needed to fuel an innovation economy and remain preeminent in science and engineering.

The U.S. remains a magnet for the world's best talent.

U.S. scientists and engineers are modeling scientific values that are practiced throughout the world.

The U.S. has increased STEM skills in its workforce, creating more opportunities for all Americans.

The U.S. has created an accessible, attractive S&E enterprise that more closely reflects the nation's demographic and geographic diversity.

U.S. government, industry, and academic partners are working in coordination to realize national R&D priorities and accelerate the discovery-to-innovation cycle.

NSF continues to drive U.S innovation through fundamental research and lead the evolution of the global practice of science and engineering.

nsf.gov/nsb/NSBActivities/vision-2030.jsp

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