SIMONS FOUNDATION

Research at the Simons Foundation

Marion Greenup, Vice President, Administration
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The mission of the Simons Foundation
is to advance the frontiers of research
in mathematics and the basic sciences.

Scientific and Funding Values

- Dedication to the ideals of *basic* science
- Open sharing of data and ideas
- Collaboration across disciplines
- Funding important areas and projects that government and others do not
- Resource and tool development

Simons Program Areas

- Life sciences
- Autism research
- Mathematics and physical sciences
- Outreach and education
- Computational sciences – Flatiron Institute

Program and Funding Strategies

- Grant Making Programs
  - Life sciences
  - Autism research
  - Mathematics and physical sciences
  - Outreach and education
- Collaborations
  - Life sciences
  - Mathematics and physical sciences
- Computational Sciences
  - Astrophysics
  - Biology
  - Quantum physics
  - Mathematics
  - Scientific computing core

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Simons Collaborations

Collaborations bring together outstanding scientists to address topics of fundamental scientific importance in which a significant new development has created a novel area for exploration in an established field.

Current Simons Collaborations

- Computational Biogeochemical Modeling of Marine Ecosystems
- Ocean Processes and Ecology
- Origins of Life
- Principles of Microbial Systems
- Global Brain (internal brain processes)
- Simons Observatory
- Special Holonomy in Geometry, Analysis and Physics
- Algorithms and Geometry
- Arithmetic Geometry, Number Theory and Computation
- Cracking the Glass Problem
- Homological Mirror Symmetry
- Quantum Fields, Gravity and Information
- Many Electron Problem
- Nonperturbative Bootstrap Problem

Simons Collaboration on Ocean Processes and Ecology (SCOPE)

A study of the North Pacific Subtropical Gyre

Multidisciplinary teams from 16 institutions:

University of Hawai'i
Columbia University
University of Montana
MIT
University of South California
University of Washington
University of South Carolina
Georgia Institute of Technology
Oregon State University
University of California, Santa Cruz
Technion – Israel Institute of Technology
Woods Hole Oceanographic Institution

Simons Observatory

Goal is to observe the cosmic microwave background, study how the universe began and evolved

Collaborating researchers from
- University of California, San Diego
- University of California, Berkeley
- University of Pennsylvania
- Princeton University
- Lawrence Berkeley National Laboratory

Executive Board - 8 members
Science Board - 4 members
Technical Board - 4 members
Team Members - 200 members

With Heising-Simons Foundation, funding a collaboration that merged with and expanded two previous projects: POLARBEAR and the Atacama Cosmology Telescope to bring cosmic microwave background experiments to the next level.

Collaboration Grants for Mathematicians

To increase collaborative contacts between mathematicians

- 800 awards (175 new each year)
- Mathematicians at 250 U.S. universities
- 5 year awards at $7,000/year to support scientific travel
- Award terminated when researcher receives additional grants

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Simons Foundation Autism Research Initiative (SFARI)

Research Resources

- Cohort recruitment, data collection and biorepositories
- Animal models
- SFARIGene.org, a genetic database
- Data analysis tools
- An editorially- independent research news website
- Convening scientists for workshops, annual research meetings and site visits

SPARK
Igniting autism research
Improving lives

(Simons Foundation Powering Autism Research for Knowledge)

Aims to recruit, engage and retain a community of 50,000 individuals with autism and their family members in the U.S.

Families are recruited via 25 clinical sites and through social media to:

- Contribute medical and behavioral information
- Collect saliva for genetic analysis
- Receive genetic findings related to autism
- Receive newsletters, webinars and tailored information

Resources for researchers:

- Genetic data for analysis
- Phenotypic data
- Recruitment of participants for new research studies
- Outreach and media

CURRENT STATUS:
113,000 registrants
43,000 with autism
11,000 trios – individual and parents

Key Roles for Philanthropic Funders

- Funding higher risk projects
- Recruiting new investigators and partners to the field
- Exploring and expanding partnership models

Challenges to improving relationships between institutions and funders?

- Data sharing vs. intellectual property ownership
- Urgency of disease/disorder funders for research findings vs. academic and publishing timetables
- Administrative requirements
  - application platforms
  - reporting requirements

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