



PRESS RELEASE

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KidneyX Launches New Artificial Kidney Prize with \$10.5 Million in Funding

Washington, DC (August 11, 2022) — Today, the US Department of Health and Human Services (HHS) and the American Society of Nephrology (ASN) announced a new prize competition from the Kidney Innovation Accelerator (KidneyX) that seeks to further the development of a fully functional bioartificial kidney.

Phase 2 of the Artificial Kidney Prize competition invites submissions focused on developing prototype bioartificial kidneys or a new tool or component that can help enable the development of bioartificial kidneys. Innovators in the fields of regenerative medicine, cellular engineering, tissue engineering, systems biology, and synthetic biology are strongly encouraged to apply.

The 850 million people worldwide who live with kidney diseases include 37 million Americans. In the United States alone, treatment costs total more than \$100 billion a year. Each day, 13 people die while waiting for a kidney transplant, while those on dialysis face a 50 percent mortality rate during the first five years of treatment. Communities of color are disproportionately affected with increased incidence, fewer organs available for transplant, and poorer outcomes overall.

Innovation is urgently needed. Through this prize competition, KidneyX is seeking to advance a field that has seen little progress in more than 60 years. The best treatment is a kidney transplant, but the supply of organs only addresses a small fraction of the need.

Assistant Secretary of Health ADM Rachel L. Levine notes, “We are hopeful that KidneyX Phase 2’s focus on the integration and advancement of artificial kidney prototypes will result in breakthroughs that ensure a healthier future while reducing health disparities.”

Development of a fully functional bioartificial kidney has proven difficult in the past because of the overall complexity of the organ, which is made up of a multitude of cell types and performs several important functions.

A successful bioartificial kidney must be able to perform at least some of the kidney’s most vital functions, such as blood filtration, electrolyte homeostasis, fluid regulation, toxin removal and secretion, and the transport and drainage of excess filtrate. However, given

the substantial scientific advances that could supplement kidney health, such as adjustments in lifestyle and nutrition, pharmaceuticals, and other interventions that could slow progression of kidney disease or mitigate kidney failure, a bioartificial kidney may not need to replicate the full cellular and tissue complexity of a human kidney.

To encourage revolutionary designs, Phase 2 of the Artificial Kidney Prize consists of two tracks.

- Track One, “Accelerating the Prototype of a Bioartificial Kidney,” is open to submissions from innovators with development plans for a prototype bioartificial kidney, including a pathway and future timeline toward first-in-human studies.
- Track Two, “Components and Tools that Enable the Development of an Artificial Kidney,” is open to proposals for tools or components that adapt regenerative medicine, cellular engineering, tissue engineering, systems biology, and/or synthetic biology methods to address a challenge currently faced in the development of a fully functional artificial kidney.

Past KidneyX prize winners, as well as any other entrants who meet the eligibility requirements, are invited to enter Phase 2 of this prize competition.

Artificial kidneys may be wearable or implantable options for kidney replacement therapy; xenotransplant, including chimera, or another non-human organ platform may also be considered.

The components and tools solve a specific challenge for developing xenotransplanted, bioartificial, biomechanical, and/or other implantable or wearable platforms for kidney replacement therapy. Examples include tools or components that optimize efficiency and scalability of regenerative medicine, cellular and tissue engineering, systems biology, and/or synthetic biology methodology to enable development of an artificial kidney platform, such as applications of artificial intelligence, machine learning, gene editing, and gene circuits.

“Thanks to the public-private partnership behind KidneyX, innovators have a unique opportunity to create next-generation solutions to help the 850 million people worldwide living with kidney diseases,” said John Sedor, MD, FASN, KidneyX Steering Committee Chair. “This competition specifically focuses on the use of regenerative medicine and artificial biology methods to advance the development of bioartificial kidney prototypes or to create enabling tools that overcome barriers slowing innovation. We believe this

competition will generate exciting approaches that will accelerate new kidney replacement therapies and improve the lives of people with kidney diseases.”

The submission period for both tracks of Phase 2 opens today, with Track One closing on October 28, 2022, and Track Two closing on January 28, 2023. Track Two applicants are encouraged to use the additional time to seek guidance from or collaborate with experts in the kidney field to improve their applications.

Up to \$10.5 million in funding will be split among up to nine (9) prize winners, including up to three (3) winners from Track One each receiving \$1.5 million and up to six (6) winners from Track Two each receiving \$1 million.

For the full rules and eligibility requirements, as well as a list of resources available to applicants, visit kidneyx.org/akp.

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ABOUT AMERICAN SOCIETY OF NEPHROLOGY

Since 1966, ASN has been leading the fight to prevent, treat, and cure kidney diseases throughout the world by educating health professionals and scientists, advancing research and innovation, communicating new knowledge, and advocating for the highest quality care for patients. ASN has nearly 20,000 members representing 132 countries. For more information, please visit asn-online.org and follow us on [Facebook](#), [Twitter](#), [LinkedIn](#), and [Instagram](#).

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