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About PCMI

The Institute for Advanced Study / IAS / Park City Mathematics Institute (PCMI) is designed for mathematics educators at the secondary and post-secondary level, as well as mathematics researchers and students at the post-secondary level. These groups find at PCMI an intensive mathematical experience geared to their individual needs. Moreover, the interaction among groups with different backgrounds and professional needs increases each participant's appreciation of the mathematical community as a whole as well as the work of participants in different areas.

PCMI programming consists of the following:

- Three-week residential Summer Session
- Year-round program of Professional Development and Outreach groups for Secondary school teachers
- Lecture Publication Series

The flagship program of PCMI is the three week Summer Session for:

- secondary school teachers
- mathematics education researchers
- undergraduate college faculty
- undergraduate students
- graduate students
- mathematics researchers

At the annual Summer Session all six of PCMI's groups meet simultaneously, pursuing both individual courses of study and a meaningful amount of interaction. The rich mathematical experience combined with interaction among all participants results in greatly increased understanding and awareness of the issues confronting mathematics and mathematics education today.

The **Research in Mathematics Program** comprises daily seminars and informal working groups. It offers advanced scholars the opportunity to do research, collaborate with their peers, meet outstanding students, and explore new teaching methods with professional educators. The organizers envision a strong interaction between the Research Program and the Graduate Summer School and thus encourage participants in each program to actively participate in as many of each program's activities as desired.

Centered around lectures by leading computer scientists, the **Graduate Summer School** gives students the opportunity to interact with advanced researchers as well as professional educators, other graduate students, and undergraduate students. Activities are designed to promote personal contact, facilitate collaborative work, advance careers, and demonstrate the complementary aspects of research and education.

The **International Seminar on Mathematics Education: Bridging Policy and Practice** brings diverse perspectives and practices to a U.S. national dialogue on mathematics education. This annual, one-week program is by invitation, and the briefs are published each year through PCMI.

The **Undergraduate Summer School** immerses undergraduate students in a multi-level, intensive research environment and in the educational, cultural, and social issues that characterize the broader mathematics community. Strong interaction with the Undergraduate Faculty Program is fostered.

The **Undergraduate Faculty Program** encourages collegiate mathematicians with a strong interest in undergraduate education to apply. Seminars and activities are designed to give these participants the opportunity to advance their mathematical knowledge and hone their teaching skills in an environment where both research and educational goals are being pursued.

The **Secondary School Teachers Program** is structured around three goals: all teachers should continue to professionalize their work by 1) continuing to learn and do mathematics, 2) analyzing and refining classroom practice, and 3) becoming resources to their colleagues and the profession. The SSTP is organized around three strands related to these goals; enriched by additional activities tailored to specific participant needs and by programs involving other components of the PCMI community.

Professional Development and Outreach Groups:

For Secondary school teachers, the Summer Session is one of two opportunities available for professional development. The second opportunity is involvement in a year-long program of Professional Development and Outreach (PDO) groups based at cooperating universities around the country. Within their PDO groups, the participating secondary school teachers work in collaboration with university faculty to become leaders in their schools, their school districts, and the larger community.

How PCMI is different:

The defining feature of PCMI is the interaction among participants from all programs. With few exceptions, all program lectures and seminars at the Summer Session are open to all participants. In addition to the lectures and courses developed specifically for each group, there are daily activities and lectures of general interest. These are designed to foster communication among the participants and deepen insight into mathematics at all levels. Many opportunities for informal and social interaction are available, ranging from organized Cross Program activities to casual conversations over breakfast or lunch. In addition, the PCMI environment facilitates cross-program mentoring to encourage a sense of community among participants.

INSTITUTE FOR ADVANCED STUDY

The Institute for Advanced Study in Princeton, New Jersey, exists to encourage and support fundamental scholarship in the sciences and humanities, the original, often speculative, thinking that produces advances in knowledge that change the way we understand the world. Founded in 1930 as an independent nonprofit institution, the Institute fulfills a unique role in postgraduate education and scientific and scholarly research. As "the university to universities" the Institute serves all colleges and universities by providing a place that offers scholars the freedom to do their best work, thereby adding substantially to their ability to contribute as both teachers and scholars to the academic institutions where they will base their careers. The Institute is organized in four Schools: Historical Studies, Mathematics, Natural Sciences, and Social Science. The broad range of scholarly interests within each School transcends the usual divisions of academic departmental research areas. This breadth of coverage and the opportunity it provides for independent, self-directed scholarship distinguish the Institute from most other centers for research, as does its permanent Faculty, composed of no more than twenty-eight eminent scholars who guide the work of the Schools and each year award fellowships to about 190 visiting Members.

The IAS/Park City Mathematics Institute is an outreach program of the School of Mathematics at the Institute for Advanced Study.

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