

White House Office of Science and Technology Policy & National Institutes of Health
ARPA-H Listening Session: Biomedical Organizations
Tuesday, August 3, 2021
Summary

Overview

On August 3, 2021, the White House Office of Science and Technology Policy (OSTP) and the National Institutes of Health (NIH) convened a listening session to gather input to inform the focus of the Advanced Projects Research Agency for Health (ARPA-H). As part of the two-hour listening session, representatives from 37 biomedical research organizations and scientific societies¹ discussed scientific opportunities, approaches, challenges, and partnership strategies ARPA-H might adopt.

The session was introduced by Dr. Francis Collins, the Director of NIH. Dr. Collins welcomed participants and explained the meeting goal, which was to engage participants in a discussion about making the bold, new ARPA-H concept as productive as possible. Dr. Collins noted that COVID-19 has been our generation's "Sputnik moment" and that ARPA-H is intended to help the United States take full advantage of this moment in scientific history to accelerate scientific progress and prevent future pandemics. He suggested that ARPA-H would follow a model that is built upon the DARPA experience, taking on high-risk and high-reward programs that would otherwise not receive Federal support. The new ARPA-H, he suggested, should engage bold, fearless leaders with entrepreneurial character and private sector experience, recruit visionary program managers, bring new research performers and collaborations into the biomedical research ecosystem, and operate using time-limited, milestone-driven approaches to monitor progress and identify failures early. ARPA-H will complement NIH's expansive and fundamental portfolio to accelerate progress toward breakthroughs in areas ripe with opportunity. He also stressed that equity needs to be built into ARPA-H's structure and culture, drawing in top talent from across the United States, looking at diseases and health from a multiplicity of lenses – from the molecular to the societal – and including those disproportionately affected by health inequities.

After Dr. Collins' introduction, participants engaged in a question-and-answer period, followed by two breakout sessions, reconvening the groups after each for feedback sessions moderated by Dr. Lawrence Tabak, Principal Deputy Director of NIH. The first session considered the scientific opportunities and platform technologies that ARPA-H might address. The second session considered challenges and barriers in the biomedical and health research ecosystem that ARPA-H could address and the partnership strategies ARPA-H might employ to catalyze progress.

¹ American Society of Gene & Cell Therapy; American Public Health Association; American Society for Microbiology; Council of Medical Specialty Societies; National Academy of Medicine; Wellcome; American Academy of Physician Assistants; Salk Institute for Biological Studies; American Society for Tropical Medicine and Hygiene; National Black Nurses Association; Cohen Veterans Bioscience; Society for Advancement of Chicanos/Hispanics and Native Americans in Science; Kaiser Family Foundation; National Postdoctoral Association; American Dental Association; Federation of American Societies for Experimental Biology; The American Society of Hematology; The Jackson Laboratory; Association of Public & Land Grant Universities; American Association for the Advancement of Science; Biophysical Society; Association of American Medical Colleges; American Academy of Nursing; Critical Path Institute; American Association of Colleges of Nursing; Peterson Center on Healthcare; American Society for Cell Biology; Coalition for Life Sciences; American Hospital Association; Society for Neuroscience; American Medical Student Association; Association of Independent Research Institutes; Infectious Diseases Society of America; Fred Hutchinson Cancer Research Center; American Chemical Society; ACRO; American Academy of Pediatrics

Themes

- ***ARPA-H should focus on platform technologies rather than pure fundamental discovery.*** Participants noted that many of the opportunities for rapid advances may lie in the development or adaptation of engineered platforms to biomedical research; involving physical scientists, engineers, clinicians, and other biomedical researchers can help innovations bridge the “valley of death” and mature to the point where they can be scaled and distributed. Examples of potential platform technologies suggested include new diagnostic tools such as automated medical image analysis and continuous monitoring of physiological parameters, realizing the potential of machine learning and other artificial intelligence tools, integration of multi-omics data, and the development of cryoelectron tomography as a research tool. Data-as-a-platform was also recommended as an opportunity for ARPA-H, with examples cited that include interoperable health records, extending the diversity of genomic data to reflect all Americans, and early warning systems for disease outbreaks.
- ***The range of potential opportunities where ARPA-H could catalyze advances is broad.*** Participants suggested that ARPA-H could catalyze advances in many biomedical areas. Overcoming antimicrobial resistance was suggested by several participants as a specific area of public health concern where a range of disruptive approaches might be considered. Other suggestions for areas ripe for advances included mental health, obesity, Alzheimer’s disease, and pediatric care.
- ***ARPA-H should adopt a user-focused perspective in the opportunities it addresses.*** Participants noted that the end users of many of the technologies ARPA-H will develop will be clinicians and patients and that a user-focused perspective should underlie the program areas of ARPA-H. Clinically-oriented programs should involve FDA and CMS, among others, from an early stage to ensure that successes can reach patients without encountering regulatory or reimbursement hurdles.
- ***Developing the entrepreneurial culture ARPA-H requires may be facilitated through the adoption of non-traditional and innovative organizational approaches.*** Participants applauded the emphasis on developing a flexible and entrepreneurial culture at ARPA-H and suggested that non-traditional mechanisms may help to promote that culture. Locating ARPA-H outside of the Washington D.C. area, using external advisory boards or public-private governance structures, and incorporating prizes, citizen science, and other innovative funding approaches were suggested as mechanisms for building the culture of independence and entrepreneurship ARPA-H requires. Innovative approaches for working with academia, such as early stage investigator awards, were recommended by participants as well.

Next Steps and Conclusion

This was the fourth in a series of five listening sessions being convened throughout July and August with representatives from patient groups, industry, biomedical scientific societies, physical science-oriented scientific societies, non-profits, and other stakeholders. Even once this series of listening session concludes, the White House and NIH will continue to seek perspectives from stakeholders on ARPA-H. The Administration has also convened a Fast Track Action Committee of the National Science and Technology Council to identify synergies between ARPA-H and the work of NIH and other Federal research agencies and to promote interagency coordination in the design of ARPA-H’s approach, where appropriate. OSTP and NIH are grateful for the participation and perspectives provided by the wide variety of stakeholders in these

listening sessions. Much work remains to ensure that the biomedical ecosystem is engaged in solving some of the most pressing health challenges of our time. The Administration will continue to work to ensure that the US remains a global leader in biomedical and health innovation for the benefit of all Americans.