

PROVIDE CONSENSUS ADVICE

With our power to convene the top experts from across the science, engineering, and health sectors, the National Academies are uniquely positioned to take on cross-cutting, multidisciplinary challenges.

Consensus Studies

The National Academies' consensus activities are considered the "gold standard" of our products. We appoint a balanced, independent committee of experts to address a study's statement of task and document the evidence-based consensus. The resulting reports typically include findings, conclusions, and recommendations based on information gathered by the committee and the committee's deliberations. Each report is subjected to a rigorous and independent peer-review process, and it represents the position of the National Academies on the statement of task.

Future U.S. Workforce for Geospatial Intelligence (2013)

This study assessed the supply of expertise in 10 geospatial intelligence fields, including 5 traditional areas (geodesy and geophysics, photogrammetry, remote sensing, cartographic science, and geographic information systems and geospatial analysis) and 5 emerging areas that could improve geospatial intelligence (GEOINT fusion, crowdsourcing, human geography, visual analytics, and forecasting).

Data Science for Undergraduates: Opportunities and Options (2018)

This study offered a vision for the emerging discipline of data science at the undergraduate level. This report outlined some considerations and approaches for academic institutions and others in the broader data science communities to help guide the ongoing transformation of this field.

Evolving the Geodetic Infrastructure to Meet New Scientific Needs (2020)

This report summarized progress in maintaining and improving the geodetic infrastructure and identifies improvements to meet new science needs. Focusing on sea-level change, the terrestrial water cycle, geological hazards, weather and climate, and ecosystems, this study examined specific aspects of the geodetic infrastructure that need to be maintained or improved to help answer science questions.

Consensus Studies can help sponsors

- Provide findings and recommendations based on evidence from the fields of science, engineering, and medicine
- Inform policy and practice
- Establish a research agenda
- Guide grant making and development of RFPs

Projects can be tailored to meet the unique needs of sponsors.

For example, the timeline, approach, and products can be customized as appropriate.

Our objective processes lead to
informed decision making.

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CONVENE EXPERTS

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Convene Experts

We convene carefully selected experts to engage in a focused discussion about issues important to our sponsors. Depending on the needs of the sponsor, convening activities can range from a one-day meeting of a small group, to an iterative process that takes place over time, to large public workshops.

[Enhancing Quantitative Capacity of Geoscience Programs \(April 2020\)](#)

What are the core analytical skills needed to prepare undergraduate geoscience majors for graduate work and careers? What are best practices for integrating analytic skills into curricula? This meeting investigated effective methods for teaching analytical classes and how current geoscience curricula may need to change to accommodate more quantitative capacity, as well as leveling the playing field of those with and without prior research experience.

[Beyond the Black Box: The Future of Machine Learning and Data-Intensive Computing in the Solid Earth Geosciences \(October 2019\)](#)

This meeting reviewed progress and future investments needed for a more concerted and long-term effort to combine datasets with appropriate data-intensive computing resources. Discussions centered around how workflows can be combined with approaches that provide insights into the physics of earth systems, beyond black-box applications.

[Roundtable on Data Science Postsecondary Education \(2016-2019\)](#)

This roundtable identified challenges and highlight best practices in postsecondary data science education. Convening quarterly for 3 years, representatives from academia, industry, and government gathered with other experts from across the nation to discuss topics relating to foundations of data science, data science across the postsecondary curriculum, data science across society, and ethics and data science.

Convening activities can help sponsors

- Interact with experts on a specific topic
- Engage in ongoing dialogue with stakeholders
- Be part of a community of practice
- Take action with others operating from a common knowledge base

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