Blavatnik National Awards for Young Scientists Announce 2020 Laureates

America's largest unrestricted scientific prize goes to promising young researchers

NEW YORK, July 22, 2020 – The Blavatnik Family Foundation and the New York Academy of Sciences announced today a molecular biophysicist, an organic chemist and an astrophysicist as the Laureates of the 2020 Blavatnik National Awards for Young Scientists. Each will receive $250,000, the largest unrestricted scientific prize offered to America's most-promising, young faculty-level scientific researchers.

The Laureates are:

- Clifford Brangwynne, chemical and biological engineering professor, Princeton University, for a discovery that upends previous understandings of the internal organization of cells.
- William R. Dichtel, chemistry professor, Northwestern University, for pioneering methods to create novel, porous materials from simple, carbon-based building blocks.
- Brian Metzger, physics professor, Columbia University, for settling a long-standing question about the origin of gold and other heavy elements in the universe.

"Science demands creativity, knowledge and persistence to solve the world's most challenging problems," said Len Blavatnik, founder and chairman of Access Industries, head of the Blavatnik Family Foundation and member of the President's Council of the New York Academy of Sciences. "Through dedication to their research, these outstanding young scientists have harnessed their diverse interdisciplinary backgrounds to make discoveries that will change our society for the better."

Nicholas B. Dirks, the New York Academy of Sciences' new president and CEO said, "This year marks the first time the Blavatnik National Awards has Laureates from Princeton University, Columbia University or Northwestern University, and we congratulate these institutions for their strong support of cutting-edge research in the sciences. We look forward to inviting these three winning scientists to participate as Laureates in the Academy, sharing their future innovations and discoveries with our members and the world at large."

The 2020 Blavatnik National Awards competition received 305 nominees from 161 research institutions across 41 states. Nominees, eligible if age 42 or younger, were evaluated by three independent juries – one for each of the awards' categories of Life Sciences, Physical Sciences & Engineering and Chemistry. The judging panels, composed of some of America's most distinguished scientists, selected these Laureates from a group of 31 finalists:

2020 Blavatnik National Awards Laureate in Life Sciences

Clifford Brangwynne, PhD

Professor, chemical and biological engineering
Princeton University
Investigator
Howard Hughes Medical Institute

Brangwynne has transformed the field of cell biology through a discovery that upends the understanding of the internal organization of cells. Brangwynne discovered that inside cells, biomolecules can merge to form liquid-like droplets that allow for the localization and compartmentalization of molecular interactions. The ability of these droplets to smoothly fuse and separate is critical for cell division and the development of embryos. Errors in this physical property may result in the formation of solid structures, such as the tangles and fibers found in Alzheimer's disease, which can cause cell damage and death. The Life Sciences Jury noted that Brangwynne's work has influenced many areas of biology. "Clifford Brangwynne has fundamentally changed the way we think about scientific problems and biology," said Elaine Fuchs, PhD, Rebecca C. Lancefield Professor at The Rockefeller University, Howard Hughes Medical Institute Investigator, and Chair of the 2020 Blavatnik National Awards Life Sciences Jury. "Scientists, including myself, have become increasingly fascinated with thinking about how his findings relate to the scientific problems we study and how they relate to other kinds of fundamental biological processes."

2020 Blavatnik National Awards Laureate in Chemistry

William R. Dichtel, PhD
Robert L. Letsinger, professor of chemistry
Northwestern University

Dichtel has pioneered methods to create novel, porous materials from simple, carbon-based building blocks. These materials can be easily designed and tailored to address specific needs and possess extremely high surface areas because they contain tiny holes—pores that can store, detect and separate small molecules and ions. For example, he invented porous materials derived from corn that are now being used commercially to remove toxic substances such as industrial pollutants and pharmaceuticals from drinking water. He has also developed materials that show promise for new energy storage systems. Noting Dichtel's strengths in interdisciplinary research, Stephen L. Buchwald, PhD, Camille Dreyfus Professor of Chemistry at MIT and member of the 2020 Blavatnik National Awards Chemistry Jury, said, "Dichtel uses an extremely creative combination of fields to derive practical solutions to important societal problems. He leverages his background in organic chemical synthesis plus fundamental studies in polymer chemistry, physical organic chemistry, and materials science to understand the mechanistic properties of materials and make new molecules that have never before existed."

2020 Blavatnik National Awards Laureate in Physical Sciences & Engineering

Brian Metzger, PhD
Professor of physics
Columbia University

Metzger has settled a long-standing question about the origin of gold and other heavy elements in the universe. He predicted that gold, along with all the stable elements on the lower part of the periodic table, was

created in a collision of two merging neutron stars called a "kilonova." In 2017, the LIGO gravitational wave observatory recorded the first observed kilonova explosion, and measurements taken after this discovery confirmed Metzger's predictions. Indeed, the heaviest elements present in the universe, like gold, were created by such cataclysmic events. Metzger's work has ushered in an exciting new era in astronomy that will revolutionize our understanding of the cosmos. "This year, the Physical Sciences & Engineering Jury chose a superstar in the field of astrophysics," said Nicholas B. Suntzeff, PhD, Distinguished Professor of the Mitchell Institute for Fundamental Physics and Astronomy at Texas A&M University, and member of the 2020 Blavatnik National Awards Physical Sciences & Engineering Jury. "Brian Metzger has made multiple and profound theoretical predictions that have proven to be true, something that is rare in the field of astronomy. One of those predictions—how gold was made—is an everyday question that children might ask, but to which a true scientific answer had remained elusive."

To learn more about the Laureates' groundbreaking research, click on the links below to read their bios on the Blavatnik Awards website, or to view videos of past presentations that these three scientists have given at the New York Academy of Sciences:

- Clifford Brangwynne at the recent "New Frontiers in CRISPR" conference
- William R. Dichtel at the 2019 Blavatnik Science Symposium in a session on "Synthetic Methodology"
- Brian Metzger in a webinar on "The Era of Gravitational Wave Astronomy"

Because of the coronavirus pandemic, the annual Blavatnik National Awards ceremony and gala dinner in honor of the 2020 Laureates and Finalists has been postponed to 2021. The 2020 Blavatnik National Awards honorees will be celebrated alongside the 2021 Blavatnik National Awards honorees, on Sept. 27, 2021, at the American Museum of Natural History in New York.

About the Blavatnik Awards for Young Scientists

The Blavatnik Awards for Young Scientists, established by the Blavatnik Family Foundation in the United States in 2007 and independently administered by the New York Academy of Sciences, began by identifying outstanding regional scientific talent in New York, New Jersey, and Connecticut. The Blavatnik National Awards were first awarded in 2014 and, in 2017, the Awards were expanded to honor faculty-rank scientists in the United Kingdom and in Israel. By the close of 2020, the Blavatnik Awards will have conferred prizes totaling over $10.2 million to 321 outstanding young scientists and engineers from more than 46 countries, representing 36 scientific and engineering disciplines. For updates about the Blavatnik Awards for Young Scientists, please visit www.blavatnikawards.org or follow us on Facebook and Twitter (@BlavatnikAwards).

About the 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 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 US with global strategic interests. Visit: www.accessindustries.com or www.blavatnikfoundation.org.

About the New York Academy of Sciences

The New York of 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.

Media contact:
Kamala Murthy
Kmurthy@nyas.org
212-298-3740

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