



GRUBER
F O U N D A T I O N



FY 2023 Annual Report

July 1, 2022 – June 30, 2023

A supporting organization of **Yale**

A. Sarah Hreha, Executive Director

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

The 2022 Gruber International Prizes were awarded in person after two years of virtual presentations. We jumped right in by holding the Cosmology Prize in Busan, South Korea! It was amazing to see people again and energy was high even with COVID restrictions in effect – including masked presentations. There were some hiccups, but we awarded all three prizes in person and held the celebratory dinner for each one.

The Gruber Program for Global Justice and Women's Rights had returned to in-person programming in March 2022 and continued albeit with varying restrictions and smaller gatherings. The Gruber Science Fellowship also held events in person and will resume its annual lecture in 2024.

Fiscal year 2023 brought us some much-needed normalcy and we look forward to it continuing!

The Board of Directors of The Gruber Foundation comprises: Peter Salovey, Chairman; Steven Wilkinson, 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 2023 Financial Overview

Statement of Financial Position as of June 30, 2023

Assets

Cash and cash equivalents	\$ 645,478
Investments	139,689,849
Beneficial interest in charitable gift annuity	<u>83,515,361</u>
Total assets	<u>223,850,688</u>

Liabilities

Accounts payable	466
Due to Yale University	<u>680,957</u>
Total liabilities	<u>681,423</u>

Net assets	\$ <u>223,169,265</u>
Total liabilities and net assets	<u>\$ 223,850,688</u>

2023 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, subject to certain adjustments. 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	\$3,012,350
Gruber Justice and Women's Rights	<u>\$1,200,000</u>
	\$4,212,350

Gruber Prizes

Gruber Prizes disbursed through June 30, 2023 were as follows:

2022 Cosmology Prize	\$500,000
2022 Genetics Prize	\$500,000
2022 Neuroscience Prize	<u>\$500,000</u>
	\$1,500,000

Gruber International Prize Program

Fiscal year 2023 saw the 2022 Gruber Prizes awarded and the 2023 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 2022 Prizes

COSMOLOGY

August 2, 2022

XXXIst General Assembly of the International Astronomical Union
Busan, South Korea

Gruber Lecture: A New Era of High Angular Resolution Astronomy

**Advisory Board Member Paul Ho, Sarah Hreha,
and Prize Recipient Frank Eisenhauer**



Prize Citation:

The Gruber Foundation is pleased to present the **2022 Cosmology Prize** to **Frank Eisenhauer** for his innovative design and construction of the GRAVITY instrument, a near-infrared interferometric beam combiner for the ESO Very Large Telescope Interferometer in Chile.

GRAVITY has opened up near-infrared interferometry to help us understand a wide range of astrophysical and cosmologically important phenomena, including black holes and exoplanets.

Eisenhauer also led the construction of the SPIFFI/SINFONI, the first adaptive optics integral field spectrometer on an 8m class optical telescope. These instruments enabled the detection of general relativity effects close to a black hole by defining the orbit of the star S2 around the Galactic Center Massive Black Hole SgrA* with unprecedented and exquisite angular resolution.

Selection Advisory Board: James Evans, Wendy Freedman (non-voting), Paul Ho, Angela Olinto (chair), Jean-Loup Puget, Hans Ringström, Martin Rees (non-voting), Linda Tacconi, Licia Verde

GENETICS



Prize Recipients Geraldine Seydoux, James Priess, and Ruth Lehmann, and Sarah Hreha

Gruber Lecture: *Germline soma dichotomy in the early embryo*

Prize Citation:

The Gruber Foundation proudly presents the **2022 Genetics Prize** to **Ruth Lehmann, James Priess, and Geraldine Seydoux** for discovering how early nematode (Priess and Seydoux) and fruitfly (Lehmann) embryos set aside particular cells during development, especially germ cells that result in intergenerational inheritance.

Their research employed genetic screens and elegant molecular analyses to characterize mysterious “germ granules” located in oocytes and early embryos. Germ granules house mRNAs whose regulated translation and localization specify germ cells and protect them from premature transcription. Germ granules utilize a novel mechanism, phase separation, relevant to many other particulate cellular structures and to organismal development. These seminal genetic findings illuminated normal biology and furthered our understanding of nuclear inheritance, while highlighting the power of model organisms to reveal the mysteries of life.

Selection Advisory Board: Aravinda Chakravarti, Philip Hieter, Jeannie T. Lee, James Lupski, Eric N. Olson, Allan Spradling (Chair)

NEUROSCIENCE

November 13, 2022
 51st Annual Meeting of the Society
 for Neuroscience
 San Diego, California

Gruber Lecture: *Expanding Horizons in Theoretical and Computational Neuroscience*



Advisory Board Chair Frances Jensen, Sarah Hreha, Prize Recipients Haim Sompolinsky and Terrence Sejnowski, Patricia Gruber, Prize Recipients Larry Abbott and Emery Neal Brown

Prize Citation:

The Gruber Foundation proudly presents the **2022 Neuroscience Prize** to **Larry Abbott, Emery Neal Brown, Terrence Sejnowski and Haim Sompolinsky** for seminal contributions to computational and theoretical neuroscience. These fields are playing increasingly important roles in helping us understand the brain as datasets get so large and complex that they can no longer be grasped intuitively.

Bringing their expertise in physics, machine learning and statistics to neuroscience, each has generated theories, models and tools that are now widely used. Among them are: Abbott's models of homeostatic plasticity, olfactory processing and learning in networks; Brown's methods for decoding spike trains in behaving animals and analyzing synchronized oscillations during anesthesia; Sejnowski's independent component analysis method for distributing complex data into separate channels; and Sompolinsky's attractor and balanced state network models of complex circuit function.

Selection Advisory Board: Joanne Berger-Sweeney, Frances Jensen (chair), Pierre Magistretti, Ikue Mori, Eric Nestler, Anthony Phillips, Joshua Sanes

More information on the 2022 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 returned to in person sessions September 14-17, 2022, with the theme "Weighing Judicial Authority." The seminar included 24 justices from national and regional courts, including a few new participants. The Faculty Director was Judith Resnik, Liman Professor of Law. Seminar proceedings began with the Anderson Lecture "Challenges to Constitutionalism: A Conversation with Justices Susanne Baer and Marta Cartabia on Pressing Concerns in 2022, including Climate and COVID, Gender Inequality, and Incarceration." The conversation was moderated by Judith Resnick.

Gruber Distinguished Lectures in Global Justice and Women's Rights

Sara Nelson delivered the Fall 2022 Gruber Distinguished Lecture in Women's Rights on October 17: "Women and Unions: Solidarity is a Force Stronger than Gravity." On March 27, 2023, **Lynsey Addario** delivered the 2023 Gruber Distinguished Lecture in Global Justice: "Of Love and War."

Gruber Global Justice and Women's Rights Fellowships

Post-Graduate Fellowships

The tenth class (2020-2021) of Gruber Fellows in Global Justice and Women's Rights will have completed their fellowship projects as of fall 2022.

The Gruber Committee selected five post-graduate 2022-2023 Peter and Patricia Gruber Fellows in Global Justice and Women's Rights, from a pool of 26 applications received from Yale graduate students and alumni from the Law School, the Graduate School of Arts and Sciences, the School of Forestry and Environmental Studies, the School of Public Health, the School of Nursing, the School of Architecture and the Yale Divinity School.

1. **Lauren Ashbrook (YSE '22)** promote water justice in the Colorado River Delta with Mexicalli farmers
2. **Shantrice King (YSN '22)** post-partum care cooperative among new mid-wives in Segou, Mali, with Centre de Sane Communautaire – Medine
3. **Zain Lakhani (YLS '22)** secure economic protections for migrant women workers in the US, with White House Gender Policy Council
4. **Laura Pappalardo (YSA '22)** working with the Chão Coletivo research platform to improve housing quality in the Pyau village at the foot of Jaraguá Peak in Brazil
5. **Chelsea Thompson (YLS '22)** working with A Better Balance, providing direct representation to low-wage workers facing discrimination due to caregiving responsibilities

Faculty Fellowships

Charles Ngwena was Visiting Research Scholar with the Global Health Justice Program and Najia Mahmudi was a visitor at the Orville H. Schell Jr. Center for International Human. In spring 2023, Alexandra Brodsky was Visiting Lecturer in Law at Yale Law School.

Gruber Project

The Gruber Project provides support for clinical and experiential learning initiatives and supports five initiatives in 2022-2023: (i) the Global Health Justice Partnership; (ii) the International Refugee Assistance Project; (iii) the Reproductive Rights and Justice Project and (iv) the Yale Immigrant Justice Project. The Gender Violence Clinic was not offered for the 2022-2023 academic year, but the Visiting Practitioners-in-Residence program was revived.

2022-2023 Gruber Committee

The Gruber Committee is appointed by the Yale Law School Dean and is responsible for selecting Fellows and Gruber Distinguished Lecturers. The 2022-2023 Gruber Committee includes: **Paul Kahn** (Robert W. Winner Professor of Law and the Humanities and Director, Orville H. Schell, Jr. Center for International Human Rights), Chair, **Dan M. Kahan** (Elizabeth K. Dollard Professor of Law), **Samuel Moyn** (Chancellor Kent Professor of Law and History), **Rohit De** (Associate Professor, Department of History, Yale University), **Shelly Geballe** (Assistant Professor of Public Health Practice at the Yale School of Public Health, teaching Public Health Law, Health Disparities, and the Health Policy Practicum, and a Clinical Lecturer in Law at Yale Law School), 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 2023 Lecture was cancelled due to the COVID-19 pandemic but there are plans for the lecture to resume next year.

2022 Gruber science fellows:

- Mackenzie Bender**, Immunobiology
- Katherine Benitez**, Molecular Medicine, Pharmacology and Physiology
- Ruth Mabel Boytz**, Microbiology
- William Cerny**, Astronomy
- Nicole Feriancek**, Microbiology
- Jenel Fraij**, Computational Biology and Bioinformatics
- Camila Garcia**, Biochemistry, Quantitative Biology, Biophysics and Structural Biology
- Samantha Greenspun**, Molecular Medicine, Pharmacology and Physiology
- Gal Jaschek**, Molecular Cell Biology, Genetics and Development
- Mara Kushelman**, Microbiology
- Oleksandr (Sasha) Kyrysyuk**, Immunobiology
- Haocong (Katherine) Ma**, Microbiology
- Jacob Mathai**, Immunobiology
- Anthony Minnah**, Molecular Medicine, Pharmacology and Physiology
- Frances Moore**, Molecular Cell Biology, Genetics and Development
- Mackenzie Noon**, Molecular Cell Biology, Genetics and Development
- Pauline Lining Pan**, Molecular Medicine, Pharmacology and Physiology
- Gregory Quevedo**, Biochemistry, Quantitative Biology, Biophysics and Structural Biology
- Ricardo Ramirez Padilla**, Biochemistry, Quantitative Biology, Biophysics and Structural Biology
- Molly Roe**, Microbiology
- Nikkita Salla**, Neuroscience
- Caecilia Thuemer**, Molecular Cell Biology, Genetics and Development
- Ray Vaca**, Neuroscience
- Ruben Warkentin**, Molecular Cell Biology, Genetics and Development
- Lena Wirth**, Immunobiology

Fellowship Events and Activities

Professional Development

- Mentoring and Outreach event
- Peer Pathways Night
- Gruber Science Fellow Symposium

Social Programming

- Gruber Science Fellowship Reception
- Theater screening