The Women and Mathematics program at IAS, Princeton

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Talk to Women in Mathematics Conference, Japan

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Women and Mathematics at IAS, Princeton: 2.

- ▶ The program was started by Karen Uhlenbeck together with Antonella Grassi and Chuu-Lien Terng in the early 1990s, and thrives to this day.

- ▶ It is now organized by Wei Ho, together with a committee of female mathematicians (of which I am currently the Chair), Peter Sarnak of the School of Mathematics, IAS, and Michelle Huguenin (the program manager from IAS).

- ▶ Currently it is a week-long residential program dedicated to some particular topic (this year: Number theory from a dynamical perspective) and brings together about 35 women mathematicians at many stages in their career, from undergraduate to post-doc.

- ▶ Each year, there are two lecture courses (one more elementary and one more advanced) plus review sessions run by Teaching Assistants in which students work together on various problems.

- ▶ Other activities: a Junior Research Seminar, some invited lectures and panels, and there are many formal and informal discussions.

- ▶ We also organize outreach to local school children at the Princeton Library, and a WAM Ambassador program that allows former participants to organize various activites (e.g. conferences, study groups, . . .) in their local institution.

Women and Mathematics at IAS, Princeton: 3.

webpage: https:// www.ias.edu/math/wam/program-years/previous-years

WAM 2022 Yearbook

The Mathematics of Machine Learning
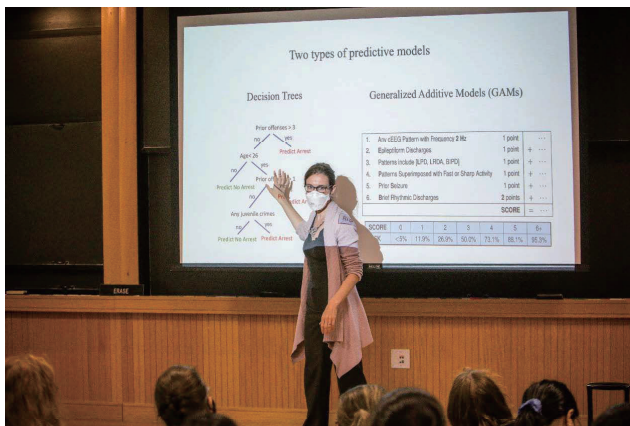
(hybrid)

Institute for Advanced Study, Princeton

Women and Mathematics at IAS, Princeton: 4.

Mathematical Talks

Terng Lectures:

Cynthia Rudin, Duke University, "Introduction to Interpretable Machine Learning"

Abstract: Machine learning is now used throughout society and is the driving force behind the accuracy of online recommendation systems, credit-scoring mechanisms, healthcare systems and beyond. Machine learning models have the reputation of being "black boxes" meaning that their computations are so complicated that no human would be capable of

Women and Mathematics at IAS, Princeton: 5.
Some participants:
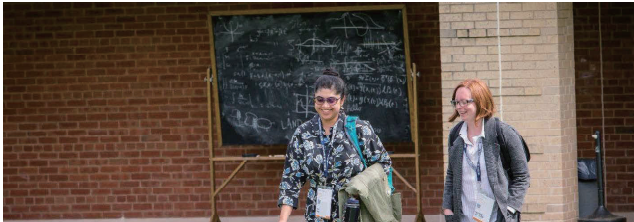
Women and Mathematics at IAS, Princeton: 6.
Informal discussions

Women and Mathematics at IAS, Princeton: 7.

Outreach for school children at the Princeton Library by Margaret Readdy and WAM participants. We also run a year round WAM Ambassador program, that provides small amounts of money for WAM participants to organize activities in their local university and community.

Some comments about WAM from participants: 8.

▶ I loved being around women mathematicians. I was pleasantly surprised by how relaxed the atmosphere was, how many math questions were asked, and how free I felt to ask questions (without being judged for representing women).

▶ My first year of graduate school, I was the only woman in my incoming class. It was a very isolating experience, as none of my classmates or professors were women. Then I went to the IAS Women?s Program, and was suddenly surrounded by fun and talented women doing math. It was a magical, life-changing experience for me.

▶ Of course the WAM programs are excellent and beneficial because of the technical expertise they develop in participants. But I think there is something else about the WAM program that is precious and irreplaceable: it allows women in math to find out what it means to be relaxed in a mathematical atmosphere. To breathe fully and freely, and to think "ah, this is how it can be, to do math among people who naturally assume I am good at this". The fact that WAM takes place at the IAS is also part of this message: this is an investment in new generations of mathematicians, and a welcoming, a boost, to say "we think you can be great". – Lillian Pierce (a WAM commitee member and former participant).