Dr. John Veysey
Executive Officer to the National Science Board
National Science Foundation

Image credit: Oleg D. Lavrentovich, Liquid Crystal Institute, Kent State University
National Science Board

Founded in 1950 as part of NSF Act

24 Members + NSF Director

Appointed by the President based on science and engineering eminence to represent …

- All areas of science and engineering
- All areas of the Nation
Science & Engineering Indicators

- Biennial report on the state of S&E in the U.S.
- Required by law; delivered to the President and Congress
- Policy relevant and policy neutral
- Produced by independent statistical agency (NSF’s NCSES) under the guidance of the NSB
Policy Products

Task Force on the Skilled Technical Workforce (STW)

NATIONAL SCIENCE BOARD

A Comparison to Science and Engineering Indicators 2014

Revisiting the STEM Workforce

STEM EDUCATION AND THE WORKFORCE PATHWAYS, NOT PIPELINES

WHAT TYPES OF JOBS DO STEM DEGREE HOLDERS HAVE?

STEM (science, technology, engineering, and math) knowledge and skills enable individuals to follow career paths to many jobs, not just those traditionally defined as STEM or S&E (science and engineering).

- Among college-educated U.S. workers with their highest degree in an S&E Field, 49% are employed in an S&E or S&E-related job.
- A majority (51%) of these workers are employed in non-S&E occupations.
- Non-S&E jobs held by S&E degree holders include management, sales, marketing, social services, and teaching in non-STEM fields.

A "PATHWAYS MODEL" OF CAREER PROGRESSION

In our dynamic economy, careers are continually being created, supplanted, and reshaped. Yet the "STEM pipeline" model suggests a straightforward progression from formal STEM education to STEM occupation. This model does not reflect the full range of career opportunities available to STEM degree holders and the many factors that influence career choices over a lifetime.

A "pathways model" better represents the relationship between degree and jobs, in which STEM degree holders follow career paths into STEM and non-STEM jobs, or both, over the course of their working lives. This approach recognizes that employers can create workforce pathways to draw on diverse individuals with disparate educational backgrounds and expertise.

An emphasis on career pathways encourages a shift in the focus of questions concerning workforce competitiveness from "how many degrees/workers" do we have to "what kinds of knowledge and skills" should all U.S. workers have.
Impact: U.S. and China R&D Expenditures
Indicators Reimagined: SEI 2020

- Modernize how we provide information
- Leverage digital technology
- More timely and useful reports
- Make production more sustainable and efficient
Beyond SEI 2020

- Ongoing modernization
- Topical thematic reports
- Special reports on emerging topics and new indicators
- Improved data tools and navigation

Let us know what you think!

ncsesweb@nsf.gov
Many actors shape US S&E policy

Decision-makers want and use data

… if it is timely, accessible, and relevant