Trends in Responses to the RFI on the Update to the 2016 National Artificial Intelligence Research and Development Strategic Plan

The Networking and Information Technology Research and Development (NITRD) program issued a Request for Information (RFI) in September 2018 to obtain public input for the Update to the 2016 National Artificial Intelligence Research and Development Strategic Plan. Responses received came from a variety of public and private stakeholders, all of which are posted here. After taking into consideration these responses, NITRD issued an updated National AI R&D plan in June 2019. This update maintained the predominance of the 2016 plan with the addition of an eighth strategy focused on expanding public-private partnerships as a means of accelerating AI development.

A review of the RFI responses found the **most prominent and consistent themes** to be:

- Public-private collaboration needs to be fostered
- Eliminate data bias
- Improve datasets while learning how to better use existing data
- Expedite AI application
- Understand the AI R&D workforce and their constant re-education
- Remove government impediments to development
- Create a larger focus on ethics
- Standardize AI-AI communications and interoperability
- Improve communication of government priorities to the research community

Detailed below are the trends in responses organized by sector and by theme, and notes corresponding with each response received.

Trends by Sector

Medical Field:

- Accelerate clinical adoption of AI tools by developing better means for this adoption.
- Develop diverse datasets to eliminate bias in data and to make data more applicable.
- Standardize means of transferring data as well as nomenclature and terminology sets for AI tools.
- Develop ethical guidelines and a registry reporting system to protect patients.
- Understand better AI R&D workforce needs
- Balance between general and domain-specific AI application
- Data protection and privacy

Academia:

- Explainability and causality
- Social context awareness
- Remove impediments to progress in the field

Industry:

- Better quality data or learning to make better use of the data we have
- Application needs to be accelerated and implemented as soon as possible
- Impediments to application need to be removed and incentives needs to rise
- Increase in cross-disciplinary/public-private cooperation

Research & Professional Organizations:

- Eliminate data bias
- Increase accountability of AI systems
- Pay closer attention to data protection
- Enhance Human-AI interaction as well as AI-AI interaction

Trends by Theme

1. Eliminating Algorithm Biases
    a. ACR – American College of Radiology
    b. Association for Computing Machinery
    c. Association for the Advancement of AI
    d. American Psychological Association
    e. California Institute of Technology
    f. EPIC
    g. Center for Data Innovation
    h. HealthITNow
    i. Microsoft
2. Understanding AI R&D Workforce Needs
    a. Accenture
    b. American Medical Association
    c. American Medical Informatics Association
    d. American Psychological Association
    e. Arm
    f. National Center for Atmospheric Research
    g. Healthcare Information and Management Systems Society
    h. IBM
    i. IEEE-USA
3. Increase in Transparency
    a. EPIC
    b. Association for Computing Machinery
    c. C. Warren Pope
    d. IDA-SAC
4. Evidence-based Policy Development

    a. Microsoft
    b. U.S. Council for International Business (USCIB)
5. Explainability
    a. IBM
    b. UCSD & USC
    c. American Medical Association
    d. Association for Computing Machinery
    e. Princeton
6. More Domain-Specific AI
    a. American Medical Informatics Association
    b. Software and Information Industry Association

Detailed Notes by Response

1. Accenture
2. American College of Radiology
3. Association for Computing Machinery
4. Association for the Advancement of Artificial Intelligence
5. American Medical Association
6. American Medical Informatics Association
7. American Meteorological Society
8. American Psychological Association
9. Anduril Industries
10. Arm
11. Amazon Web Services
12. C. Warren Pope
13. California Institute of Technology
14. Center for Data Innovation
15. CAN Center for Autonomy and AI
16. EPIC
17. General Electric
18. Greg Cooper
19. Healthcare Information and Management Systems Society
20. HealthITNow
21. Hewlett Packard Enterprise
22. IBM
23. IEEE-USA
24. Indiana University
25. Information Technology Industry Council
26. Institute for Defense Analyses Systems and Analyses Center
27. ISACA
28. Microsoft
29. MITRE Corporation
30. National Center for Atmospheric Research
31. Niskanen Center
32. NVIDIA
33. Open AI
34. Policy Sciences Center Inc.
35. Princeton University
36. Society for Industrial and Applied Mathematics
37. Software & Information Industry Association
38. Soumyendu Sarkar
39. University of California San Diego & University of Southern California
40. University of Texas at Austin
41. U.S. Council for International Business (USCIB)
42. Workday

1. Accenture:
    - Investment value of AI v AI capabilities
        - Value Measures:
            - Intelligent Automation
            - Enhanced Judgement
            - Enhanced Interaction
            - Intelligent Products
            - Enhanced Trust
    - Plan to engage non-government/private entities
    - Increase investments to better data necessary to train & monitor supervised AI algorithms
    - Promote and support new learning techniques to bolster the AI R&D workforce and beyond
        - Speed up Experiential Learning
        - Shift focus from institutions to individuals
        - Empower vulnerable learners
    - Implement governance frameworks for government-funded R&D and move on from developing understanding.
    - Increase focus on the industrial supply chain
        - Risk of falling behind Japan, Germany & China in this regard
        - Look at Industry 4.0 in Germany & its marriage of public and private
    - Align strategies for the following:
        - Quantum computing
        - 5G
        - Biotech
        - Biocomputing

2. American College of Radiology (ACR):
    - DSI: 'to facilitate the translation of AI research to clinical practice in a manner that protects the safety of patients and the public'
    - Need for more integrated, scalable systems to actually implement developed algorithms.
        - Better standards for clinical integration and care management. Institutions developing systems for their singular use will not allow them to be implemented across HIT resources & electronic health record technology.
    - Eliminate unintended bias in the algorithms so to increase generalizability to various populations and settings.
    - Develop structured use cases that define:
        - Parameters for training data
        - Pathways for validation
        - Mechanism for deployment & monitoring in clinical practice
    - Develop standard pathways for validation and monitoring AI use in clinical practice through registry reporting (needed for patient safety)

- Since general AI solutions in healthcare are not yet ready for implementation in general healthcare practice, more solutions need to be developed for specific problems. (10 to 20 year goal)
- Need for more ethical guidelines:
    - Data use
    - Privacy protection
    - Ownership of patient data
    - Objectivity
    - Elimination of algorithm bias / diverse data should be available to those training and testing algorithms to make sure they sure the population as a whole
- Better methods needed for data anonymization & data use agreements.
- Promotion of pathways for standardization with mechanisms to prevent exposure of confidential information when data is shared among various networks.
- Prioritize the development of publicly available, richly annotated data for development.
- Develop federally mandated/supported processes to ensure AI algorithm are safe, reliable and effective. Continued monitoring of an algorithm's effectiveness throughout clinical practice will also be important.
- Standardization of transferring data
- Monitor the effect of AI development on healthcare professionals and how it shifts their roles.

3. Association for Computing Machinery:
    - Adherence to Algorithmic Transparency and Accountability
        - Awareness: Of the possible biases involved in design & implementation
        - Access & Redress: Encourage the adoption of mechanisms that enable questioning and redress for individuals and groups that are adverse.ly affected by algorithmically informed decisions.
        - Accountability: Institutions should be held responsible for decisions made by the algorithm that they use (even is it is not feasible to explain in detail how the algorithms produce those results).
        - Explanation: Systems and institutions using the algorithms must produce explanations regarding both the procedures followed by the algorithm and the specific decisions made (especially in private policy).
        - Data Provenance: A description is need for the way in which the training data was collected and maintained by the builders of the algorithm
        - Auditability: Models, algorithms, data and decisions should be recorded so that they may be audited in cases where harm is suspected.
        - Validation and Testing: Use of rigorous methods to validate their models and document methods and results.

4. Association for the Advancement of Artificial Intelligence (AAAI):
    - Need to integrate human common knowledge into AI capabilities

- Ensuring that AI systems best augment human decision-making
- Develop ways that AI systems can introspect about their capabilities and limitations and self-monitoring safety capabilities
- Develop better theoretical understanding of AI systems & methodologies
- Develop models for AI systems that address differences in mental abilities
- Opportunities for multidisciplinary AI research in academia and government
- Remove bias.
- Need to implement collaborative decision-making with AI systems supporting human decision-makers to act ethically.
- Increase in forums for public discourse / public needs to be closer to AI so all can identify the challenges
- Characterize AI systems in terms of agency, ownership, fairness and responsibility
- Provide protection against potential power asymmetries through manipulation or exploitation of AI systems
- Data protection needs to improve.
- Legal aspects of AI systems must be approached incrementally as a function of the degree of the system autonomy and the problem domain (medical diagnosis or the degree of the system autonomy permitted)
- Goverment should fund research to monitor social/economic impacts of growth of productivity and distribution of wealth. Regular reports to government should be required so that policies can be introduced as they become necessary.
- Improved technical safety measures / AI Safety Engineering must become a productive field
- Speed and scale of AI needs to be limited for our own protection
- Need to push accurate information into the public and government so that everyone understands our true capabilities as they develop
- Promotion of open and FAIR data initiatives
- Need to provide participant support for non-traditional teams that wish to compete for incentive prizes
- Current government acquisitions standards and rules esp. in DoD are acting as disincentives to the development of advanced technology and this must change.
- Research funds needed from federal sources to universities particularly for AI and not just specific science disciplines
- AI topics need to be introduced at younger ages in education.

5. American Medical Association:
    - Better Human-AI collaboration
    - Address ethical, legal & societal implications
    - Ensure security and safety of AI systems
    - Develop shared public datasets and environments for AI training & testing
    - Measure and evaluate AI technologies through standards and benchmarks
    - Better understand the national AI R&D workforce needs.
    - Develop methods to better protect privacy laws.

- Better understanding of liability and intellectual property laws.
- Government needs to encourage external stakeholders to develop a common nomenclature and terminology set, updated at regular intervals.
- Better means to adopt tools once developed.

6. American Medical Informatics Association - AMIA:
- Emphasize AI R&D investments in areas not aimed at consumer markets, especially related to Human-AI collaboration.
- Need for cabinet-level departments that produce annual reports articulating how their AI R&F efforts contribute to the federal AI R&D strategy
- Develop a good balance between general-purpose AI R&D as well as domain-specific AI R&D experts
- Develop implementation framework and study what is needed to sustain a robust AI R&D workforce.

7. American Meteorological Society – AMS:
   - Interdisciplinary methods needed to develop improved models and forecasts.
   - Determine appropriate AI methods in the weather, water and climate community.
   - Improving data assimilation techniques.
   - More research on human-AI interactions.
   - Research on the accuracy of predictions and capabilities of the algorithms in order to determine what the uncertainties are.
   - Need to develop national dataset conformity.
   - Determine how AI can help aid with extreme weather safety.
   - More AI opportunities in education and workforce development.

8. American Psychological Association:
   - Need to develop a working theory of mind.
   - Inclusion of psychologists in process of determining how to eliminate algorithm bias.
   - Better understanding needed of the national AI R&D workforce and its needs.

9. ANDURIL Industries:
   - There should be a more prominent role for the commercial tech sector due to the talent present there.
   - Focus needs to shift to R&D over commercial procurement.
   - Focus to shift more to paradigm shifting technical breakthroughs in software and electronics than large R&D projects.
   - Instead of creating insular government R&D programs it is better to create new incentives for industry to participate in public programs.
   - A good procurement strategy is better than any other R&D funding initiatives to date. Ex: China's Sense Time has the Chinese government both as one of its largest investors and one of its largest customers.
   - Adopt more strategies used by VC firms:

- Make big bets instead of spreading funds across many small investments.
- Target talent centers and reward nimble and dynamic engineering teams rather than traditional players with fewer incentives to innovate.
- Anchor their investment strategy to an overarching thesis, rather than to an over-specified vision of a specific solution, product or service.
- To achieve this:
  - Award meaningful, high dollar-value contracts to talented businesses.
  - Procurement needs to target engineering talent centers, rather than merely focusing on traditional government contractors and government funded labs.
  - Government procurements in AI should be guided by an overarching thesis, but avoid over-specified and requirements-driven funding.

10. Arm:
    - More research on AI systems interacting with each other.
    - Research on new applications for AI.
    - Ethical-by-design needs to be as important as privacy-by-design and security-by-design.
    - Standards & benchmarks need to be standardised.
    - Better understanding of what the AI R&D workforce needs will come from consultation with private sector agents.

11. Amazon Web Services: - industry
    - Invest in areas of market failure.
    - Invest in AI-first infrastructure
    - Build cross-disciplinary communities for the future of AI/ML
    - Outline key assumptions around the future direction of analogous policies impacting AI/ML.

12. C Warren Pope:
    - Algorithmic transparency and public outreach needs to be amplified.
    - Privacy advocacy needs to be a bigger focus.

13. California Institute of Technology:
    - Address issues of interpretability, bias, controllability, visualization and causality.

14. Center for Data Innovation:
    - Federal funding should support both basic and applied R&D
    - Human-AI collaboration is important but AI-AI collaboration is also crucial
    - Pursuing transparency will not guarantee an accurate or unbiased result
    - Another issue to reconsider is the idea that the blame for an AI system's error lies with the creator of the algorithm and not those who use the system. This

should be readdressed. To remedy this we need methods for achieving algorithmic accountability.
- Plan emphasized the importance of ensuring AI in critical systems is secure but we must encourage research into both the cyber risks and opportunities of AI more broadly.
- NITRD should ensure that its AI R&D Strategic Plan and its cybersecurity both compliment each other.
- Shared data resources need to become available for developing AI systems. In a public-private data sharing model. UK has developed data trusts like this model.
- Public datasets could remedy bias and create diverse data sets.
- Government must play a role in ensuring the private sector develops voluntary, consensus-based standards for new AI technology both domestically and internationally.
- Need to alleviate university brain-drain by creating competitive early-career monetary awards for AI researchers that are conditional on remaining in academia for a fixed period of time.

15. CNA Center for Autonomy and AI (CAAI):
    - Define the nature of the industry/academia relationship with government.
    - Operationalize R&D
    - Strengthen relationships with allies.
    - Component needed to address ethical, legal and societal concerns among the government, industry, academia and the public.

16. EPIC:
    - Algorithm bias needs to be eliminated
    - Accurate, transparent & accountable systems must be prioritized
    - Need to maintain human review and authority over AI systems to preserve accountability and dignity / human right to determination.
    - Needs to be an obligation for termination if an AI system can no longer be controlled by humans
    - Increase data quality

17. General Electric:
    - Must learn how to capitalize on data sets that are neither comprehensive nor copious.
    - AI needs to be able to operate today with existing infrastructure that was not built with AI in mind
    - AI must be as safe of an option as non AI solutions

18. Greg Cooper:
    - Causality and decision analysis methods need to be prioritized more

19. Healthcare Information and Management Systems Society (HIMSS):

- Increasing the volume of high-quality AI data available for research and development purposes
- Making government policies more conducive for AI technologies usage
- Targeted AI policies – AI that relieves specific clinical burdens
- Safeguarding data
- Workforce appropriately-trained to advance these technologies & cultivate a robust health IT workforce to help advance AI

20. HealthITNow – industry
    - Develop test bed standards for interoperability, bias and safety reporting
    - Align privacy laws to address consent networks, which will allow instances for subsequent use of PHI among predefined user groups
    - Analyze the current limitations of the contemporary legal-regulatory framework for data privacy on PHI and deidentified data analysis.
    - Explore the use of blockchain technology to ensure scalable and secure data governance on shared datasets and models.
    - Focus interoperability policy on platforms to protect innovations in AI and analytical software
    - More government datasets in accessible and usable formats to foster greater AI innovation
    - Administratively repurpose Office of National Coordinator for Health Information Technology Accredited Testing and Certification Bodies to facilitate third-party certification of AI testbeds based on standards developed between FDA and NIST
    - Support tax incentives for public-private partnerships in support of AI testbeds and for academic institutions providing support for workforce retraining in deprecated industries
    - Prioritize AI in Small Business Investment Research grant program (SBIR)

21. Hewlett Packard Enterprise (HPE):
    - USG intervention and funding is needed to push public/private divide
    - USG should lead moonshot projects (domestic and global) and the creation of a global AI consortium to help the US retain its leadership position and address global challenges of mutual interest
    - Fund more research at universities to remain competitive
    - Create a uniform standard on data access
    - Utilize tax incentives as an effective multiplier effect of R&D investment
    - AI R&D needs to pivot from social media to means that actually have societal benefits
    - Incentivize schools to invest more

22. IBM:
    - Build AI ecosystems
    - Need to broaden AI

- AI needs to learn more naturally and effectively
- Visualization in explainability and interpretability of AI Models
- Move to create advanced interaction beyond language (move into gestures, etc)
- Identify and define ways to model values and ethical priorities, to embed them into AI systems and to use them also to improve the ethical stance of the human-machine team
- Fairness-by-design must be implemented
- Multi-disciplinary and multi-stakeholder approach
- Investment in the privacy and confidentiality of AI data and models, corresponding use cases
- Benchmarks & labelled datasets needed to increase AI security
- Understand the trade off between model accuracy and robustness
- Policy innovation to produce data with integrity and availability in mind
- New standards for data usage terms
- Develop public shared AI models and an environment to share them in
- Advocate for Open Government Data and Models
- Benchmarks for explainability, fairness and security
- Develop a workforce of AI teachers

23. IEEE-USA:
    - Ensure that an understanding of the impact of AI on individuals and society at large is central to AI R&D so as to promote public acceptance of AI
    - Corporate responsibility needs to be encourage as well as participation by all willing parties, empowerment, accountability and non-discrimination
    - Partnership between the US Census bureau and the US Bureau of Labor Statistics to study the effects of adoption of AI and AI-related technology on the US workforce
    - 2020 administration budget proposal needs to include similarly strong investments in non-defense AI research and development
    - Study and research resilience of AI to ensure public safety
    - Verification and explanation of deep neural networks via model validations
    - Prioritize protecting U.S. Intellectual Property by advising the Department of Commerce and other agencies on emerging technologies
    - Promote and facilitate the use of AI in government services and improve government expertise in AI and emerging technologies
    - Pilot programs for the strategies should be implemented in already existing initiatives such as autonomous vehicles in the National Transportation Safety Board
    - Interagency panel to coordinate federal activity
    - Strengthen transfer and commercialization of emerging technologies from federal labs (Reduce transaction costs, implement consistent rules and processes, etc)
    - On-the-job training
    - Strengthening Career and Technical Education for the 1st Century of 2018 Act - allows for the states to dedicate additional resources for community colleges and

other educational institutes for high-demand fields such as cybersecurity and artificial intelligence based on changing economic, educational, or national security needs.

24. Indiana University:
    - Development of Integrated AI systems
    - Study of AI architectures, such as cognitive architectures or architectures for meta-reasoning
    - More emphasis on explanation
    - Look more into autonomous vehicles
    - Clarify human-like versus human-centric emphasis
    - Focus more on AI carrying out mid-level tasks instead of simply base level or high level

25. Information Technology Industry Council (ITI):
    - Identify ways to incorporate private sector participation to ensure AI is advanced in a fashion that is broadly beneficial to all Americans, ie through NSTC
    - Seek alignment with federal privacy initiatives for regulatory coherence and to promote privacy for design by responsible use of AI
    - Provide sustained engagement in AI standardization activities and collaborate with industry on the development of voluntary, consensus-based international standards, such as ISO SC42 AI
    - Facilitate the adoption of AI by encouraging data sharing with meaningful stakeholders and making datasets accessible to the broader AI research community
    - Continue building strong government framework to integrate resources and set goals for AI to grow
    - Increase government R&D investment and promote scientific collaboration benefiting US interests
    - Create opportunities to collect and distribute data responsibly. Allow US citizens the right to opt-on to data collection by providing meaningful consent through services they already use, such as health care, tax payments, etc.
    - Broker more data-sharing agreements ex – UK open banking initiative, IBM mastercard partnership, etc.
    - Invest in AI to monitor and improve AI as data is collected and ages
    - Beyond consumer data, the government must also play a leading role in collecting data that will improve core supply chain issues such as predictive maintenance and safety

26. Institute for Defense Analyses Systems and Analyses Center (IDA SAC):
    - Do not believe it is appropriate to refer to AI-enabling technologies as a singular technology.
    - AI needs to become AI-enabling technologies
    - Broaden current narrow AI capabilities

- Ensure fairness, transparency and accountability-by-design: AI needs to be designed as transparent decision-makers that make decisions easily interpretable by humans
- Build ethical AI: AI needs adequate methods for values-based conflict resolution in which the system incorporates principles that can address the realities of complex situations where strict rules are impracticable
- Design architectures for ethical AI: Rapid response pattern matching rules, deliberative reasoning for slower responses for describing and justifying actions, social signaling to indicate trustworthiness for the user, and social processes that operate over even longer time scales to enable the system to abide by cultural norms
- Additional investments are needed to advance general approaches to the assurance of AI dependability, which must encompass not only safety but also physical security, cybersecurity, and robustness of performance
- Not only is proof of dependability needed but also a system of evidence to prove that a system is dependable
- Nurture diverse talent
- Identify the R&D areas and projects of particular importance to the nation that are unlikely to be addressed by commercial or academic efforts

27. ISACA:
    - Process for creating algorithms must be controlled and not require the disclosure of intellectual property or other elements of a proprietary nature
    - Incorporate an overall focus on audit within ML/AI
    - Control framework for testing systems for resistance to adversarial attacks
    - Governance needed to ensure tools continue to meet internal and external requirements and are subject to ongoing monitoring, review and remediation
    - Need for translational corps of professionals to ensure there is a clear path from exceptional research to the application of that research

28. Microsoft:
    - A sustained focus on AI R&D, in both the public and private sector, is fundamental to preserving US competitiveness and global leadership, and to shaping development of AI policy and regulatory frameworks in ways that can maximize its potential benefit
    - Need for a stronger inter-agency coordination process that is focused on opportunities for AI to enhance US competitiveness and economic prosperity and budgetary allocations within respective federal agencies that would correspond with stated AI objectives and R&D priorities
    - Short-term and long-term investment strategic AI technologies should be adopted broadly
    - Enable broad AI innovation and adoption across all sectors and by organizations of all sizes
    - AI for evidence-based policy making

- Global standards that are voluntary and market-driven
- Research on how to eliminate bias
- Enable human understanding of AI must be a priority
- Better understand the context in which AI technologies are used
- More public-private partnerships in research
- Keep policy stakeholders informed of research as it will lead to more informed policy making that would not adversely impact research
- AI must be adapted in government services as it could increase interagency coordination as well as further collaboration

29. The MITRE Corporation:
    - Better leverage NSTC capabilities:
        - Update the existing strategy areas so they are no longer presented as ideals for agencies to consider but instead as specific outcomes that the government intends to meet
        - Assign a lead agency, as well as supporting agencies for each outcome
        - Task the Select Committee on AI to regularly track progress on each outcome and report on such to OSTP and OMB
        - Direct agencies to support the strategic plan within their R&D budgets
        - State an intent for OSTP and OMB to closely analyze agencies' budget requests to ensure proper support for this strategic endeavor
    - Need to address how to incentivize non-government agencies to collaborate with the government
    - More research on the effectives on AI on social isolation
    - Determine how to transition into human-machine teaming situations so that people don't feel AI is a threat to their jobs, but rather is an enabler that will help them perform better
    - Research into how our physical infrastructure could be modified to make it easier for AI to operate
    - Improve data sharing
    - Fix the AI skills gap

30. National Center for Atmospheric Research:
    - AI needs to be included in environmental modeling and simulation as a topic that contributes to economic prosperity
    - More long-term investments in AI research
    - Effective methods for human-AI collaboration
    - Address ethical, legal and societal implications for AI
    - Ensure the safety & security of AI systems
    - Develop shared public datasets and environments for AI training and testing
    - Measure and evaluate AI technologies through standards and benchmarks
    - Better understand the national AI R&D workforce needs
    - Continue development of core AI based applications that push the science, serve the public and benefit the nation

31. Niskanen Center:
    - Include an additional strategy that focuses on identifying, reviewing and suggesting changes to the US Code of Federal Regulations (CFR)
    - Add an 8th strategic aim to address the legal and regulatory barriers to the research, development and adoption of AI
    - Expand Strategy 3 to address the merits of 'algorithmic accountability' via multi-stakeholder process

32. NVIDIA:
    - Research into technologies that lower the barrier to entry for applying AI
    - Expand large-scale incentive efforts such as DARPA's AI NEXT program
    - Disclosure on data sets that are available in the US
    - Create testbeds
    - Government must consult private sector on talent acquisition

33. Open AI:
    - Prioritize investment in AI Safety research.
    - Strengthen the US AI ecosystem by investing in AI talent
    - Augment existing measurement and analysis initiatives with a specific 'dual use' focus

34. Policy Sciences Center, Inc.:
    - Build a capacity for rapid learning economics
    - Use AI to create early warnings signs for recessions
    - Improve economic science for all countries so that the IC can make more reliable forecasts of political stress and national security challenges

35. Princeton University:
    - Ensure that AI are capable of explaining their decisions

36. Society for Industrial and Applied Mathematics (SIAM):
    - More support for programs such as NSF's NSF Research Traineeship, Graduate Research Fellowships (GRF) and CAREER awards
    - Commit to supporting the integration of data science and modelling

37. Software & Information Industry Association:
    - Strategic plan should not mandate specific agency research plans
    - Federal AI funding should supplement private sector research and application development to fulfill needs that the private cannot or should not satisfy
    - An updated strategic plan should call for assessment of AI on jobs
    - Favor domain-specific AI ethical assessment
    - Support full funding for quantum computing

38. Soumyendu Sarkar – Hewlett Packard:
    - Effective multiplier effect of R&D investment
    - Prioritize and focus governmental US AI R&D investments
    - Incentivize the usage of AI products from American enterprises triggering additional organic investments
    - Academic investment at inception at school levels

39. UCSD & USC:
    - Application context is crucial
    - Human context is important – security, fairness and explainability
    - Socio-Economic Context is important
    - Unified US strategy for investment in AI/ML

40. University of Texas at Austin:
    - Define a path toward accruing technical expertise in AI at all levels of government. Effective governance requires more experts who understand and can analyze the interactions between AI technologies, programmatic objectives and overall societal values
    - Remove the perceived and actual impediments to research on the fairness, security, privacy and social impacts of AI systems
    - Increase public and private funding for interdisciplinary studies of the societal impacts of AI

41. U.S. Council for International Business (USCIB):
    - AI used to support inclusiveness
    - Importance of US AI Technology Leadership and Policy Leadership
    - Evidence-Based AI Policy Development

42. Workday:
    - More specific definitions needed
    - Government-funded basic scientific research needs to have results made available for commercialization
    - Strong privacy protections can live in harmony with data needs of advanced analytics and increased data-driven decision making
    - Prioritize skill building in the disciplines essential in an economy replete with AI