

PROMYS for Teachers

<http://www.promys.org/pft/>

History of the Program in Mathematics for Young Scientists (PROMYS)

PROMYS, now in its **18th** year at Boston University, founded and directed by Glenn Stevens (Boston University) is a program that engages mathematically inclined high school students in the process of mathematical exploration through their work on unusually challenging problems in number theory. Since 1991, PROMYS has also worked with pre-service high school mathematics teachers from the Boston University School of Education. In the summer of 1999, PROMYS expanded its activities again by engaging in-service Massachusetts high school mathematics teachers in the program's summer activities and running five professional development seminars during the academic year.

An Immersion in Mathematics for Secondary Teachers

PROMYS for Teachers (PfT) is a collaboration of Boston University's Department of Mathematics with the Education Development Center in Newton, Massachusetts. Glenn Stevens (BU) and Al Cuoco (EDC) are working to promote what we call a "culture of exploration" in high school mathematics classrooms. Our experience proves that the joys of exploration and discovery can be experienced by high school students and teachers in ways that are not all that different from what a seasoned mathematics researcher experiences. Moreover, teachers who have such experiences in their backgrounds are better prepared to encourage independent inquiry among their own students. Reports from former PROMYS teachers confirm that all students benefit from this kind of instruction, not just the most talented ones.

The PROMYS Community

PROMYS for Teachers offers a unique opportunity to in-service teachers who are admitted into the program to deepen mathematical content knowledge; develop pedagogical skills; and become part of a mathematical community of teachers, educators, graduate students, research mathematicians, and university professors.

This summer, there were a total of 33 teacher participants in **PROMYS for Teachers**: A group of 20 "first-years," 8 "second-years," and 5 "third-years." 13 of these teachers were supported by **Focus on Mathematics** (FoM), and were partners in our five public school districts.

Career Development

There is a growing nationwide demand on teachers to improve subject-matter knowledge and pedagogical skills. Improving individual skills through university course work helps qualify for salary increases and certification requirements.

In addition to PfT as a path to career development, Boston University College of Arts and Sciences and the School of Education are offering a new degree, a Masters in Mathematics for Teaching (MMT). A teacher who completes **PROMYS for Teachers**

and decides to develop their career further is eligible to apply for the MMT and transfer the 8 graduate credits earned in PFT to the MMT degree program.

The MMT Degree Program

A new graduate degree, Master in Mathematics for Teaching (MMT) is now offered at Boston University. This degree fulfills Massachusetts requirements for the Professional Teacher's License and includes:

- A six-week immersion experience in mathematics (PROMYS),
- A research experience, and
- An internship in professional development.

Teachers already holding a master's degree may earn a Certificate of Advanced Graduate Study (CAGS) in Mathematics Education with a specialization in Mathematics for Teaching.

Focus on Mathematics: Mathematics Teaching Fellows (MTFs)

The first cohort of 5 MTFs from our school district partners completed their 3rd summer of **PROMYS for Teachers** and their professional development internship on August 11, 2006. They will be graduating in September with the first-ever MMT degree! These teachers completed 38 credits of graduate course work; an equivalent of **950** professional development hours; in addition to teaching full time and participating in many other FoM professional development programs over the last 3 years.

Our second cohort, of 4 MTFs, having just completed their second summer of **PROMYS for Teachers** and their research experience are on track for 2007 graduation!

Our third cohort of 4 MTFs: 2 MMT candidates and 2 CAGS candidates, just completed their first summer of **PROMYS for Teachers** and will continue their academic course work in the Fall.

All 13 **Focus on Mathematics** MTFs, have made a commitment, upon graduation, to remain in their FoM school district for 3 years in order to continue to lead professional development programs in their schools.