



NITRD Spotlight

Cross-sector Information Sharing

The multiagency Networking and Information Technology Research and Development (NITRD) Program, through its Interagency Working Groups (IWGs), advances the [Administration R&D Budget Priorities](#) through many avenues including its open meetings with attendees from academia and industry.

NITRD IWGs often host invited experts from academia and industry to share information and engage in discussions on R&D that addresses key challenges and questions directly related to the priorities of the Administration and the Federal agencies.

The following recent talks were hosted by the NITRD IWGs:

- **LSN-JET (January 16):** Jeff Smith, GSA, [Enterprise Infrastructure Solutions \(EIS\), Briefing to JET](#)
- **SPSQ (February 1):** Dr. Irena Bojanova, NIST, [The Bugs Framework \(BF\): A Structured Approach to Express Bugs](#)
- **LSN-MAGIC (February 7, March 7, April 4):** Speaker series on [Containerization and Virtualization Technologies](#) and their usage in distributed and leaderships class computing environments. Speakers provided updates on current technologies, adoption and use of these technologies in science communities, and adoption and deployment by resource providers.
- **LSN-JET (March 20):** Patty Giuntoli, ESnet, presented [ESnet6 Project Update](#), and John Moore, Internet2, presented [Next-gen R&E Ecosystem Infrastructure: Planning and Experimentation](#)
- **FASTER CoP (March 22):** Matt Barrett, NIST, presented [Framework for Improving Critical Infrastructure Cybersecurity](#)



A Word from our Director

Dr. Bryan Biegel, NCO Director and Co-chair, NITRD Subcommittee

The Benefits and Challenges of AI

Artificial intelligence (AI) has arrived—driverless cars, home and mobile assistants, real-time traffic routing, advising systems for everything from stock markets to healthcare, helpdesk chatbots, and more. Rapid AI advancements are enabled by technologies that NITRD agencies helped create, including powerful and pervasive networked computing and sensors, big data, and machine learning (ML) algorithms.

Even as AI helps us to be safer and healthier, frees us from repetitive work, and supports informed decisions, complex challenges threaten these benefits: workforce disruption; new risks to safety, privacy, and cybersecurity; ensuring alignment with human values; and societal change.

The NITRD Program will be a steadfast force in helping us solve these challenges. In fact, we have been exploring collaboration on AI challenges with an affiliated group in the National Science and Technology Council: Subcommittee on Machine Learning and Artificial Intelligence (MLAI).

Every NITRD IWG coordinates agency programs and engages expertise that can help solve the challenges of AI. For example:

- Big Data: big data management, provenance, analysis
- CSIA: security of AI-based cybersecurity systems
- HEC: exascale computing optimized for ML
- IRAS: collaboration of humans and intelligent robots
- Privacy: confidentiality in a hyper-aware world

AI is a genie that we cannot put back into the lamp, nor should we want to considering the benefits it is bringing to our lives and world. Instead, robust coordination between NITRD and MLAI will be essential in solving complex AI challenges to ensure that our “wishes” are wise and that the “magic” of AI helps create a better future for all.

NITRD Agency Corner: *National Science Foundation*



***Dr. James Kurose, NSF/CISE
Assistant Director and Co-
chair, NITRD Subcommittee***



***Dr. Erwin Gianchandani,
NSF/CISE Deputy Assistant
Director***

The [National Science Foundation \(NSF\)](#) continues its work to support the fundamental research and education to create knowledge across all fields of science and engineering. NSF's annual budget represents approximately 27% of the total federal budget for fundamental research conducted at US colleges and university; in computer science, this percentage rises to 83% of federal investments in fundamental academic research.

In March, NSF was appropriated \$7.8 billion for Fiscal Year (FY) 2018. This included an increase of about \$300 million over the FY 2017 Appropriations. This budget supports existing programs and is helping to seed the "[10 Big Ideas for Future NSF Investments](#)."

The [President's FY 2019 Budget Request for NSF](#) would accelerate progress on the Big Ideas and dedicate \$30 million to each of the six research-focused Big Ideas: Future of Work at the Human-Technology Frontier; Harnessing the Data Revolution; Navigating the New Arctic; Quantum Leap; Understanding the Rules of Life; and Windows on the Universe. Among the four process-oriented Big Ideas, \$20 million is dedicated for NSF INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering Science); \$60 million for Mid-Scale Research Infrastructure; \$16 million for Growing Convergence Research; and \$6.5 million for the NSF 2026 Fund. Networking and information technology (NIT) research over the years has helped to define many of these areas and continues to shape them today.

One NIT area that cuts across many of these Big Ideas is artificial intelligence (AI), which is also an area of growing interest from Congress. Dr. Jim Kurose, NSF assistant director for computer and information science and engineering, and NITRD co-chair, [testified](#) on March 7, 2018, before the House Oversight and Government Reform Committee's Subcommittee on Information Technology in the second in a series of hearings focused on AI. Dr. Kurose highlighted the important role of NITRD and its publication of [The National Artificial Intelligence Research and Development Strategic Plan](#) in his testimony.

A final update to note is NSF's new [Strategic Plan](#), published earlier this year. As part of this plan, NSF announced an agency priority goal for FY 2018 and 2019 to expand public and private partnerships in order to enhance the impact of NSF's investments and contribute to American economic competitiveness and security. This priority goal calls for increasing, by 5 percent, the number of NSF's partnerships and/or award actions with other federal agencies, private industry, and foundations/philanthropies (relative to the FY 2017 baseline). The priority goal builds on NSF's existing partnerships and partnership models. For example, just this month, NSF [announced](#) nearly \$25 million in funding, to be matched by another \$25 million in cash and in-kind contributions from an industry consortium of 28 networking companies and associations, to support the development and deployment of two experimental research platforms through the Platforms for Advanced Wireless Research (PAWR) program. These test beds, to be located in Salt Lake City and New York City, will serve as "living laboratories" for wireless networking research motivated by real-world challenges. Over the years, NITRD has served as an important convener and facilitator for many of NSF's partnerships, and we look forward to continuing to work with you, our agency partners.

Upcoming Events

Keep an eye on [NITRD.gov](https://www.nitrd.gov) for details on upcoming conferences, meetings, and workshops of interest.

April 15-19: [High Performance Computing Symposium](#)

April 17: [Simulation and Machine Learning in Robotics](#)

May 7- 9: [2018 High Confidence Software and Systems Conference](#)

Still want more!

Visit the NITRD website: <https://www.nitrd.gov/>

NITRD Presentation Library: <https://www.nitrd.gov/presentations/>

NITRD YouTube channel: <https://www.youtube.com/user/TheNCONITRD>

The NITRD Program is the Nation's primary source of federally funded research and development (R&D) on networking and information technology (IT). The NITRD Program seeks to maximize interagency coordination in providing the R&D foundations for continued U.S. technological leadership and meeting the needs of the Federal Government for advanced IT.

The Program provides a framework and mechanisms for coordination among the Federal agencies that support advanced IT R&D and report IT research budgets in the NITRD crosscut. Many other agencies with IT interests also participate in NITRD activities.



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