

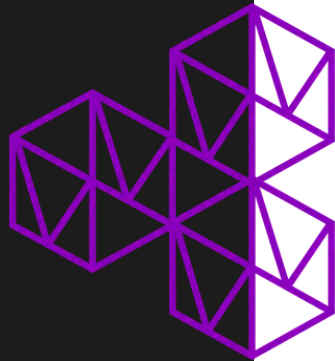
## CALL FOR MEMBERSHIP

# Kinetic Theory: Novel Statistical, Stochastic and Analytical Methods

August 18 - December 19, 2025  
Berkeley, California

Applications open August  
through November 2024

[SLMATH.ORG/APPLY](https://slmath.org/apply)



SIMONS LAUFER  
MATHEMATICAL  
SCIENCES INSTITUTE

The Simons Laufer Mathematical Sciences Institute (SLMath), formerly MSRI, is a landmark of U.S. and world collaborative mathematical research. For over 40 years, SLMATH has organized and hosted semester-length programs and workshops to bring together established and future leaders in an environment that promotes creativity and the interchange of ideas. It is a place where breakthroughs are made, research areas are created, and brilliant careers are launched.

**Apply to spend all or part of Fall 2025 in residence at SLMATH in Berkeley, California.**

The focus of the program are so-called kinetic equations, describing the evolution of the of many-particle interacting systems. These models have the form of statistical flows, with their solutions being either a single or multiple point probability density functions or measures, supported in a space of attributes. The attributes are problem-dependent and can be molecular velocity, energy, opinion, wealth, and many others. The flow then predicts the evolution of the probability measure in time, position in space, and the interchanging of the particles' states by the transition probability.

In recent years, the successes of kinetic theory gave rise to an rapidly increasing variety of mathematical models beyond physics to applications in life sciences, social sciences, economics, and data science. Kinetic theory has strong and fascinating interactions with a large variety of other fields, including statistical mechanics, stochastic processes, dynamical systems. and more.

The program will strive to give an overview of the novel mathematical tools used in kinetic theory through a broad range of classical and more recent applications.

## Types of Membership

SLMath invites applications for the following positions beginning in early August 2024 (see next page for position details):

- **Research Professors: Deadline Oct. 1**
- **Research Members: Deadline Nov. 15**
- **Postdoctoral Fellows: Deadline Nov. 15**

*MSRI, now SLMATH, has been supported from its origins by the National Science Foundation, joined by other government agencies, 116 Academic Sponsor departments, private foundations and corporations, and generous and farsighted individuals.*



Top: Neutrino interactions and neutrino-atom interactions. Bottom: Collision of two 'waves'

## Program Organizers

**Laurent Desvillettes**  
Université Paris Cité  
**Irene M. Gamba**  
University of Texas, Austin  
**François Golse**  
École Polytechnique  
**Pierre Emmanuel Jabin\***  
Pennsylvania State University

**Qin Li**  
University of Wisconsin-Madison  
**Chiara Saffirio**  
Universität Basel  
**Lexing Ying**  
Stanford University

## Logistical Support

Our staff will assist with:

- Finding housing in Berkeley
- Obtaining a proper visa
- Finding schools, day care, etc. for children
- Family Support for children ages 17 and under via childcare grants open to all SLMATH program participants

[VIEW PROGRAM DETAILS](#)

## Research Professorships

Application Deadline: October 1, 2024

**Research Professorships** are reserved for distinguished researchers who can make key contributions to their programs including the mentoring of postdoctoral fellows. Research Professorships are normally awarded only to candidates who plan to be in residence for at least three months.

**Eligibility:** Tenured faculty or emeriti faculty who have received a PhD prior to 2015.

**Support:** A Research Professor may receive up to \$5,700 per month for reimbursement of local expenses during their residence at SLMath. Research Professors are automatically eligible for nomination for appointment to distinguished professorships by the organizing committees of the programs; no separate application is necessary.

## How to Apply for Membership

SLMath uses **MathJobs** to process applications for its positions. Applications open in early August for all positions. International applicants, please check [visa instructions](#) before applying.

All applications will be reviewed by the SLMath Directorate, Scientific Advisory Committee, Broadening Participation Advisory Committee, and Program Organizers.



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## Research Memberships

Application Deadline: November 15, 2024

**Research Members** are mathematicians with PhDs who will be in residence for at least 30 consecutive days (preferably longer) in a scientific program.

**Eligibility:** Researchers with a PhD at the time of the proposed residency. Some preference is given to U.S. applicants.

**Support:** Research memberships may be offered with no support, and/or with per diem support. The per diem level is currently \$4,500 per month. Members are eligible for per diem support only during their dates of residency while the program is in session.

## Complementary Program

Application Deadline: November 15, 2024

The Complementary Program has a limited number of memberships that are open to mathematicians whose interests are not closely related to the core programs who are spouses or partners of invited members of a core program. Interested partners should apply for the position of Research Member in the Complementary Program through MathJobs.

## Postdoctoral Fellowships

Application Deadline: November 15, 2024

For 2025–26, SLMath will appoint 6–8 **Postdoctoral Fellowships** to the program. Fellowship applications are reviewed by program organizers and the Broadening Participation Advisory Committee, who recommend finalists to the Scientific Advisory Committee (SAC) for approval at its January 2025 meeting. Awards will be announced by early February 2025.

**Eligibility:** Fellows must hold a PhD at the beginning of the program. The PhD must have been awarded no more than five years prior to the start of the program. Fellows must be in residence for the entire duration of the program (with no exceptions), and cannot receive any other monetary compensation during their fellowship at SLMath. Current NSF Postdoctoral Fellows or simultaneous applicants, see website.

**Support:** The fellowship stipend is currently \$7,000 per month for five months, with a travel subsidy for one round-trip from your current institution to the Bay Area, and research travel funds. Health, dental and vision insurance is also provided. In addition, SLMath awards some endowed fellowships which carry a monthly stipend of \$8,250. There is no need to apply separately for these endowed positions.

*“...like belonging to an ‘all-star’ mathematics department for a semester consisting of many of the best researchers in my field.”*

**LEARN MORE: SLMATH.ORG**