



GRUBER

F O U N D A T I O N



FY 2020 Annual Report

July 1, 2019 – June 30, 2020

A supporting organization of **Yale**

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The Gruber Foundation
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Executive Summary

The Gruber Foundation honors individuals in the fields of Cosmology, Genetics, Neuroscience, Justice, and Women's Rights, whose groundbreaking work provides new models that inspire and enable fundamental shifts in knowledge and culture.

The Gruber Foundation is a 509(a)(3) Type 1 supporting organization operated, supervised, or controlled by Yale University and incorporated in 2011 under the 501(c)(3) section of U.S. Corporate Law. It was funded by The Peter and Patricia Gruber Foundation, and Peter and Patricia Gruber were its Co-founders. As President Emeritus, Patricia Gruber has a lifetime seat on the Board.



A. Sarah Hreha, Executive Director

We were fortunate to have a wonderful 2019 prize season before the COVID-19 pandemic took gatherings online – Cosmology in Paris, Genetics in Houston, and Neuroscience in Chicago. Selection for the 2020 prizes happened via Zoom, like so many meetings since spring. We awarded the 2020 Genetics Prize virtually in April as part of The Allied Genetics Conference and were delighted to reach 999 attendees during the lecture! Despite a successful first virtual event we would prefer to be celebrating our recipients in person and basking in the reflected glory of their scientific accomplishments.

Now, in the midst of a global pandemic, we are reckoning with systemic inequality in both COVID health outcomes and social justice. We at The Gruber Foundation reaffirm our dedication to diversity, equity, and inclusion. We commit to continue to work hard so shortlisted nominees to Gruber International Prizes represent the breadth and diversity of their respective fields. To that end we include language to urge nominators to put forth diverse candidates, we have set aside time with committee chairs to focus on diversity, and we collaborate with our affiliate science organizations to make the composition of our Selection Advisory Boards diverse. The Gruber Program for Global Justice and Women's Rights, administered by Yale Law School, specifically targets issues of equality in a global context with a separate, related focus on women's rights. The accumulated wisdom of the Gruber Foundation stresses that stifling even a single segment of a population shortchanges the whole of humanity, and helping liberate that segment contributes to universal human progress – which of course cleaves to our mission.

The Board of Directors of The Gruber Foundation comprises: Peter Salovey, Chairman; Pericles Lewis, President; Patricia Gruber, President Emeritus; Joan O'Neill; Waring Partridge. The Treasurer is Elizabeth Bilodeau, and the Executive Director is A. Sarah Hreha.

Further information on the Foundation is available online at gruber.yale.edu

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Fiscal Year 2020 Financial Overview

Statement of Financial Position as of June 30, 2020

Assets

Cash and cash equivalents	\$ 138,560
Accounts Receivable	11,501
Investments	111,506,490
Beneficial interest in charitable gift annuity	<u>49,233,532</u>
Total assets	<u>160,890,083</u>

Liabilities

Accounts payable	--
Total liabilities	<u>--</u>

Net assets

\$160,890,083

2020 PROGRAM SPENDING

Grants to Yale University

The Gruber Foundation provides grants to Yale University for the Gruber Science Fellowship Program and the Gruber Program for Global Justice and Women's Rights. The agreement provides that The Gruber Foundation will distribute for the benefit of the Gruber Science Fellowship Program the greater of \$2.5 million or 1.6% of the net value of The Gruber Foundation's assets as of the beginning of each fiscal year. In addition, the agreement provides for disbursements of \$1.2 million for the benefit of the Global Justice and Women's Rights Program.

The following grants have been distributed through June 30:

Gruber Science Fellowship Program	\$2,500,000
Gruber Justice and Women's Rights	<u>\$1,200,000</u>
	\$3,700,000

Gruber Prizes

Gruber Prizes disbursed through June 30, 2020 were as follows:

2019 Cosmology Prize	\$500,000
2019, 2020 Genetics Prizes	\$1,000,000
2019 Neuroscience Prize	<u>\$500,000</u>
	\$2,000,000

Gruber International Prize Program

Fiscal year 2020 saw the 2019 Gruber Prizes awarded and the 2020 recipients selected. The program mission statement is: *The International Prize Program honors individuals in the fields of Cosmology, Genetics, and Neuroscience, whose groundbreaking work provides new models that inspire and enable fundamental shifts in knowledge and culture.*

The 2019 Prizes

COSMOLOGY

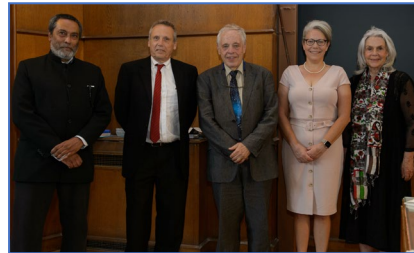
June 28, 2019

CosmoGold conference

Institut d'Astrophysique de Paris

Paris, France

Gruber Lectures: *Testing Cosmology: Will the Next Decade be Decisive?* (Kaiser) and *The Limits of Cosmology* (Silk)



Prize Advisor Subir Sarkar, Prize Recipients Nicholas Kaiser and Joseph Silk, Sarah Hreha, and Patricia Gruber

Prize Citation:

The Gruber Foundation is pleased to present the **2019 Cosmology Prize** to **Nicholas Kaiser** and **Joseph Ivor Silk**, for their seminal contributions to the theory of cosmological structure formation and probes of dark matter.

Kaiser provided the mathematical description of primordial density fluctuations that have evolved into large-scale structure, while Silk predicted the eponymous damping scale imprinted on the cosmic microwave background anisotropies. Kaiser pioneered the analysis of weak gravitational lensing of light from distant galaxies by dark matter, while Silk recognized dark matter's indirect signatures such as antiprotons in cosmic rays and high energy neutrinos from the Sun. Their work has transformed modern cosmology.

Selection Advisory Board: James Evans, Wendy Freedman (non-voting), Paul Ho, Robert Kennicutt (Chair), Frans Pretorius, Martin Rees (non-voting), Subir Sarkar, Rashid Sunyaev, Linda Tacconi

GENETICS

October 18, 2019

Annual Meeting, American Society of Human Genetics

Houston, Texas

Gruber Lecture: *Cancer Driver Genes and Their Implications for Patients*



GSA's Hugo Bellen, Sarah Hreha, Prize Recipient Bert Vogelstein, Patricia Gruber, and Selection Advisory Board Chair Helen Hobbs

Prize Citation:

The Gruber Foundation proudly presents the **2019 Genetics Prize** to **Bert Vogelstein** for his discoveries of new genetic pathways and processes contributing to cancer. He showed that malignant transformation of colorectal cancers results from the stepwise acquisition of mutations in oncogenes and tumor suppressor genes, thus elucidating the somatic evolution of cancer. Using cutting edge technologies and approaches, he identified new genetic defects that alter cell signaling, promote cell growth, and compromise the integrity of DNA repair. His work has advanced our understanding of cancer pathogenesis and led to the development of new diagnostic tests and targeted therapies for cancer.

Selection Advisory Board: Victor Ambros, Kathryn Anderson, Utpal Banerjee, Marlene Belfort, Kay Davies, Helen Hobbs (Chair), James Lupski.

NEUROSCIENCE

October 20, 2019
49th Annual Meeting, Society for Neuroscience
Chicago, Illinois

Gruber Lecture: *Molecular Basis of the Circadian Clock in Mammals and its Fundamental Role in Aging and Longevity*



Prize Recipient Joseph Takahashi and Sarah Hreha

Prize Citation:

The Gruber Foundation proudly presents the **2019 Neuroscience Prize** to **Joseph S. Takahashi** for his pioneering work on the molecular and genetic basis of circadian rhythms in mammals.

Takahashi has made groundbreaking discoveries in the neurobiology of circadian rhythms, including the isolation and cloning of the first mammalian circadian rhythm gene, known as the Clock gene. Using elegant genetic approaches in mammals, his research has elucidated the networks of genes and proteins that interact to drive the circadian clock system and the feedback loops that govern their expression. His use of innovative approaches to observe clock oscillations throughout the body in real time has revealed the broader impact of the circadian system in regulating the timing of cellular events in health and disease.

Selection Advisory Board: Susan Amara (Chair), Frances Jensen, Tirin Moore, Anthony Phillips, Angela Roberts, Joshua Sanes, Carla Shatz

More information on the 2019 Gruber Prizes is available at: <http://gruber.yale.edu/gruber-prizes>

Gruber Program for Global Justice and Women's Rights

The Gruber Program for Global Justice and Women's Rights has four core components: 1) the Global Constitutionalism Seminar; 2) the Gruber Distinguished Global Justice and Women's Rights Lectures; 3) the Gruber Global Justice and Women's Rights Fellowships; and 4) the Gruber Project.

Global Constitutionalism Seminar

The Global Constitutionalism Seminar took place September 11-13, 2019, in New Haven, with the theme "Fragile Futures and Resiliency." The seminar included 26 judges from national and regional courts, including a few new participants. The Faculty Director was Judith Resnik, Liman Professor of Law. Seminar proceedings were held in tandem with the Gruber Distinguished Lecture on Women's Rights, to honor the upcoming centennial of the securing of women's right to vote through the Nineteenth Amendment to the US Constitution and also to connect with Yale's September 2019 celebration of the 50th anniversary of co-education.

Gruber Distinguished Lectures in Global Justice and Women's Rights

Ruth Rubio Marín presented "On Constitutionalism and Women's Citizenship," as the Gruber Distinguished Lecture on Women's Rights on September 11, 2019. She is a Professor of Constitutional Law at the University of Seville, Spain, was previously appointed as a Professor of Constitutional and Public Comparative Law at the European University Institute in Florence, and was also a faculty member of the Hauser Global Law School at NYU. **William Barber** presented the Gruber Distinguished Lecture in Global Justice on February 24, 2020. Barber is pastor of Greenleaf Christian Church in Goldsboro, NC, a social justice advocate, and founder of Repairers of the Breach.

Gruber Global Justice and Women's Rights Fellowships

Post-Graduate Fellowships

The seventh class of Gruber Fellows in Global Justice and Women's Rights will have completed their fellowship projects as of fall 2020.

Melaina Dyck (FES '19) is working on Peruvian Government Intellectual Property rights and the protection of traditional ecological knowledge, with Alianza Arkana

Jeannia Jia Ni Fu (GSAS/YSPH '19) is working with Women of Color who are in conflict with state, with the CT Bail Fund

Jessica Laird (YLS '19) is working with the Legal Division of the Red Cross International Committee, on the 4th Geneva Convention

Hilary Ledwell (YLS '19) is working on the Intersection of religious freedom and nondiscrimination claims, with the ACLU

Roxana Moussavian (YLS '19) is working with Pangea Legal Services to support immigrants seeking habeas suits

The Gruber Committee selected 5 post-graduate 2019-2020 Peter and Patricia Gruber Fellows in Global Justice and Women's Rights, from a pool of 28 applications received from Yale graduate students and alumni from the Law School, the School of Forestry and Environmental Studies, the School of Public Health, and the Graduate School.

Faculty Fellowships

The two Peter and Patricia Gruber Fellows in Global Justice were: Belabbès Benkredda for the academic year 2019-20, and James Cavallaro for the Spring term 2020.

Gruber Project

The Gruber Project provides support for clinical and experiential learning initiatives, and supports five initiatives in 2019-2020: (i) the Beshar/Lehner Gender Violence Clinic; (ii) the Global Health Justice Partnership; (iii) the Yale Immigration Justice Project; (iv) the International Refugee Assistance Project and (v) the Reproductive Rights and Justice Project and Clinic.

Visiting Practitioners-in-Residence

Fall 2019: the Honorable Virginia Kendall, David Marshall, and Dr. Deqo Mohamed
Spring 2020: Annemie Turtelboom

2019-2020 Gruber Committee

The Gruber Committee is appointed by the Yale Law School Dean and is responsible for selecting Fellows and the Gruber Distinguished Lecturers. The 2019-2020 Gruber Committee includes: **Douglas NeJaime** (Anne Urowsky Professor of Law) (Spring 2019) **Chair**, **Tracey Meares** (Walton Hale Hamilton Professor of Law), **Anika Singh Lemar** (Clinical Associate Professor of Law), **Kaveh Khoshnood** (Associate Professor, Yale School of Public Health), **Mushfiq Mobarak** (Professor of Economics, Yale School of Management) and **Mindy Jane Roseman** (Director, Gruber Program for Global Justice and Women's Rights) (ex officio).

Gruber Science Fellowship Program

The purpose of the Gruber Science Fellowship is to recruit and support the very best graduate students to pursue doctoral studies in the life sciences, cosmology and astrophysics at Yale's Graduate School of Arts and Sciences. The spring 2020 Lecture and Symposium were cancelled.



2019 Gruber Science Fellows with Richard Sleight, Sarah Hreha, Lynn Cooley, and Patricia Gruber

2019 Gruber science fellows:

Elvira An, Molecular Medicine, Pharmacology, and Physiology

Elizabeth Black, Molecular Cell Biology, Genetics, and Development

Jordan Cardenas, Immunobiology

Carissa Chan, Microbiology

Chrishan Fernando, Biochemistry, Quantitative Biology, and Structural Biology

Rebecca Greenberg, Neuroscience

Rachelle Hunt, Microbiology

Yiqun Jiang, Molecular Cell Biology, Genetics, and Development

Vanessa Kelley, Molecular Medicine, Pharmacology, and Physiology

Arcadia Kratkiewicz, Molecular Cell Biology, Genetics, and Development

Peiyu Liu, Molecular Medicine, Pharmacology, and Physiology

Olivia Meisner, Interdepartmental Neuroscience

Jeremy Moore, Biochemistry, Quantitative Biology, and Structural Biology

Mala Puri, Biochemistry, Quantitative Biology, Biophysics, and Structural Biology

Sasha Safonova, Astronomy

Zili Shen, Astronomy

Link Tejavibulya, Interdepartmental Neuroscience

Aarthi Venkat, Computational Biology and Bioinformatics

Mamie Wang, Computational Biology and Bioinformatics

Timothy Watkins, Immunobiology

Julius Yunus, Molecular Cell Biology, Genetics, and Development

Luke Ziolkowski, Interdepartmental Neuroscience