Reimagining the Science and Engineering Indicators: Improving How Information is Delivered to Policymakers

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Did you know that while the United States (U.S.) outspends the rest of the world on scientific research and development, and publishes the most impactful peer-reviewed articles in science and engineering in the world, its math and science test scores at the elementary school level are globally mediocre? High-quality data on these issues and others are published in the latest edition of *Science and Engineering Indicators* (https://ncses.nsf.gov/indicators/), a congressionally mandated report prepared by the National Center for Science and Engineering Statistics (NCSES (https://www.nsf.gov/statistics/)), under the guidance of the National Science Board (https://www.nsf.gov/nsb/). NCSES is a principal federal statistical agency housed within the Social, Behavioral, and Economic Sciences Directorate of the National Science Foundation (https://www.nsf.gov/).

Decisions made by the federal government help to direct the nation’s science and engineering enterprise, and so have profound effects on everyone. *Science and Engineering Indicators* provides high-quality data for decisionmakers by portraying the landscape of science and engineering in the
U.S. with quantitative indicators of education, the labor force, research and development, innovation, and public attitudes toward science and engineering. Critically, *Indicators* is policy-relevant but policy-neutral, which ensures it to be regarded as a credible and reliable source of information.


An important part of the reimagined *Indicators* is increased leveraging of web-based tools, delivering the content in a form that better meets the demands of growing digital usage. Each online report enables maximum interactivity for the end user through exploration, manipulation, and downloading of data. Detailed statistics become visible by navigating the cursor over a figure, data series can be hidden to focus on specific information, and figure axes dynamically scale according to the data that the user wants to see (see Figure). Users can also dig deeper into supplementary information, data sources, and methodology on the website.
Figure: An example of a dynamic figure on the Science and Engineering Indicators website. The version on the top is the primary view of the figure. The version on the bottom is altered by a user who removed some categories and navigated the mouse over a bar to show detailed numbers.

Reimagining Science and Engineering Indicators aims to maximize impact without sacrificing its high quality. The objective is to make it easier than ever for readers to understand the narrative, use the data, and share it with colleagues and on social media. This objective aims to not only make evidence-based policymaking easier for federal decisionmakers, but also to meet the informational needs of a broader audience that could include students, the media, think tanks, and educational organizations. As science and engineering changes our lives at a quickening pace, Indicators strives be a rich and reliable reflection of those changes for an increasingly diverse group of stakeholders.

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