NCSES STRATEGIC PLAN 2024–2028

National Center for Science and Engineering Statistics
Directorate for Social, Behavioral and Economic Sciences
U.S. National Science Foundation

National Center for Science and Engineering Statistics Strategic Plan: 2024–2028

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Message from the Director – Emilda B. Rivers



The mission of the National Center for Science and Engineering Statistics (NCSES) is to serve as the nation's leading provider of trusted, quality data on the science and engineering enterprise, often in a global context. In support of this mission and its activities, I am thrilled to present NCSES's 5-year Strategic Plan that embodies a forward-looking vision of *empowering the nation through data and analysis to drive insights in science, technology, and innovation*. Grounded in principles of innovation, integrity, and objectivity, NCSES's plan charts a course that maintains our ability to meet the evolving needs of our stakeholders and society at large.

The importance of robust statistical data and analysis cannot be overstated in an era defined by increasingly complex data landscapes. Our agency plays a critical role in providing accurate, reliable, and timely data that supports evidence-based decision-making, informs policy formulation, and drives societal progress toward strengthening science, technology, and innovation for the nation. To that end, this plan presents four overarching goals: (1) strengthen stakeholder connection and engagement; (2) deliver world-class products; (3) increase organizational efficiency and effectiveness; and (4) grow and maintain an engaged, effective team. These goals allow our agency not only to meet its mission but also to thrive and engage with our diverse set of stakeholders who rely on our efforts to provide quality information in a way that meets their evolving needs.

As we embark on this journey together, I am inspired by the dedication, expertise, and passion that the NCSES workforce brings to our agency. I am also grateful to the broader stakeholder community that often relies on our data and brings needed accountability and feedback to ensure that we continue to provide policy-relevant information that informs the U.S. science and engineering ecosystem. Our collective efforts will be instrumental in realizing the ambitious goals outlined in our Strategic Plan and ensuring that we continue to serve as a trusted source of data-driven insights.

As we build toward these goals, NCSES will strengthen its partnership with the U.S. National Science Foundation to build trust and ensure our unique yet complementary missions are met together, and we will continue to leverage our position and partnerships within the federal statistical system and the broader data ecosystem at large. Only together will we be able to navigate the challenges and opportunities that lie ahead with resilience, creativity, and unwavering commitment to excellence.

I am deeply grateful for your ongoing dedication and contributions to our agency's mission, and I am confident that, together, we will achieve great things.

With gratitude,

Emilda B. Rivers
Director, National Center for Science and Engineering Statistics

About Us

The National Center for Science and Engineering Statistics (NCSES) was created by the National Science Foundation Act of 1950 and reauthorized by Section 505 of the America COMPETES Reauthorization Act of 2010.

NCSES is a principal statistical agency located within the Social, Behavioral and Economic Sciences (SBE) Directorate at the U.S. National Science Foundation (NSF). NCSES is also a part of the Federal Statistical System, which is committed to advancing the methods for collection and accessibility of objective statistical information in the United States. These efforts include increasing collaboration within the Federal Statistical System network, adopting a common framework for protecting statistical data, and disseminating statistical data securely and equitably, in accordance with the Confidential Information Protection and Statistical Efficiency Act of 2018 (CIPSEA) and other provisions within the Foundations for Evidence-Based Policymaking Act of 2018 (Evidence Act). This work is foundational to informing decisions across the public and private sectors.

NCSES is responsible for statistical data on the following four core areas of interest:

- Research and Development Funding and Performance
- Science and Engineering Workforce
- STEM Education
- Innovation and Global Competitiveness

Core Activities

As one of 13 principal federal statistical agencies, NCSES designs, supports, and directs periodic national surveys and performs a variety of other data collections and research. The Center leads the collaborative effort with the Federal Statistical System to enhance existing shared services and to inform the shared culture.

The following activities form the core of NCSES work:

- Collection, acquisition, analysis, reporting, and dissemination of statistical data related to the United States and other nations in the areas of science, technology, and innovation
- Provide data and trends on the following:
    - The U.S. S&E workforce, their demographic characteristics, educational history, additional training, and career pathways
    - U.S. higher education institutions, including data on field of research, source of funds (including funding from federal, state, and local governments; businesses; nonprofits; institutions; and foreign sources), and type of research (basic research, applied research, and experimental development)
    - The overall R&D effort in the United States, including information on R&D expenditures by sector of performance, source of funds, character of R&D work, R&D-to-gross domestic product (GDP) ratios, and international comparisons
    - U.S. innovation and global competitiveness, including U.S. R&D innovation efforts, such as patents and trademark registration, R&D expenditures by sector (business, higher education, nonprofit, and federal and state governments), and R&D-to-GDP ratios (a gauge of the intensity of a nation's R&D effort)
- Support of research that uses NCSES data
- Methodological research in areas related to NCSES's work
- Education and training of researchers in the use of large-scale, nationally representative data sets
- Lead and support cross-agency and statistical system priorities, including the Standard Application Process and the National Secure Data Service Demonstration project

- Provide research and funding opportunities through three mechanisms:
    - Broad Agency Announcements (BAAs) that provide research opportunities primarily to U.S. institutions of higher education and their collaborators to conduct a variety of research projects that support the strategic objectives of NCSES and partner federal statistical agencies
    - America's Data Hub Consortium (ADC) that enables eligible people across a broad spectrum of performers to securely engage in collaborative research and decision-making that benefits the NCSES mission and the American public
    - Grant program designed to advance analytic and methodological research in support of understanding the science and technology enterprise

NCSES's primary role as a clearinghouse and source of data and information on scientific and engineering resources originated in the National Science Foundation Act of 1950 (42 U.S.C. 1862 (a) (6)). This primary purpose continues to shape our vision and mission, the values that guide the Center's work, and the strategic goals and objectives set forth in this plan.

Vision Statement

Empowering the nation through data and analysis to drive insights in science, technology, and innovation.

Mission Statement

To provide objective information on U.S. science, technology, and innovation.

NCSES provides high-quality information on the science and engineering enterprise to policymakers and the public. We enable evidence-based decision-making for policymakers, practitioners, researchers, and the public by gathering, analyzing, and disseminating statistical data on the following:

- R&D
- The S&E workforce
- U.S. competitiveness in science, engineering, technology, and R&D
- The condition and progress of STEM education in the United States

We conduct our work as a federal statistical agency and strive to address information needs of our constituents, to improve our data collections, to provide broad dissemination of information and access to our data, and to serve as a leader in supporting evidence-building initiatives.

Values

- We meet our stakeholders' expectations for quality, relevance, and transparency.
- Our work is unbiased, objective, and policy-neutral.
- We lead in the development of innovative approaches to our work and in support of the Federal Statistical System.
- We engage our colleagues, data providers, and stakeholders with respect and trust, and we encourage open dialogue.
- We hold ourselves to the highest standards to promote integrity and credibility in official statistics.

This 5-year NCSES Strategic Plan (2024–28) outlines the strategic goals and objectives that align with the agency's vision and mission. The prioritization and implementation of strategic activities are dependent on the availability of resources, as determined in consultation with NCSES and NSF leadership. This Strategic Plan will be reviewed at least annually to assess changes in priorities or other considerations, and it will be updated, as required, during the strategic planning period.

Strategic Goals and Objectives

Goal 1: Strengthen Stakeholder Connection and Engagement

Strengthen and sustain relationships through strategic engagement to build public trust, foster communities of practice, and address the needs of our stakeholders, data providers, and the evidence-building community.

Goal 2: Deliver World-Class Products and Services

Develop and improve our data, products, and services through innovative approaches that meet stakeholders' needs and expectations and the Center's standards. Provide leadership within the Federal Statistical System to build a shared-service culture in support of the nation's evidence-building needs.

Goal 3: Increase Organizational Efficiency and Effectiveness

Identify, prioritize, improve, and innovate Center operations to meet mission-critical goals and requirements in a manner that effectively and efficiently uses public resources. Create opportunities for knowledge-sharing and collaboration to facilitate solutions that support the Center's mission.

Goal 4: Grow and Maintain an Engaged, Effective Team

Attract, recruit, and retain talent to address the Center's existing and emerging analytical, technical, and operational needs. Empower staff to innovate and provide them with opportunities to support their professional development, thrive in an inclusive and supportive work culture, and fulfill the Center's mission.

Goal 1: Strengthen Stakeholder Connection and Engagement

Strengthen and sustain relationships through strategic engagement to build public trust, foster communities of practice, and address the needs of our stakeholders, data providers, and the evidence-building community.

Objective 1.1

Expand stakeholder identification and collaboration to enhance our understanding of their wants, needs, and expectations. Stakeholders include but are not limited to subject matter experts, survey practitioners, federal policymakers, researchers, and others in the science and engineering community and international communities.

Outcomes for Objective 1.1

A centralized process and system where all stakeholders and their needs can be identified on an ongoing basis, with actions taken and responses provided. Information obtained and shared results in increased use of NCSES products and services and greater understanding of the science and engineering enterprise.

Objective 1.2

An NCSES Strategic Communications Plan is developed, implemented, and routinely updated.

Outcomes for Objective 1.2

NCSES members are satisfied with the information provided on activities, decisions, and ideas impacting them or their work. External satisfaction results in more reliance on and trust in NCSES products and services. This satisfaction leads to more innovative uses of S&E statistics and data resulting in informed decision-making and potential for improved or increasing innovations in the S&E enterprise.

Objective 1.3

Build public trust and engagement through outreach.

Outcomes for Objective 1.3

As trust increases, stakeholders' reliance on NCSES products and services grows, resulting in more effective policies and decisions impacting U.S. science, technology, and innovation.

Objective 1.4

Strengthen relationships with survey respondents and data collection partners to improve data quality and response coverage.

Outcomes for Objective 1.4

Stronger relationships with respondents and partners will increase the data quality (as measured by the data quality framework scorecard) of science-, technology-, and innovation-related data and information and reduce the need for complex methodological solutions.

Goal 2: Deliver World-Class Products and Services

Develop and improve our data, products, and services through innovative approaches that meet stakeholders' needs and expectations and the Center's standards. Provide leadership within the Federal Statistical System to build a shared-service culture in support of the nation's evidence-building needs.

Objective 2.1

Initiate, lead, and support projects or activities that address legislative initiatives on data sharing and evidence building.

Outcomes for Objective 2.1

NCSES consistently completes legislatively mandated data-sharing and evidence-building initiatives on time and within budget, routinely meets or exceeds sponsors' expectations, and typically provides models and frameworks for other agencies. This includes requirements under the Evidence Act and the CHIPS and Science Act.

Objective 2.2

Test new or enhance existing shared services to inform a shared-services culture within the Federal Statistical System.

Outcomes for Objective 2.2

Improved collaboration and shared service offerings will result in greater efficiencies, reduced duplication of effort and costs, and consistently met stakeholder needs and expectations.

Objective 2.3

Enhance the quality, timeliness, utility, and accessibility of products and services through the use of new and improved methods, tools, and platforms.

Outcomes for Objective 2.3

Improved products and services will better meet stakeholders' needs and expectations. New and improved methods, tools, and platforms make NCSES an indispensable resource for making informed decisions and policies about the U.S. S&E enterprise.

Objective 2.4

Develop, demonstrate, and improve the usefulness of and ease of access to innovative data sets that integrate NCSES and non-NCSES sources, including non-traditional data sources.

Outcomes for Objective 2.4

Improvements in utility and data accessibility will lead to innovative new products that do not rely on traditional data sources and provide more sustainable official statistics.

Objective 2.5

Expand the NCSES research program to include the development and application of new methodologies, technologies, or techniques that contribute to improved evidence building and the efficacy and use of our data, products, and services.

Outcomes for Objective 2.5

Recognition of NCSES's role in advancing research in higher education institutions, data science training, data linking, privacy and data protection, and improving NCSES products and services.

Goal 3: Increase Organizational Efficiency and Effectiveness

Identify, prioritize, improve, and innovate Center operations to meet mission-critical goals and requirements in a manner that effectively and efficiently uses public resources. Create opportunities for knowledge-sharing and collaboration to facilitate solutions that support the Center's mission.

Objective 3.1

Build a knowledge management infrastructure that centralizes storage of decisions, data, and other important information.

Outcomes for Objective 3.1

NCSES is able to easily organize and locate data and knowledge related to the mission of the agency and destroy documents as needed.

Objective 3.2

Develop an evidence-based approach to business management by modernizing and applying data collection and analysis of internal business data about costs and funding availability.

Outcomes for Objective 3.2

NCSES operates with increased cost and time efficiency by using data to drive business practices and decisions.

Objective 3.3

Streamline Center-wide processes to prioritize cost-effective technical investments and reduce burden and inefficiency.

Outcomes for Objective 3.3

NCSES has processes and frameworks that enable and encourage purposeful innovation to meet current and future organizational needs.

Goal 4: Grow and Maintain an Engaged, Effective Team

Attract, recruit, and retain talent to address the Center's existing and emerging analytical, technical, and operational needs. Empower staff to innovate and provide them with opportunities to support their professional development, thrive in a supportive work culture, and fulfill the Center's mission.

Objective 4.1

Leverage human capital assessments to develop a strategic human capital plan that identifies mission-critical recruitment needs and retention targets for use in Center decision-making.

Outcomes for Objective 4.1

NCSES is able to recruit, select, and retain a qualified workforce with the required competencies to meet its current and future work requirements.

Objective 4.2

Create opportunities for professional development and encourage staff career growth.

Outcomes for Objective 4.2

Employees at all levels have access to a wide range of professional development, leadership, and mentoring opportunities.

Objective 4.3

Promote greater employee involvement in Center decision-making, build a culture of innovation and accountability, and support teamwork and collaboration.

Outcomes for Objective 4.3

NCSES has an organizational culture exemplified by an involved, committed, and satisfied workforce.

NCSES Authorities

Statistical Programs and Standards, the White House. Office of Management and Budget's Statistical Policy Directives identify minimum requirements for Federal principal statistical agencies when they engage in statistical activities.

Confidential Information Protection and Statistical Efficiency Act of 2018, also known as Title III of the Foundations for Evidence-Based Policymaking Act of 2018, reaffirms and expands CIPSEA 2002. Among other things, it codifies the fundamental responsibilities of federal statistical agencies and units to ensure public trust and gives statistical agencies and units responsibilities and authorities to facilitate more effective evidence building. Requires data or information acquired by an agency under a pledge of confidentiality and for exclusively statistical purposes to be used by the agency's officers, employees, or agents only for such purposes. Prohibits such information from being disclosed in identifiable form, for any use other than such a purpose, without the informed consent of the respondent.

Principles and Practices for a Federal Statistical Agency. Guidance for statistical agencies and units, as well as other agencies engaged in statistical activities, to carry out their responsibilities to provide accurate, timely, relevant, and objective information for public and policy use.

Privacy Act of 1974, as amended, 5 U.S.C. § 552a.

The Information Quality Act, Sec. 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-554; H.R. 5658)

The Foundations for Evidence-Based Policymaking Act of 2018 ("Evidence Act"), signed into law on 14 January 2019, emphasizes collaboration and coordination to advance data and evidence-building functions in the federal government by statutorily mandating federal evidence-building activities, such as the Standard Application Process, open government data, and confidential information protection and statistical efficiency.

The CHIPS and Science Act of 2022 authorizes investments in exploratory research and use-inspired translational research within NSF and NCSES. Section 10375 authorizes the establishment of a National Secure Data Service Demonstration project.

Contact Us

NCSES remains open to stakeholder input and partnerships that further advance the agency's mission.

Interested parties can e-mail their questions or comments to NCSES at ncsesweb@nsf.gov or visit the agency website at http://ncses.nsf.gov.

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