ARPA-H Initiatives at a Glance:
Major Projects and Project Objectives as of April 2024

Transplantation of Human Eye Allografts (THEA)

- Build on decades of hard-won progress in eye science and neuroscience to achieve successful eye transplantation, with the goal of restoring sight to the blind and visually impaired.

Novel Innovations for Tissue Regeneration in Osteoarthritis (NITRO)

- Pioneer innovative approaches to assist the body in self-repairing joints.

Precision Surgical Interventions (PSI)

- Dramatically reduce instances in which a tumor is only partially removed, or damages hidden nerves, blood vessels, and other structures, contributing to enhanced surgical success in oncology and other fields.

Resilient Extended Automatic Cell Therapies (REACT)

- Increase medication effectiveness by developing two devices: one that allows patients to receive personalized single or combination therapies and a second that provides real-time disease-related data to patients and doctors for tracking and making informed medication treatment decisions.

Antigens Predicted for Broad Viral Efficacy through Computational Experimentation (APECx)

- Develop broadly effective vaccines to reduce the number of vaccinations and pre-empt the deadly impact of viruses responsible for cancer, pandemics, and other viral threats.

Advancing Clinical Trial Readiness (ACTR)

- Enable 90% of eligible Americans who want to participate in a clinical trial the ability to participate within a half-hour of their home.

Digital Health Security (DIGIHEALS)

- Support innovative research focused on protecting medical devices and the U.S. health care system's electronic infrastructure against hostile threats. This initiative is a competitive grant program, with funding for highly promising proposals distributed across the following areas
    - **Healthcare Ransomware Resiliency and Response Program (H-R3P)**
        - Will develop evidence-based interventions to mitigate the impact of cyberattacks on the health care delivery system.
    - **Reliable and Explainable Cyber Reasoning System for Digital Health Security (RxCRS)**
        - Will reduce the effort and cost required to find and address vulnerabilities in older medical devices.
    - **Digital Format Rehabilitation to Improve Interoperability of EHR Systems and Records (EHR-FIST)**

Source: https://arpa-h.gov/

        - Will enhance the security and privacy of patient data in electronic health records.
    - **Software Bills of Materials and Software Bills of Behaviors for Effective Cyber Risk Mitigation in Healthcare Systems Comparative Study (SBOM Study)**
        - Will provide a more comprehensive automated cybersecurity risk assessment for medical devices than existing methods.

ML/AI-Aided Therapeutic Repurposing In eXtended uses (MATRIX)

- Develop a machine learning platform to rapidly identify existing medications that could be effective in treating rare diseases that have no current therapies.

Platform Accelerating Rural Access to Distributed and Integrated Medical Care (PARADIGM)

- Create a scalable vehicle platform to provide advanced medical services outside of the hospital setting to address rural healthcare access issues.

Artificial Intelligence Cyber Challenge (AIxCC)

- In partnership with DARPA, develop AI-enabled tools and capabilities to find and fix problems in software that could leave critical medical infrastructure vulnerable to cyberattack.

Engineering of Immune Cells Inside the Body (EMBODY)

- Utilizing advances in gene therapy, develop treatments that eliminate time, cost, and access hurdles for patients with various immune system disorders.

Personalized Regenerative Immunocompetent Nanotechnology Tissue (PRINT)

- Utilizing advances in regenerative medicine and bioprinting technology, address chronic shortages in transplantable organs by 3D printing personalized, on demand organs that do not require lifetime use of immunosuppressive drugs.

Lymphatic Imaging, Genomics, and pHenotyping Technologies (LIGHT)

- Develop diagnostic tools to accurately assess the health of the lymphatic system, cutting down on misdiagnosed or undiagnosed dysfunction that affects millions of patients each year.

Building Resilient Environment for Air and Total Health (BREATHE)

- Create a scalable system capable of monitoring and responding to changes in indoor air quality using diagnostic and biosensor technology to assess the risk of airborne infection transmissions, irritants, and other ailments that impact quality of life.

Open Broad Agency Announcement Awardees

- The ARPA-H Open Broad Agency Announcement (BAA) solicits proposals focused on areas of high potential and urgent need. For example:
    - **Programmable Scalable Therapeutics for Immune-directed Cancer-killing (SPIKES)**
        - Will use genetically programmable bacteria to create an innovative, scalable, and cost-effective cancer immunotherapy that precisely targets solid tumor cells, overcoming challenges in current cancer treatments.

Source: https://arpa-h.gov/

ARPA-H Sprint for Women's Health

- ARPA-H is participating in the White House's Initiative on Women's Health Research, announced in February of 2024. The initiative aims to close historical gaps in women's health research and pioneer new medical discoveries to improve women's health outcomes.

ARPA-H Investor Catalyst Hub

- Centered in Cambridge, MA, this hub is built to provide connections between researchers and private venture investors to bring ideas and research to market faster.

ARPA-H Customer Experience Hub

- Centered in Dallas, TX, this hub is built to develop health solutions that will be accessible, in demand, and readily adopted. This hub is focused on such objectives as identifying and addressing costly inefficiencies in healthcare and ensuring ARPA-H funding is producing cost-effective, meaningful advances.

Source: https://arpa-h.gov/