The Networking and Information Technology R&D Program

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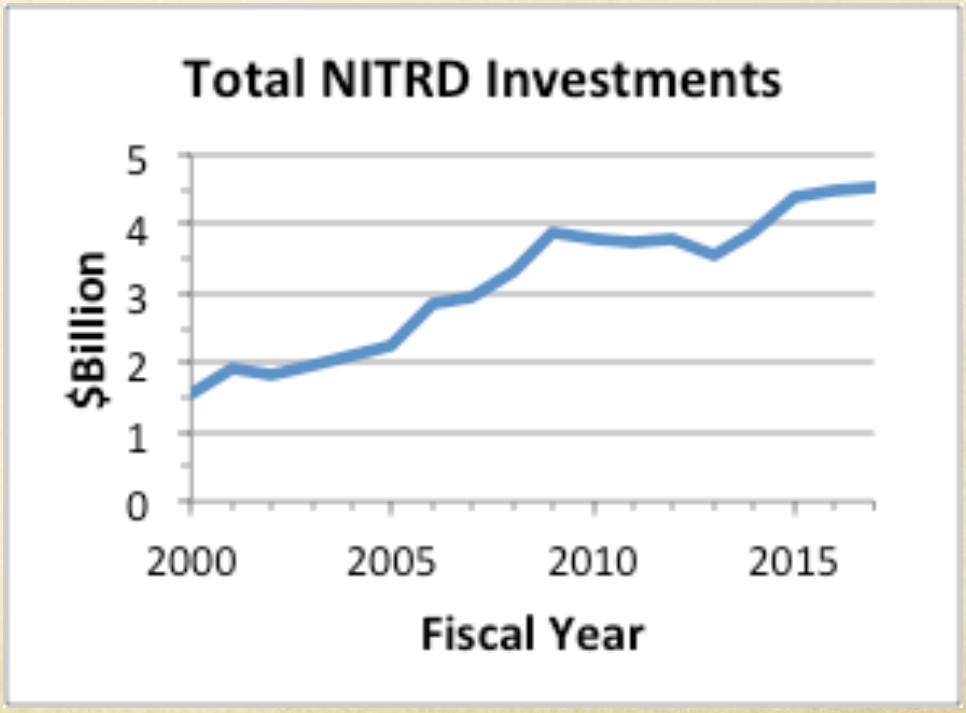
NITRD Overview

- Interagency program created by High Performance Computing Act of 1991, amended by American Innovation and Competitiveness Act, Jan. 2017
- Purpose: Assure U.S. leadership in, accelerate development and deployment of, advanced information technology (IT)
- Approach: Enhance coordination, collaboration in federal IT R&D
- ~60 federal agencies participate
- ~$4.8B federal IT R&D enacted under NITRD in FY17
- Summarized in annual NITRD Supplement to President's budget

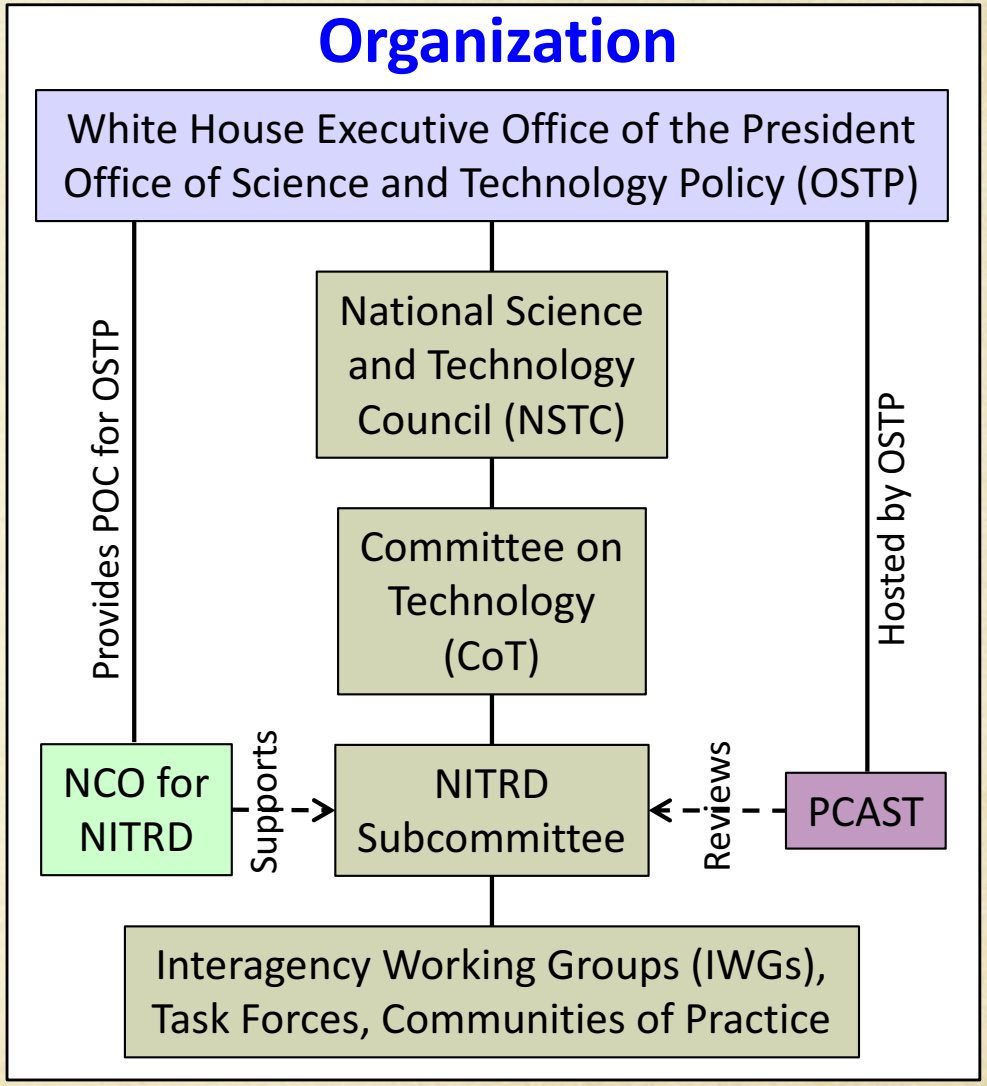


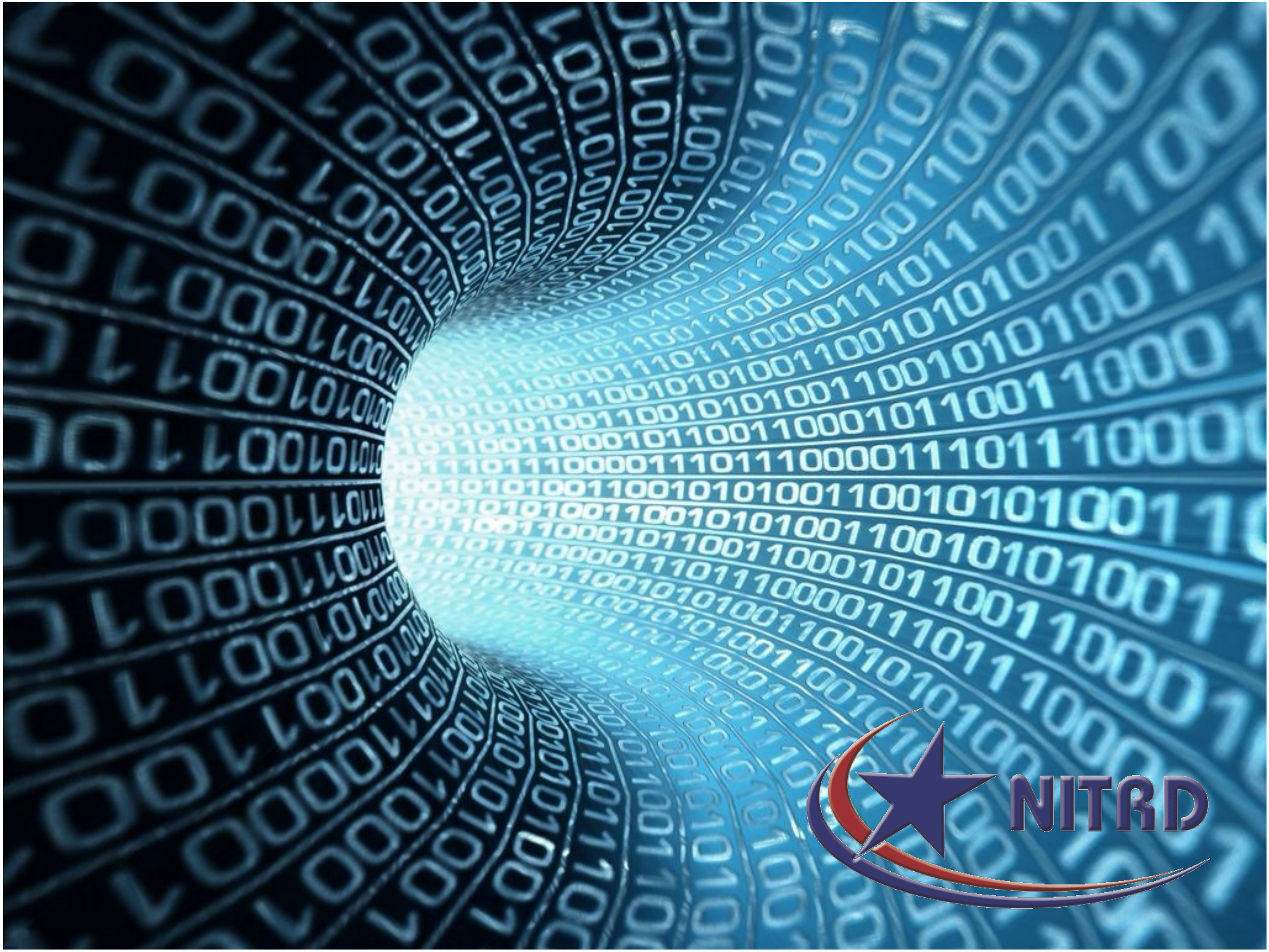
NITRD Goals

- Broadly advance IT more rapidly, strategically, safely, ethically, to:
  - Enable new capabilities for Federal agencies and the Nation
  - Accelerate progress of scientific discovery and innovation
  - Open new fields of research and new areas of inquiry
  - Educate next generation of 21st century scientists and engineers
  - Advance societal benefits
  - Leverage broad expertise; coordinate to minimize duplication, gaps
- How? By influencing IT R&D funded by federal agencies
  - Vector independent agency IT R&D toward joint, coordinated, strategic
  - Federal strategic plans in IT R&D
  - Broaden awareness of activities

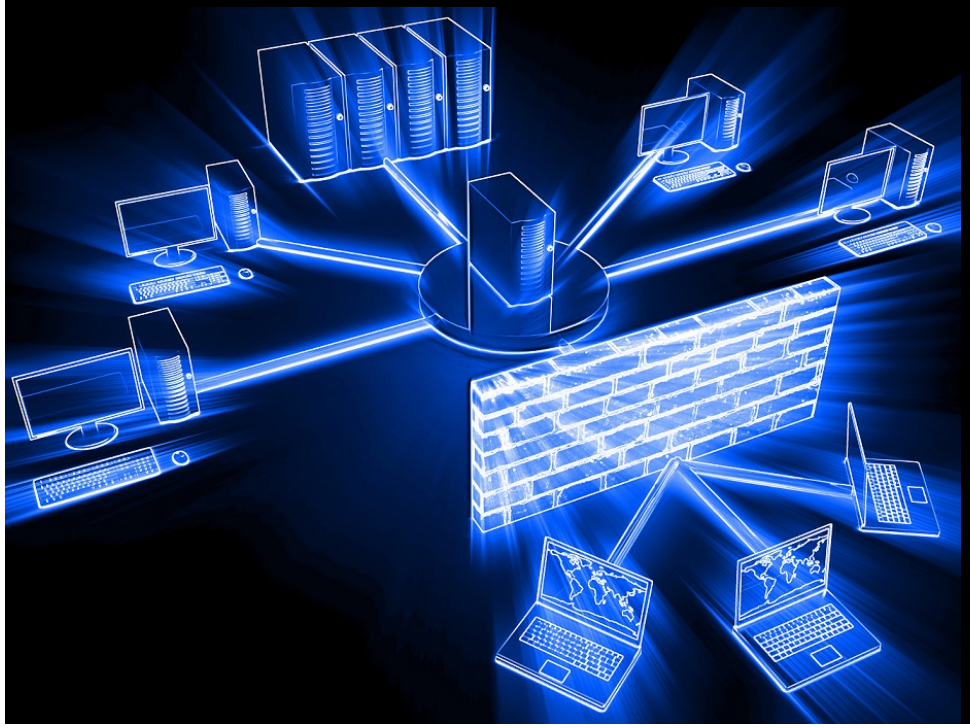
NITRD Organization

- NITRD activities managed by NITRD Subcommittee, under CoT, under NSTC, within OSTP
- NCO: National Coordination Office for NITRD
  - Supports NITRD Program with technical expertise, planning, coordination; serves as central point of contact for NITRD, and interface with OSTP, OMB, GAO, Congress, etc.
- NITRD periodically reviewed by President's Council of Advisors on Science and Technology (PCAST, non-government S&T luminaries)



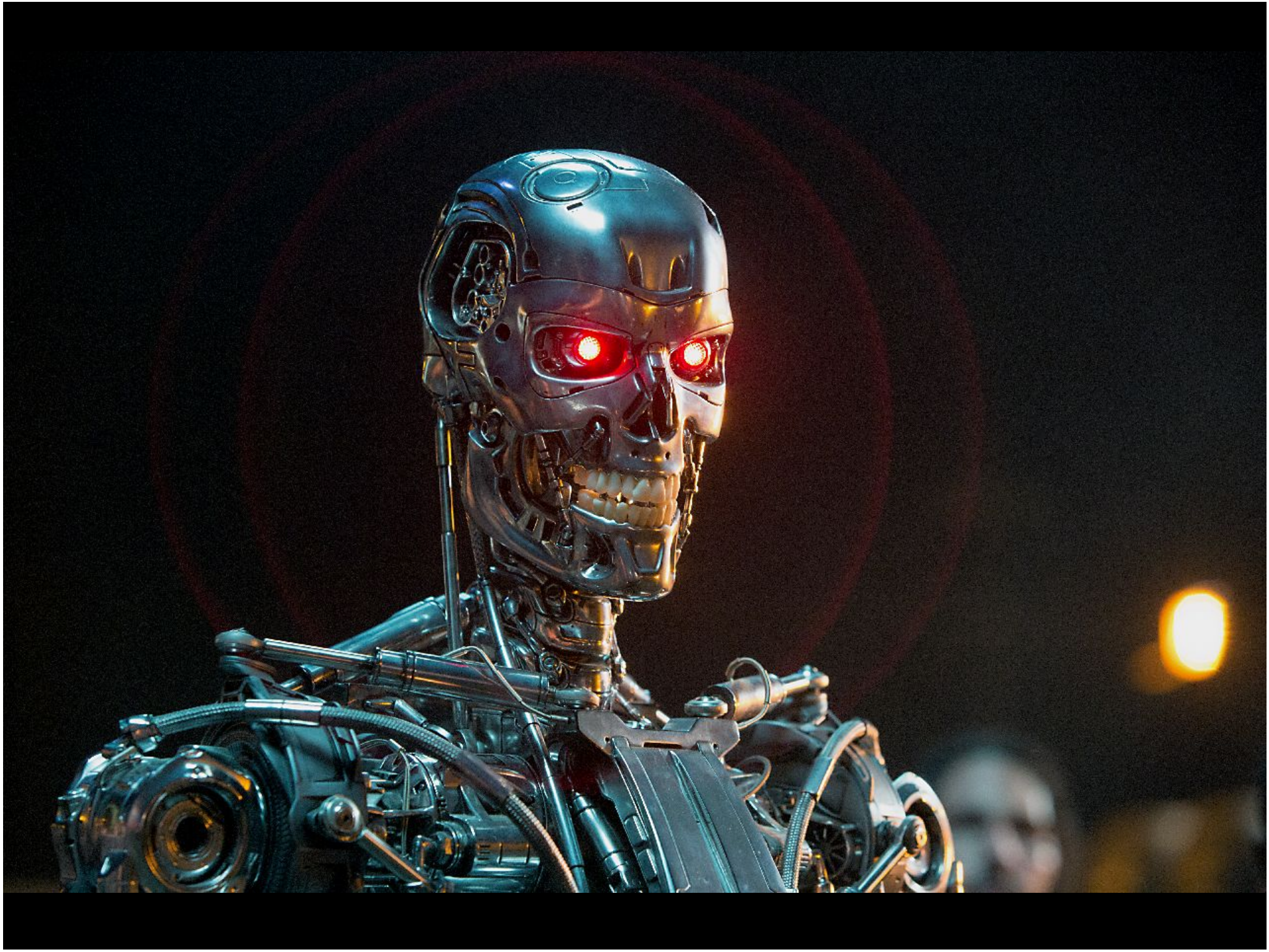

NITRD

Phone
Mail
Messages
What can I help you with?



TITAN

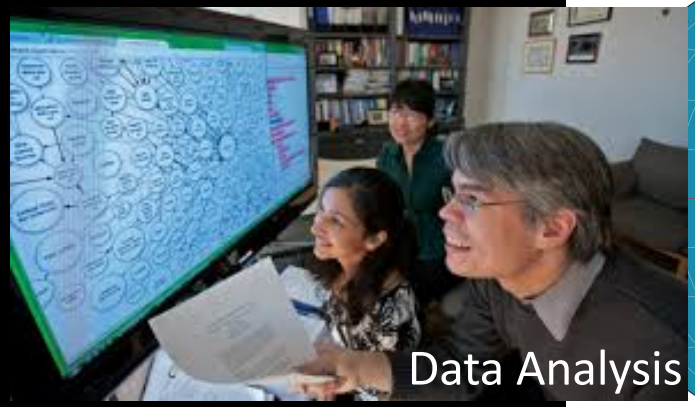
MEDICAL
NETWORK

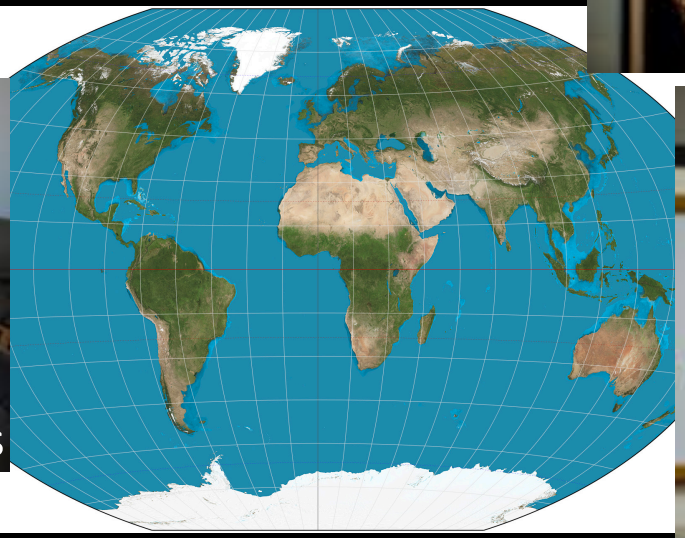


Artificial
Intelligence

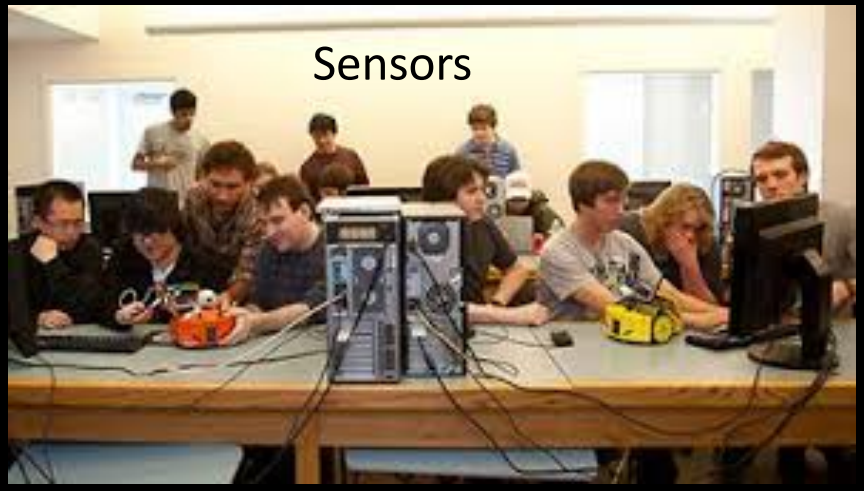
Communications

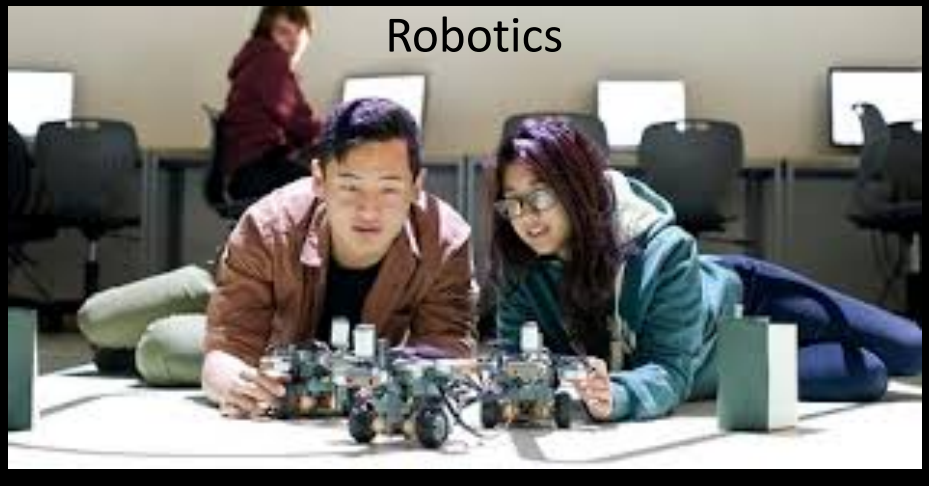
Cybersecurity


Data Analysis



Software


Sensors

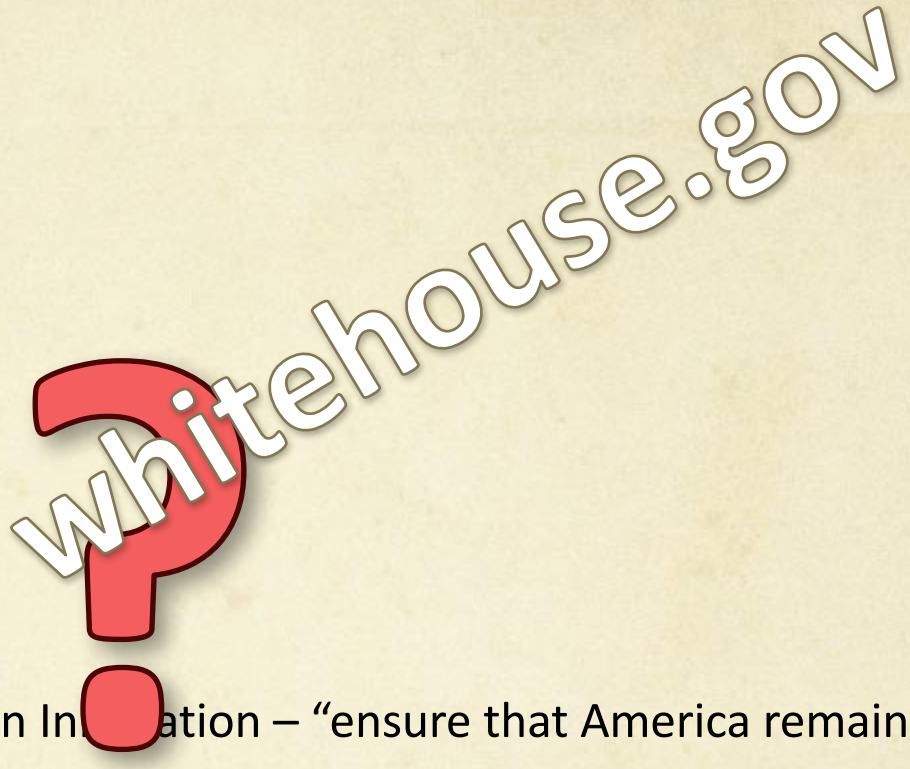

Robotics

Historical Federal Roles: Lead IT R&D; IT for Social Good

NITRD Program for a Brighter Future

Federal IT R&D Priorities

- Administration Priorities
  - Jobs and Economic Growth
  - National Security and Defense
  - Rebuilding Infrastructure
  - Better Healthcare
  - Safe Communities
  - Efficient Government



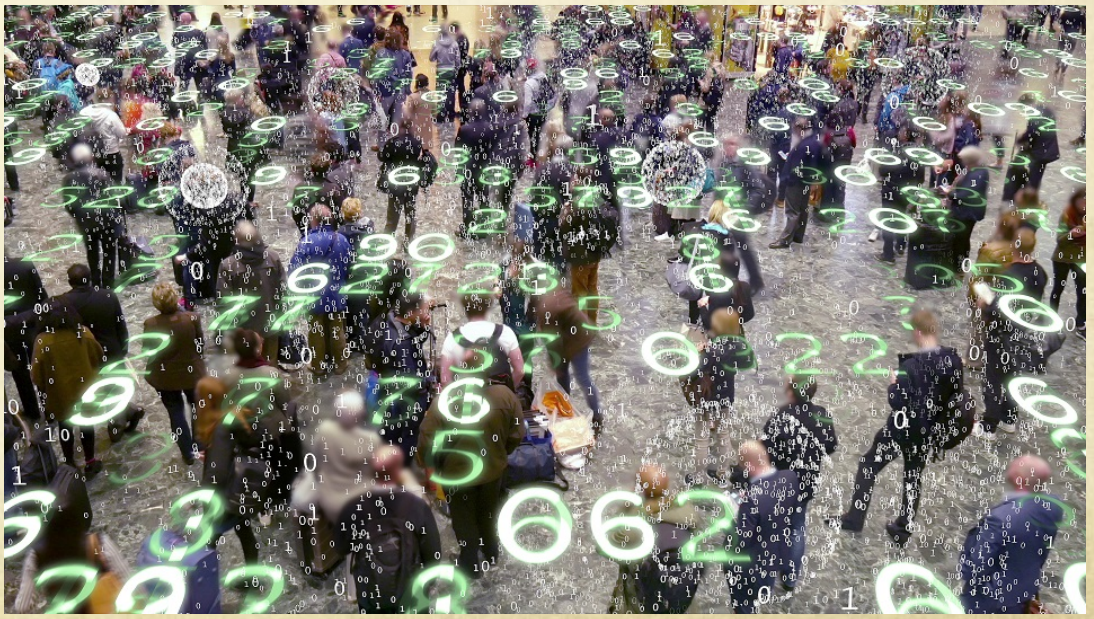
- Administration Statements
  - 3/27/17 PM on Office of American In ation – "ensure that America remains the global innovation leader"
  - 5/1/17 EO on the American Technology Council – "promote the secure, efficient, and economical use of information technology"
  - 5/7/17 EO on cybersecurity of Federal networks, critical infrastructure, and the nation
  - 6/22/17: Speech including commitment to rural broadband access

NITRD Interagency Working Groups

- Artificial Intelligence (under MLAI Subcommittee)
- Big Data
- Cyber Physical Systems
  - Smart Cities & Communities
- Cyber Security and Information Assurance
- High Confidence Systems and Software
- High End Computing
- Health IT
- Intelligent Robotics and Autonomous Systems
- Large Scale Networking
  - Broadband
- Privacy
- Social Computing
- Software Productivity, Sustainability, and Quality
- Video and Image Analytics
- Wireless Spectrum

Current IT R&D Opportunities

- Machine Learning – truth oracle, automated SW development, cyber security, many others
- Automation – enhance economic productivity; mitigate workforce disruption
- Cybersecurity – reverse imbalance of consequence; deterrence
- Smart Infrastructure – smart communities solutions, standards
- Supercomputing – NSCI: making U.S. supercomputers great again
- Health IT – Interoperability, safety/security, privacy
- General AI – To avoid The Terminator (or The Matrix), and achieve Star Trek



Backup Slides

NITRD Member Agencies

- Department of Commerce (DOC)
  - National Institute of Standards and Technology (**NIST**)
  - National Oceanic and Atmospheric Administration (**NOAA**)
- Department of Defense (DoD)
  - Defense Advanced Research Projects Agency (**DARPA**)
  - National Security Agency (**NSA**)
  - Office of the Secretary of Defense (**OSD**)
  - Service Research Organizations (**Air Force, Army, Navy**)
- Department of Energy (DOE)
  - National Nuclear Security Administration (**DOE/NNSA**)
  - Office of Electricity Delivery and Energy Reliability (**DOE/OE**)
  - Office of Science (**DOE/SC**)

- Department of Health and Human Services (HHS)
  - Agency for Healthcare Research and Quality (**AHRQ**)
  - National Institutes of Health (**NIH**)
  - Office of the National Coordinator for Health Information Technology (**ONC**)
- Department of Homeland Security (DHS)
  - Science and Technology Directorate (**DHS/S&T**)
- Department of Justice (DOJ)
  - National Institute of Justice (**NIJ**)
- Environmental Protection Agency (**EPA**)
- National Aeronautics and Space Administration (**NASA**)
- National Archives and Records Administration (**NARA**)
- National Reconnaissance Office (**NRO**)
- National Science Foundation (**NSF**)

NITRD Participating Agencies

- Department of Commerce (DOC)
  - National Telecommunications and Information Administration (NTIA)
- Department of Defense (DoD)
  - Defense Health Agency (DHA)
  - Department of Defense Intelligence Information Systems (DoDIIS)
  - Joint Improvised Explosive Device Defeat Organization (JIEDDO)
  - National Computer Security Center (NCSC)
  - National Geospatial-Intelligence Agency (NGA)
  - Telemedicine and Advanced Technology Research Center (TATRC)
- Department of Education (ED)
- Department of Energy (DOE)
  - Office of Environmental Management (DOE/EM)
- Department of Health and Human Services (HHS)
  - Centers for Disease Control and Prevention (CDC)
  - Food and Drug Administration (FDA)
- Department of Homeland Security (DHS)
  - Customs and Border Protection (CBP)
  - Federal Protective Service (FPS)
  - Transportation Security Administration (TSA)
- Department of Interior (Interior)
  - National Park Service (NPS)
  - U.S. Geological Survey (USGS)
- Department of Justice (DOJ)
  - Federal Bureau of Investigation (FBI)
- Department of Labor (DOL)
  - Bureau of Labor Statistics (BLS)
- Department of State (State)
- Department of Transportation (DOT)
  - Federal Aviation Administration (FAA)
  - Federal Highway Administration (FHWA)
- Department of the Treasury (Treasury)
  - Office of Financial Research (OFR)
- Department of Veterans Affairs (VA)
- Federal Communications Commission (FCC)
- Federal Deposit Insurance Corporation (FDIC)
- General Services Administration (GSA)
- Nuclear Regulatory Commission (NRC)
- Office of the Director of National Intelligence (ODNI)
  - Intelligence Advanced Research Projects Activity (IARPA)
  - National Counterterrorism Center (NCTC)
- U.S. Agency for International Development (USAID)
- U.S. Department of Agriculture (USDA)
  - Agricultural Research Service (ARS)
  - National Institute of Food and Agriculture (NIFA)

NITRD coordinates IT R&D across ***many*** Federal Departments and Agencies who share a common interest in advancing IT in support of mission success