

Section 1051 of the Fiscal Year 2019 National Defense Authorization Act (NDAA) established the National Security Commission on Artificial Intelligence as an independent Commission to “consider the methods and means necessary to advance the development of artificial intelligence, machine learning, and associated technologies by the United States to comprehensively address the national security and defense needs of the United States.”

**Interim Report due May 2019**

**Annual Reports due August 2019, August 2020**

**Final Report due October 2020**

# National Security Commission on Artificial Intelligence

(A) The competitiveness of the United States in AI, Machine Learning (ML), and other associated technologies, including matters related to national security, defense, public-private partnerships, and investments.

(B) Means and methods for the United States to maintain a technological advantage in AI, ML, and other associated technologies related to national security and defense.

(C) Developments and trends in international cooperation and competitiveness, including foreign investments in AI, related ML, and computer science fields that are materially related to national security and defense.

(D) Means by which to foster greater emphasis and investments in basic and advanced research to stimulate private, public, academic and combined initiatives in AI, ML, and other associated technologies, to the extent that such efforts have applications materially related to national security and defense.

(E) Workforce and education incentives to attract and recruit leading talent in AI and ML disciplines, including science, technology, engineering, and mathematics programs.

- (F) Risks associated with U.S. and foreign country advances in military employment of AI and ML, including international law concerning armed conflict, international humanitarian law, and escalation dynamics.
- (G) Associated ethical considerations related to AI and ML as they will be used for future applications related to national security and defense.
- (H) Means to establish data standards and incentivize the sharing of open training data within related national security and defense data-driven industries.
- (I) Consideration of the evolution of AI and appropriate mechanisms for managing such technology related to national security and defense.
- (J) Any other matters the Commission deems relevant to the common defense of the Nation.



## National Security Commission on Artificial Intelligence

### Commissioner Biographies

*As of December 17, 2018*



**Safra Catz** is co-CEO of Oracle Corporation and is responsible for global operations. Previously, she served as Executive Vice President and Senior Vice President. She has been a member of Oracle's Board of Directors since October 2001, and she currently serves on Oracle Corporation's Executive Management Committee. She is also a member of the board of directors for HSBC Holdings plc, one of the world's largest banking and financial services organizations. Prior to joining Oracle Corporation, Ms. Catz was at Donaldson, Lufkin & Jenrette, a global investment banking group (since 1986) where she was a Managing Director from February 1997 to March 1999.

Ms. Catz is a graduate of the Wharton School of the University of Pennsylvania and the University of Pennsylvania Law School.



**Dr. Steve Chien** is Technical Group Supervisor of the Artificial Intelligence Group and Senior Research Scientist in the Mission Planning and Execution Section at the Jet Propulsion Laboratory, California Institute of Technology where he leads efforts in automated planning and scheduling for space exploration. Dr. Chien is also Adjunct Faculty with the Department of Computer Science of the University of Southern California and previously was a Visiting Scholar with the Department of Computer Science of the University of California at Los Angeles. He holds a B.S. with Highest Honors in Computer Science, with minors in Mathematics and Economics, M.S., and Ph.D. degrees in Computer Science, all from the University of Illinois.

He is a founder of the International Workshops on Planning and Scheduling for Space held every other year from 1997-2013 and was the Chair of the 1997 workshop and Co-chair of the 2013 Workshop. He is former chair of the AIPS Executive Council (2000-2002), was a founding member of the ICAPS Executive Council (2002-2006), and was founding President of the ICAPS Executive Council 2002-2004. He was also a Councilor for the American Association for Artificial Intelligence (2003-2006)

Dr. Chien was a recipient of the 1995 Lew Allen Award for Excellence, JPL's highest award recognizing outstanding technical achievements by JPL personnel in the early years of their careers. In 1997, he received the NASA Exceptional Achievement Medal for his work in research and development of planning and scheduling systems for NASA. He is the Team Lead for the ASPEN Planning System, which received Honorable Mention in the 1999 Software of the Year Competition and was a contributor to the Remote Agent System which was a co-winner in the same 1999 competition. In 2000, he received the NASA Exceptional Service Medal for service and leadership in research and deployment of planning and scheduling systems for NASA. He is the Principal Investigator for the Autonomous Sciencecraft Experiment which is a co-winner of the 2005 NASA Software of the Year Award. In 2007, he received the NASA Exceptional Achievement Medal for outstanding technical accomplishments in the development of the Autonomous Sciencecraft deployed on the Earth Observing One Mission and the development of the Earth Observing Sensorweb. In 2011 He was



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awarded the inaugural AIAA Intelligent Systems Award, for his contributions to Spacecraft Autonomy. In 2011, he was the team co-lead for the Sensorweb Toolbox team, which was awarded Honorable mention in the 2011 NASA Software of the Year Competition. In 2015 He was awarded a JPL Magellan Award as well as the NASA Exceptional Achievement Medal for his contributions to automated science scheduling for ESA's Rosetta mission.

Dr. Chien has presented invited seminars on planning, scheduling, and resource allocation as well as on spacecraft autonomy and autonomous systems. H has authored numerous publications in these areas, and serves as a consultant to several multinational corporations in these areas. His current research interests lie in the areas of: planning and scheduling, machine learning, operations research, and decision theory.



**Dr. Kenneth Ford** is Founder and Chief Executive Officer of the Florida Institute for Human & Machine Cognition (IHMC) – a not-for-profit research institute located in Pensacola, Florida. IHMC has grown into one of the nation's premier research organizations with world-class scientists and engineers investigating a broad range of topics related to building technological systems aimed at amplifying and extending human cognition, perception, locomotion and resilience. Richard Florida has described IHMC as “a new model for interdisciplinary research institutes that strive to be both entrepreneurial and academic, firmly grounded and inspiringly ambitious.” IHMC headquarters are in Pensacola with a branch research facility in Ocala, Florida. In 2004 Florida Trend Magazine named Dr. Ford one of Florida's four most influential citizens working in academia.

Dr. Ford is the author of hundreds of scientific papers and six books. Dr. Ford's research interests include: artificial intelligence, cognitive science, human-centered computing, and entrepreneurship in government and academia. Dr. Ford received his Ph.D. in Computer Science from Tulane University. He is Emeritus Editor-in-Chief of AAAI/MIT Press and has been involved in the editing of several journals. Ford is a Fellow of the Association for the Advancement of Artificial Intelligence (AAAI), a charter Fellow of the National Academy of Inventors, a member of the Association for Computing Machinery, a member of the IEEE Computer Society, and a member of the National Association of Scholars. Ford has received many awards and honors including the Doctor Honoris Causas from the University of Bordeaux in 2005 and the 2008 Robert S. Englemore Memorial Award for his work in artificial intelligence (AI). In 2012 Tulane University named Ford its Outstanding Alumnus in the School of Science and Engineering. In 2015, the Association for the Advancement of Artificial Intelligence named Dr. Ford the recipient of the 2015 Distinguished Service Award. Also in 2015, Dr. Ford was elected as Fellow of the American Association for the Advancement of Science (AAAS). In 2017 Dr. Ford was inducted into the Florida Inventor's Hall of Fame.

In January 1997, Dr. Ford was asked by NASA to develop and direct its new Center of Excellence in Information Technology at the Ames Research Center in Silicon Valley. He served as Associate Center Director and Director of NASA's Center of Excellence in Information Technology. In July 1999, Dr. Ford was awarded the NASA Outstanding Leadership Medal. That same year, Ford returned to private life and to the IHMC.

In October of 2002, President George W. Bush nominated Dr. Ford to serve on the National Science Board (NSB) and the United States Senate confirmed his nomination in March of 2003. The NSB is the governing board of the National Science Foundation (NSF) and plays an important role in advising the President and Congress on science policy issues. In 2005, Dr. Ford was appointed and sworn in as a member of the Air Force Science Advisory Board.



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In 2007, he became a member of the NASA Advisory Council and on October 16, 2008, Dr. Ford was named as Chairman – a capacity in which he served until October 2011. In August 2010, Dr. Ford was awarded NASA’s Distinguished Public Service Medal – the highest honor the agency confers.

In February of 2012, Dr. Ford was named to a two-year term on the Defense Science Board (DSB) and in 2013, he became a member of the Advanced Technology Board (ATB) which supports the Office of the Director of National Intelligence (ODNI).



**Dr. José-Marie Griffiths** is currently the President of Dakota State University. She has worked for more than 30 years in higher education and has focused her academic research on the use of information technology in higher education, the contribution of technology and informatics, and health informatics.

She has been vice president for academic affairs at Bryant University since 2010. Throughout her career Griffiths has held vice president or vice chancellor positions, with responsibility for academic affairs, information technology, and research. Nationally, she has served in three presidential appointments involving information technology and information science.

Griffiths holds a doctor of information science and a bachelor’s degree in physics from University College London. She also completed a postdoctoral fellowship in computer science and statistics at University College London. She has conducted numerous contracts or grants with 16 federal agencies, including the National Science Foundation, the National Institutes of Health, the Department of Energy, the National Institute of Science and Technology, and NASA, as well as with more than a dozen Forbes 100 companies, including AT&T Bell labs, IBM, Eastman Kodak, Johnson & Johnson, DuPont, and Colgate-Palmolive; multiple international organizations including NATO, UNESCO, and the British Library Research and Development Division; and over 10 statewide studies on networking, including Massachusetts, Florida, Pennsylvania, and New York.

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**Dr. Eric Horvitz** is a technical fellow and director at Microsoft Research. He has made contributions in areas of machine learning, perception, natural language understanding, decision making, and human-AI collaboration. His efforts and collaborations have led to fielded systems in healthcare, transportation, ecommerce, operating systems, and aerospace. He received the Feigenbaum Prize and the Allen Newell Prize for contributions to AI. He has been elected fellow of the National Academy of Engineering (NAE), the Association of Computing Machinery (ACM), Association for the Advancement of AI (AAAI), and the American Academy of Arts and Sciences. He has served as president of the AAAI, and on advisory committees for the National Science Foundation, National Institutes of Health, President's Council of Advisors on Science and Technology, DARPA, and the Allen Institute for AI. Beyond technical work, he has pursued efforts and studies on the influences of AI on people and society, including issues around ethics, law, and safety. He established the One Hundred Year Study on AI and served as a founder and co-chair of the Partnership on AI to Support People and Society. Eric received PhD and MD degrees at Stanford University.



**Andy Jassy** has been Chief Executive Officer of Amazon Web Services at Amazon.com, Inc. since April 13, 2016. Mr. Jassy leads the Amazon Web Services business (AWS) and the Technology Infrastructure organization for Amazon.com. He served as Senior Vice President of Amazon Web Services at Amazon.com Inc. since April 2006 until April 13, 2016. He served as Vice President of Web Services at Amazon.com Inc. from January 2005 to April 2006. Mr. Jassy served as Vice President of Associates and Web Services of Amazon.com Inc. from September 2003 to January 2005 and served as its Vice President and Technical Assistant from November 2002 to September 2003. Prior to Amazon.com, he founded a marketing consulting company in 1997 and served as its Manager. He served as a Director of Coupa Software Inc. Mr. Jassy earned his bachelor's degree from Harvard University and his Master's of business administration from Harvard Business School.



**Gilman G. Louie** is a Co-Founder, General Partner and Partner at Alsop Louie Partners. Mr. Louie served as the Chief Creative Officer of Online Division at Hasbro Inc. He was an Investment Partner at NewSchools Venture Fund, Investment Arm. He was the Founder of In-Q-Tel and served as the President and Chief Executive Officer, where he focused on refining and revolving firm's innovative model, identifying and exploring exciting new developments in the technology and helped deliver technologies into the CIA and the intelligence community. He served as the Chief Executive Officer of Hasbro Interactive and General Manager of the Games.com Group. Prior to this, he served as the Chief Executive at a number of corporations including Nexa Corporation, Sphere Inc., Spectrum Holobyte, Inc., and Microprose Inc. He founded Spectrum Holobyte. He has nearly two decades of diverse experience in strategic business development and product design, mergers and acquisitions, financing arrangements leveraging venture capital and the public markets and negotiated major licensing deals while remaining actively engaged in the design and development of award-winning products and technologies. He built a career as a Pioneer in the interactive entertainment industry with accomplishments that include the design and development of the Falcon F-16 flight simulator as well as licensing Tetris from its developers in the Soviet Union. He serves as the Chairman of Vricon, Inc. He served as the Chairman and Director of MicroProse, Inc. He has been a Member of Defense Executive Advisory Board at Cubic Defense Applications, Inc. since December 2014. He serves as a Director of Niantic, Inc., Smith & Tinker,



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Inc., MetaCarta, Inc., John and Mary R Markle Foundation, Wickr Inc. and The Markle Foundation. He served as a Director of GreatSchools, Inc. until July 27, 2017. He serves as a Member of Technical Advisory Board at Cleversafe, Inc. He has been a Member of Board of Directors of Aerospike, Inc. since June 24, 2014. He served as a Director at NetWitness Corporation. He served as a Director of several corporations and group including Wizards of the Coast LLC, Pogo.com Inc., Direct Language, Redux, Inc., and FASA Interactive Technologies, Inc. He has served on the Markle Task Force on National Security in the Information Age. Mr. Louie was the recipient of the 2008 Director of National Intelligence Medallion and the 2006 Director's Award from the Director of the Central Intelligence Agency. Mr. Louie has completed the Advanced Management Program/International Seniors Management Program at Harvard Business School in 1997 and received a B.S. in Business Administration from San Francisco State University where he graduated magna cum laude in 1983.



**Dr. William Mark** leads SRI International's Information and Computing Sciences Division, which creates new technology in information security, system design, speech and natural language, vision and perception, planning and reasoning, and formal methods. The group's leading-edge research is complemented with a strong focus on intellectual property creation and commercialization. Projects include Internet interaction, intrusion detection software, physical and virtual information spaces, and technology for dynamic enterprise management.

Prior to joining SRI in 1998, Mark headed the System Technology Group at National Semiconductor. The group focused on system-level design and implementation of the silicon-based systems of the future, including hardware/software co-design, integrated DSP solutions, and reconfigurable computing technology.

Mark was formerly director of Information and Computing Sciences for the Lockheed Martin Palo Alto Research Laboratories. Before joining Lockheed, he was a co-founder of Savoir, a company developing software tools for flexible manufacturing. He was a designer of the Flexis product, for which he holds a software patent. Previously, he held positions at the University of Southern California Information Sciences Institute and the General Motors Research Laboratories.

Mark has a Ph.D. in computer science from MIT. His personal research interests include system design and smart spaces.



**Dr. Jason Matheny** is the former Director of Intelligence Advanced Research Projects Activity. He previously worked for the Future of Humanity Institute at Oxford University, where his work focused on existential risks. He was the cofounder of New Harvest, which supports the development of new agricultural biotechnologies. His work was called one of the "ideas of the year" by The New York Times. In 2014, he received the Presidential Early Career Award for Scientists and Engineers. In 2017, he was included in Foreign Policy's Top 100 Global Thinkers list. Matheny received the Intelligence Community's Award for Individual Achievement in Science and Technology. He co-chaired the Networking and Information Technology Research and Development Task Force on Artificial Intelligence, which authored the National Artificial Intelligence Research and Development Strategic Plan, released by the White House in October 2016.





**The Honorable Katharina McFarland**, former Assistant Secretary of the Army (Acquisition, Logistics & Technology) is now the subject matter expert to Cypress International's consulting team. As Assistant Secretary of the Army (Acquisition, Logistics & Technology) and Army Acquisition Executive, Honorable McFarland oversaw the execution of the Army's acquisition function, including life cycle management and sustainment of Army weapons systems and research and development programs, and managed the Army Acquisition Corps and greater Army Acquisition Workforce. Honorable McFarland also served as the science advisor to the Secretary of the Army and as the Army's senior research and development official and senior procurement executive. In addition, Honorable McFarland held principal responsibility for all Department of the Army matters related to logistics. Honorable McFarland has spent 30 years supporting the Department of Defense in roles such as Assistant Secretary of Defense (Acquisition), President of the Defense Acquisition University (DAU), and Missile Defense Agency principal acquisition executive.



**Dr. Andrew W. Moore** currently serves as the Director of Google Cloud AI. A distinguished computer scientist with expertise in machine learning and robotics, he served as dean of the Carnegie Mellon University School of Computer Science from 2014-2018. He had previously served as a professor of computer science and robotics before taking a leave of absence to become founding director of Google's Pittsburgh engineering office in 2006.

Moore's research interests broadly encompass the field of "big data"--applying statistical methods and mathematical formulas to massive quantities of information, ranging from Web searches to astronomy to medical records, in order to identify patterns and extract meaning from that information. His past research has also included improving the ability of robots and other automated systems to sense the world around them and respond appropriately.

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**Dr. Eric Schmidt** is the executive chairman of Alphabet Inc. He is responsible for the external matters of all of the holding company's businesses, including Google Inc., advising their CEOs and leadership on business and policy issues.

Prior to the establishment of Alphabet, Eric was the chairman of Google Inc. for four years. From 2001-2011, Eric served as Google's chief executive officer, overseeing the company's technical and business strategy alongside founders Sergey Brin and Larry Page. Under his leadership, Google dramatically scaled its infrastructure and diversified its product offerings while maintaining a strong culture of innovation, growing from a Silicon Valley startup to a global leader in technology.

Prior to joining Google, Eric was the chairman and CEO of Novell and chief technology officer at Sun Microsystems, Inc. Previously, he served on the research staff at Xerox Palo Alto Research Center (PARC), Bell Laboratories and Zilog. He holds a bachelor's degree in electrical engineering from Princeton University as well as a master's degree and Ph.D. in computer science from the University of California, Berkeley.

Eric is a member of the President's Council of Advisors on Science. He was elected to the National Academy of Engineering in 2006 and inducted into the American Academy of Arts and Sciences as a fellow in 2007. He also chairs the board of the New America Foundation, and since 2008 has been a trustee of the Institute for Advanced Study in Princeton, New Jersey. Since 2012, Eric has been on the board of the Broad Institute and the Mayo Clinic. In 2013, Eric and Jared Cohen co-authored The New York Times bestselling book, *The New Digital Age: Transforming Nations, Businesses, and Our Lives*. In September 2014, Eric published his second New York Times best seller, *How Google Works*, which he and Jonathan Rosenberg co-authored with Alan Eagle.



**Secretary Robert O. Work** is the Distinguished Senior Fellow for Defense and National Security at the Center for a New American Security and the owner of TeamWork, LLC, which specializes in national security affairs and the future of warfare.

Secretary Work previously served as the Deputy Secretary of Defense, where he was responsible for overseeing the day-to-day business of the Pentagon and developing the Department's \$600 billion defense program. He is widely credited for his work with leaders in the Department and the intelligence community on the "Third Offset Strategy," which aimed to restore U.S. conventional overmatch over its strategic rivals and adversaries. He was awarded DoD's Distinguished Public Service Award (twice), the National Intelligence Distinguished Public Service Award, and the Chairman of the Joint Chiefs of Staff Joint Distinguished Civilian Service Award.

Prior to serving as Deputy Secretary, Secretary Work spent one year as CEO of the CNAS, after serving as Undersecretary of the Navy from 2009-2013 in the first Obama administration. As the principal civilian deputy to the Secretary of the Navy, he was responsible for the smooth running of the U.S. naval global business enterprise, with over 500,000 active duty personnel and 200,000 government civilians, and a budget of \$160 billion. He was twice awarded the Department of the Navy's Distinguished Civilian Service Award.



## Proposed Working Groups

1. Maintaining Global Leadership in AI Research
2. Maintaining Global Leadership in National Security AI Applications
3. Exploiting AI for the Betterment of Our Citizens and Economy
4. Preparing Our Citizens for an AI Future
5. Ensuring International Competitiveness in AI

## 1. Maintaining Global Leadership in AI Research

- a. Advanced computing (quantum science)
- b. Machine learning/algorithm development
- c. Contextual AI
- d. Explainable AI
- e. National programs
- f. FFRDCs



## 2. Maintaining Global Leadership in National Security AI Applications

- a. DoD AI strategies
- b. Intel community AI strategies
- c. Cyber defense strategies
- d. Space information AI strategies
- e. AI strategies to combat societal and governance cohesion attacks
- f. AI strategies to defend against critical infrastructure attacks
- g. Accelerating AI adoption across the national security sector

## 3. Exploiting AI for the Betterment of Our Citizens and Economy

### a. Adoption in key sectors

- i. Energy
- ii. Financial
- iii. Transportation
- iv. Agricultural

### b. Identifying and eliminating barriers to startups and AI acceleration

### c. Addressing corporate use

### d. Overcoming privacy concerns



## 4. Preparing Our Citizens for an AI Future

- a. Changes to the education system to spur STEM
- b. National education programs
- c. How does the human experience change
- d. Automation an the future of work
- e. Trust
- f. How to accelerate acceptance and excitement

## 5. Ensuring International Competitiveness in AI

- a. Export controls
- b. Immigration
- c. Treaties
- d. Arms controls
- e. International bodies
- f. Potential carrots and sticks



## AI Definitions

**From NDAA:** The term “artificial intelligence” includes each of the following:

- Any artificial system that performs tasks under varying and unpredictable circumstances without significant human oversight, or that can learn from experience and improve performance when exposed to data sets.
- An artificial system developed in computer software, physical hardware, or other context that solves tasks requiring human-like perception, cognition, planning, learning, communication, or physical action.
- An artificial system designed to think or act like a human, including cognitive architectures and neural networks.
- A set of techniques, including machine learning that is designed to approximate a cognitive task.
- An artificial system designed to act rationally, including an intelligent software agent or embodied robot that achieves goals using perception, planning, reasoning, learning, communicating, decision-making, and acting.

**100 Year Study:** “branch of computer science that studies the properties of intelligence by synthesizing intelligence.”

**AAAI:** "The scientific understanding of the mechanisms underlying thought and intelligent behavior and their embodiment in machines."

**1956 Definition (when coined by John McCarthy):** "The science and engineering of making intelligent machines."

**DoD Definition:** “The ability of machines to perform tasks that normally require human intelligence – for example, recognizing patterns, learning from experience, drawing conclusions, making predictions, or taking action – whether digitally or as the smart software behind autonomous physical systems.”

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**OECD:** an AI system is a machine-based system that is capable of influencing the Environment by making recommendations, predictions or decisions for a given set of Objectives. It does so by utilising machine and/or human-based inputs/data to: i) perceive real and/or virtual

environments; ii) abstract such perceptions into models manually or automatically; and iii) use Model Interpretations to formulate options for outcomes.

# NATIONAL SECURITY COMMISSION ON ARTIFICIAL INTELLIGENCE

## WASHINGTON, D.C.

### Talking Points:

- The National Security Commission on Artificial Intelligence was established by the National Defense Authorization Act for Fiscal Year 2019 and is comprised of 15 Commissioners including a Chairman and Vice Chairman.
- The Commission will review and advise on the competitiveness of the United States in artificial intelligence, machine learning, and other associated technologies, including matters related to national security, defense, public-private partnerships, and investments.
- The bipartisan membership and bipartisan congressional oversight makes the Commission uniquely suited to help look at the future of Artificial Intelligence and give the best advice on what must be done to keep the United States at the forefront of this transformative technology and competitive in the future.
- The Commission held its inaugural meeting on March 11 in Washington, DC.
  - The Commissioners received briefs from the Defense and Commerce departments, the intelligence community, and Members of Congress.
  - Senator Martin Heinrich and Representatives Elise Stefanik and Jerry McNerney personally attended and laid out their expectations and recommendations for the Commission's focus areas and expressed their support and help.
- The Commission is working in close collaboration with the White House, Interagency, and Congress.
  - There are many efforts inside Government, academia, and the commercial industry that we will work with. These efforts are complementary and will ensure the delivery of comprehensive reports.
- We are now planning for future plenary sessions throughout the year and expect to hold them in different locations throughout the United States to reflect the different topics that will be addressed in our mission.
- Our working groups will be organized around issues related to national security and defense and the impact of Artificial Intelligence. They will research, analyze, and recommend steps needed to keep the United States ahead of near-peer competitors and a leader in this technology.
  - These groups will meet regularly to build the foundations of the reports that will go to Congress.
  - We expect the first report to be delivered sometime in August 2019.



# NATIONAL SECURITY COMMISSION ON ARTIFICIAL INTELLIGENCE

WASHINGTON, D.C.

## Key Quotes:

“It is critical to our future that the United States be a global leader in the development of artificial intelligence. Last Congress, I introduced legislation that created an AI Commission to identify our country’s AI priorities and make actionable recommendations of what direction we need to take in order to fulfill these priorities. I am looking forward to working with the White House to ensure their efforts align with the AI Commission’s efforts and forthcoming recommendations.” – Rep. Elise Stefanik

"I'm honored to lead this talented group of Commissioners as we take on this important effort. I want to thank the Senate and House Armed Services Committees and Senate and House AI Caucuses for their support and look forward to presenting our findings in the future, and particularly Senator Martin Heinrich and Representatives Elise Stefanik and Jerry McNerney, who joined us to discuss Congressional intent and expectations. We have a tremendous opportunity to help our government understand the state of artificial intelligence and offer ideas on how to harness this transformative technology to benefit both our economic and national security interests." - Eric Schmidt

“Artificial intelligence will have an enormous impact on our future economic and military competitiveness. I look forward to working with Eric Schmidt and the other distinguished commissioners on how best to exploit this rapidly improving technology for the betterment of our citizens, economy and security.” – Bob Work

“If we’re going to succeed against a competitor like China that is all-in in this competition — I mean they are all in, from the top leadership down to the commanders in the field — we’re going to have to grasp the inevitability of AI and adapt our own innovation culture and behavior so that AI has a chance to take hold.” – Bob Work

# NATIONAL SECURITY COMMISSION ON ARTIFICIAL INTELLIGENCE

WASHINGTON, D.C.

## About the National Security Commission on Artificial Intelligence:

H.R. 5515, the National Defense Authorization Act for Fiscal Year 2019, section 1051, establishes the National Security Commission on Artificial Intelligence (the Commission) to review advances in artificial intelligence, related machine learning developments, and associated technologies including recommendations to more effectively organize the Federal Government.

## The Commissioners:

Commissioners were appointed by the secretaries of Defense and Commerce, as well as the top Republicans and Democrats on congressional armed services, commerce and intelligence committees.

### Chairman

- Dr. Eric Schmidt, Technical Advisor to Alphabet

### Vice Chairman

- Hon. Robert Work, Senior Counselor for Defense at Center for a New American Security

### Other Commissioners:

- Ms. Safra Catz, CEO of Oracle
- Dr. Steve Chien, Technical Group Supervisor of AI Group and Senior Research Scientist at California Institute of Technology's Jet Propulsion Lab
- Ms. Mignon Clyburn, Open Society Foundation Fellow and former FCC Commissioner
- Mr. Chris Darby, CEO of In-Q-Tel
- Dr. Kenneth Ford, CEO of the Florida Institute for Human and Machine Cognition
- Dr. Jose-Marie Griffiths, president of Dakota State University
- Dr. Eric Horvitz, director of Microsoft Research Labs
- Mr. Andy Jassy, CEO of Amazon Web Services
- Mr. Gilman Louie, partner at Alsop Louie Partners
- Dr. William Mark, director of SRI's Information and Computing Sciences Division
- Dr. Jason Matheny, founding director of the Center on Security and Emerging Technology
- Hon. Katharina McFarland, consultant at Cypress International and former Assistant Secretary of the Army (Acquisition, Logistics & Technology)
- Dr. Andrew Moore, VP of Engineering and head of Google Cloud AI

## Senate Artificial Intelligence Caucus Co-Chairs:

Senators Martin Heinrich (D-NM) and Rob Portman (R-OH)

## House Artificial Intelligence Caucus Co-Chairs:

**NATIONAL SECURITY COMMISSION ON ARTIFICIAL INTELLIGENCE**

**WASHINGTON, D.C.**

Representatives Jerry McNerney (D-California) and Pete Olson (R-Texas)