2024 Blavatnik National Awards for Young Scientists Announced

A molecular biologist from Dana-Farber Cancer Institute, a chemical engineer from UC Berkeley, and an earth scientist from Cornell University are this year's Laureates.

NEW YORK, September 12, 2024 – The Blavatnik Family Foundation and The New York Academy of Sciences named three women scientists as Laureates of the Blavatnik National Awards for Young Scientists, marking the second time since the launch of the awards that all three Laureates are women. Each will receive $250,000, the largest unrestricted scientific prize offered to America's most promising, faculty-level scientific researchers under 42. Three independent juries – one each for life sciences, chemical sciences, and physical sciences & engineering – composed of some of America's most distinguished scientists selected the three winning Laureates. An additional 15 Finalists will each receive $15,000.

The 2024 Blavatnik National Awards received 331 nominations from 172 institutions in 43 U.S. states. Nominees must be faculty-level scientific researchers, 42 years of age or younger.

The Blavatnik National Awards for Young Scientists will celebrate the 2024 Laureates and Finalists and the 2024 Blavatnik Regional Awards Laureates and Finalists in a gala ceremony on October 1, 2024, at the American Museum of Natural History in New York.

The 2024 winning Laureates are:

2024 Laureate in Life Sciences: Cigall Kadoch, Ph.D., Dana-Farber Cancer Institute, Harvard Medical School & Howard Hughes Medical Institute (Molecular & Cellular Biology)—***Working to discover and characterize chromatin remodeling complexes, understanding how their disruption leads to human disease, and developing a new class of therapeutics***

Healthy cells rely on the intricate collaboration of millions of biological molecules; even minor perturbations in these interactions can lead to diseases like cancer. In a series of groundbreaking studies, Cigall Kadoch has decoded the role of ATP-dependent chromatin remodelers—complex molecular machines made up of dozens of interacting proteins—in regulating DNA accessibility and gene

expression. The Kadoch Lab also unraveled how disease-causing mutations in these complexes impact their structure and function in an expanding list of diseases that includes cancer, neurodevelopmental disorders, and immunodeficiencies. Dr. Kadoch has built upon these discoveries to develop novel therapeutics, which are being tested in clinical trials and could revolutionize the treatment of diverse maladies.

2024 Laureate in Chemical Sciences: Markita del Carpio Landry, Ph.D., University of California, Berkeley (Chemical Engineering)—***Pioneering nanoscale chemical tools to address disparate challenges in human health and sustainability***
The behavior of chemicals within and between cells of the body still holds many secrets to how life operates. By manipulating these basic chemical interactions of life, using very small particles to uncover new insights and tools for biology, Landry has applied new nanobiotechnology towards a wide range of tasks, from measuring the transfer of chemicals between synapses in the brain to bioengineering plant genetics. Landry's strategies for applying nanobiotechnology tools are already paving the way for more resilient crops and new treatments for neurological disease ranging from neurodegeneration to autism spectrum disorders.

2024 Laureate in Physical Sciences & Engineering: Britney E. Schmidt, Ph.D., Cornell University (Physical Earth Sciences)—***Advancing climate science and planetary habitability studies through groundbreaking research on ice-ocean interactions and innovative exploration of Earth's polar regions and icy planetary bodies***
In order to better predict the impact of climate change we must understand the interactions between the Earth's oceans and ice. Britney E. Schmidt and her team designed, built, and deployed Icefin, a remotely operated vehicle that provides unprecedented insights into Antarctic ice shelf melting and ocean circulation. Schmidt's work solves key problems in ice dynamics and interaction with the ocean and offers novel comprehensive views of sub-ice environments. Critically, this research shows how interactions between the ice, ocean, and seafloor control how glaciers respond to the warming ocean. Schmidt also applies Earth-based ice studies to solar system icy worlds to further our understanding of extraterrestrial environments. Schmidt's contributions have earned widespread recognition, including inclusion in Time Magazine's 100 Most Influential People of 2023.

"On behalf of the Blavatnik Family Foundation, I congratulate this year's outstanding Laureates and Finalists for their exceptional research. They are among the preeminent leaders of the next generation of scientific innovation and discovery," said Len Blavatnik, founder of Access Industries and the Blavatnik Family Foundation and a member of the President's Council of The New York Academy of Sciences.

Nicholas B. Dirks, president and CEO of The New York Academy of Sciences, said, "The New York Academy of Sciences has always championed women in science. We are thrilled to celebrate, for the second time in the United States, that all three of the scientists named the 2024 Blavatnik National Awards Laureates are women working in their respective fields to use science to benefit the public good."

FINALISTS

The following scientists have been named Finalists in their respective categories:

Life Sciences

Wei Gao, Ph.D., California Institute of Technology (Biomedical Engineering & Biotechnology) Developed advancements in wearable biomolecular sensors, allowing for continuous, real-time monitoring and early diagnosis of various health conditions without requiring invasive medical procedures.

Kaiyu Guan, Ph.D., University of Illinois Urbana-Champaign (Agriculture & Animal Sciences)
Developed revolutionary technology to enhance our understanding of agricultural production systems and innovating transformative solutions to achieve co-sustainability of agricultural productivity and environmental quality.

Sergiu Pașca, M.D., Stanford University (Neuroscience & Developmental Biology)
Uncovered transformative and therapeutically relevant insights into the molecular and cellular steps underlying the assembly of the human brain and the mechanisms leading to neuropsychiatric disease.

Sohini Ramachandran, Ph.D., Brown University (Ecology & Evolutionary Biology)
Established quantitative methods that reveal the causes and consequences of human genetic variation while advancing the goal of personalized medicine for all.

Christoph A. Thaiss, Ph.D., University of Pennsylvania (Neuroscience & Immunology)
Made significant advances in decoding the mechanisms by which the communication between environment, body, and brain mediates the impact of lifestyle factors on common human diseases.

Chemical Sciences

Joseph Cotruvo, Jr. Ph.D., The Pennsylvania State University (Biochemistry & Structural Biology)
Discovered and engineered biomolecules to sustainably harvest and purify rare metals, which are used in advanced technology, from electronic waste and the environment.

Garret Miyake, Ph.D., Colorado State University (Polymer Chemistry)
Made ground-breaking advances across polymer and organic chemistry, including inventing light-driven synthesis methods, novel plastics that are chemically recyclable, and light-reflecting coatings to reduce energy needs.

David Nagib, Ph.D., The Ohio State University (Organic Chemistry)
Stabilized traditionally unstable molecules, such as carbenes and free radicals, to discover faster, more effective, and previously unknown chemical mechanisms for synthesizing pharmaceuticals.

Yogesh Surendranath, Ph.D., Massachusetts Institute of Technology (Inorganic & Solid-State Chemistry)
Developed a molecular-level understanding of how charges arrange at electrified surfaces, like battery electrodes, and new chemical reactions to decarbonize fuel and chemical synthesis.

Wei Xiong, Ph.D., University of California San Diego (Physical Chemistry)
Established the experimental foundations of polariton chemistry, which describes hybrid, excited states of molecules, and engineered photonic cavities to provide better control over chemical reactions.

Physical Sciences & Engineering

Anima Anandkumar, Ph.D., California Institute of Technology (Computer Science)
Made ground-breaking advancements in AI to address practical scientific challenges, drastically accelerating simulation of complex phenomena like weather forecasting, scientific simulations, engineering design and scientific discovery.

Polina Anikeeva, Ph.D., Massachusetts Institute of Technology (Materials Science & Nanotechnology)
Integrated nanomaterials synthesis and electronic device design to develop neurotechnologies, artificial limbs, and soft robotics that advance our understanding and treatment of neurological disorders.

Ivan Z. Corwin, Ph.D., Columbia University (Applied Mathematics)
Expanded "Extreme Diffusion Theory" to model complex physical systems like the growth of tumors, the propagation of nerve signals, and the early spread of pandemics.

Alexey V. Gorshkov, Ph.D., National Institute of Standards and Technology & University of Maryland (Theoretical Physics)
Advanced the design of large interacting quantum systems through pioneering research at the intersection of quantum physics and information science with groundbreaking implications for quantum computers, sensors, and networks.

Maryam Shanechi, Ph.D., University of Southern California (Electrical Engineering)
Pioneered research at the intersection of engineering, AI, and neuroscience to develop advanced neurotechnologies that decode and regulate brain activity for treating brain disorders.

About the Blavatnik Awards for Young Scientists

The Blavatnik Awards for Young Scientists, established by the Blavatnik Family Foundation in 2007 and independently administered by The New York Academy of Sciences, initially identified outstanding regional scientific talent among faculty and postdoctoral students in New York, New Jersey, and Connecticut. The Blavatnik National Awards, honoring faculty-rank scientists throughout the United States, were first awarded in 2014 and were expanded in 2017 to honor faculty-rank scientists in the United Kingdom and Israel. By the end of 2024, the Blavatnik Awards will have awarded prizes totaling $17.4 million and, to date, has honored over 470 scientists.

Blavatnik Awards scholars are driving economic growth by embarking on new scientific trajectories to pursue high-risk, high-reward scientific research. To date, Blavatnik Awards honorees have founded 72 companies. After recognition by the Blavatnik Awards, 30% of past honorees obtained a patent or filed a patent application, 75% have started a new research direction, and 11% have started a new collaboration with another Blavatnik Awards honoree.

Visit blavatnikawards.org for further information.

About the Blavatnik Family Foundation

The Blavatnik Family Foundation provides many of the world's best researchers, scientists and future leaders with the support and funding needed to solve humankind's greatest challenges. Led by Len

Blavatnik, founder of Access Industries, the Foundation advances and promotes innovation, discovery and creativity to benefit the whole of society. Over the past decade, the Foundation has contributed over US$1 billion to more than 250 organizations. See more at www.blavatnikfoundation.org.

About The New York Academy of Sciences

The New York Academy of Sciences is an independent, not-for-profit organization that, since 1817, has been committed to advancing science for the benefit of society. With more than 20,000 members in 100 countries, the Academy advances scientific and technical knowledge, addresses global challenges with science-based solutions, and sponsors a wide variety of educational initiatives at all levels for STEM and STEM-related fields. The Academy hosts programs and publishes content in the areas of life and physical sciences, the social sciences, nutrition, artificial intelligence, computer science, and sustainability. The Academy also provides professional and educational resources for researchers across all phases of their careers. The Blavatnik Awards for Young Scientists is part of a series of prominent awards and scholarship programs that the Academy and its partners present each year to accomplished early-career and established scientists worldwide. These initiatives, along with education and professional development programs for students and young scientists, reflect the Academy's broader commitment to strengthening and diversifying the pipeline for skilled and talented scientists globally. Please visit us online at www.nyas.org.

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