

# involve

a journal of mathematics

## Preface

Darren A. Narayan



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In 1999, the American Mathematical Society received funding from the National Security Agency (NSA) to hold a conference on Summer Undergraduate Research Programs in Washington, D.C. This conference turned out to be the first in a series of three conferences, all with the mission of expanding research opportunities for undergraduates. The second conference was entitled “Promoting Undergraduate Research in Mathematics” (PURM) and was held in 2006 in Chicago.

By 2012, there were more programs aimed at involving students in undergraduate research. In addition to approximately 75 REU federally funded sites, such as NSF-REU sites, there were many other programs that increased the number of opportunities for undergraduates. These included programs supported by the National Science Foundation (NSF) in which undergraduate research plays an important role: the Mentoring at Critical Transition Points (MCTP) Program, (which funded the Center for Undergraduate Research in Mathematics (CURM) at Brigham Young University and the Long Term Undergraduate Research Experiences Program (LURE)), and the Undergraduate Biology and Mathematics Program (UBM).

Other programs were designed to provide additional opportunities for undergraduates: the MAA NREUP Program (which focuses on engaging students from underrepresented groups), the Institute of Pure and Applied Mathematics (IPAM), the Mathematical Sciences Research Institute UP program (MRSI-UP), and the Council on Undergraduate Research (CUR). With this significant growth in programs, it was clear that a third conference to review best practices for undergraduate research in mathematics was needed. Thanks to the generous support from the NSA and the NSF, the 2012 Trends in Undergraduate Research in the Mathematical Sciences (TURMS) conference was held at the Westin O’Hare hotel in Chicago, October 26–28, 2012. The central goal was to bring together faculty from these programs to discuss current practices and exchange ideas to enhance undergraduate research in mathematics.

The 2012 conference featured a keynote address by Dr. Lloyd Douglas, a former NSF-REU program officer. This was followed by an address by Dr. Jennifer Pearl,

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the current program officer, and invited talks, panel discussions, and break-out sessions.

The conference organizers included Michael Dorff, Joseph Gallian, Aparna Higgins, Darren Narayan, and Ivelisse Rubio. Also assisting with the conference planning were Linda Braddy, Barbara Deuink, Olga Dixon, Barbara Johnson, Michael Pearson, Peter Smith, and Laura Witowsky. We were especially grateful to Floyd (Ben) Cole of the NSA and to Jennifer Pearl from the NSF.

This volume of conference proceedings appears as a special issue of the journal *Involve*, published by Mathematical Sciences Publishers. The purpose of the volume is to promote undergraduate research in mathematics beyond the conference. A printed version of this special issue is being distributed to all subscribing institutions and an electronic version will be available free to everyone.

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