



GRUBER

F O U N D A T I O N



FY 2019 Annual Report

July 1, 2018 – June 30, 2019

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

Imbued by the life experiences of our co-founder Peter Gruber – who lived in three countries on three continents before settling in the United States - the Foundation is intentionally international.

Reflecting this scope, the 2018 Gruber Prizes were awarded on three continents – Europe, South America and North America – to scientists from five countries, as well as a large global team. The Gruber Program for Global Justice and Women’s Rights sent two of its five fellows out of the country, to Peru and to Malawi, hosted speakers and judges from around the world, and supported legal clinics involved in global health, asylum and refugee assistance and domestic violence (including immigrant communities). The Gruber Science Fellowship admitted five promising science graduate students born outside the United States, and is structured to be able to fund continuing international students who are ineligible for many of the grants used to pay domestic students.

Patricia Gruber, co-founder and president emeritus of the Foundation – and Peter’s wife and partner, ensured this global breadth was built into the structure of their giving, even as we transitioned to Yale as a new legal entity. The individual programs are described in more detail in their respective sections, and further information on the Grubers is available on our website (link below).

The Board of Directors of The Gruber Foundation comprises: Peter Salovey, Chairman; Ben Polak, 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 2019 Financial Overview

Statement of Financial Position as of June 30, 2019

Assets

Cash and cash equivalents	\$ 724,404
Investments	106,917,523
Beneficial interest in charitable gift annuity	45,433,183
Total assets	<u>153,075,110</u>

Liabilities

Accounts payable	1962
Total liabilities	<u>1962</u>

Net assets	<u>\$153,075,110</u>
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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, 2019 were as follows:

2018 Cosmology Prize	\$500,000
2018 Genetics Prize	\$500,000
2018 Neuroscience Prize	\$500,000
	\$1,500,000

Gruber International Prize Program

Fiscal year 2019 saw the 2018 Gruber Prizes awarded and the 2019 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 2018 Prizes

COSMOLOGY

August 20, 2018

At the XXXth General Assembly of the
International Astronomical Union
Vienna, Austria

Gruber Lecture: *The Planck Cosmology Legacy*



Advisory Board Chair Rob Kennicutt, 2018 Prize Recipients
Jean-Loup Puget and Nazzareno Mandolesi, and Patricia Gruber

Prize Citation:

The Gruber Foundation is pleased to present the **2018 Cosmology Prize** to the **Planck Team**, and to **Jean-Loup Puget** and **Nazzareno Mandolesi**, the leaders of the HFI and LFI instrument consortia, for mapping the temperature and polarization of the cosmic microwave background radiation with the ESA Planck spacecraft.

Planck measured, with unprecedented precision, the matter content and geometry of the universe, the imprint on the CMB of hot gas in galaxy clusters and of gravitational lensing by large-scale structure, constrained a hypothetical ‘inflationary’ phase, pinned down when the first stars formed, and provided unique information about interstellar dust and magnetic fields in our Galaxy.

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

September 12, 2018

At the XXII International Congress of Genetics
Iguaçu Falls, Brazil

Gruber Lecture: *Auxin as the Plant Brain – Plant Morphogenesis and Environmental Response are Controlled by a Common Pathway*



Prize Advisor Utpal Banerjee, 2018 Prize Recipients
Elliot Meyerowitz and Joanne Chory, and Sarah Hreha

Prize Citation:

The Gruber Foundation proudly presents the **2018 Genetics Prize** to **Joanne Chory** and **Elliot Meyerowitz** for their pioneering discoveries in genetic regulatory and biochemical mechanisms underlying plant development.

Joanne Chory discovered signaling pathways in plants that regulate responses to environmental signals. Elliot Meyerowitz pioneered the use of *Arabidopsis thaliana* to study plant development and he elucidated the regulatory mechanisms underlying flower shapes and patterns.

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

NEUROSCIENCE

November 4, 2018
48th Annual Meeting
of the Society for
Neuroscience
San Diego

Gruber Lecture:
*Assembling neural
circuits: cells and
synapses*



Selection Advisory Board Chair Robert Wurtz, 2018 Prize Recipients Okihide Hikosaka and Ann Graybiel, Patricia Gruber, Sarah Hreha, and 2018 Prize Recipient Wolfram Schultz

Prize Citation:

The Gruber Foundation proudly presents the **2018 Neuroscience Prize** to **Ann M. Graybiel**, **Okihide Hikosaka**, and **Wolfram Schultz** for their pioneering discoveries on the organization and function of the basal ganglia.

Ann M. Graybiel discovered the striosome-matrix organization of the striatum and demonstrated that striosomes form key nodes in corticostriatal circuits affecting repetitive behaviors, cost-benefit evaluation and responses to stress.

Okihide Hikosaka elucidated the basal ganglia circuitry involved in saccadic eye movements, interactions between reward and punishment, and unique pathways involved in goal-directed actions and skilled responses.

Wolfram Schultz' work revolutionized our conception of how reward information is processed by demonstrating that dopaminergic signaling is directly related to reward prediction error, critically underlying reward related learning.

Selection Advisory Board: Susan Amara, Tobias Bonhoeffer, Frances Jensen, Tirin Moore, Angela Roberts, Carla Shatz, Robert Wurtz (Chair)

More information on the 2018 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 12-15, 2018, in New Haven, with the theme "Global Reconfigurations, Constitutional Obligations, and Everyday Life." The seminar included 21 judges from national and regional courts, including a few new participants. The Faculty Director was Judith Resnik, Liman Professor of Law.

Gruber Distinguished Lectures in Global Justice and Women's Rights

Esther Duflo presented "Science against poverty: from action research to large scale change" as the Gruber Distinguished Lecture in Global Justice on October 22, 2018. Duflo is the Abdul Latif Jameel Professor of Poverty Alleviation and Development Economics at MIT and co-founder and co-director of the Abdul Latif Jameel Poverty Action Lab. **Natalia Kanem** presented "Transforming our Future: Ensuring Sexual and Reproductive Health and Rights for All" as the Gruber Distinguished Lecture in Women's Rights on March 4, 2019. Kanem is Executive Director of UNFPA, the United Nations Population Fund.

Gruber Global Justice and Women's Rights Fellowships

Post-Graduate Fellowships

The sixth class of Gruber Fellows in Global Justice and Women's Rights will have completed their fellowship projects as of fall 2019.

Elizabeth Deutsch (Yale Law School '16, **WR**) is working with the ACLU's Reproductive Freedom Project on a systematic response to new federal restrictions on reproductive care.

Camilo Huneus Guzman (Yale School of Forestry and Environmental Studies '18, **J**) is working with UN Development Program on a water and sewage system access plan around Lomas de Lima (Peru).

Laura Portuondo (Yale Law School '18, **WR**) is part of the Center for Reproductive Rights' Judicial Strategy team, strengthening its advocacy by developing and advancing innovative legal narratives.

Victoria (Tori) Roeck (Yale Law School '18, **J**) works with the New York Civil Liberties Union to provide legal assistance for detainees with final removal orders in the Buffalo Federal Detention Center.

Rose Sulentic (Yale School of Public Health '18, **WR**) works to increase access to maternal/neonatal health services and promote sustainable agriculture for Baylor International Pediatric AIDS Initiative.

The Gruber Committee selected 5 post-graduate 2018-2019 Peter and Patricia Gruber Fellows in Global Justice and Women's Rights, from a pool of 23 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 Divinity School.

Faculty Fellowships

The Gruber Faculty and Visiting Fellows for 2018-19 are Judge Virginia Kendall, Professor Paola Bergallo and, as a short-term visitor, Professor Mairead Enright.

Gruber Project

The Gruber Project provides support for clinical and experiential learning initiatives, and supports four initiatives in 2018-2019: (i) the Asylum Seekers Assistance Project; (ii) the Global Health Justice Partnership; (iii) the International Refugee Assistance Project (IRAP); (iv) the Domestic Violence Clinic and (v) the Reproductive Rights and Justice Project (RJ).

2018-2019 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 2018-2019 Gruber Committee includes: **Reva Siegel**, Chair (Nicholas deB. Katzenbach Professor of Law); **Monica Bell** (Associate Professor of Law); **Ann Kurth**, (Dean and Linda Koch Lorimer Professor, School of Nursing); **Kaveh Khoshnood** (Associate Professor of Epidemiology, School of Public Health); **Heather Gerken** (Dean and Sol & Lillian Goldman Professor of Law) (ex officio); **Sara Lulo** (Assistant Dean) (ex officio) 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.



2018 Gruber Science Fellows with Patricia Gruber, Sarah Hreha, Richard Sleight, and Lynn Cooley

2018 Gruber science fellows:

Garrett Allington, Molecular Medicine, Pharmacology, and Physiology

Joseph Balowski, Molecular Cell Biology, Genetics, and Development

Kathryn Bridges, Biomedical Engineering

Kelsie Cassell, Public Health

Kevin Chung, Biochemistry, Quantitative Biology, and Structural Biology

Kathryn Citrin, Molecular Medicine, Pharmacology, and Physiology

Yile Dai, Immunobiology

Carrie Ann Davison, Molecular Cell Biology, Genetics, and Development

Danielle Goldman, Neuroscience

Omar Gonzalez, Immunobiology

Elizabeth Gordon, Molecular Cell Biology, Genetics, and Development

Amber Howell, Neuroscience

Daniel Konstantinovsky, Biochemistry, Quantitative Biology, Biophysics, and Structural Biology

Jasmine Mah, Ecology and Evolutionary Biology

Jeffrey Mandell, Computational Biology and Bioinformatics

Christopher Ng, Molecular Medicine, Pharmacology, and Physiology

Peter Niesman, Neuroscience

Heather Ortega, Neuroscience

Kevin Parducho, Molecular Cell Biology, Genetics, and Development

Laura Quinto, Molecular Cell Biology, Genetics, and Development

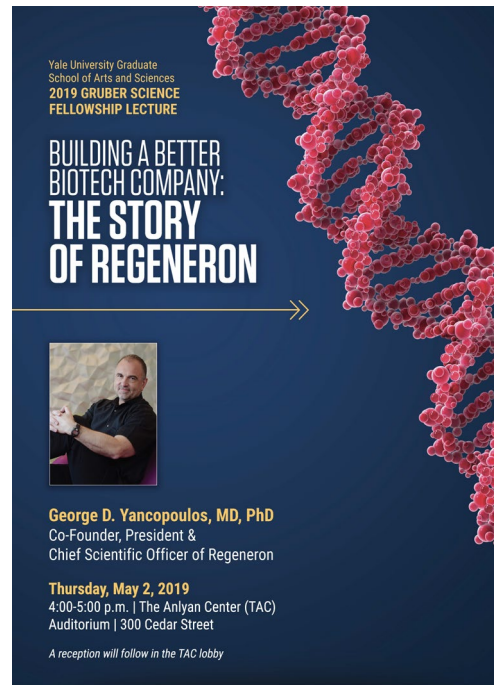
Halie Sonnenschein, Biochemistry, Quantitative Biology, Biophysics, and Structural Biology

Kyra Thrush, Computational Biology and Bioinformatics

Ziwei Yang, Microbiology


Gruber Science Fellowship Lecture

On May 2, 2019, **George D. Yancopoulos, MD, PhD**, Co-Founder, President & Chief Scientific Officer of Regeneron, delivered the Gruber Science Fellowship Lecture, *Building a Better Biotech Company: The Story of Regeneron*.



Yale University Graduate School of Arts and Sciences
2019 GRUBER SCIENCE FELLOWSHIP LECTURE

**BUILDING A BETTER BIOTECH COMPANY:
THE STORY OF REGENERON**



George D. Yancopoulos, MD, PhD
Co-Founder, President &
Chief Scientific Officer of Regeneron

Thursday, May 2, 2019
4:00-5:00 p.m. | The Anlyan Center (TAC)
Auditorium | 300 Cedar Street

A reception will follow in the TAC lobby

Yale

The Gruber Science Fellowship Lectures bring renowned scientists to campus to speak about the current state of knowledge in their fields. All lectures are free and open to the public.



Gruber Science Fellowship Symposium

**4TH ANNUAL
GRUBER
SCIENCE
FELLOWSHIP
SYMPOSIUM**

Research from PhD students in the departments of
Molecular, Cellular, and Developmental Biology
Molecular Biochemistry and Biophysics
Neuroscience
Astronomy
& Genetics

May 23rd 2019
8:30 AM to 1 PM
HOPE 216
315 Cedar Street

**STUDENT
SPEAKERS:**

Arthur Adams
Christopher Lim
Darryl Seligman
Leon Tejwani
Julianne Gerdes
Maxwell Shinn
Myles Alderman
Sharif Kronemer

**POSTER
PRESENTATIONS:**

Andres Guillen
Jack Collora
Kate Bridges
Olivia Justynski
Ryosuke Tanaka
Sarah Mohr

Gruber Science Fellows held their **4th annual symposium** on May 23. The symposium is entirely student-organized.