AI RFI Responses, October 26, 2018

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

October 26, 2018

Mr. Faisal D'Souza
National Coordination Office
2415 Eisenhower Avenue
Alexandria, VA 22314

Submitted via email at: AI-RFI@nitrd.gov.

RE: RFI Response: National Artificial Intelligence Research and Development Strategic Plan

Dear Mr. D'Souza:

Health IT Now (HITN) is pleased to submit these comments in response to the National Science Foundation Request for Information on Update to the 2016 National Artificial Intelligence Research and Development Strategic Plan.

Health IT Now (HITN) is a diverse coalition of healthcare providers, patient advocates, consumers, employers, technology companies, and payers who support the adoption and use of health IT to improve health outcomes and lower costs.[1] Our coalition came together with a focus on electronic health records (EHRs) but our members' interests and applications of information technologies have expanded beyond traditionally-regulated medical products to include consumer devices, Software As A Service (SAAS), Infrastructure As A Service (IAAS), and artificial intelligence (AI) products that may not have been originally conceived for use in health care. We believe our members to be a realistic representation of the technology-enabled healthcare waterfront and the myriad ways consumer and traditional medical products have been combined to reflect the new normal in the healthcare marketplace.

AI has demonstrated its capacity to revolutionize finance, service delivery, and outcomes-driven research, yet uptake in healthcare lags behind other industries. Healthcare lacks for few resources and the modern era of medicine is defined by staggering amounts of data; this industry is ripe for AI-driven improvement. The promise of artificial neural networks that assist healthcare practitioners to diagnose and treat patients, analysts to identify and prevent fraud and abuse, and researchers to study behavioral patterns that will inform future design and delivery of personalized care are too exciting to forgo and too important to let languish.

To this end, we appreciate the NCO for requesting this information from stakeholders and we have framed our comments within each of the requested strategies.

Strategy 1: Make long-term investments in AI research.

[1] https://www.healthitnow.org/thecoalition/

The private sector is the engine that disrupts the status quo and has driven the integration of technology innovations to change every aspect of the American lifestyle. Industry innovators have turned their sights on the high-dollar, high-promise healthcare sector, which has lagged behind the rest of the economy in technology adoption.

The healthcare system has found a place in the new digital marketplace defined by smart systems and the meaningful use of massive data. Innovators in the AI space are not necessarily traditional developers of technology-enabled healthcare solutions. Data analytics systems are more reminiscent of the myriad consumer applications that we know from our smartphones and tablets: software products that run on a platform. To this end we strongly advocate for a long-term investment strategy that focuses less on those that have already generated or aggregated volumes of data and instead fosters an marketplace of solutions

Strategy 3: Understand and address the ethical, legal, and societal implications of AI.

Ethical Design and Implementation – The social implications of computing have grown and will continue to expand as more people have access to smart systems.

> ***Recommendation*** – NIST, in collaboration with public and private industry, should establish and evolve baseline test bed standards for interoperability, bias, and safety reporting. These testbeds are integral to developing consumer guides, such as star-rating systems, that warn of observed bias.

Strategy 4: Ensure the safety and security of AI systems.

Design with Privacy in mind – Traditional data privacy models are focused on episodes of access and are ill-equipped to address subsequent, deidentified, and aggregate use. Personal health information (PHI) disclosure policies are focused on sending data "out" instead of bringing new data sources "in" to traditional health information platforms. Existing privacy law and associated regulations are specifically focused on what *cannot* be done with identifiable and deidentified health information rather than scheme for consented use and continued use. Further, from a policy perspective, privacy and security are often considered to be one in the same. This is not the case and while better security would allow for more granular–and effectively more useful–approaches to privacy, simply limiting the universe of potential disclosures of personal health information does not make data inherently more secure.

> ***Recommendation*** – Align privacy law to address consent networks, which allow instances of subsequent use of PHI among predefined user groups.

> ***Recommendation*** – Analyze the current limitations of the contemporary legal-regulatory framework for data privacy on PHI and deidentified data analysis.

Strategy 5: Develop shared public datasets and environments for AI training and testing.

Liberate Data Responsibly – Data acquisition is imperative to achieving more enhanced models of development and training. Key to data liquidity is standardization. Public data dictionaries and implementation guides are necessary to ensure that application programming interfaces (APIs), used for data extraction and acquisition, are able to access information and analyze it in proper context. Furthermore, innovation is required to ensure that any data gathering practice produces data with integrity and availability in mind, while ensuring new standards are created for data usage and provenance.

> ***Recommendation*** – Explore the use of blockchain technology to ensure scalable and secure data governance on shared datasets and models.

> ***Recommendation*** – Focus interoperability policy on platforms to protect proprietary innovations in AI and analytical software.

> ***Recommendation*** – Make more government datasets in accessible and usable formats to foster greater AI innovation.

Strategy 6: Measure and evaluate AI technologies through standards and benchmarks.

Foster Innovation and Open Development – Government should support the controlled testing of artificially intelligent systems to help industry, academia, and other stakeholders improve system design. There are a number of ways that this can be done administratively but there are likely also a number of domains where legislation will be needed to repurpose or refocus existing regulatory bodies. Specifically:

> ***Recommendation*:** Administratively repurpose Office of the National Coordinator for Health Information Technology Accredited Testing and Certification Bodies (ONC-ATCBs) to facilitate third-party certification of AI testbeds based on standards developed collaboratively between FDA and NIST (see Strategy 3).

Strategy 7: Better understand the national AI R&D workforce needs.

Incentivize workforce education in high-tech and emerging technology – Development of a
> workforce in support of implementing more artificially intelligent systems will require focus on innovation, research, and maintenance. Incentives for the implementation of AI in healthcare will foster a marketplace that advantages those developing AI solutions. Similarly, AI is a tool not a holistic solution and there will be a need to analyze the outputs of AI-enabled systems.

> ***Recommendation*:** Support tax incentives for public-private partnerships in support of AI testbeds and for academic institutions providing support for workforce retraining in deprecated industries.

> ***Recommendation:*** Prioritize AI in the Small Business Investment Research (SBIR) grant program.

HITN is supportive of this request from NSF and its long-view towards a future, AI-enabled healthcare system. We stand ready to actively participate in these ongoing efforts.

Sincerely,

Joel C. White
Executive Director