The Blavatnik Awards for Young Scientists honor exceptional young scientists and engineers by celebrating their extraordinary achievements, recognizing outstanding promise, and accelerating innovation through unrestricted funding.
Encouraging and supporting young scientists is essential if we are to successfully address society’s challenges. By honoring these young individuals and their achievements we are helping to promote the breakthroughs in science and technology that will define how our world will look over the next century.

LEN BLAVATNIK
FOUNDER AND CHAIRMAN
ACCESS INDUSTRIES AND BLAVATNIK FAMILY FOUNDATION

Key Features of The Blavatnik Awards for Young Scientists

Open to researchers working in more than 36 different scientific and engineering disciplines in three categories:

- The Blavatnik Award for Young Scientists in Chemistry
- The Blavatnik Award for Young Scientists in Physical Sciences & Engineering
- The Blavatnik Award for Young Scientists in Life Sciences

- Recognize and support outstanding young scientists and engineers early in their careers when additional funding and recognition have the greatest impact on their work.
- Honorees are selected based on the quality, novelty, and impact of their research, and their potential for further significant contributions to science.
- Offer the largest unrestricted prizes ever created for early-career scientists.
- Connect alumni with a network of their peers throughout the world to foster collaboration.

“Past and present Blavatnik Scholars are some of the top young scientists in the world. We are proud to celebrate them and their achievements, and to showcase their work to the world.”

NICHOLAS B. DIRKS
PRESIDENT AND CEO
NEW YORK ACADEMY OF SCIENCES

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Established by: Administered by:

Blavatnik Awards in Israel, in collaboration with:

The Israel Academy of Sciences and Humanities
Our Impacts

BLAVATNIK SCHOLARS ARE BRINGING REVOLUTIONARY IDEAS AND ADVANCES IN SCIENCE AND TECHNOLOGY INTO REALITY.

- REPAIRING SPINAL CORD INJURY WITH SYNTHETIC FIBERS
- USING MUNICIPAL CITY WATER TO DETECT PUBLIC LEVELS OF COVID INFECTION
- DISCOVERING THE BIGGEST FOSSIL OF A PTEROSAUR EVER FOUND ON EARTH
- SOLVING THE “BLACK HOLE PARADOX” AND CORRECTING STEPHEN HAWKING’S 1974 FORMULA
- FABRICATION OF OPTICAL LENSES IN SPACE
- CREATION OF THE FIRST HUMAN BRAIN ORGANOID
- FIRST CRISPR-BASED TEST FOR COVID-19
- DISCOVERY OF GRAVITATIONAL WAVES
- 40+ COMPANIES LAUNCHED, CREATING JOBS AND DRIVING ECONOMIC GROWTH
- ENHANCED RECYCLABILITY OF EVERYDAY PLASTICS
- ARTIFICIAL INTELLIGENCE CONVERTS BRAIN ACTIVITY INTO SPEECH IN PARALYZED STROKE PATIENT
- FIRST EFFECTIVE TREATMENT OF ALS IN MICE
- CRISPR-BASED MEDICINE TARGETING INHERITED FORM OF BLINDNESS
- BEAMS STRONGER THAN STEEL MADE OUT OF WOOD
- AND MANY MORE ON BLAVATNIKAWARDS.ORG

Science Knows No Borders

60% OF BLAVATNIK AWARDS HONOREES ARE IMMIGRANTS TO THE COUNTRY IN WHICH THEY WERE RECOGNIZED.

ARGENTINA • AUSTRALIA • AUSTRIA • BELARUS • BELGIUM • BOSNIA AND HERZEGOVINA • CANADA • CHINA • COLOMBIA • CROATIA • CZECH REPUBLIC • EGYPT • FRANCE • GERMANY • GREECE • HONG KONG • HUNGARY • INDIA • IRAN • IRELAND • ISRAEL • ITALY • JAPAN • LEBANON • MALAYSIA • MEXICO • MOROCCO • NETHERLANDS • NEW ZEALAND • NIGERIA • PALESTINE • POLAND • PORTUGAL • ROMANIA • RUSSIA • SERBIA • SINGAPORE • SLOVAKIA • SLOVENIA • SOUTH AFRICA • SOUTH KOREA • SPAIN • SWITZERLAND • TAIWAN • TURKEY • UK • UKRAINE • URUGUAY • USA • UZBEKISTAN

THE BLAVATNIK AWARDS RECOGNIZE OUTSTANDING YOUNG FACULTY AND POSTDOCTORAL RESEARCHERS IN 36 SCIENTIFIC DISCIPLINES.

- Agricultural & Animal Sciences
- Analytical Chemistry
- Applied Mathematics
- Astrophysics & Cosmology
- Atomic, Molecular & Optical Physics
- Biochemistry & Structural Biology
- Biomedical Engineering & Biotechnology
- Chemical Biology
- Chemical Engineering
- Civil Engineering
- Clinical Medicine & Epidemiology
- Computational Biology, Bioinformatics & Systems Biology
- Computer Science
- Condensed Matter Physics
- Developmental Biology
- Ecology & Evolutionary Biology
- Electrical Engineering
- Environmental Chemistry & Biogeochemistry
- Genetics & Genomics
- Green Chemistry
- Immunology
- Inorganic & Solid-State Chemistry
- Materials Science & Nanotechnology
- Mechanical & Aeronautical Engineering
- Microbiology
- Molecular & Cellular Biology
- Neuroscience
- Nuclear & Plasma Physics
- Organic Chemistry
- Particle Physics
- Physical Chemistry
- Physical Earth Sciences
- Polymer Chemistry
- Synthetic Chemistry
- Theoretical Chemistry
- Theoretical Physics
The Blavatnik Family Foundation announces doubling of the prize money for Winners and Finalists starting in 2013.

The Blavatnik National Awards are created to honor faculty scientists across the United States, and the first Laureates in Life Sciences, Physical Sciences & Engineering, and Chemistry are announced. Each Laureate receives a $250,000 prize.

The Blavatnik Regional Awards continue to honor postdoctoral scientists in New York, New Jersey, and Connecticut.

The first Blavatnik Awards in the United Kingdom and Israel are conferred. In Israel, the New York Academy of Sciences collaborates with the Israel Academy of Sciences and Humanities in administering the awards.

The first annual Blavatnik Science Symposium is hosted in London. The symposium opens its doors to the public to give Blavatnik Scholars from the United Kingdom the opportunity to communicate their research to students and science enthusiasts.

Blavatnik Scholars take on the COVID-19 pandemic, discovering new ways to predict and detect disease spread, identifying effective treatments, and researching new vaccine technologies.

Three women are named Blavatnik Regional Awards Winners, marking the first time in Blavatnik Awards history that the top prize is concurrently awarded to women scientists in each of the three disciplinary categories.

By the close of 2022, the Blavatnik Awards will have recognized 392 young scientists and engineers and awarded prizes totaling over $13.6 million.
2021 Blavatnik Regional Awards for Young Scientists

Acknowledge and celebrate the excellence of outstanding postdoctoral scientists and engineers who work in New York, New Jersey, and Connecticut.

Young scientists are nominated by research institutions across the New York region, and Winners and Finalists are selected by a group of senior scientists and engineers from institutions in this Tri-State Area. Winners are awarded $30,000 each and Finalists are awarded $10,000 each in unrestricted funds.

DANIEL STRAUS
2021 Regional Winner in Chemistry
Princeton University

Materials chemist Daniel Straus, PhD, is challenging assumptions about how materials form and behave, finding new ways to synthesize materials for efficient chemical production and energy generation. Straus identified a structural instability in a promising new solar cell material, known as cesium lead iodide. His discovery lays a foundation for new, stable solar cells to be developed from this material. Straus has also demonstrated a new technique to make chiral, or asymmetric, materials from very simple non-chiral molecules. These chiral materials could be valuable as biological sensors or catalysts for chemical manufacturing.

“Many things are known to be impossible, until someone comes along and does them.”

CHENHAO JIN
2021 Regional Winner in Physical Sciences & Engineering
University of California, Santa Barbara (formerly at Cornell University)

Physicist Chenhao Jin, PhD, has established himself as an exceptional young experimentalist in a new area of physics, known as two-dimensional materials. His research on two-dimensional van der Waals materials and heterostructures has led to a number of exciting experimental discoveries, including the discovery of new types of quantum phases and the development of an innovative, energy-efficient memory storage device. Jin has also developed a number of revolutionary optical techniques to capture the interesting physics displayed by these 2D-materials.

“Humans collaborate to perform different functions in a society; atoms interact to form diverse matters shaping the world. I aim to understand the latter by making documentary films in the quantum realm, and developing the tools to do so.”

DIRENA ALONSO-CURBELO
2021 Regional Winner in Life Sciences
Institute for Research in Biomedicine Barcelona (formerly at Memorial Sloan Kettering Cancer Center)

Cancer commonly arises in damaged tissues and is often referred to as a “wound that never heals.” Cancer biologist Direna Alonso-Curbelo, PhD, investigates the similarities and differences between wound healing and tumor development to better understand the initiating events of cancer. By comparing the responses to tissue damage of normal cells and those harboring a cancer-initiating mutation, Alonso-Curbelo discovered a mechanism that explains how the most common gene mutation that causes pancreatic cancer co-opts otherwise reparative processes to fuel tumor initiation. This discovery uncovers fundamental knowledge on the complex interactions between environmental and genetic risk factors that contribute to disease, and paves the way for the earlier detection and treatment of cancer.

“To fix the ending, we need to better understand the beginnings. In the lab, I put curiosity, creativity, and observation into action to explore the unknowns of cancer biology. The best part is that I get to do this surrounded by so many inspiring colleagues that I’m lucky to call family.”
2022 Blavatnik National Awards for Young Scientists

Celebrate America’s most innovative and promising faculty-rank scientists and engineers.

Nominations are accepted from US-based research institutions and the Blavatnik National Awards Scientific Advisory Council. Every year, one nominee in each category is named a Blavatnik National Awards Laureate and awarded US$250,000 in unrestricted funds, with additional nominees recognized as Finalists. Laureates and Finalists are selected by a jury composed of some of the United States’ most distinguished scientists and engineers.

“...are a few awards for young scientists, but almost all of them are based on proposals that you submit, and not on the actual work that you do as a young scientist. The Blavatnik Awards is true recognition of the work of young scientists; it is unique in that sense. There is no equivalent.”

MICHAEL LIPSON
MEMBER, NATIONAL ACADEMY OF SCIENCES
EUGENE HIGGINS PROFESSOR OF ELECTRICAL ENGINEERING AND PROFESSOR OF APPLIED PHYSICS
COLUMBIA UNIVERSITY
2010 BLAVATNIK REGIONAL AWARD WINNER
MEMBER, BLAVATNIK NATIONAL AWARDS SCIENTIFIC ADVISORY COUNCIL

Meet the 2022 Blavatnik Awards National Laureates

HOSEA M. NELSON
2022 National Laureate in Chemistry
California Institute of Technology

Hosea M. Nelson, PhD, is fearlessly pursuing new methods to understand the molecules that make up every part of our daily lives. The methods being developed in his lab are creating new types of molecules that will ultimately lead to key advances in human health. Nelson has adapted cryogenic electron microscopy—a technology typically used to identify the arrangement of atoms in large biological molecules like proteins—to measure much smaller molecules. This powerful new technique is called microcrystal electron diffraction (or MicroED) and gives previously unforeseen insight into small molecules, building a foundation to dramatically accelerate the development of new drugs or commercial chemicals.

“We strive to create knowledge that will aid in alleviating Humankind’s greatest challenges. Support from the Blavatnik Family Foundation will enable this goal by allowing us to approach these challenges in non-conventional ways.”

CONOR WALSH
2022 National Laureate in Physical Sciences & Engineering
Harvard University

Conor Walsh, PhD, is reshaping our understanding of how humans interact with machines. His research group has pioneered a whole new class of lightweight, flexible, and soft wearable robot technologies and has helped launch this new and rapidly expanding field of soft wearable robotics. His research combines aspects of human movement science with robot design, the mobility and quality of life for people with physical disabilities. His technological innovations are wide-ranging, from functional apparel to elegant designs for electro-mechanical systems and sensors to software control algorithms. Each technological innovation from his lab has had a tremendous impact on the field.

“This Blavatnik Award will highlight the significant potential for the field of wearable robotics at this exciting time as new technologies transition from research labs to clinics, industrial settings and the home.”

ELAINE Y. HSIAO
2022 National Laureate in Life Sciences
University of California, Los Angeles

Elaine Y. Hsiao, PhD, is making unprecedented discoveries on the gut-brain connection by investigating the gut microbiome and the biomolecules they produce, also known as metabolites. Hsiao is advancing our understanding of how bacterial metabolites influence neurodevelopment, neurological diseases and gastrointestinal disorders. Hsiao’s laboratory also discovered that the gut microbiome could even influence the effects of antidepressant drugs on health and disease.

“By studying how gut microbes interact with the nervous system, we hope to uncover fundamental principles for communication across different organ systems and new ways to treat diseases of the gut and brain.”
Recognize and support outstanding young scientists and engineers working in England, Wales, Scotland, and Northern Ireland.

Talented young academic staff across the UK are nominated by their university or research institution, or by members of the Blavatnik Awards UK Scientific Advisory Council. Each year, one nominee in each category is named a Blavatnik Awards UK Laureate and awarded £100,000 in unrestricted funds, with two Finalists in each category each receiving £30,000 in unrestricted funds. Laureates and Finalists are selected by a jury of distinguished scientists based in the UK.

“There are many prizes for senior scientists often at a time when they don’t need them and frequently years after they’ve made their big discoveries. It is a really nice change to see scientists rewarded early in their career when they have many great things ahead of them.”

SIR VENKI RAMAKRISHNAN
NOBEL LAUREATE
PRESIDENT EMERITUS, THE ROYAL SOCIETY
MEMBER, THE BLAVATNIK AWARDS IN THE UK SCIENTIFIC ADVISORY COUNCIL

KIM JELFS
2022 UK Laureate in Chemistry
Imperial College London

Most materials are made up of molecules and atoms that assemble in an orderly fashion. Materials that are composed of discrete molecular entities held together by weak, intramolecular bonds between molecules are often referred to as supramolecular assemblies. Through these assemblies, they can have unique properties and functions; their characteristics are difficult to predict without actually synthesising them in a laboratory—a process that is time-consuming and often gives unpredictable results. Kim Jelfs, PhD, has developed revolutionary, open-source software capable of predicting the properties and functions of advanced supramolecular materials. Her development has led to collaborative work with synthetic laboratories all over the world and subsequently the creation of new molecules and materials with properties ranging from photonics to energy storage, that would not have been possible without her predictive software.

“It’s a privilege to work with so many talented people to develop computational approaches aimed at tackling challenges in materials discovery, inspired by our fantastic synthetic collaborators.”

MATTHEW BROOKES
2022 UK Laureate in Physical Sciences & Engineering
University of Nottingham

Matthew Brookes, PhD, is internationally-acclaimed for his contributions to human brain imaging, and particularly for his work using magnetoencephalography (MEG) to study the function of the human brain. MEG measures tiny magnetic fields generated by the electrical currents that flow through neurons. These neuronal signals allow mapping of functional networks on a millisecond-by-millisecond basis as they form and dissolve in support of cognition. His research uses novel types of quantum sensors to measure these fields, providing greater accuracy and spatial precision and opening up the possibility of imaging brain activity in moving subjects, young children, adults in active motion, and patients with neurological disorders.

“For me, understanding the human brain and the many disorders that affect it is one of the greatest scientific puzzles. That the magic of quantum physics can allow us to watch the brain at work, and provide pieces of that puzzle, is truly remarkable!”

MADELINE LANCASTER
2022 UK Laureate in Life Sciences
MRC Laboratory of Molecular Biology

Madeleine Lancaster, PhD, has pioneered the development of the first method for generating brain organoids—brains grown in the lab that are created from reprogrammed human stem cells. Her technology is ushering in a new era of neuroscience research. The human brain has evolved several features that may account for many of the cognitive abilities that make humans unique. These specific and singular features also make human brain development difficult to study using animal models. Her work using organoids to investigate brain barriers, primate brain evolution, and fetal brain development will help reveal fundamental knowledge about how human brains evolved and how they are affected by disease.

“I am incredibly honored to receive this recognition. These past few years have been challenging for myself and my team, so to have all that hard work recognized is a real boost and encourages us to continue to develop these methods and ask really big questions.”
2022 Blavatnik Awards for Young Scientists in Israel

Celebrate and support outstanding young faculty-rank scientists in Israel.

Each year, one nominee in each category is named a Blavatnik Awards Israel Laureate and awarded US$100,000 in unrestricted funds. Nominations are accepted from all universities in Israel and from the Blavatnik Awards Israel Scientific Advisory Council. Laureates are selected by a jury of world-recognized researchers working in Israel.

The Blavatnik Awards in Israel are administered jointly by the New York Academy of Sciences and the Israel Academy of Sciences and Humanities.

“While COVID has reminded us that we may not know what novel threats or drastic changes may appear tomorrow, we can be certain that our scientific capabilities along with our national resilience and international partnerships will be key to overcoming them.”

ISAAC HERZOG
PRESIDENT OF ISRAEL
SPEAKING AT THE 2021 BLAVATNIK AWARDS FOR YOUNG SCIENTISTS IN ISRAEL CEREMONY

Meet the 2022 Blavatnik Awards Laureates in Israel

MENNY SHALOM
2022 Israel Laureate in Chemistry
Ben-Gurion University of the Negev

Major advances in materials synthesis and manufacturing techniques, as well as the sheer need for more energy worldwide, have brought about a rapid increase in the study of solar energy conversion into fuel through the development of materials that are capable of capturing, storing, and releasing energy from sunlight. Menny Shalom, PhD, approaches this difficult problem through the rational design of novel, inexpensive, easily synthesized, and chemically stable materials that contain only common elements. Materials developed by Shalom have found uses in a variety of applications including splitting water into hydrogen and oxygen, batteries, and photocatalysts—tiny particles that speed up chemical reactions when exposed to light. Through careful analysis of how these materials are made and their resulting behavior, this work will have a significant impact on renewable and sustainable energy production.

“Our goal is to develop new materials for sustainable and renewable energy creation. The research for me is like being a child in a playground and I cannot wait to see the next discoveries!”

RONEN ELDAN
2022 Israel Laureate in Physical Sciences & Engineering
Weizmann Institute of Science

The work of Ronen Eldan, PhD, has led to breakthroughs in solving conjectures in the mathematical theory of high-dimensional phenomena that have profound impacts on the fields of statistics, machine learning, and theoretical computer science. His research spans several fields of mathematics with a focus on high dimensional probability, which concerns the study of random systems with many variables or many sources of randomness. One of his main contributions is the development of a new methodology that builds on an unexpected connection between the analysis of high-dimensional systems and stochastic calculus, the theory which studies the motion of diffusing particles. Moreover, his applied line of research has led to new understanding of the limitations of neural networks in machine learning and a new algorithm for decision-making in artificial intelligence.

“Science is perhaps the only domain regarding which we can say with high certainty that humanity is actually moving forward.”

NOAM STERN-GINOSSAR
2022 Israel Laureate in Life Sciences
Weizmann Institute of Science

Noam Stern-Ginossar, PhD, has developed revolutionary strategies to decode the viral genome of human cytomegalovirus (CMV). CMV, a herpesvirus, infects the majority of the world’s population and can lead to severe diseases in newborns and immunocompromised adults. In order to characterize CMV’s genome, Stern-Ginossar applied a technique based on deep sequencing, wherein she sampled a specific piece of the host machinery used for viral reproduction—the ribosome—to identify fragments of viral genome (RNA). This method, termed “ribosome profiling,” has been used to reveal hundreds of previously undiscovered, virus-produced proteins that can regulate the production of proteins in the host cell. In 2020, Stern-Ginossar applied this technology to rapidly characterize the SARS-CoV-2 genome.

“I am honored to join the Blavatnik Award Laureates, a selected group of researchers that are tackling major scientific problems. These last two years have been challenging both for me and for many in my group, so obtaining this prestigious recognition is uplifting and encourages us to continue with our quests.”
In the sixteen years since its launch, the Blavatnik Awards for Young Scientists program has built an exceptional network of honorees whose members represent one of the most dynamic, innovative, and cross-disciplinary communities in the world.
Blavatnik Science Scholars
In the News

Heather Lynch discovers large colonies of Gentoo penguins further south than expected, hypothesizing that climate change is drastically changing the mix of species in Antarctica
Scientific American | February 8, 2022
The New York Times | April 12, 2022

Edward Chang and colleagues understand the brain in greater detail than ever before, from cracking the code on severe depression, to creating a neuropsychotstics that allows severely paralyzed patients to communicate
The New York Times | July 14, 2021
Quanta Magazine | October 21, 2021
CBS San Francisco | November 2, 2021

Moran Barcozic develops a technology for making optic lenses with NASA, saying it could be used to make space telescopes
Haaretz | Dec 14, 2021

Stephen Brusatte discovers the largest fossil of a pterosaur, the first animal to engage in powered flight, on the Isle of Skye in Scotland
National Geographic | February 22, 2022

Netta Engelhardt resolves Stephen Hawking’s “Black Hole Paradox,” completing a new calculation that corrects Hawking’s 1974 formula predicting black holes’ behavior
Quanta Magazine | August 23, 2021
Haaretz | December 21, 2021

Leeb Weinstein creates new COVID-19 nasal spray therapy aimed to reduce viral load in the lungs by 100-fold
ABC7 | December 14, 2021

Rebecca Oppenheimer writes an opinion piece in Scientific American on how Hollywood successfully tackles science denialism in 2021 science fiction film Don’t Look Up
Scientific American | December 30, 2021

Rob Knight leads COVID-19 wastewater surveillance project that shows San Diego’s case surge is slowing
KPBS | January 19, 2022

Ian Chapman discusses fusion energy with The Prince of Wales on his recent tour of the UK Atomic Energy Authority based at Culham Science Centre
Oxford Mail | January 31, 2022

Benjamin TenOever and Stavros Lomvardas discover a mechanism that may explain why COVID-19 patients lose their sense of smell, as well as having implications for long COVID
Science Daily | February 7, 2022

Emily Baltzuk discovers that an elusive molecule called Collibactin in the human gut may have the ability to awaken “zombie” or latent viruses hiding in the microbiome
Inverse | March 1, 2022

“it may be a cliché at this point, but they’re the canary in the coal mine for climate change because they’re so closely tied to those sea ice conditions.”
HEATHER LYNCH
2019 BLAVATNIK NATIONAL AWARDS LAUREATE ON THE MIGRATION OF GENTOO PENGUINS SPEAKING TO SMITHSONIAN MAGAZINE | FEBRUARY 8, 2022

BLAVATNIK FAMILY FOUNDATION
The Blavatnik Family Foundation is an active supporter of world-renowned educational, scientific, cultural and charitable institutions in the United States, the United Kingdom, Israel, Russia and other countries throughout the world. The foundation is headed by Len Blavatnik, a global industrialist and philanthropist and the founder and chairman of Access Industries, a privately held industrial group based in the U.S. with global strategic interests. Visit www.accessindustries.com or www.blavatnikfoundation.org.

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 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. Please visit us online at www.nyas.org and follow us on Twitter @NYASciences.

THE ISRAEL ACADEMY OF SCIENCES AND HUMANITIES
The Israel Academy of Sciences and Humanities is the preeminent scientific institution in Israel. It was established by law in 1961 and acts as a national focal point for Israeli scholarship in all branches of the sciences, social sciences, and humanities. The Academy comprises 132 of Israel’s most distinguished scientists and scholars who operate in two divisions—the Sciences Division and the Humanities Division. It is tasked with promoting Israeli scientific excellence, advising the government on scientific matters of national interest, publishing scholarly research of lasting merit, and maintaining active contact with the broader international scientific and scholarly community. Please visit us online at www.academy.ac.il and follow us on Twitter @IsraelAcademy.

THE ISRAEL ACADEMY OF SCIENCES AND HUMANITIES

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