













ANNUAL REPORT FISCAL YEAR 2021









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# **Science for the 21st Century**

When I became President of the New York Academy of Sciences in June 2020, it seemed inconceivable that more than a year later we would still be dealing with a global pandemic that simply will not go away.

COVID-19 is not the only crisis the world's scientists are confronting, and perhaps not even the most challenging. Excessive heat and drought are creating the perfect storm for large wildfires — even in places where they have been rare, such as Greenland. Food and water insecurity is increasing. And civil unrest is being fueled by misinformation and conspiracy theories promoted through social media.

We have seen how the concentrated focus of scientists resulted in the rapid development of highly effective COVID-19 vaccines and treatments that are in many ways slowly bringing us back to the lives we knew before March 2020. Now, we can refocus on discovering scientific solutions to our other global challenges, some of which may reach crisis levels as we head toward the mid 21<sup>st</sup> Century.

Throughout all the upheaval caused by COVID-19, I'm proud that the New York Academy of Sciences has continued its steadfast missions to advance science and bring accurate and timely information to our community, the media, and the public at large. We've increased our online professional development offerings, continued to recognize the work of rising stars in science, published pathbreaking research, and extended our educational programs in STEM fields. And even as we've continued to host important webinars on COVID-19, we've showcased other crucial work, too, in neuroscience, cancer research, sustainable energy, AI, and nutrition.

In 2022 we'll be formally launching the International Science Reserve, an exciting new initiative bringing scientists together to work across national, disciplinary, and institutional borders to respond quickly and help solve the next major crisis — whatever it may be.

With your partnership, the Academy will continue its deep engagement in public conversations about the role of science in our modern world.

Nicholas B. Dirks President and CEO New York Academy of Sciences

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CONVENINGS	ATTENDEES	GLOBAL REACH	ATTENDEE PROFILE
FROM COVID-19 TO AI	<b>20k</b> INVESTIGATORS AND SCIENCE ENTHUSIASTS	PARTICIPANTS FROM	120% UNDER- REPRESENTED MINORITIES* *3.8% NATIONAL AVG. OF URMS IN ACADEMIA SECTOR 52% Academia 6% Not-for-profit
20,000 ACADEMY MEMBERS ACROSS THE GLOBE	<ul> <li>60% Ph.D or M.D.</li> <li>50% Life Sciences &amp; Biomedicia</li> <li>25% Engineering &amp; Physical Sci</li> <li>35% International</li> <li>37% Graduate Students, Post E &amp; Early Career Researche</li> </ul>	ne siences Docs rs	13% Industry2% Government12% Healthcare15% OtherAnnals of the New York Academy of SciencesAVAILABLE IN OVER4 7 000
<ul> <li>✓ <sup>550+</sup> SPEAKERS</li> <li>✓ <sup>49%</sup> FEMALE PRESENTERS</li> </ul>	144 MAJOR SUPPORTERS 76,500 FOLLOWERS	<b>DOO</b> <b>IDENTS</b> 100 COUNTRIES	I 7,000 INSTITUTIONS & > 100 COUNTRIES ANNUAL REPORT 4

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### IMPACT FOR SCIENCE AND SOCIETY Uniting the Scientific Community Against the Pandemic

Understanding the pandemic took the hard work of interdisciplinary teams. Recognizing this, the Academy hosted programs spanning a broad range of perspectives, bringing together leading experts from academia, industry, non-governmental organizations, and government.

**The Quest for a COVID-19 Vaccine** featured the CDC's Anthony Fauci, Operation Warp Speed's Moncef Slaoui, and a dozen senior scientists and pharma leaders presenting vaccine status reports, including late-breaking updates on the Pfizer-BioNTech, Moderna, and J&J vaccines.

**Preparing for Emerging Viral Diseases: Lessons from SARS-CoV-2** focused attention beyond the current pandemic, toward science and strategies that can help the world face the next, large-scale virus outbreak.

**Long Term Health Effects of COVID-19** brought scientists and clinicians together to explain possible long term health effects following initial recovery, and who might be most at risk for these complications.

**The Evolution of STEM Research Culture During the Pandemic** used the Academy's Annual Meeting to explore the impact of the pandemic — and the disruptions it caused — on the practice of science in both the life sciences and other fields.





## IMPACT FOR SCIENCE AND SOCIETY Bringing Facts about the Pandemic to the Public

The Academy continued to help meet the general public's critically-important need for unbiased scientific information on the COVID-19 pandemic, with virtual programs that reached thousands of people, and with widespread media coverage around the world.

**COVID-19 Therapies and Vaccines: The Road Ahead** presented the latest on clinical trials as the world anxiously awaited the rollout of the first vaccines.

**COVID-19 Testing: What You Should Know** helped explain three different types of available testing, and the pros and cons of each.

**COVID-19: Screen Time and the Developing Brain** answered questions on many parents' minds — what might happen to my child's development if they spend too much time at home on digital devices?



# IMPACT FOR SCIENCE AND SOCIETY The Life Sciences

The Academy's scientific programs and public-facing talks in the life sciences spanned a broad range of topics in basic research, drug development, and public health. They featured researchers, business leaders, and policy experts at the cutting edge of their fields.

**Psychedelics for the Treatment of Depression and Psychiatric Disorders** shared recent clinical trial data demonstrating therapeutic benefits of mind-altering drugs for the treatment of psychiatric disorders.

**Extending Human Healthspan and Longevity** brought together physicians and scientists to discuss approaches to help people live longer and with a higher quality of life in their later years.

**Conflicts of Interest in Healthcare: Opportunities for Self Reflection and Action** began with a crash course on bias, and then brought experts together to explore individual and institutional conflicts. The program presented conflict-mitigating strategies and raised complex questions, including how private-public partnerships can operate ethically.

**RNA Viruses and the Immune System** explored how RNA viruses work, how the immune system fights them, and how antiviral responses can be tracked in real time.

**The Youth Vaping Epidemic: From Science to Public Policy**, and a corresponding program designed for the general public, described the youth vaping epidemic, and short- and long-term health effects of the behavior.





### IMPACT FOR SCIENCE AND SOCIETY Climate Change, Sustainable Energy, and the Environment

2021 saw a staggering escalation in wildfire activity in the American West, while the deluge of melting of Greenland's ice sheet caused our planet's crust to warp. The inciting factors are layered and complicated, but the climate emergency remains a leading culprit. With a mission to support science-based solutions to global challenges, the Academy presented an array of programs designed to help better understand the climate crisis, develop sustainable energy, and protect the planet from environmental degradation.

**Fire and Ice: The Impact of Climate Change on Environmental Ecosystems** reported new data connecting rising temperatures with the increased number and intensity of forest fires and expedited ice sheet melting, with experts offering approaches to improve forest health and reduce forest fire damage.

**A World Powered by Renewable Energy** showcased innovative technological developments in materials and electrochemistry for the capture of solar energy and energy storage. The program probed ways to simultaneously meet future energy demands.

**Sustainable Polymers** brought together expert chemists to reveal strategies for synthesizing novel, sustainable plastics and the creative reuse — or "upcycling" — of plastic waste into new materials. In setting the stage, scientists explained that while 9% of plastic waste is recycled and 12% is incinerated, a remaining 79% has accumulated in landfills or the natural environment.



## IMPACT FOR SCIENCE AND SOCIETY Exploration, Computer Science, and Artificial Intelligence

Reflecting the vast number of ways science engages our minds and touches our lives, the Academy rounded out its programming with talks and symposia on space exploration, computer science, and the fast-moving field of artificial intelligence (AI).

**Our Lunar Future** outlined plans for the return to the moon by astronauts, as well as strategies spacefaring nations can use to resolve disputes that will inevitably arise away from the surface of the Earth.

**Natural Language, Dialog, and Speech** focused on models for analyzing the structure and content of human conversation to create artificial agents to interact with both people and machines.

Scaling up: New Advances in Building Quantum Computers explained "quibits", and how electrical engineers, physicists, and computer scientists plan on moving from protypes to quantum computers that can solve complex, real-world problems.

**Al for Materials: From Discovery to Production** explored the application of artificial intelligence (Al) for the identification of novel synthetic and catalytic routes to new materials, and the scaling of materials production from the lab to the factory.



# IMPACT FOR SCIENCE AND SOCIETY **STEM Supremes**

The Academy's Chief Scientific Officer, Brooke Grindlinger, hosted **STEM Supremes** — a series of virtual conversations with "wonder women" in science and tech. The Supremes tackled subjects as diverse as fostering inclusivity for LGBTQ scientists, attracting and retaining more girls and women to STEM careers, encouraging diversity in hiring practices and workplace culture, and the ever elusive concept of work-life balance. These discussions were celebrations of accomplished women who overcame cultural, academic, and workplace bias. The series was part of the Academy's focus on barriers and racism in science.

These conversations were with Nobel Laureate **Elizabeth Blackburn**, former NASA Chief Scientist **France A. Córdova**, pioneering computer scientist **Barbara Liskov**, exoplanetary scientist **Rebecca Oppenheimer**, and oncologist **Padmanee Sharma**.

"Support talent, regardless of where you come from, and what your gender is, and what your religion is, and what your background is ... that kind of thing should be built into the ethos of science."

— Elizabeth Blackburn



### IMPACT FOR SCIENCE AND SOCIETY Interstellar Initiative

The **Interstellar Initiative**, a program developed by the Japan Agency for Medical Research and Development (AMED) and the New York Academy of Sciences, fosters international and interdisciplinary collaboration between scientists early in their careers. The program brings together researchers from around the world, selected via a competitive application process, and teams them with peers in complementary disciplines. With the guidance of leading senior researchers, each team develops a grant proposal centered on a novel scientific research question. The different perspectives of teammates allow them to think creatively, with the ultimate goal of catalyzing scientific advancement. The program facilitates novel, biomedical research collaborations and creates a supportive infrastructure to harness the teams' collective knowledge, leading to innovative research projects.

The 2020-2021 **Interstellar Initiative** focused on challenges in healthy longevity, with projects targeting cancers, neurodegenerative and cognitive disorders, cardiovascular disease, metabolic and hormonal disorders, and other chronic age-related conditions. The teams and mentors, from over 15 countries, used virtual technology to meet twice for workshops. Modest funding was provided by AMED to each team.

Since 2017, the **Interstellar Initiative** has supported over 170 early career scientists and, as mentors, 41 senior scientists. The Academy is now working with AMED to convene a series of alumni events aimed at creating new collaborations, facilitating mentoring opportunities, and highlighting the achievements of participants.



# IMPACT FOR SCIENCE AND SOCIETY **Nutrition Program**

The New York Academy of Sciences' **Nutrition Science Program** carried out important work in 2021 supporting maternal and child nutrition, and exercising leadership in food safety, food security, and the drive to end micronutrient deficiencies.

The **Multiple Micronutrient Supplementation (MMS) in Pregnancy Technical Advisory Group**, hosted by the Academy's nutrition team, issued guidance to support decision makers on the updated World Health Organization's antenatal care guidelines for MMS. The group also submitted an application to include MMS on the World Health Organization's model list of essential medicines.

The **Global Thiamine Alliance** held its second meeting to discuss the findings of several ongoing research projects and literature reviews. These included the impact of thiamine supplementation of lactating women in Cambodia on the cognitive development of their infants and the surprising prevalence of thiamine deficiency in high income settings. The findings were published in a Special Issue of the *Annals of the New York Academy of Sciences*.

A new **Task Force on Calcium** was held to explore ways the supplements can help prevent hypertensive disorders during pregnancy and preterm birth, as well as to develop recommendations to improve calcium intake.

The **Nutrition Modeling Consortium** engaged in the first co-located modeling effort in Cameroon. Experts used three nutrition modeling tools to help the government improve its nutrition strategy based on data and modeled interventions. In Colombia, the group led a research project to understand the relationships between occupational status, the COVID-19 pandemic, and the nutritional status of adolescent women.



## CELEBRATING ACHIEVEMENT The Blavatnik Awards for Young Scientists



The **Blavatnik Awards for Young Scientists** were established in 2007 by the Blavatnik Family Foundation to identify and honor exceptional young scientists and engineers in the categories of Life Sciences, Chemistry, and Physical Sciences & Engineering by celebrating their extraordinary achievements, recognizing outstanding promise, and accelerating innovation through unrestricted funding.

Beginning as the Blavatnik Regional Awards for Young Scientists in New York, New Jersey, and Connecticut, with the subsequent introduction of the National Awards in 2014, and the successful expansion to Israel and the United Kingdom in 2017, the Blavatnik Awards now honor groundbreaking young scientists around the world.

Since its inception the Blavatnik Awards for Young Scientists have:

- Awarded \$11 million
- Honored 330 young scientists from 47 countries
- Recognized work in 36 scientific disciplines

Fifty-two scientists and engineers were honored in FY2021.

The **Blavatnik Awards for Young Scientists** has implemented several strategies to ensure an equitable selection process. This includes targeted outreach to increase the diversity of nominee pools. Also, judges undergo training and use tools to navigate unconscious bias throughout the nominee assessment and awardee selection process.



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The 2020 **Blavatnik Regional Awards** received 154 nominations of talented postdoctoral scientists from 24 institutions across New York, New Jersey, and Connecticut. The three Winners and six Finalists, each awarded US\$30,000 and US\$10,000 respectively, were announced on September 23, 2020 during National Postdoc Appreciation Week in the U.S.



### 2020 WINNER IN CHEMISTRY

CELEBRATING ACHIEVEMENT

**Ning Jia** is unlocking key biological mechanisms that govern the ability of CRISPR-Cas systems to perform gene editing. Jia measured the precise molecular structures of CRISPR-Cas molecules as they operate in biological settings, which is key to efforts to adapt CRISPR-Cas to cure genetic diseases.



#### **2020 WINNER IN LIFE SCIENCES**

Antonio Fernández-Ruiz is expanding our understanding of how neurons in the brain coordinate their activity to form and recall memories. Fernández-Ruiz has demonstrated that memory can be improved by therapeutic interventions, building pathways to curing memory-related disorders, such as Alzheimer's disease.



#### 2020 WINNER IN PHYSICAL SCIENCES & ENGINEERING

**2020 Blavatnik Regional Awards** 

Adrian Price-Whelan uses advanced computational techniques to help understand one of the biggest mysteries of the universe — the presence of dark matter. By analyzing the motions of stars, Price-Whelan has provided the first clear evidence of the organization of dark matter in the outskirts of the Milky Way galaxy.



# CELEBRATING ACHIEVEMENT 2021 Blavatnik National Awards



The three 2021 **Blavatnik National Awards** Laureates — each receiving US\$250,000 — and 28 Finalists were announced in early summer 2021, recognizing their groundbreaking work from building new molecules to storing energy and mapping life across our world.



### 2021 LAUREATE IN CHEMISTRY

**Mircea Dincă** has upended a conventional wisdom among chemists that porous materials known as metal-organic frameworks (MOFs) cannot conduct electricity. By designing new molecules to build MOFs, Dincă created the first conducting MOFs, which will soon be used in highly efficient air conditioners and to improve power systems in electric cars.

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### 2021 LAUREATE IN LIFE SCIENCES

**Kay M. Tye** is shedding new light onto the inner workings of our brains to understand how we process reward, fear, and learning. Tye discovered specific neural pathways that underlie compulsive, reward-seeking behavior and social isolation — knowledge that could be used to tackle addiction and other mental health disorders.



### 2021 LAUREATE IN PHYSICAL SCIENCES & ENGINEERING

Andrea Alù is challenging limits in materials science by fabricating new "metamaterials" that interact with light and other electromagnetic waves in ways that seem to contradict the well-established laws of physics. Alù revealed behaviors that could lead to a myriad of new applications, including improved cellular communications and energy harvesting, and radar cloaking.





## CELEBRATING ACHIEVEMENT 2021 Blavatnik Awards in the United Kingdom



The **Blavatnik Awards in the United Kingdom** announced nine 2021 honorees — three Laureates, each awarded US\$100,000, and six Finalists, each awarded US\$30,000 — in December 2020. Every honoree is pushing boundaries of science and bringing new understanding to our world.



#### 2021 LAUREATE IN CHEMISTRY

**Daniele Leonori** is discovering new methods for forming chemical bonds between carbon and nitrogen atoms in molecules naturally found in living things. The reactions that Leonori created are already being used to manufacture pharmaceutical drugs more efficiently.



#### **2021 LAUREATE IN LIFE SCIENCES**

**Stephen Brusatte** studies dinosaur fossils to better understand evolution and mass extinction events, like the one many scientists say we currently face due to climate change. As a preeminent expert on dinosaurs, Brusatte served as a consultant for the film, *Jurassic World: Dominion*.



#### 2021 LAUREATE IN PHYSICAL SCIENCES & ENGINEERING

**Sinéad Farrington** searches the world of subatomic particles to better understand the building blocks of matter. Farrington co-leads the project at the Large Hadron Collider that made the landmark discovery of how particles acquire mass, and is now searching for new clues about how all matter is formed.





# CELEBRATING ACHIEVEMENT 2021 Blavatnik Awards in Israel



The 2021 **Blavatnik Awards in Israel**, jointly administered by the New York Academy of Science and the Israel Academy of the Sciences and Humanities, honored the most promising and impactful scientists in Israel. The three Laureates — **Rafal Klajn**, **Yossi Yovel**, and **Ido Kaminer** — were each awarded US\$100,000. They work at the cutting edge of science, creating synthetic materials that react like living things to stimuli, discovering new interactions between light and matter, and unraveling how bats interact with complex, interconnected biological processes in their environment.

The 2021 Laureates were celebrated in a summer 2021 ceremony at the Israel Museum in Jerusalem. **Hila Korach**, anchor of *Saturday Night News* on Israel's Channel 13, served as emcee, and special guest, President of Israel **Isaac Herzog**, spoke of the importance of science to his country.

A special program, the **Blavatnik Awards for Young Scientists in Israel Symposium: Science of Tomorrow**, was hosted by the Israel Academy of Sciences and Humanities to highlight the impact of the Blavatnik Awards in Israel. This half-day, public symposium was chaired by Israel Prize Winner **Adi Kimchi** and featured lectures by the 2021 and 2020 Israel Laureates.

"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



### CELEBRATING ACHIEVEMENT Innovators in Science Award



The New York Academy of Sciences, in partnership with Takeda Pharmaceuticals, launched the fourth cycle of the **Innovators in Science Award**, a global recognition program to honor the contributions of both a promising early-career scientist and an outstanding senior scientist for their exceptional research and contributions to a specific field of study.

The 2022 **Innovators in Science Award** focuses on gastroenterology. More than 40% of people worldwide are affected by functional gastrointestinal disorders, which can dramatically impact quality of life. The award will highlight innovative researchers from around the world that have made significant strides in developing treatments for patients with gastroenterological and liver diseases.

The 2022 Award announcement and nomination period took place from April 1-June 3, 2021. The Academy received 114 nominations from 18 countries, across six continents. Nomination disease subcategories were equally diverse, ranging from inflammatory bowel disease and gut microbiome to liver disease and cancer. The winners were selected at a jury meeting in January 2022, and will be publicly announced in spring, 2022. Each winner will receive a US\$200,000 prize to support their commitment to innovative research.

"Gastrointestinal (GI) diseases are a global issue, with rising prevalence across every continent. We believe that no GI disease that is life-limiting to patients should remain unnoticed or untreated. Takeda is on a relentless search for answers and viable treatment solutions for patients. We are proud to partner with the Academy to advance GI science."

- Christophe Weber, President and CEO, Takeda Pharmaceuticals



### BROADENING THE STEM PIPELINE The Global STEM Alliance – Focus on Students

The **Global STEM Alliance** (GSA) equips students with skills and provides role models to support them on educational paths toward STEM careers. The GSA pairs young people with mentors, engages students around the globe with challenge competitions to solve real-world problems, supports teachers with professional development, and trains STEM professionals to serve as mentors. Together, in Fiscal Year 2021, GSA programs engaged with 16,000 students in 100 countries.

#### 1000 Girls, 1000 Futures

The Academy reached more than 1,000 high school students, connecting them with female mentors in a program designed to foster networks of female STEM leaders around the world. A highlight was a Superstars of STEM essay contest.

### **The Junior Academy**

1,100 exceptional students joined a powerful online community for access to best-in-class STEM resources and mentorship. Through the Academy's cloud-based Launchpad platform, scores of these students collaborated on solutions to environmental problems in the textile industry, bias in AI systems, inequities in vaccine distribution, and shortfalls in the reach of telemedicine.

### **Global STEM Alliance Summit**

Four hundred students gathered virtually for the GSA's annual Global Summit to present and learn about winning challenge solutions and to participate in workshops on social entrepreneurship, video and media communications, and college preparation.



## BROADENING THE STEM PIPELINE The Global STEM Alliance – Focus on Teachers and STEM Professionals

The **Global STEM Alliance** supports students by supporting adults who inspire young people as they learn about science, technology, engineering, and math. Mentors participate in all GSA programs, with students and STEM professionals alike benefitting from cross-generational collaborations.

#### Scientist-in-Residence Program

With the New York City Department of Education, the Academy paired 20 STEM professionals with classroom teachers, to develop and implement year-long scientific research projects for students.

### Afterschool STEM Mentoring Program

The Academy recruited and trained 150 undergraduate and graduate students, postdocs, and STEM professionals to mentor elementary and middle school students at afterschool sites around New York City.

### STEM Education in the 21st Century

More than 70 New York City teachers enrolled in an Academy course designed to help teachers incorporate essential STEM skills and competencies in their lessons. These include critical thinking, collaboration, effective communication, information and digital literacy, and creativity. One teacher developed a curriculum unit asking fourth graders to use data analytics to study the effects of immigration on New York City's industrial development.



## BROADENING THE STEM PIPELINE The Science Alliance – Focus on Scientists-in-Training

The **Science Alliance** supports early career researchers, providing entrepreneurial opportunities, platforms for cross-cultural personal and professional networking, and access to learning communities. **Science Alliance** also helps young scientists become well-qualified educators for the 21<sup>st</sup> century.

During the 2020/2021 academic year, **Science Alliance** hosted 40 virtual events, all designed to help graduate students and post docs launch their careers and navigate common challenges.

**Solutions to Drive Excellence and Reduce Systemic Inequities in Academia** explored ways to further diversity in the STEM pipeline, including strategies to increase awareness of unconscious bias and to mitigate systemic barriers.

**Diversity and Inclusion in STEM: Leveraging your Network and Skills**, a program held in partnership with Hudson River Park, featured a diverse panel of STEM experts sharing first-hand experiences demonstrating the importance of diversity in the workforce and professional opportunities arising from creativity, innovation, and networking.

**Career Paths**, a webinar series, helped graduate students and postdocs learn about diverse career opportunities in academia, consulting, policy, government, and the pharmaceutical industry.

**How to Effectively Communicate Your Science to Any Audience**, one of a series of multi-day online courses, coached young scientists in techniques to help them explain their research in job interviews and other professional settings.

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RANKED 13<sup>TH</sup> OUT OF 73 IN THE MULTIDISCIPLINARY SCIENCES CATEGORY

ANNALS of THE NEW YORK ACADEMY OF SCIENCES

5,691 IMPACT FACTOR Journal Citation Reports, Science Edition®

(Clarivate Analytics, 2020)

te Power of Wonder

## SCIENTIFIC PUBLICATIONS Annals of the New York Academy of Sciences

The Academy's 198-year old **Annals of the New York Academy of Sciences** is an international multidisciplinary science journal. Each issue presents Original Research Articles and/or commissioned Review, Commentary, and/or Perspective Articles.

Ann NY Acad Sci is available by subscription and Open Access in over 80 countries, is rigorously peerreviewed, and is ranked among the top multidisciplinary journals worldwide.

In 2020, Clarivate Analytics listed *Ann NY Acad Sci* among the top 11% of 12,982 journals in their core science collection. 8,507 institutions offered access via site licenses and philanthropic initiatives extended low-cost or free access to an additional 10,495 institutions in the developing world. *Ann NY Acad Sci* had 1.21 M full-text downloads and 52,619 total citations.

Among the papers most highly cited in 2020:

- Global prevalence and disease burden of vitamin D deficiency: a roadmap for action in lowand middle-income countries (10.1111/NYAS.13968)
- Inflammation in psychiatric disorders: what comes first? (10.1111/NYAS.13712)
- Insulin regulation of gluconeogenesis (10.1111/NYAS.13435)



### **FORTHCOMING:**

- Developments in Modern Environmental Biotechnology
- Parasitology: An Integrated Approach, 2e

## SCIENTIFIC PUBLICATIONS Academy and John Wiley & Sons Book Series

The Academy and John Wiley & Sons joint book series covers topics in all areas of life and physical sciences.

Books include professional/research books, educational textbooks, techniques books, and handbooks:

- Neurobiological Basis of Migraine (ISBN: 978-1-118-96719)
- Building Brains: An Introduction to Neural Development, 2e (ISBN: 978-1-119-29371-2)
- Evidence-Based Evolutionary Medicine (ISBN: 978-1-118-83833-4)
- Postharvest Biology and Nanotechnology (ISBN: 978-1-119-28944-9)
- Vitamin and Mineral Bio-fortification of Edible Plants (ISBN: 978-1-119-511113)
- Handbook of Water Harvesting and Conservation (ISBN: 978-1-119-478959)

# **Financial Statement**

### **OPERATING SUPPORT AND REVENUE**

•	Contributions	\$13,704,605
	Publication Sales	\$2,192,200
	Gain on Forgiveness of Paycheck Protection Program Loan	\$1,853,230
	Membership Fees	\$603,442
•	Registration Fees	\$358,006
	Other Income	\$11,052
Total Public Support and Revenue\$18.722.535		

### **OPERATING EXPENSES**

Tot	al Operating Expenses	\$18,934,252
	General and Administrative	\$3,803,859
	Fundraising	\$2,310,966
•	Program Expenses	\$12,819,427



Change In Net Assets Before Depreciation	(\$211,717)
Less: Depreciation Expense	\$822,312
Change in Net Assets after Depreciation and Before Realized Gains on Investments	.(\$1,034,029)
Realized Gains on Investments	\$13,650
Change in Net Assets	.(\$1,020,379)

The above data has been condensed from the consolidated financial statements as of June 30, 2021, audited by EisnerAmper, LLP. Copies of the audited statements including the accountant's unmodified opinion are available from the Academy upon request.

The New York Academy of Sciences is pleased to acknowledge the generous contributions of all our donors. Their support helps us address global challenges through science-based solutions.

### LIFETIME MISSION PARTNER (\$1 MILLION + LIFETIME)

**ARM Holding** 

Bill and Melinda Gates Foundation

Blavatnik Family Foundation

Cisco

The Estate of Herbert J. Kayden

Japan Agency for Medical Research and Development (AMED)

Johnson & Johnson

The Malaysia Industry-Government Group for High Technology National Science Foundation

New York City Department of Education

PepsiCo

PepsiCo Foundation

Peter and Carmen Lucia Buck Foundation, Inc. Pfizer, Inc.

Qatar Foundation for Education, Science, and Community Development

**Richard Lounsbery Foundation** 

Jim and Marilyn Simons

United Technologies Corporation

### MISSION PARTNER (\$1 MILLION+)

Blavatnik Family Foundation

**IBM** Corporation

Takeda Pharmaceutical Company Limited

# **VISIONARY PARTNER** (\$250,000 - \$999,999)

Children's Investment Fund Foundation – CIFF

Ericsson

Fondation Botnar

Johnson & Johnson

Peter and Carmen Lucia Buck Foundation, Inc.

The Stevens Initiative

### 1817 HERITAGE SOCIETY MEMBERS

In recognition of those who have named the Academy in their estate plans through a will, trust, life insurance policy or retirement plan, leaving a legacy to support science for the public good. Carolyn J. Foster Jennifer Henry Herbert J. Kayden\* Joel Kirman\* and Liora Kirman Michael L. Korchynsky\* Richard E. Parr\* Ethel Romm\* Leroy Safian\*

Michael Samek\*

Vera Studer

\* Deceased

### **PREMIER PARTNERS** (\$100,000 - \$249,999)

Alfred P. Sloan Foundation	The Royal Swedish Academy of Engineering Sciences (IVA)
Boehringer Ingelheim Pharmaceuticals	Konstantin Shakhnovich
The Carson Family Charitable Trust	S&P Global Foundation
Citi Ventures	
Clifford Chance	
PepsiCo	
Regeneron Pharmaceuticals, Inc	

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### LEAD SUPPORTERS (\$50,000 - \$99,999)

David K. A. Mordecai and Samantha Kappagoda

Envision

The Feinstein Institutes for Medical Research

GlaxoSmithKline (GSK)

Infosys Foundation USA

JP Morgan Chase & Co

Lockheed Martin Corporation

Medidata Solutions

**Mushett Family Foundation** 

United Engineering Foundation

### **SUPPORTERS** (\$25,000 - \$49,999)

AbbVie	Novavax
Depository Trust & Clearing Corporation	Worley
Eisai, Inc	
Fred J. Brotherton Charitable Foundation	
Human Vaccines Project	
New York Hall of Science	
Nissan Chemical America Corporation	
Indra Nooyi	
Novartis Institutes for Biomedical Research	

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### FRIENDS OF THE ACADEMY (\$1,000 - \$24,999)

Charina Founda
Clinilabs
Barry S. Coller
Jacquie Corbell
Corbus Pharma
Michael Cotton
Cue Biopharma
Paul J. Davis
Steve and Robe
Fordham Unive
Resource Cente
Foundation for t
Genentech
Cilead Sciences
Gliead Sciences
Gossamer Bio

Greenwich B ation Grigori P. Gr **Diane Hallma** Charles Heso Hevolution F ceuticals Paul Horn Jerry Hultin IFFF Standa Association erta Denning Intellia Thera rsity evelopment Iovance Biot er Inc. the National Mel Kantor alth Ralph Kaslic Michael Katz s, Inc. John E. Kelly Joel J. Kirma

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abovoi	Lathan
an	R. May
dorffer	Jacque
oundation	Life Bio
	Paul N
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7/15/2020	Sexual Harassment in Higher Ed: How Collaborative Science Can Inform Policy
7/17/2020	Tracking Coronavirus Challenge Virtual Pitch
7/21/2020	Global STEM Alliance Virtual Summit
7/22/2020	COVID-19: Screen Time and the Developing Brain
7/24/2020	Microbiome and Mental Health
7/27/2020	Fire and Ice: The Impact of Climate Change on Environmental Ecosystems
8/11/2020	Diversity and Inclusion in STEM: Leveraging your Network and Skills
8/18/2020	Career Paths in Pharmaceutical Drug Development
8/26/2020	Student Perspectives on Back to School
9/4/2020	Online Course: Cybersecurity Governance
9/11-13/2020	The Interstellar Initiative: 2020–2021 Workshop
9/16/2020	Metabolism, Health, and Cancer: The 2020 Dr. Paul Janssen Award Symposium
9/17/2020	COVID-19 Therapies and Vaccines —The Road Ahead
9/18/2020	PepsiCo Perspective: Leveraging STEM Skills
9/22/2020	Career Paths in Higher Education Beyond Faculty
9/24/2020	Is Your Brain Democratic or Republican?
9/25/2020	Drug Discovery for Remission of Chronic Kidney Disease

9/25/2020	Mental Wellness and Health
9/30/2020	Preparing for Emerging Viral Diseases: Lessons from SARS-CoV-2
10/1/2020	Frontiers in Rare Diseases: 2020 Innovators in Science Award Ceremony
10/2/2020	Frontiers in Rare Diseases: 2020 Innovators in Science Award Symposium
10/5/2020	Lyceum Society
10/5/2020	Genome Integrity Discussion Group
10/6-7/2020	Al for Materials: From Discovery to Production
10/9/2020	Solutions to Drive Excellence and Reduce Systemic Inequities in Academia
10/11/2020	STEM Education in the 21st Century — For Infosys Foundation USA Pathfinders Online Institute
10/14/2020	COVID-19 Testing: What You Should Know
10/16/2020	Is Traditional Higher Ed Still Worth It?
10/16/2020	Resiliency as a Scientist
10/16/2020	Your Internal Clock and Your Health
10/20/2020	Novel Inflammatory Pathways in Chronic Human Liver Diseases
10/21-22/2020	Systemic Effects of Metastatic Cancer Day

10/23/2020	Workshop: STEM Career Opportunities in Government
10/27/2020	Immune Contribution to Heart Failure and Therapeutic Opportunities
10/27/2020	2020 Annual Meeting: The Evolution of STEM Research Culture
10/30/2020	2020 Ross Prize in Molecular Medicine — Mechanisms
	of RNA Splicing
11/2/2020	Introduction to Molecular Modeling in Drug Discovery November 2020 Online Course
11/2/2020	Frontiers in Circadian Medicine
11/2/2020	Lyceum Society
11/9/2020	PepsiCo Data Science Challenge Virtual Pitch
11/10/2020	The Significance of Microbial Metabolomics in Human Health and Disease
11/11/2020	Will COVID-19 Kill the SAT?
11/12/2020	Career Paths In Consulting and Beyond
11/13/2020	Natural Language, Dialog and Speech (NDS) Symposium 2020
11/13/2020	Job Search Workshop
11/17/2020	Lab Reopening and Lab Management
11/18–19/2020	Synthetic Biology Approaches to Improve Human and Environmental Health

2/1/2020	Chat with a Scientist — Working in the Pharmaceutical Industry
2/2/2020	Adapting STEM Instruction to Online Learning
2/4/2020	Alzheimer's Disease Therapeutics: Alternatives to Amyloid 2020
2/7/2020	Lyceum Society December 2020
2/7/2020	Genome Integrity Discussion Group
2/8/2020	Brain Health: Diet, Exercise, and Disease Prevention
2/9/2020	Our Lunar Future
2/10/2020	Bioengineering for Space
2/16/2020	Chat with a Scientist — How drug development and clinical trials really work
/4/2021	Lyceum Society January Meeting
/12/2021	The Neuroscience of Mindfulness
/25/2021	The Benefits of Challenge-based Learning
/26/2021	The Science behind Cannabis-Based Medicines
/27/2021	Targeting the Endocannabinoid System for Treatment of Human Diseases
/29/2021	How to curate your Resume?
2/1/2021	Lyceum Society
2/1/2021	Genome Integrity Discussion Group

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2/2/2021	The Quest for a COVID-19 Vaccine	3/15/2021	CRISPR: New Frontiers
2/5/2021	Conversation with author Malika Grayson, PhD	3/16/2021	Sustainable Polymers
2/7-9/2021	Interstellar Initiative	3/17/2021	Al in Chemical Biology: New Frontiers
2/10/2021	Introduction to Molecular Modeling Concepts for Polymers Online Course	3/18/2021	STEM Supremes: In Conversation with Elizabeth Blackburn
2/10/2021	The Youth Vaping Epidemic: From Science to Public	3/22/2021	Career Paths in Academia — Faculty Route
	Policy	3/25/2021	2022 Innovators in Science Awards Call for
2/10/2021	Vaping: Fact versus Fiction		Nominations
2/17/2021	Career Paths in Clinical Research and Management	3/25/2021	STEM Supremes: In Conversation with France Córdova
2/23/2021	Advancing STEM Education for All	3/26/2021	Creating a Community to Build Resiliency
2/25/2021	Chat with a Scientist	3/31/2021	Chat with a Scientist
2/25/2021	RNA Viruses and the Immune System	4/1/2021	Long-Term Health Effects of COVID-19
2/26/2021	Effectively Lleing Social Modia	4/5/2021	Engineering Solutions For Cardiovascular Disease
2/20/2021		4/5/2021	Find Yourself: Tracing Human Origins Using DNA
3/1/2021	Expert Talk with FNIH Lurie Prize Winner Dr. Aviv Regev, Ph.D	4/5/2021	Welcome To Your Brain Gym! Think Like A
3/1/2021	Lyceum Society	4/5/2021	Lyceum Society
3/3/2021	Craft Your STEM Elevator Pitch	4/5/2021	Genome Integrity Discussion Group
3/8/2021	Transition to Research Independence: Funding and Grantsmanship	4/7/2021	Scaling Up: New Advances in Building Quantum Computers
3/9/2021	Recent Developments in Thiamine Research	4/8/2021	Career Paths in Life Science Consulting
3/10/2021	Conflicts of Interest in Healthcare: Opportunities for Self-Reflection and Action	4/9/2021	How to write an Inclusive Letter of Recommendation?

4/12/2021	STEM Supremes: In Conversation with Barbara Liskov
4/13/2021	Genomic Repeats Link Cancer and Neurodegeneration
4/16/2021	Confronting Cachexia — A Disease within a Disease
4/23/2021	Meet the Editor
4/23/2021	Managing Conflict and Collaboration
4/23/2021	Rising Stars of Cancer Metabolism and Signaling
5/3/2021	STEM Supremes: In Conversation with Rebecca Oppenheimer
5/3/2021	Lyceum Society
5/11/2021	Chat with a Scientist
5/12/2021	Frontiers in Cancer Immunotherapy
5/19/2021	Extending Human Healthspan and Longevity
5/20/2021	Chemical Biology Discussion Group Year-End Symposium
5/20-6/10/2021	Online Course: How to Effectively Communicate our Science to Any Audience
5/24/2021	Advances in the Neurobiology of Mental Illness
5/25/2021	A World Powered by Renewable Energy
5/25/2021	Psychedelics for the Treatment of Depression and Psychiatric Disorders
6/1-8/9/2021	Scientists Teaching Science Online Course
6/7/2021	Genome Integrity Discussion Group

6/7/2021	Lyceum Society
6/8/2021	Bioactive Lipids in Metabolic Syndrome
6/10/2021	Career Paths in Policy
6/21/2021	Finding Inspiration for Functional Nanomaterials from Nature
6/22/2021	STEM Supremes: In Conversation with Padmanee Sharma

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