Quarterly Newsletter July 2018 Issue NITRD Leads IT

The Networking and Information Technology Research and Development (NITRD) Program



NITRD Leads IT - Quarterly Newsletter for the NITRD Program

July 2018

NITRD Spotlight

A New NITRD IWG for Artificial Intelligence (AI) R&D

On June 27, 2018, the Office of Science and Technology Policy (OSTP) and its newly established Select Committee on AI approved the formation of a new NITRD AI R&D IWG. This decision implements a recommendation of the National AI R&D Strategic Plan.

The NITRD AI R&D IWG will serve as the coordinating body for Federal AI R&D investments. Jeff Alstott, Ph.D. of Intelligence Advanced Research Projects Activity (IARPA) and Henry Kautz, Ph.D of the National Science Foundation will serve as the IWG's Co-chairs. <u>More about the new</u> <u>NITRD AI R&D IWG</u>

National Coordination Office Welcomes Next Director, Kamie Roberts

The Networking and Information Technology Research and Development (NITRD) National Coordination Office (NCO) welcomes the appointment of its next Director, Kamie Roberts, in August 2018.

In this role, she will also serve as the Co-chair for the NITRD Subcommittee. Please join us in welcoming Ms. Roberts on her appointment. <u>More about the new Director</u>

NITRD Subcommittee Welcomes a New Co-chair, Dr. Erwin Gianchandani

The NITRD Subcommittee welcomed its new Co-chair, Dr. Erwin Gianchandani of the National Science Foundation (NSF) on May 30, 2018, joining Dr. Bryan Biegel of the NCO. Dr. Gianchandani serves as the Acting Assistant Director for the NSF Computer and Information Science and Engineering Directorate. He has been an active and integral contributor to the NITRD Subcommittee and Program. Erwin succeeds Dr. James Kurose. <u>More about</u> <u>the new NITRD Co-chair</u>



A Word from our Director

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

From IT Innovations to Solutions

Serving as NITRD NCO Director for the past two years has reinforced my appreciation of the importance of Federal IT R&D in addressing the challenges and pursuing the opportunities of advancing IT. I am also reminded that new challenges and opportunities always lie ahead.

One challenge and opportunity is particularly clear as I prepare to return to NASA: the need to purposefully move our innovations across the technology "valley of death"—the gap between positive research results and usable solutions that benefit our agencies and Nation.

I will be supporting NASA's digital transformation initiative, which will maximize mission success by fully leveraging advanced digital technologies. Digital transformation is enabled by rapidly-advancing technologies from across the NITRD portfolio—big data and AI to automate processes and support informed decision making, agile development to accelerate software delivery, cloud computing for operational efficiency and scalability, sensors and augmented/virtual reality for better insight into complex system operation, supercomputing and software integration to power digital twins and model-based systems engineering, mobile access and collaboration to enhance workforce effectiveness, social media to better engage the Nation, blockchain and many of the above technologies to enhance cybersecurity, and more.

I will continue to engage with the NITRD community to address both the challenges and opportunities of using the powerful and complex technologies we create to enhance Federal agency mission success. Our Nation can thank the NITRD Program for our continued world leadership in both IT R&D *and* IT-enabled solutions.

Publications

Wirless Spectrum: Radio Receiver Systems

July 13: "WSRD Radio Receiver Systems: R&D Innovation Needs and Impacts on Technology and Policy Workshop Summary" outlines research topics that were discussed by a cross-section of experts with the goal of improving radio receiver systems at workshop held on May 5, 2017. To address the challenges of the rapidly changing landscape for radio receivers, the WSRD IWG developed recommendations for Federal R&D, standards development, and policy in radio receiver systems that imply coordination and collaboration with the private and academic sectors. These recommendations were published in "Radio Receiver Systems R&D Innovation Needs: Recommendations of the WSRD IWG".

Frontiers of Data Visualization Workshop II: Data Wrangling Workshop Summary

July 13: This <u>report</u> summarizes the individual perspectives of a group of visualization experts from the public, private, and academic sectors who met online on October 18, 2017 to discuss how to improve the creation and use of high-quality visualizations. The specific focus of this workshop was on the complexities of "data wrangling".

FY2019 NITRD Supplement to the President's Budget

The NITRD Supplement to the President's 2019 Budget Request to Congress is in final agency review, with expected release by the end of July. It illustrates how the NITRD Program's coordinated Federal IT and networking R&D advance national priorities described in the FY2019 Administration R&D Budget Priorities memorandum. This Supplement is accomanied by the FY2019 Federal Cybersecurity R&D Strategic Plan Implementation Roadmap, which summarizes how agencies are working and coordinating to solve the cybersecurity challenges outlined in the 2016 Federal Cybersecurity R&D Strategic Plan.

Recent Activities

The muiltagency NITRD Program, through its Interagency Working Groups (IWGs), has hosted several invited experts from academia and industry to share information and engage in discussions on R&D that address key challenges and questions directly related to the national R&D priorties of the Administration and Federal agencies. The following talks were hosted recently by the NITRD IWGs:

- LSN-MAGIC (July 11): <u>DevOps Speaker Series</u> Kickoff: Marshall Lamb (IBM Corporation), Nitin Madhok (Clemson University), Thomas Morton (DoD), and Andrew J. Younge (Sandia National Laboratories)
- **Big Data (June 28):** Allen Dearry, Program Director NIH, <u>National Cancer Institute (NCI)</u> <u>Cancer Research Data Commons</u>
- **FASTER (June 1):** Will Slack and Peter Burkholder (GSA) <u>Moving Bureaucracies</u> <u>Toward Modern Cloud Practices</u>
- LSN-JET (May 9): Rommel Hidalgo, CIO, University of Guam, <u>GOREX: Guram Open</u> <u>Research & Education eXchange</u>

Upcoming Events

Keep an eye on <u>NITRD.gov</u> for details on upcoming conferences, meetings, and workshops of interest.

- July 17: LSN-JET In-person meeting
- July 31 August 2: <u>Structural Simulation</u> <u>Toolkit/Open Curation for Computer</u> <u>Archhitecture Modeling (SST/OCCAM) Tutorial</u> <u>Workshop</u>
- August 1: <u>LSN-MAGIC Meeting/DevOps Speaker</u> <u>Series</u>
- August 13: <u>Leadership in Embedded Security</u> <u>Workshop</u>
- August 20: <u>Robotics Assembly Recent</u> <u>Advancements and Opportunities for Challenging</u> <u>R&D</u> at the August 20-24, <u>IEEE International</u> <u>Conference on Automation Science and</u> <u>Engineering</u>
- September 13: <u>Security from a Wireless</u> <u>Spectrum Perspective: Technology Innovation and</u> <u>Policy Research Needs</u>

NITRD Agency Corner: Department of Defense



Dr. Richard Linderman, Deputy Director, Information Systems and Cyber Security,



Dr. Dai H. Kim, Associate Director, Advanced Computing Information Systems and Cyber Security

The Department of Defense (DoD) conducts basic research across a wide variety of areas with the ultimate goal of fielding game-changing capability on the battlefield. The current competitive global environment presents unique challenges – the proliferation of knowledge and technology is eroding our historic advantages and near-peers are increasing their rates of investment in military research and development. The DoD must rapidly modernize. To this end, Dr. Mike Griffin, Under Secretary of Defense for Research and Engineering, derived a list of technology focus areas from the recently-published 2018 National Defense Strategy.

AI is currently a key area of focus for the DoD. It presents the opportunity to expand operations and enhance military capability, while improving affordability and streamlining key business functions that support the Secretary's priorities. In September 2017 we held a technical exchange meeting to capture the state of play in AI throughout the Department. This meeting reinforced the need for a DoD AI Strategy. We continue to work towards an overall strategy for the DoD in the area of AI, and hope to leverage AI and automation to enable U.S. forces to operate more effectively and efficiently. As a Department, we are evaluating which processes and procedures we can enhance with the adoption of AI technology. We have engaged with the National Security Council for an "All-of-Government" approach to collaborate and share best practices and lessons learned.

DoD plans and coordinates its Science and Technology (S&T) efforts through the Reliance 21 Community of Interest (COI) framework. The goal of Reliance 21 is to ensure that the DoD S&T community provides solutions and advice to the Department's senior-level decision makers, warfighters, Congress, and other stakeholders in the most effective and efficient manner possible. This is achieved through an ecosystem and infrastructure that enables information sharing, alignment of effort, coordination of priorities, and support for scientists and engineers across the Department. Reliance 21 has roots that go back several decades, and has been continually renewed and refreshed to ensure relevance as circumstances have evolved. This emphasis on coordinated research planning is a key strength of DoD's S&T Enterprise.

Our ability to continue to maintain our technological edge in the future depends on the next generation of DoD scientists and engineers. DoD has a responsibility and critical interest in the development of STEM-literate individuals to maintain and grow the talent pool to ensure technical dominance in the future.

Every day, Department of Defense Laboratories throughout the US pursue cutting-edge research and development in support of our Nation's Warfighters. We employ nearly half (46 percent) of all scientists and engineers within the Federal Government.

As we continue to pursue groundbreaking advances through science and technology, we look forward to working with our agency partners through NITRD.

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.

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



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