Special Report to the Nation III

ACCELERATING COLLABORATIVE, SYSTEMIC CHANGE

to Broaden Participation in STEM

National Science Foundation

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WHO WE ARE

NSF's Eddie Bernice Johnson Inclusion Across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES) Initiative is a comprehensive, national effort designed to enhance U.S. leadership in discovery and innovation by focusing on diversity, inclusion, and broadening participation in science, technology, engineering, and mathematics (STEM) at scale. In 2022, the INCLUDES Initiative was renamed in honor of retired Chairwoman Eddie Bernice Johnson, U.S. House of Representatives, TX 30th District. Chairwoman Johnson worked to build a legacy of science for all and the INCLUDES Initiative works toward a similar goal, by awarding grants and building and strengthening an engaged National Network to build capacity, raise visibility, and expand opportunity to broaden participation in STEM.

Karen Marrongelle, Chief Operating Officer | **Eddie Bernice Johnson,** Retired U.S. House of Representatives | **James L. Moore, III**, Assistant Director, EDU | **Sylvia Butterfield**, Acting Assistant Director, SBE | **Tori Rhoulac Smith**, Lead Program Director, NSF's Eddie Bernice Johnson INCLUDES Initiative

Credit: **Charlotte Geary**, NSF

A MESSAGE FROM THE NSF

It is with great enthusiasm that we share with you the third Report to the Nation for NSF's Eddie Bernice Johnson INCLUDES Initiative. The INCLUDES Initiative is catalyzing collaborative, systemic efforts to increase diversity and inclusion in the science, technology, engineering, and mathematics (STEM) workforce on a broad, national scale. This report highlights progress toward these goals.

Since funding the first projects in 2016, the INCLUDES Initiative has supported numerous efforts to broaden participation in STEM across different populations, disciplines, and settings. Design and Development Launch Pilot projects have tested new strategies and models for collaborative approaches to broadening participation. Planning grants helped projects build collaborative infrastructure to establish the shared vision, partnerships, goals and metrics, leadership and communication. They supported the potential for expansion, sustainability, and scale that could lead to future networks and centers focused on broadening participation in STEM. Alliances establish large, multifaceted networks to implement systemic strategies and conduct research that will advance broadening participation goals. These projects, along with conference grants, awards co-funded with other NSF programs, federal agency partners, and many allied individuals and organizations, have developed into an interconnected National Network, led and supported by the INCLUDES Coordination Hub.

Indeed, the INCLUDES National Network is developing into a dynamic ecosystem of people and projects that span research and practice, working collaboratively to transform STEM education and the STEM workforce through diverse participation and contribution. As a Foundation-wide initiative, representatives from all NSF Directorates work together to advance INCLUDES goals. Funded projects collaborate to institutionalize practices that prepare students for STEM careers, to develop STEM identity in individuals from underrepresented and underserved populations, and to scale up evidence-based models that encourage inclusion in STEM, among other outcomes. Now, INCLUDES is fittingly named in honor of retired Congresswoman Eddie Bernice Johnson, the first Black woman to chair the House Committee on Science, Space, and Technology and an extraordinary leader who championed collaborative efforts to create opportunities in science for all Americans.

As you read this report and consider the outcomes presented, we encourage you to consider how you might contribute to the Initiative and be a member of the INCLUDES National Network. Because of INCLUDES, new opportunities are emerging. New partnerships are being established. New resources are available. All contribute to continued progress toward the goal of a more diverse, inclusive STEM enterprise. Please join us!

SETHURAMAN PANCHANATHAN | Director
with **SUSAN MARQUSEE** | Assistant Director, Directorate for Biological Sciences
MARGARET MARTONOSI | Assistant Director, Directorate for Computer and Information Science and Engineering
SUSAN MARGULIES | Assistant Director, Directorate for Engineering
ALEXANDRA ISERN | Assistant Director, Directorate for Geosciences
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SYLVIA BUTTERFIELD | Acting Assistant Director, Directorate for Social, Behavioral and Economic Sciences
JAMES L. MOORE III | Assistant Director, Directorate for STEM Education
ERWIN GIANCHANDANI | Assistant Director, Directorate for Technology, Innovation and Partnerships

IN MEMORIAM

NSF's Eddie Bernice Johnson INCLUDES Initiative honors the life and legacy of Dr. Kellina Craig-Henderson, champion of broadening participation efforts and strong supporter and contributor to INCLUDES. She is greatly missed.

Dr. Kellina "Kelli" Craig-Henderson

1967 - 2023

NEW NAME, CONTINUED COMMITMENT

On August 9, 2022, the Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act was signed into law. With this legislation, the NSF INCLUDES name was changed to the Eddie Bernice Johnson INCLUDES Initiative. This new name honors the legacy of trailblazer U.S. Congresswoman, Eddie Bernice Johnson (Texas 30th District). Congresswoman Johnson spent five decades in public service, where she advocated for opportunities in science for all Americans. Eddie Bernice Johnson was the first African American and female to chair the House Committee on Space, Science, and Technology. Congresswoman Johnson made numerous contributions to historic legislation, including the CHIPS and Science Act. She retired from Congress in 2022, after representing the 30th Congressional District in Texas for 15 terms and authoring/co-authoring over 300 bills. Under the new name, NSF's Eddie Bernice Johnson INCLUDES Initiative will continue to expand opportunity and broaden participation in STEM.

Eddie Bernice Johnson
United States Congresswoman

THE INCLUDES INITIATIVE VISION

The vision of the INCLUDES Initiative is to catalyze the STEM enterprise to work collaboratively for inclusive change, resulting in a STEM workforce that reflects the population of the Nation.

KEY PRINCIPLES

Four key principles guide the work of the INCLUDES Initiative.

1 **BROADENING PARTICIPATION IN STEM:** Improving collaborative efforts aimed at enhancing the preparation, participation, and contributions of populations that have been excluded and/or underserved in STEM.

2 **ENABLING SUSTAINABLE CHANGE IN SYSTEMS:** Supporting projects that take actionable steps to transform policies, practices, relationships, approaches, and/or mindsets, with the goal of making STEM cultures more inclusive, advancing equity, and broadening participation in STEM.

3 **SCALING UP OUTCOMES IN WAYS THAT ADVANCE EQUITY:** Promoting strategies that scale up proven and promising strategies for broadening participation with an understanding of who is most impacted, why and how they are affected, in partnership with those most directly affected, in ways that can be measured as equitable across the involved system(s), and ensuring that mechanisms for scale distribute power and resources across participating organizations.

4 **BUILDING COLLABORATIVE INFRASTRUCTURE:** Operationalizing the following five design elements of collaborative infrastructure in ways that catalyze and accelerate systemic change and lead to substantially broadened participation.

1. SHARED VISION: Networks and partnerships work collaboratively to develop a strategic plan centered on a shared vision to address an identified broadening participation challenge and achieve related outcomes.

2. PARTNERSHIPS: Project teams consist of partnering organizations that engage in mutually reinforcing activities and act collaboratively to accomplish project goals.

3. GOALS AND METRICS: Progress toward well-defined, relevant goals and measurable objectives and outcomes is documented and communicated.

4. LEADERSHIP AND COMMUNICATION: Projects include internal and external communication plans and explain how they develop leadership capacity and distribute leadership within and among partnering organizations.

5. EXPANSION, SUSTAINABILITY, AND SCALE: Projects describe their overall contribution to broadening participation in the nation's STEM workforce and carry out plans that will lead to the expansion, sustainability, and scale up of proven and promising approaches.

INCLUDES OUTCOMES

This *Accelerating Collaborative, Systemic Change to Broaden Participation in STEM* report highlights the progress of NSF's Eddie Bernice Johnson INCLUDES Initiative toward collaborative infrastructure building for systemic change to broaden participation in STEM. The three, primary outcomes in the INCLUDES theory of change are:

MORE EFFECTIVE COLLABORATION

◇ Projects engage a network of partners in a **shared vision** to address a broadening participation challenge.

◇ Individuals and organizations engage in **partnerships** that provide a platform for collaborative action.

◇ Shared **goals and metrics** allow projects to use robust data that facilitate informed decision making.

◇ Projects build capacity for distributed **leadership and communication** among partners.

◇ More partners join the project and more connections are made, leading to **expansion, sustainability and scale**.

MORE CONNECTIVITY

◇ INCLUDES-funded projects form the foundation for an engaged, interconnected National Network (the Network) that is broadening participation in STEM through systemic change.

◇ Shared measures are identified for use across the Network to assess progress toward collaborative infrastructure building as a mechanism for broadening participation through systems change.

MORE INCLUSIVE STEM CULTURES, POLICIES, AND PRACTICES

◇ Students and faculty have increased access to, preparation for, and inclusion in STEM educational activities.

◇ Students from populations that have been excluded from STEM develop a STEM identity.

◇ Project participants demonstrate deepened understanding of broadening participation challenges and the value of broadened participation in STEM.

◇ National Network members increase knowledge and use of evidence-based broadening participation practices.

◇ Funded projects scale up effective broadening participation strategies and models.

THE INCLUDES NATIONAL NETWORK

The INCLUDES Initiative has funded over 200 awards since the Initiative began in 2016. An ecosystem of funded projects is emerging, working at different levels and on different broadening participation challenges, but all advancing progress toward a more diverse and inclusive STEM enterprise.

29	Planning Grants	Over 70	Conferences, EAGERs, Supplements and Co-Funded Awards with Other NSF Programs
70	Design and Development Launch Pilot Projects	17	Alliances
		01	Coordination Hub

These projects form the foundation of the INCLUDES National Network.

Each funded project engages numerous, multi-sector partners and stakeholders who collectively work toward INCLUDES Initiative outcomes. The map on page 13 shows the geographical location of all INCLUDES grantees and their partner organizations in the continental United States, Alaska, Hawaii, Puerto Rico, U.S. Virgin Islands, Guam, and American Samoa (as of May 2023).

1188 ORGANIZATIONS across the Nation and its jurisdictions collaborate on INCLUDES-funded projects.

502 | Higher Ed Institutions ●
112 | Industrial/Commercial Organization ■
98 | K-12 Schools and School Systems ★

377 Nonprofit and Community-Based Organization ⬡
89 State / Local / Federal Government ▲
10 Other ◆
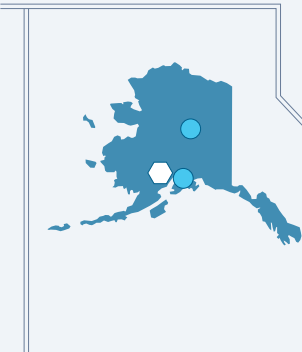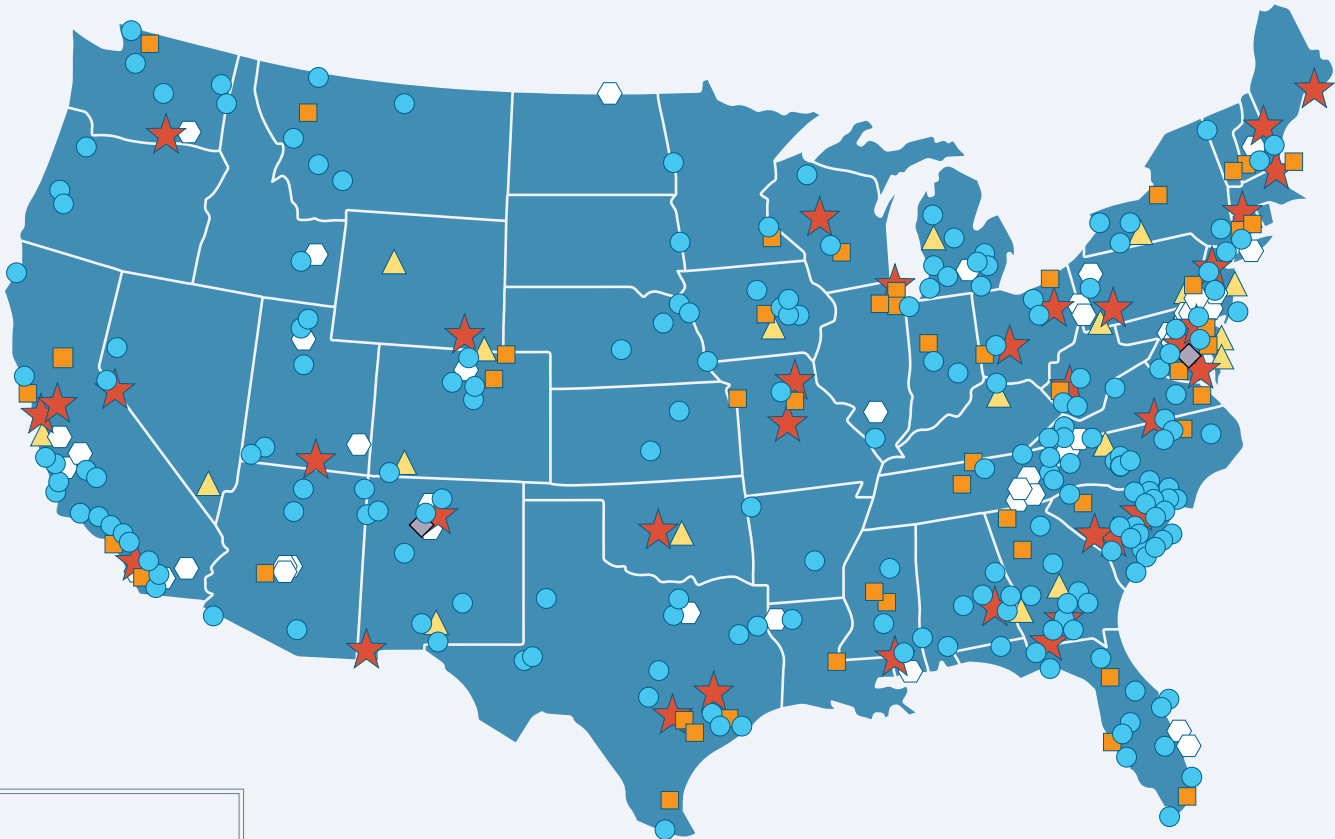
Alaska   Hawaii   Guam   Puerto Rico   American Samoa   US Virgin Islands

To develop and maintain a strong National Network, the INCLUDES Initiative also engages allied efforts in support of mutual broadening participation goals. The Network is strengthened by other NSF-funded projects, federal agencies and their funded projects, broadening participation researchers and practitioners, and all who share in the vision of an inclusive STEM workforce. As more allied efforts join and engage, the National Network moves closer to realizing its outcomes and broadening participation in STEM at a national level.

8 federal agencies partner with the INCLUDES Initiative through information sharing, resource exchange, joint convenings, and more.

National Aeronautics and Space Administration

National Institutes of Health

National Oceanic and Atmospheric Administration

Department of Defense

United States Geological Survey

United States Patent and Trademark Office

Department of Education

National Institute of Standards and Technology

As an example of how the INCLUDES Initiative partners with federal agencies, NASA's Minority University Research and Education Project (MUREP) INCLUDES effort has awarded over $7 million to minority serving institutions to strengthen their support of underrepresented communities — ***https://www.pathspartners.org/2022/03/21/ nasa-award***

> *This new collaboration enables NASA to leverage substantial INCLUDES investments for the next generation of future explorers and innovators. Working together, our agencies can further strengthen a diverse STEM workforce that will achieve missions beyond our imaginations.*
>
> **Mike Kincaid,** NASA associate administrator for STEM Engagement

THE COORDINATION HUB

With equity at the center of all its work and strategies, the INCLUDES Coordination Hub:

◊ **CONNECTS** people and organizations to facilitate relationships and learning, expand and diversify the Network, and support Network members in building capacity in order to grow and sustain their work.

◊ **CURATES** shared research, discoveries, resources, measures, expertise, and experiences to build Network members' capacity to engage in systems change and support more equitable, diverse, and inclusive STEM fields—and to track and measure impact.

◊ **CATALYZES** collective action with a focus on influencing systems change and supporting and sustaining efforts that create more equitable, diverse, and inclusive STEM fields.

◊ Builds and supports **COMMUNITY** with and for all members and amplifies and elevates the voices of participants and members of communities who have been excluded from STEM.

NSF | INCLUDES Coordination Hub
A U.S. National Science Foundation Investment

SRI Education — A DIVISION OF SRI INTERNATIONAL

QEM

EQUAL MEASURE

ORSIMPACT

EDC Education Development Center
| 2018 – 2023 |

Westat®
| 2018 – 2022 |

Digital Promise® Accelerating Innovation in Education
| 2019 – 2023 |

WestEd
| 2023 – 2028 |

CCASN UNIVERSITY OF CALIFORNIA, BERKELEY
| 2023 – 2028 |

The Coordination Hub accelerates progress toward the INCLUDES outcome of

MORE CONNECTIVITY

♦ The INCLUDES National Network is comprised of over 4,075 students, teachers, faculty members, evaluators, postdoctoral researchers, and other broadening participation, education, and STEM researchers and practitioners and it continues to grow.

Year	Value
2019	949
2020	2,000
2021	3,165
2022	4,075
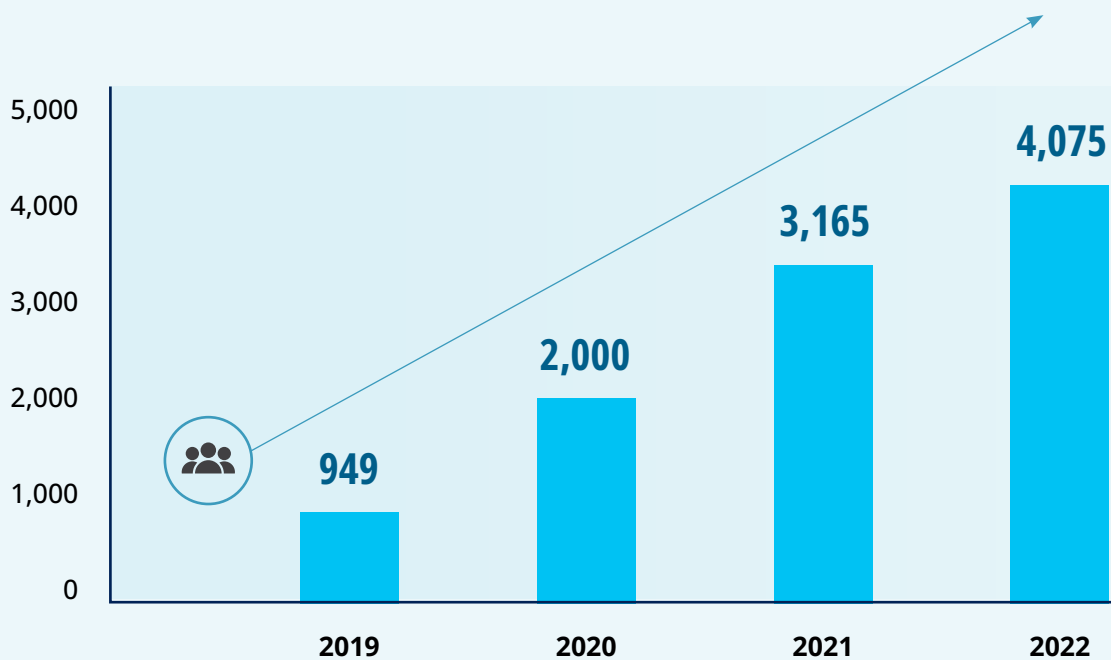
♦ The National Network connects students, teachers, faculty members, evaluators, postdoctoral researchers, and other broadening participation, education, and STEM researchers and practitioners. INCLUDES-funded projects have **over 3,400** individuals working toward broadening participation goals as part of the National Network, including:

749	**PIs/co-PIs**
1075	**Students**
566	**Teachers and Faculty Members**
31	**Postdoctoral Scholars**
135	**Consultants**
854	**Other Professionals**

♦ The National Network continues to grow and connect representatives from organizations across multiple sectors.

National Network Growth by Organization Type

	2016	2017	2018	2019	2020	2021
Academic	119					280
Nonprofit / CBO	120					178
Industry / Tech / Research	17					95
Government	12					37
K-12 Schools	22					16
Professional / Membership	1					12

Legend:
- ● Academic
- ● Nonprofit / Community-Based Organization
- ● K-12 Schools
- ● Industry / Tech / Research Institute
- ● Local / State / Federal Government
- ● Professional / Membership / Consortium

♦ The National Network is strengthened through capacity-building events, resource sharing, and engagement activities coordinated by the INCLUDES Coordination Hub.

CAPACITY BUILDING

Demystifying Systems Change

How the NSF INCLUDES National Network is Changing Systems to Broaden Participation in STEM

- **30+ Webinars** with **2,200+ total participants**
- **10 Research and Resource Briefs** by the INCLUDES Co-ordination Hub

ENGAGEMENT

Successful Factors of Virtual Collaborations and Applied Frameworks

Shared Understanding, Building Trust, and Effective Communication

RESEARCH

- **1.3 million+ Total Site Visits** to includesnetwork.org
- **25+ Virtual Chats** engaging **300+ participants**
- **3 National Network Convenings**
- **8 Federal Agency Partners**
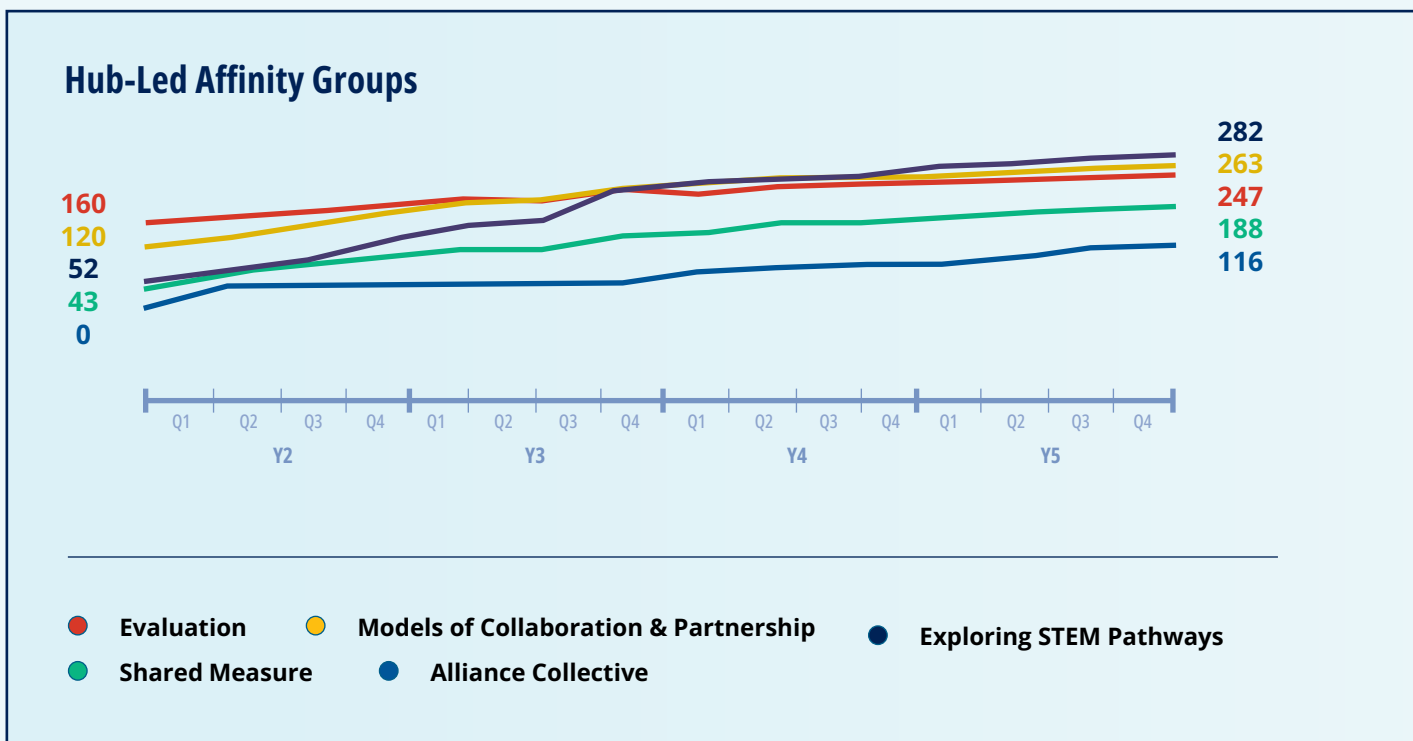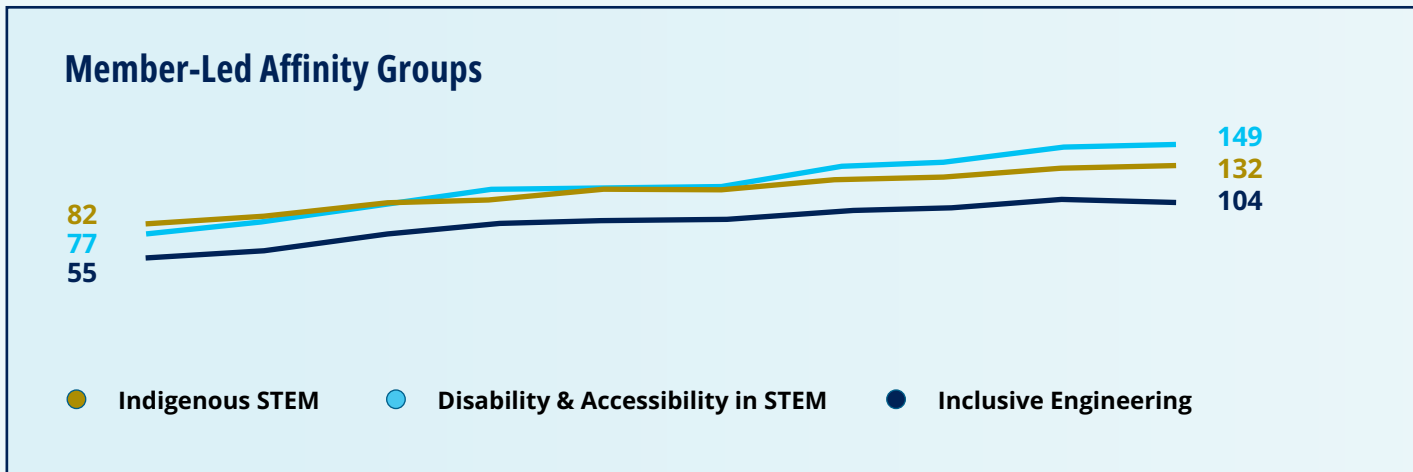- **8 Affinity Groups**

RESOURCE SHARING

Centering Inclusivity and Equity Within Family Engagement in STEM

- **100+ Network Member Publications** on includesnetwork.org
- **750+ Resources Available** in National Network Online Library
- **14,300+ Views of Documents** in Online Library
- **6,200+ Online Library Downloads**

♦ The Coordination Hub connects the National Network to topical areas of interest through affinity groups, which total **more than 1,500** members.

Member-Led Affinity Groups

149
132
104

82
77
55

● Indigenous STEM   ● Disability & Accessibility in STEM   ● Inclusive Engineering

Hub-Led Affinity Groups

282
263
247
188
116

160
120
52
43
0

Q1 Q2 Q3 Q4   Q1 Q2 Q3 Q4   Q1 Q2 Q3 Q4   Q1 Q2 Q3 Q4
Y2   **Y3**   **Y4**   **Y5**

● Evaluation   ● Models of Collaboration & Partnership   ● Exploring STEM Pathways
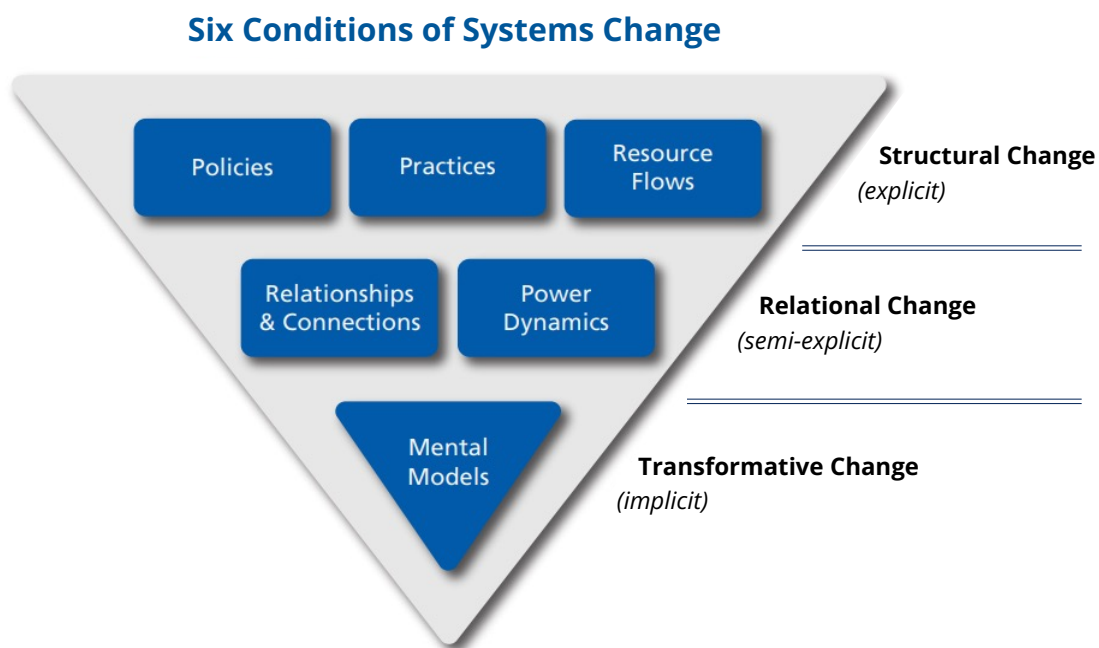● Shared Measure   ● Alliance Collective

SHARED MEASURES PROGRESS

The Coordination Hub also leads the shared measures effort for the National Network to identify and use indicators that assess progress progress toward collaborative infrastructure building, broadening participation, and systems change.

The INCLUDES Shared Measures Platform provides data and learnings that track progress toward broadening participation and collaborative infrastructure outcomes for the National Network and the broader community.

For findings on collaborative infrastructure outcomes, see *https://networksharedmeasures.org*.

To ensure that efforts to broaden participation in STEM are sustainable and advance equity, **INCLUDES supports Network members in implementing changes in STEM education and workforce systems.**

These changes can be measured by assessing Six Conditions of Systems Change, as articulated by FSG in the *Water of Systems Change* model *(https://www.fsg.org/resource/water_of_systems_change)*.

Six Conditions of Systems Change

Policies | Practices | Resource Flows
Structural Change *(explicit)*

Relationships & Connections | Power Dynamics
Relational Change *(semi-explicit)*

Mental Models
Transformative Change *(implicit)*

Systems Change in the INCLUDES National Network

More than 25% of respondents to the 2022 INCLUDES National Network survey reported that they are engaged in making changes to practices to better support underrepresented students, such as providing wrap-around supports, implementing holistic admissions practices, or creating new mentoring programs.

One in eight indicate that they are focused on changing relationships and connections such as fostering buy-in from leadership or leveraging the collaborative infrastructure model to work on improvements across multiple institutions.

Systems change can also be demonstrated in the National Network through broadening participation metrics, such as policy shifts that increase the number and diversity of PreK-12 students taking culturally responsive performance assessments.

INCLUDES-Funded Projects Focused on Each Type of Systems Change

STRUCTURAL	**Practices** 26%	**Policies** 10%	**Resource Flows** 2%
RELATIONAL	**Relationships & Connections** 13%	**Power Dynamics** 1%	
TRANSFORMATIVE	**Mental Models** 4%		

Percentages shown are based on the 2022 National Network survey (N=94 respondents). Many respondents indicated several types of system change as aligning with their work.

Next Steps

Working closely with INCLUDES Alliances and the National Network Shared Measures Working Group, the INCLUDES Coordination Hub will map broadening participation outcomes to the systems change categories to guide data collection efforts across the National Network and updates to the shared measures platform.

TOWARD MORE CONNECTIVITY AT THE NATIONAL NETWORK LEVEL

National Network Convenings take place biennially to build and strengthen relationships between Network members; identify and explore connections; and build capacity for future collaborative action toward INCLUDES goals.

NSF's 2023 Eddie Bernice Johnson INCLUDES National Network Convening:
Sustaining Equity-Driven Systems Change
Credit: **Charlotte Geary**/NSF

Alliances participated in a two-day workshop to further explore synergies and collaborative opportunities among INCLUDES-funded Alliances. Using an inclusive, participatory approach, Alliances are leveraging collective knowledge, activities, and lessons learned to accelerate systems change and broaden participation in STEM.

INCLUDES Alliance Convening Braided River

The INCLUDES Alliance Convening Braided River | Credit: **Timothy Corey**
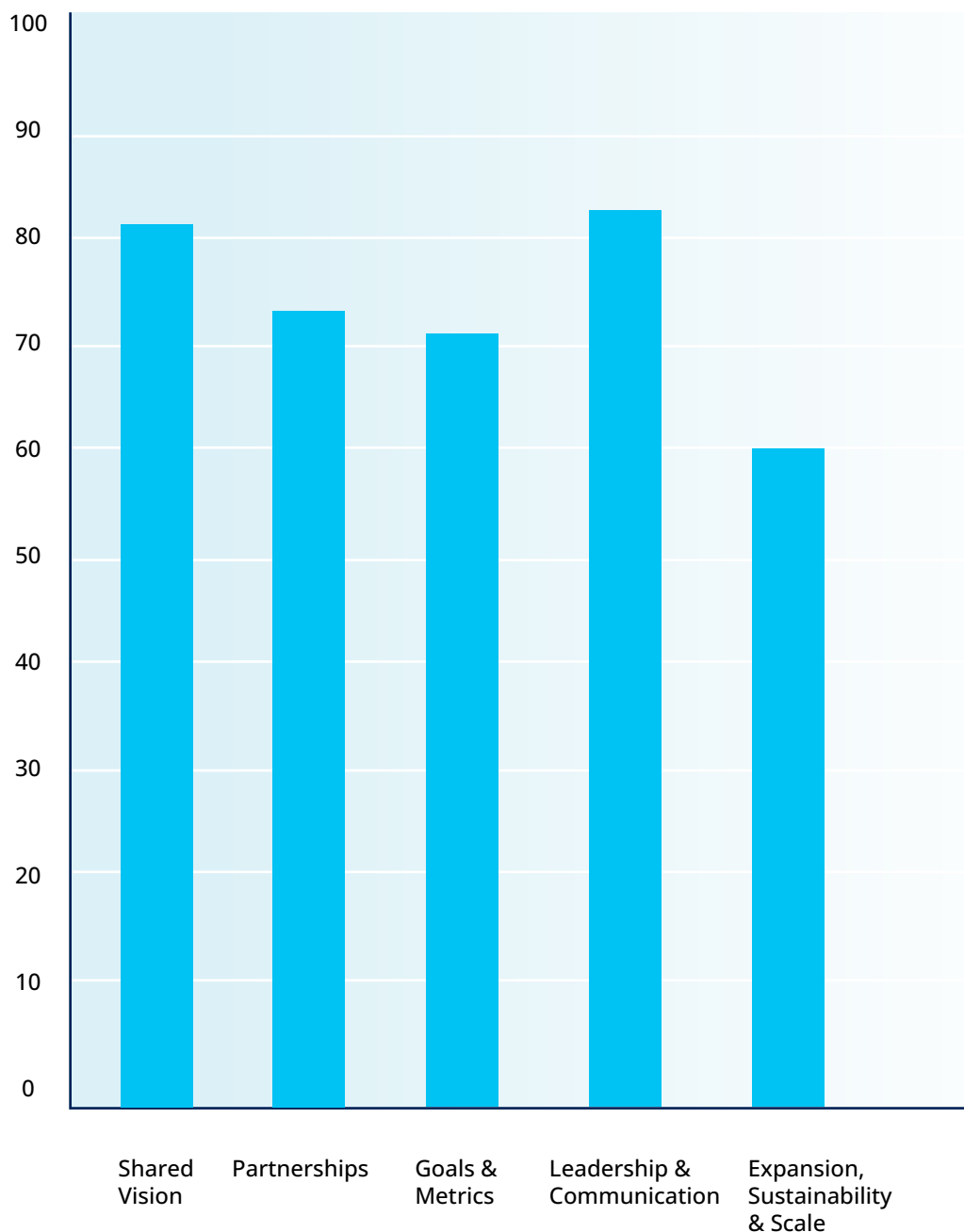
THE

INCLUDES

ALLIANCES

INCLUDES-funded Alliances build collaborative infrastructure among numerous, multi-sector partners to achieve: **MORE EFFECTIVE COLLABORATION.**

Alliances bring together programs, people, organizations, technologies, and institutions to achieve results at scale, provide new research, and leverage NSF's broadening participation investments. Alliances are collectively engaging over **1100 individuals** and over **440 organizations** in the essential work of addressing broadening participation challenges.

Scan the QR code or visit the URL below to learn more about the specific indicators in the INCLUDES shared measures framework that demonstrate progress toward operationalizing the five elements of collaborative infrastructure.

https://new.nsf.gov/ funding/opportunities/ inclusion-across-nation- communities-learners/ announcements/95872

Average Alliance-level scores indicate progress toward building collaborative infrastructure based on indicators in the INCLUDES shared measures framework. Each score has a range of 1 to 100, with 100 representing the highest possible score. Generally, scores increase as the number of years as an Alliance increases.

EACH ALLIANCE HAS A DIFFERENT AREA OF FOCUS:

ASPIRE THE NATIONAL ALLIANCE FOR INCLUSIVE & DIVERSE STEM FACULTY
Increasing diversity of STEM faculty and inclusive STEM teaching

CAHSI
Increasing Hispanic representation in computing

FIRST2
Advancing rural STEM education and first-generation college student success

IGEN
Increasing diversity in physical science doctoral degrees

STEM Core Expansion An NSF INCLUDES Alliance Project
Advancing a model for accelerated math course progression for community college students

SEAS Islands Alliance
Broadening participation among Island communities in the marine and environmental sciences

STEM OPS
Enhancing STEM education for incarcerated and formerly incarcerated individuals

STEM PUSH NETWORK
Leveraging pre-college STEM programs to advance equity in college admissions

AIICE ALLIANCE FOR IDENTITY INCLUSIVE COMPUTING EDUCATION
Increasing identity-inclusive practices and policies in computing education

NSF INCLUDES ALRISE ALLIANCE
Increasing Latinx representation in STEM

ENGINEERING PLUS ALLIANCE
Broadening participation in engineering

NATIVE FEWS ALLIANCE
Increasing participation of Indigenous populations in STEM

NSF INCLUDES Alliance TAPDINTO-STEM
Providing STEM opportunities for students with disabilities

ALL-SPICE ALLIANCE Supporting Pacific Impact through Computational Excellence
Advancing data science for economic development in the Pacific Islands

CIRCLES ALLIANCE
Advancing Indigenous STEM education through K-12 curricula, materials, and training

NATIONAL DATA SCIENCE ALLIANCE
Increasing data science programs and research at Historically Black Colleges and Universities

RISEUPP AN NSF INCLUDES ALLIANCE
Advancing equity in postdoctoral pathways to faculty positions

TOWARD MORE INCLUSIVE STEM CULTURES, POLICIES, AND PRACTICES

Each of the 13 Alliances funded in 2018–2021 report progress toward broadening participation outcomes. Newer Alliances will also contribute to INCLUDES outcomes over time. Alliances work to bring about change in one or more outcome areas. For example:

11 ALLIANCES

report progress on increasing access to, preparation for, and inclusion in STEM education for students, teachers, and faculty. Specifically, Alliances demonstrate progress toward:

Increasing exposure to culturally responsive, evidence-based STEM instructional practices.

Increasing access to STEM courses.

Increasing access to support needs at transitional points in their STEM education.

Increasing the number of students who graduate in STEM.

6 ALLIANCES

report progress toward increasing the number and diversity of students who enter STEM careers.

9 ALLIANCES

report progress toward increasing the number and diversity of individuals who advance in STEM fields.

4 ALLIANCES

report progress toward increasing the numbers of students from populations that have been excluded from STEM who develop a positive STEM identity.

ALLIANCES FUNDED BY THE INCLUDES INITIATIVE

ASPIRE Alliance

ASPIRE
THE NATIONAL ALLIANCE FOR
INCLUSIVE & DIVERSE STEM FACULTY

www.aspirealliance.org

- Increasing the diversity of STEM faculty across the nation.
- Engaging a growing network of partners to support systemic change in STEM higher education.

INITIATIVES

Regional Change — partnerships with 2- and 4-year institutions to increase faculty from underrepresented groups at 2-year colleges.

National Change — developing and disseminating inclusive practice models across disciplinary societies, institutions, and individuals.

Institutional Change — developing the capacity of leaders to change institutional policy, practice, and culture.

HIGHLIGHTS

Expanded to 6 regional collaboratives with 21 4-year and 17 2-year institutional partners.

Launched the Aspire Summer Institute (ASI) to prepare STEM campus leadership and faculty developers to be change agents for campus diversity, equity, and inclusion.

Engaged over 1800 participants and delivered 1300 inclusive practices and professional development activities.

Supported 70 IAspire Leadership Academy Fellows.

CAHSI Alliance

CAHSI

COMPUTING ALLIANCE OF HISPANIC-SERVING INSTITUTIONS
cahsi.utep.edu

- Growing and sustaining a networked community committed to recruiting, retaining, and accelerating the progress of Hispanics in computing.
- Working to ensure that by 2030, Hispanics will represent 20% or more of those who earn degrees and certifications that lead to gainful employment and advancement in computing.

HIGHLIGHTS

The CAHSI Network has grown to 85 institutional members, representing approximately 15% of all HSIs and accounting for 16% of all undergraduate degrees, 9% of all master's degrees, and 12% of all Ph.D. degrees in computer science earned by Hispanics in the U.S.

Engaged over 100 students in local research experiences to build students' knowledge, skills, and abilities in computing at their home institutions.

Created three problem solving courses for students over two years in collaboration with Google technical staff and software engineers, which included contribution of problems and challenges, and remote coaching and feedback to students.

Pairing students in fundamental courses with peers at their institution who have completed the data structures course through the CAHSI Allyship program.

CAHSI student presenting her poster at the CAHSI summit.

CAHSI PhD candidates awarded the CAHSI-Google dissertation award at the CAHSI summit held at the great minds in stem conference.

FIRST2 Network Alliance

EXPANDING THE FIRST2 STEM SUCCESS NETWORK
first2network.org

- Enhancing STEM education in West Virginia.
- Improving STEM persistence among rural, first-generation, and other underrepresented college students.
- Contributing to an innovation economy in West Virginia.
- Developing student leaders as co-creators of solutions to broadening participation challenges.

HIGHLIGHTS

Established the West Virginia STEM Hub to serve as a central resource for STEM activities and resources in West Virginia.

Developed a network of universities and STEM industries to host summer research experiences for rising freshman STEM majors.

Provided funding to 88 STEM scholars in leadership and research roles.

Established the STEM Starter Teacher Award to support middle and high school teachers' travel to state-level conferences in their field.

Created the First2 Network podcast to explore the Network's influence on the academic experiences of its members including students, STEM educators, & community.

First2 freshmen presenting research at the WVU Undergraduate Spring Symposium April 9, 2022.

First2 students representing First2 network at the WV Science Teacher Association (WVSTA) conference, October, 2021.

IGEN Alliance

IGEN

INCLUSIVE GRADUATE EDUCATION NETWORK
igenetwork.org

- **Increasing the participation of underrepresented students attaining a Ph.D. in the physical sciences by institutionalizing inclusive, evidence-based recruitment, admissions, and retention practices.**

HIGHLIGHTS

Increased students from underrepresented groups who complete doctoral degrees in the physical sciences.

- ◊ 83 students accepted into IGEN bridge programs in year 3.
- ◊ 95% retention rate among students in the first 2 cohorts of IGEN-associated bridge programs.
- ◊ 6 students graduated with a PhD from the American Physical Society (APS) Bridge Program.
- ◊ 25 graduate students were accepted into the ACS Bridge Program.
- ◊ American Geophysical Union (AGU) approved an additional 18 bridge partners.

Catalyzed the adoption of evidence-based inclusive practices in graduate education.

- ◊ Engaged 1,400 participants from 14 academic fields in Inclusive Practices and Research Hub workshops to develop their capacity for inclusive practices in graduate education.
- ◊ Delivered 26 workshops on inclusive practices, including holistic admissions strategies and graduate student well-being.
- ◊ Bridge faculty members reported significant changes in their department's recruitment and admissions practices after participation in holistic admission workshops led by the Inclusive Practices Hub.

Conducted research that distills scalable, effective practices in inclusive graduate education and institutional change.

- ◊ Created the Equity in Graduate Education Resource Center.
- ◊ Published 15 products and other resources related to equity in graduate STEM education.
- ◊ Engaged over 500 participants in 8 virtual journal club convenings on racial equity research in the physical sciences.
- ◊ Provided 5 seed grants of $5,000 each through the IGEN Research Accelerator to catalyze research on equity in graduate education.

Established cross-sector partnerships that support the advancement of underrepresented students.

- ◊ Partnered with 15 National Laboratories interested in recruiting bridge program students for internships and postdocs.
- ◊ Partnered with National Laboratories to beta-test an adapted mentor training curriculum.
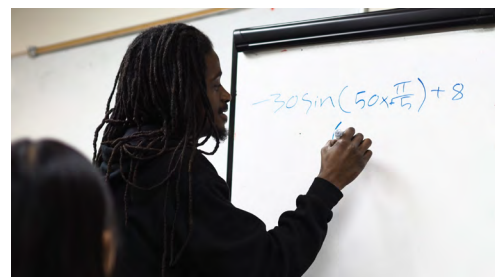
STEM Core Alliance

www.stemcore.org

- **Creating a model for accelerated pathways to calculus readiness that enhances underrepresented and underprepared students' preparation for degree completion and employment in STEM.**

HIGHLIGHTS

64% of students deemed not calculus ready at college entrance who participated in the STEM Core model of cohort-based, accelerated, contextualized math course sequencing started in intermediate algebra and were calculus ready within 1 year (only 4% of students deemed calculus ready who did not participate in the STEM Core model were Calculus ready within 3 years).

Provided 88 summer internships in 2022, including 12 at national laboratories.

Provided support services for students, including mentoring, intensive academic and social support, internship application and financial aid application support, resume workshops and interview preparation.

INCLUDES STEM Core students engaging in Active STEM learning.

INCLUDES STEM core students showing their CyberDefenders summer internship program certificates.

SEAS Islands Alliance

SUPPORTING EMERGING AQUATIC SCIENTISTS ISLANDS ALLIANCE
www.seasislandsalliance.org

- Empowering students to pursue marine and environmental science careers through scientific and professional development and mentoring.
- Bringing together two successful INCLUDES Design and Development Launch Pilots.
- Engaging an extensive network of partners in the U.S. Virgin Islands, Puerto Rico, Guam, Commonwealth of the Northern Mariana Islands, Republic of Palau, Federated States of Micronesia, and the Republic of the Marshall Islands.

HIGHLIGHTS

Launched a virtual summit for students and alumni to connect across island hubs, practice networking skills, and learn more about career pathways.

Developed the SEAS Islands Alliance Bridge to Bachelor's Program Internship for the three island hubs (Guam, Puerto Rico, and U.S. Virgin Islands).

Established a bridge program for MS or PhD students to receive training at partnering institutions.

Launched the Islands Alliance Fellows Program to enhance the regional workforce.

Engaged over 358 participants (K-12, undergraduates, bridge students, graduate students, and professionals) in the U.S. or U.S.-affiliated Island jurisdictions.

Shamoy Bideau leading the St. Croix's leg of the Youth Ocean Explorers Summer Program.

STEM OPS Alliance

STEM OPPORTUNITIES IN PRISON SETTINGS
stem-ops.org

- Improving STEM learning opportunities in prisons and supporting access to STEM for those who are directly impacted by the carceral system.
- Led by five core partner organizations:

  - *Education Development Center* (EDC)
  - *Initiative for Race Research & Justice at Vanderbilt University* (RRJ)
  - *Operation Restoration* (OR)
  - *Prison to Professionals* (P2P)
  - *The Princeton University Prison Teaching Initiative* (PTI)

HIGHLIGHTS

Convened nearly 150 people and over 40 organizations to expand access to STEM education and careers for people impacted by incarceration.

Featured on NOVA PBS in a video titled, From Prison to Careers in Science, highlighting STEM-OPS leaders and other scientists who began their pathways into STEM careers from prison.

Produced the syStem Impacted podcast to share stories of struggles and successes accessing STEM education and careers for people impacted by incarceration.

Leveraging working groups on mentoring, internships, data and measures, and (soon) expanding access to technology for STEM education in prisons, as well as a Speaker's Bureau, to disrupt systems that exclude justice-impacted people from STEM education and professions.

> **There is no cookie cutter approach to remedying systemic harm. To truly make a change, we have to have programs that are human centered, that focus on the social issues that impact us as individuals.**
>
> **Chris Etienne,** Princeton University's Prison Teaching Initiative

STEM PUSH Alliance

STEM PATHWAYS FOR UNDERREPRESENTED STUDENTS TO HIGHER EDUCATION NETWORK
stempushnetwork.org

- Leveraging the power of pre-college STEM programs to broaden the participation of Black, Latine, and Indigenous students in STEM.
- Creating systemic change in higher education admissions.

HIGHLIGHTS

Pre-college STEM programs (PCSPs) have joined STEM PUSH's Networked Improvement Community and increased capacity to serve Black, Latina/o/e and Indigenous students.

21 PCSPs tested and adapted change ideas to better serve almost 4,000 student participants per year.

◊ 14 programs reported an increased focus on recruiting more and/or different students.

◊ 7 programs reported an immediate concrete change in their program's student recruitment practices or policies.

◊ 13 programs reported an increased focus on nurturing a STEM identity and sense of belonging in students.

◊ 12 programs reported an immediate concrete change in their programs or policies for program design and implementation.

◊ 12 programs reported an increased focus on developing relevant STEM competencies in their program goals.

◊ 5 programs reported an immediate concrete change in their programs, practices, or policies regarding program goals.

◊ 12 programs reported an increased focus on strengthening college-going pathways for students.

◊ 8 programs reported an immediate concrete change in their programs, practices, or policies around college pathways.

Developed a STEM PUSH Library to share resources and leverage the knowledge and experience of the Network.

Convened 31 PCSP representatives from 24 PCSPs working in 7 STEM learning ecosystems to build and strengthen community, affirm commitment to and PCSPs' role in building greater equity in STEM college admissions and persistence, celebrate progress toward equitable practices, launch new equity-focused improvement cycles, learn together, and have fun.

AiiCE Alliance

- Increasing the entry, retention, and course/degree completion rates of high-school and undergraduate students from groups that are underrepresented in computing through evidence-based, identity-inclusive interventions.

HIGHLIGHTS

Launched Byte-sized DEI-J (pronounced DJ), student-led video shorts presenting identity-inclusive strategies.

Established the Computer Science Teachers Association (CSTA) teacher-led Policy Committee with 10 educators that focus on policies to increase entry, retention, and course/degree completion of groups historically underrepresented in computer science.

Developed a cohort-based professional development program, the Cultural Competence in Computing (3C) Fellows Program, that helps computing faculty, staff, postdoctoral researchers, graduate students, and professionals:

◊ Learn more about social science topics (such as identity, intersectionality, racism, bias, and discrimination) and how these topics impact computing environments (as well as the developed technologies).

◊ Develop computing deliverables at their home institutions that leverage these topics to foster more inclusive and equitable cultures.

Developed self-paced training modules for K-12 educators on computing topics related to identity.

Engaged three 3C cohorts of 320 Fellows across 137 organizations to date.

3C Cohort 1 implemented 24 new identity-inclusive courses, 16 modules, and 24 other activities in the 2021-2022 academic year.

Developed an online course designed to elevate teaching assistant professional development. The course offers identity-inclusive strategies that empower teaching assistants to foster a welcoming environment that encourages student diversity and success.

DEI-J character used in Byte-sized DEI-J videos

ALRISE Alliance

ACCELERATE LATINX REPRESENTATION IN STEM EDUCATION
alrise.org

- Increasing Latinx student retention and completion in STEM at two- and four-year Hispanic Serving Institutions (HSIs) and emerging HSIs (eHSIs) through culturally responsive undergraduate research and work-based experiences.
- Advancing cultural responsiveness, institutional intentionality, and capacity building for experiential learning.
- Improving students' STEM identity and engagement.

HIGHLIGHTS

Established four regional hubs (in CA, TX, AZ, FL), which engage 20 Hispanic Serving Institutions in becoming student-serving toward broadening participation in STEM.

Delivered four culturally responsive workshops for ALRISE members and partners through the HSI Intentionality and Identity (HSI3) Subgroup.

Conducted externships for two student cohorts at Phoenix College and the Maricopa Community College to provide work-based experiential learning in information technology.

Piloted an industry sponsored summer externship for 28 students attending four ALRISE member HSIs (Arizona Western College, Central Arizona College, Phoenix College, University of Texas at Dallas) in partnership with the Arizona Technology Council and Tech Titans. 15 companies and over 28 employees participated as mentors and role models to describe opportunities at their companies, network, conduct resume and LinkedIn workshops and mock interviews, and celebrate externship completion as students present their projects on the last day.

Greater Phoenix Chamber Foundation IT and Cybersecurity Externs Touring the Arizona Counter-terrorism Information Center (ACTIC).

Engineering PLUS Alliance

ENGINEERING
PLUS
An NSF INCLUDES Alliance
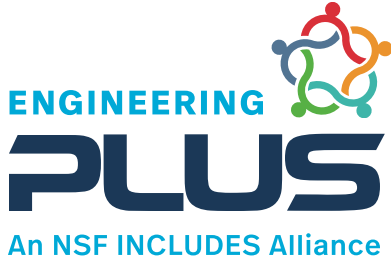
ENGINEERING PARTNERSHIPS LAUNCHING UNDERREPRESENTED STUDENTS
engplusalliance.northeastern.edu

- Building U.S. leadership in STEM by increasing the participation of individuals from populations that have been historically underrepresented in STEM.

HIGHLIGHTS

Engaged 17 stEm PEER (Practitioners Enhancing Engineering Regionally) Academy fellows representing 15 different institutions from 10 states in a 2-year professional development and research experience to support the design and implementation of high-impact, evidence-based practices at their home institutions, with the institution's support.

Established two Regional Hubs - the Northeast Regional Hub and Midwest Regional Hub - that serve as a collective alliance of networked communities to advance the systemic change needed to markedly increase the diversity of engineering students enrolled and graduating across the country.

The Leadership of the Engineering PLUS Alliance. Eng+ comprises a network of 46 collaborators and 47 member institutions across two regions, many of which are members of the NSF Louis Stokes Alliances for Minority Participation (LSAMP) network.

The inaugural cohort of the Engineering PLUS stEm PEERs (Practitioners Enhancing Engineering Regionally) attending the stEm PEER Academy.

Native FEWS Alliance

BROADENING CAREER PATHWAYS IN FOOD, ENERGY, AND WATER SYSTEMS WITH AND WITHIN NATIVE AMERICAN COMMUNITIES
nativefewsalliance.org

- Broadening the participation of Native American students in Food, Energy, and Water Systems (FEWS)
- education and careers
- Addressing critical challenges facing Indigenous communities by focusing on innovative research and community partnerships.

HIGHLIGHTS

Partnered with the University of Colorado Denver (CU Denver) - Environmental Stewardship of Indigenous Lands (ESIL) to develop an Alliance-wide certificate program to supplement student STEM training with experiences in cross-cultural communication, facilitation, and Indigenous ways of knowing.

Establishing pre-college pathways with the STAR (Service to All Relations) School, which is creating, implementing, and refining FEWS pre-college curricula that melds STEM innovation and respect for Indigenous epistemologies and place-based interests and provide training for schools on K-12 education.

Partnered with The WILLOW Alliance for Graduate Education and the Professoriate to develop an interview guide for discussions with administrators at Tribal Colleges and Universities (TCUs) and non-Native institutions and explore institutional policies and recommendations that support Native American Faculty in STEM.

Established the Native FEWS Storytellers, cadre of students and faculty telling the stories of their journeys within the FEWS pathways.

> **Our INCLUDES Alliance is led by a strong number of Indigenous faculty, researchers, and partners and fuses place-based approaches to teaching and diversity with applied research in food, energy and water systems (FEWS) and Indigenous knowledges and ways of knowing.**
>
> **Native FEWS Alliance**

TAPDINTO-STEM Alliance

NSF INCLUDES Alliance TAPDINTO-STEM

THE ALLIANCE OF PERSONS WITH DISABILITIES FOR INCLUSION, NETWORKING, AND TRANSITION OPPORTUNITIES IN STEM
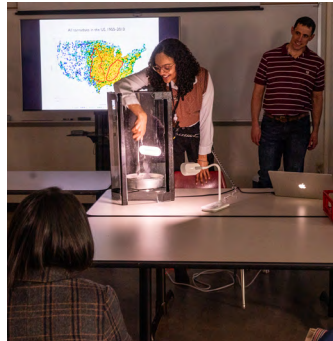
tapdintostem.org

- Increasing the number of students with disabilities (SWDs) who complete associate, baccalaureate and graduate STEM degrees and enter the STEM workforce.
- Providing professional development for faculty, staff and STEM professionals to increase their formal involvement as mentors and research collaborators to students with disabilities.
- Increasing collaboration among institutions of higher education, industry, government, national labs, and communities to address the education needs of students with disabilities in STEM, leading to increased opportunities for internships, apprenticeships, and employment.

HIGHLIGHTS

Developed a faculty mentor cluster manual that describes the TAPDINTO-STEM Mentoring Model.

Implemented a bridge to baccalaureate peer-mentoring program for freshmen and sophomores who plan to obtain a bachelor's degree in STEM.

Implemented a bridge to post baccalaureate peer-mentoring program for juniors and seniors who are pursuing a bachelor's degree in STEM with intent to transition into graduate school or the STEM workforce.

TAPDINTO-STEM Alliance 2023 Convening

THE INCLUDES INITIATIVE WELCOMED FOUR NEW ALLIANCES TO THE NATIONAL NETWORK IN 2022.

All-Spice Alliance

ALL-SPICE ALLIANCE
Supporting Pacific Impact through Computational Excellence

GOALS

Developing regional data science capacity in support of sustainability, economic development, and social justice in the Hawai`i-Pacific region.

Building educational and research capacity in data science for community impact in Hawai`i and the U.S.-affiliated Pacific Islands (USAPI).

Adapting data science curriculum for online deployment to reach rural, neighbor island, and USAPI participants.

Enhancing faculty research capacity in data science. Developing new undergraduate data science research experiences.

Producing new Pacific-focused data science courses for broad deployment across the Alliance.

Curating a "Wayfinding to Data" (W2D) portfolio of data science training opportunities spanning K–20 for marginalized populations.

"
This grant is part of a collective and exciting effort to meet a pivotal moment in our history by expanding opportunities to a new generation of change-makers.

Dr. Lynn Babington, Chaminade University of Honolulu President
"

CIRCLES Alliance

CULTIVATING INDIGENOUS RESEARCH COMMUNITIES FOR LEADERSHIP IN EDUCATION AND STEM

circlesalliance.org

GOALS

Developing Native-based STEM education activities for K-12 and higher education students in a six-state Alliance that builds on partnerships with tribal colleges and communities in Idaho, Montana, New Mexico, North Dakota, South Dakota and Wyoming.

Enabling American Indian and Alaska Native students to identify academically and culturally with being a Native scientist, technician, engineer, or mathematician, so that more students will enter and persist in STEM related fields and the workforce.

"

STEM has been a historically exclusive field. With increased Indigenous leaders in STEM, which will increase American Indian/Alaska Native student participation in STEM, better, more inclusive solutions will be reached because different thought processes and theories will be exchanged.

Philip Stevens, Director of American Indian Studies and Associate Professor in Anthropology, University of Idaho

"

NDSA Alliance

NATIONAL DATA SCIENCE ALLIANCE
www.ndsalliance.org

GOALS

Increasing the number of Black people who earn data science credentials, such as undergraduate, graduate, and post-baccalaureate minors, certificates, and degrees.

Expanding academic and research opportunities that engage HBCU students in data science.

Conducting research in data science that reduces bias and promotes ethics, fairness, and validity.

Fostering the growth of sustainable institutional capacity in data science at HBCUs.

Championing evidence-based inclusive practices and strategies that broaden the participation of HBCUs in data science.

"

We are excited that many HBCUs will collaborate with us to develop new equity-based discoveries in data science and expand student pathways that will change the face of data science.

Talitha Washington, Ph.D., NDSA Director, Professor of Mathematics, Clark Atlanta University

"

RISE UPP

RE-IMAGINING STEM EQUITY UTILIZING POSTDOC PATHWAYS
www.riseupp.org

GOALS

Leveraging state university systems to diversify STEM faculty utilizing postdoctoral pathways into tenure track faculty positions.

Facilitating postdoctoral recruitment and conversion into tenure track faculty within/across university systems.

Developing inter-institutional frameworks to assist with the adoption or adaptation of model postdoctoral programs at partner institutional systems.

Promoting inclusive cultures for postdoctoral scholars.

"

The underrepresentation of minoritized scholars in universities has been a stagnant problem for a really long time and decades of effort have not yet yielded much change...
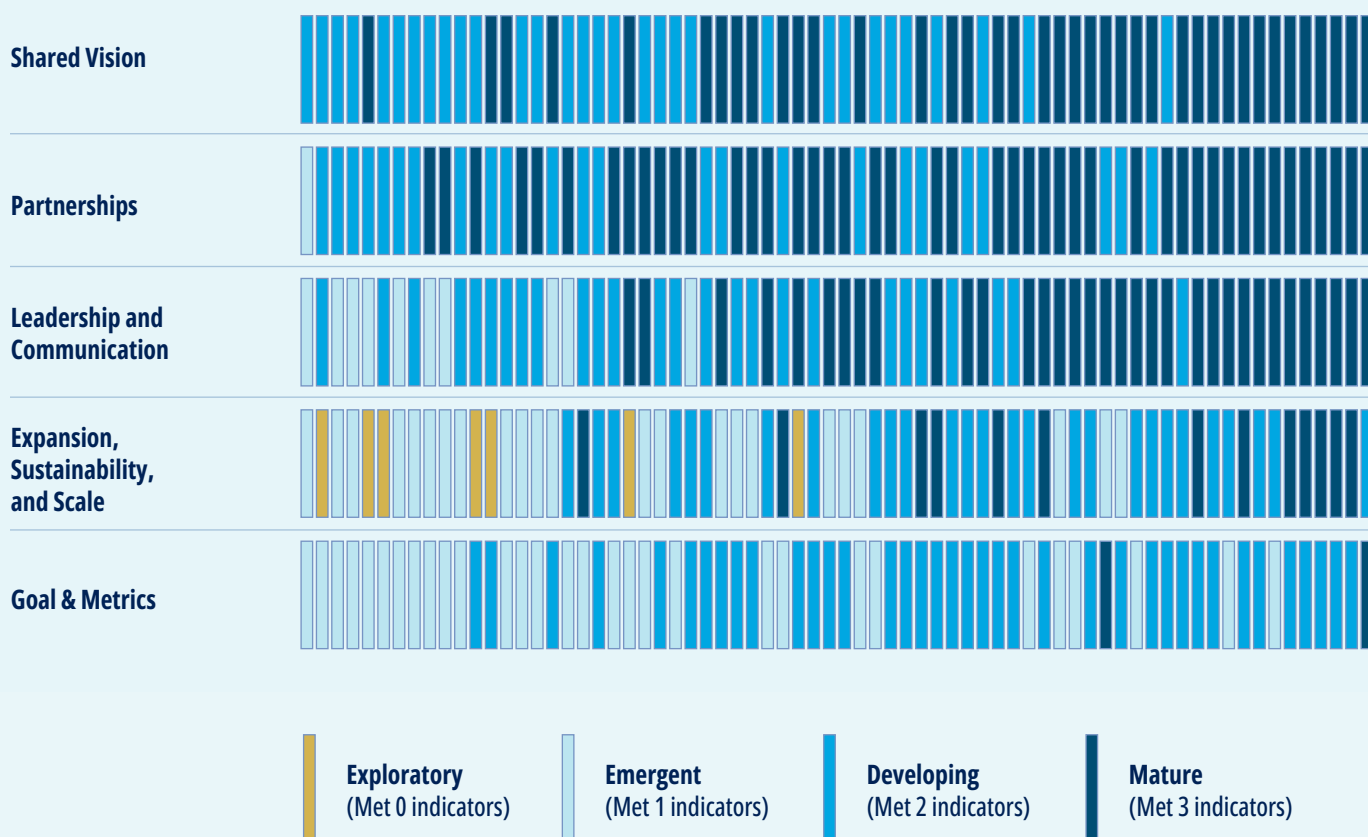
Robin Cresiski, Assistant Vice Provost for Graduate Student Development and Postdoctoral Affairs at the University of Maryland, Baltimore County.

"

DESIGN AND DEVELOPMENT LAUNCH PILOTS (DDLPs)

More effective collaboration at the project level

Of the 70 DDLPs funded in 2016 and 2017, each project demonstrated early progress toward indicators of more effective collaboration at the project level, based on assessments of maturity in implementing the five elements of collaborative infrastructure.

Shared Vision

Partnerships

Leadership and Communication

Expansion, Sustainability, and Scale

Goal & Metrics

Exploratory
(Met 0 indicators)

Emergent
(Met 1 indicators)

Developing
(Met 2 indicators)

Mature
(Met 3 indicators)

More inclusive STEM cultures, policies, and practices

DDLPs also made progress toward broadening participation outcomes.

51 DDLPs report advances in increasing the number and diversity of postsecondary students exposed to culturally responsive, evidence-based instructional practices in STEM.

23 DDLPs report advances in increasing the number and diversity of individuals who enter STEM careers.

32 DDLPs report advances in increasing the number and diversity of individuals who advance in STEM fields.

53 DDLPs report advances in increasing the number and diversity of students with access to STEM courses.

26 DDLPs report advances in developing students' STEM identity.

PLANNING GRANTS

29 planning grants were awarded to build collaborative infrastructure for addressing a broadening participation challenge in STEM at scale. Planning grants demonstrated progress toward INCLUDES outcomes.

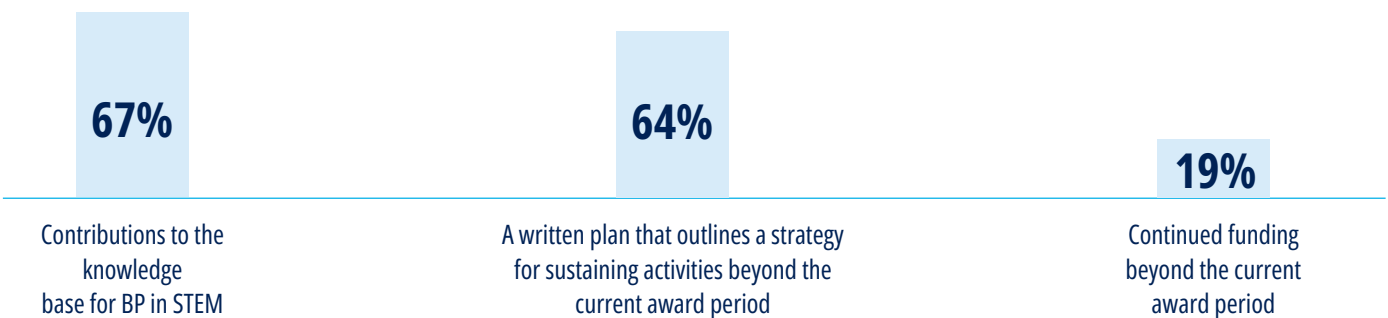## More effective collaboration at the project level

1.

Planning grants engaged in frank and open discussions, leveraging the collective knowledge of partners and other stakeholders to build relationships.

2.

Over their 12- to 18-month project period, planning grants made progress toward activities associated with **Expansion, Sustainability & Scale,** including development of plans for continuing the work of collaborative, systemic change to broaden participation in STEM.

Percentage of respondents who indicated their planning grant made significant progress toward or achieved...

67%
Contributions to the knowledge base for BP in STEM

64%
A written plan that outlines a strategy for sustaining activities beyond the current award period

19%
Continued funding beyond the current award period

More inclusive STEM cultures, policies, and practices

While planning grants were funded to build collaborative infrastructure, their work centered on projects with broadening participation goals in STEM.

79%
of planning grants developed a plan for addressing systemic barriers to broadening participation in STEM.

34%
of planning grants reported progress toward outcomes that enhance preparation for STEM education.

DDLPs and planning grants connected to form INCLUDES projects with larger scopes and impact. **More than 20** INCLUDES-funded DDLP or planning grant projects are now part of an INCLUDES Alliance or other NSF broadening participation award.

The INCLUDES Initiative no longer awards planning grants, but ideas for projects that would formerly have been considered as planning grants may align with the design and development launch pilot funding opportunity. See *NSF 22-622 (https://www.nsf.gov/pubs/2022/nsf22622/nsf22622.htm)* for more information.
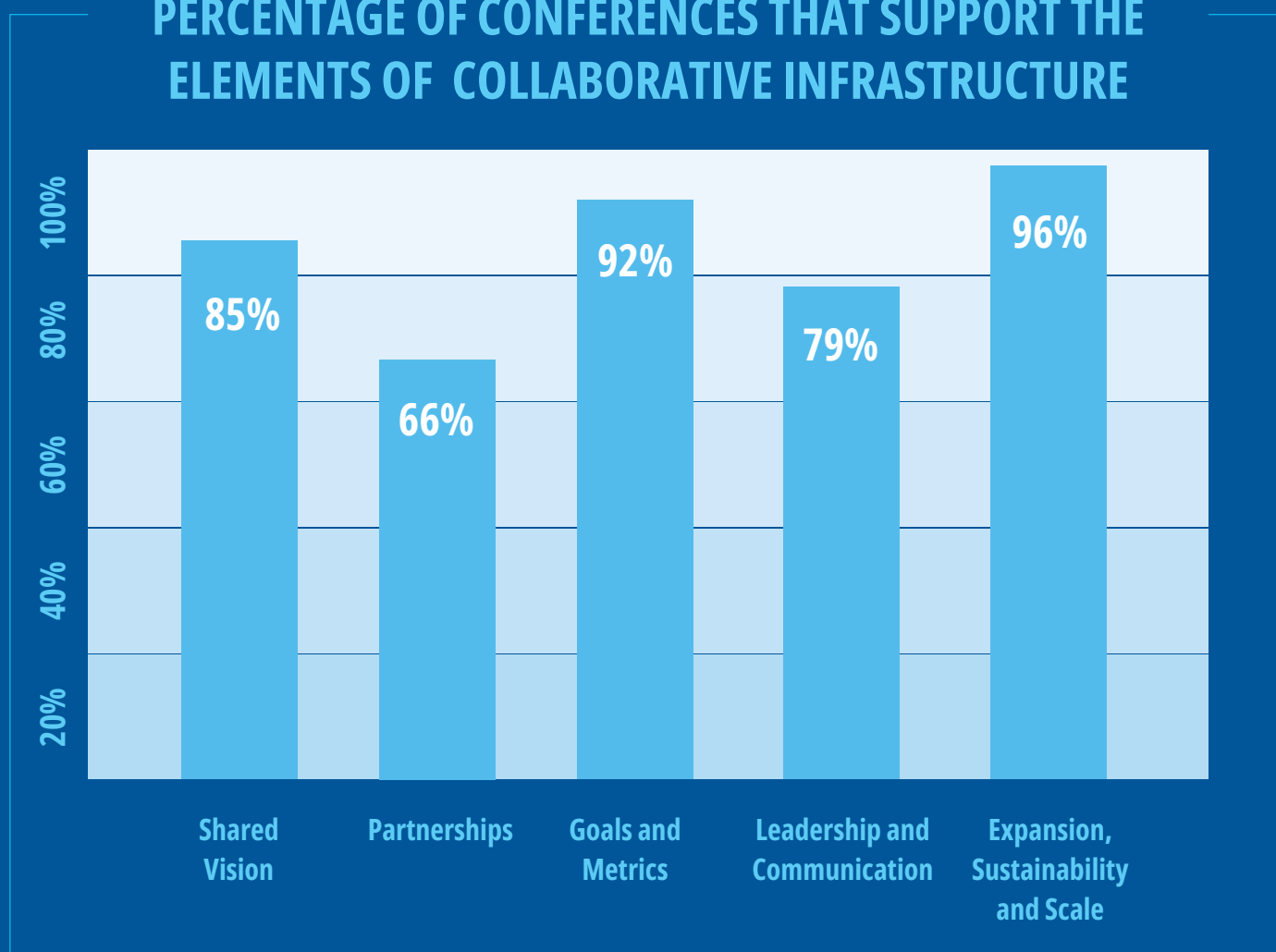
ADDITIONAL PROJECT TYPES

In addition to Alliances, DDLPs, the Coordination Hub, and planning grants, **INCLUDES also funds Network Connector awards, Early Concept Grants for Exploratory Research (EAGERs), and supplements to existing awards, in addition to co-funding awards with other NSF programs.** These awards have also contributed to INCLUDES broadening participation outcomes.

For example: **The Leveraging Field Campaign Networks for Collaborative Change project** (EAGER award 1835055) developed a novel model to address sexual harassment in atmospheric science research teams. Eliminating sexual harassment is an essential step in broadening participation.

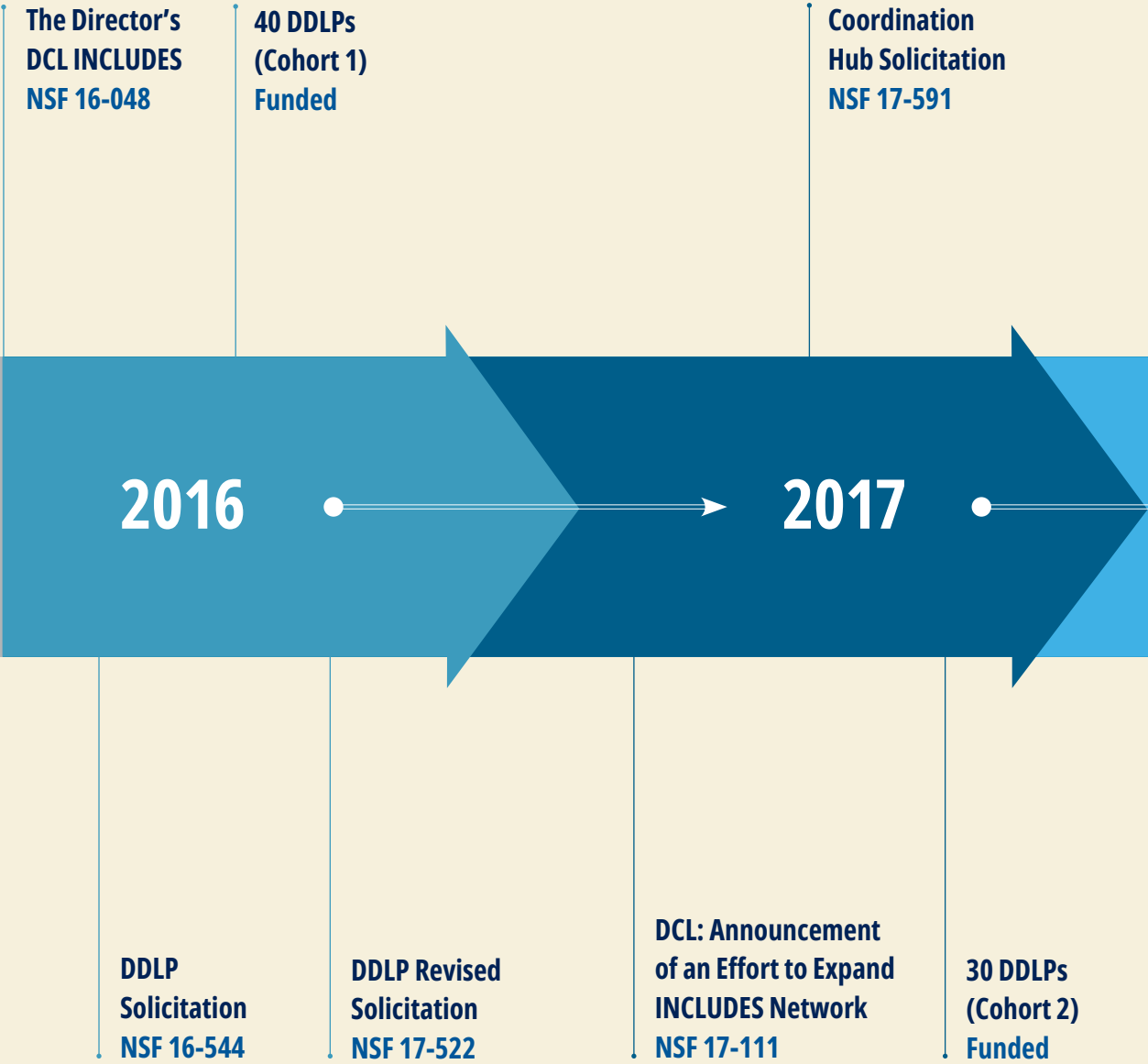# Conference awards worked toward more effective collaboration.

PERCENTAGE OF CONFERENCES THAT SUPPORT THE ELEMENTS OF COLLABORATIVE INFRASTRUCTURE

85%	66%	92%	79%	96%
Shared Vision	Partnerships	Goals and Metrics	Leadership and Communication	Expansion, Sustainability and Scale

12 conference awards reported progress toward outcomes that enhance preparation for STEM education.

8 conference awards reported progress toward outcomes that increase representation in the STEM workforce.

BUILDING AND EXPANDING THE NATIONAL NETWORK

The Director's DCL INCLUDES NSF 16-048

40 DDLPs (Cohort 1) Funded

Coordination Hub Solicitation NSF 17-591

2016 → **2017**

DDLP Solicitation NSF 16-544

DDLP Revised Solicitation NSF 17-522

DCL: Announcement of an Effort to Expand INCLUDES Network NSF 17-111

30 DDLPs (Cohort 2) Funded

Alliance Solicitation NSF 18-529

INCLUDES Report to the Nation

5 Alliances (Cohort 1) Funded

First National Network Convening

Planning Grant Solicitation NSF 19-600

2018

2019

PI/Center Director Joint Meeting

INCLUDES Coordination Hub Funded

DCL: Expanding the National Network NSF 19-042 and Supporting the Re-Entry of Women in the STEM Workforce NSF 19-038

3 Alliances (Cohort 2) Funded

BUILDING AND EXPANDING THE NATIONAL NETWORK (CONT.)

INCLUDES Alliances Solicitation NSF 20-529

5 Alliances (Cohort 3) Funded

2020 • **2021** •

INCLUDES Report to the Nation II

Virtual National Network Convening

New Solicitation with five project types
NSF 22-622

The Creating Helpful Incentives to Produce Semiconductors and Science Act of 2022 (CHIPS ACT) Name Change

National Network Convening

2022 • **2023**

4 Alliances (Cohort 4) Funded

DCL: INCLUDES Alliance Strengthening and Scaling Systems Transformation
NSF 23-076

FY 2023 AWARD SPOTLIGHT

The National Science Foundation made the first awards under solicitation, NSF 22-622, in FY 2023. These projects join an ecosystem of individuals, organizations, and partnerships of different sizes and areas of emphasis that engage in an interconnected National Network to share and learn. The new INCLUDES Initiative awardees are:

COLLABORATIVE CHANGE CONSORTIA

2304197

Association of Collaborative Communities Ensuring Equity in Youth STEM+C Success (ACCEYSS)

Shetay Ashford-Hanserd, Principal Investigator
Texas State University – San Marcos

2310386

Developing and Strengthening Partnerships to Better Support Women of Color in the Engineering Workforce

Roberta Rincon, Principal Investigator
Society of Women Engineers

DESIGN AND DEVELOPMENT LAUNCH PILOTS

2303585

Engineering Community Inclusion of Individuals with Autism

Jennifer Kouo, Principal Investigator
Johns Hopkins University

2303986

University-Led Action on Student and Systemic Inequities in STEM Transfer (ASSIST)

Peter Plavchan, Principal Investigator
George Mason University

2304093

Supporting Minoritized Women Students in STEM, Cultivating Pathways Using Mentoring Networks (WiSEN)

Elizabeth Dell, Principal Investigator
Rochester Institute of Technology

2304106

Creating Opportunities in the Mathematical Sciences through Equity and Inclusion (COME-IN)

Scott Wolpert, Principal Investigator
University of Maryland, College Park

NETWORK CONNECTORS

2304100

Data Science Equity-Driven Inquiry to Create Accessible Project-based Training for Social Impact Education (DEDICATE)

Renata Rawlings-Goss, Principal Investigator
Georgia Instituteof Technology

2304456

Expanded Network for Broader Participation in Aerospace Engineering

Carl Moore, Principal Investigator
Florida Agricultural and Mechanical University

CONFERENCES

2310189

Gathering to Create Culturally Relevant Biomimicry Pathways to STEM for Indigenous Students

Sara El-Sayed, Principal Investigator
Arizona State University

2328080

Culturewise Pathways to Indigenous STEM Education

Sharon Nelson-Barber, Principal Investigator
WestEd

2317317

Reimagining STEM Innovation and Entrepreneurship by Centering Diversity, Equity, and Inclusion

Terik Tidwell, Principal Investigator
VentureWell

CURRENT FUNDING OPPORTUNITIES

THE INCLUDES INITIATIVE SOLICITATION, *NSF 22-622*, offers multiple project types that range in size and duration. The newest project type, collaborative change consortia, address critical broadening participation challenges in STEM at city, state, and/or regional levels of impact.

DEAR COLLEAGUE LETTER, *NSF 23-076*, offers supplemental funding opportunities to Alliances in the final year of their cooperative agreement for scaling and sustaining systemic change activities and connecting those activities with the INCLUDES National Network.

JOIN THE NETWORK

The INCLUDES National Network provides a platform for members to learn about and share best practices, build and strengthen capacity for systemic change to broaden participation in STEM, and advance the national movement toward diverse, inclusive STEM education and career opportunities.

Membership is free and open to the public.
Visit *WWW.INCLUDESNETWORK.ORG* for more information.

INCLUDES TEAM MEMBERS

DESIGN TEAM

EDU | **Diana Elder (co-lead)**

ENG | **Don Millard (co-lead)**

BFA | Tom Jones

BIO | Patricia Soranno

CISE | Behrooz Shirazi

GEO | M. Brandon Jones

MPS | Anne-Marie Schmoltner

SBE | Kellina Craig-Henderson

OIA | Anne Emig

TIP | Doug Maughan

IMPLEMENTATION TEAM

EDU	|	**Tori Rhoulac Smith (co-lead)**
ENG	|	**Alias Smith (co-lead)**
BFA	|	Denise Martin
BIO	|	Andrea Holgado
BIO	|	Daniel Marenda
CISE	|	Subrata Acharya
CISE	|	Manuel Perez Quinones
CISE	|	Michelle Rogers
EDU	|	Christopher Atchison
EDU	|	Luis Cubano
EDU	|	Adrienne Dixson
EDU	|	Alicia Santiago Gonzalez

EDU	|	Sonja Montas Hunter
EDU	|	Sierra Jackson
EDU	|	Deena Khalil
EDU	|	Mark Leddy
EDU	|	YeVonda Mcllwaine
ENG	|	Christine Grant
ENG	|	Regina Pope-Ford
ENG	|	Kay-Marie Lamar
GEO	|	Bernard Grant
MPS	|	J. Matthew Douglas
MPS	|	Kathleen McCloud
MPS	|	Adriana Salerno
TIP	|	Jesus Soriano Molla

ACKNOWLEDGEMENTS

NSF's Eddie Bernice Johnson INCLUDES Initiative Special Report to the Nation III

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National Science Foundation