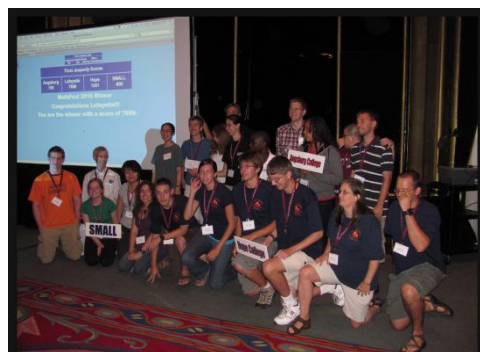# MATHFEST 2010

AUGUST 5-7, 2010

PITTSBURGH, PENNSYLVANIA

BY BRANDON MILONOVICH (MATH ED. - CLASS OF 2011)

The annual summer meeting of the Mathematical Association of America, known as MathFest, took place from August 5th through August 7th 2010 at the Omni William Penn Hotel in Pittsburgh, Pennsylvania. This meeting of mathematicians from across the country provided the opportunity for many who have a passion for mathematics to join together, including a range from high school students, undergraduate students, graduate students, teachers, and professors.

Undergraduate students were fortunate enough to arrive to the meeting August 4th for a night of enjoyable mathematics. The evening began with the MAA-PME Student Reception providing the chance to introduce themselves and meet the many students from various colleges and universities, including those involved with the Mathematical Association of America and Pi Mu Epsilon. Following the Student Reception, students, among others with a love of math, joined together to watch a game of Math Jeopardy. Four colleges had

Participants of Math Jeopardy at MathFest 2010, taken by CoffmanAdam

teams present, all putting up a great effort. Lafayette became the champions, leading by nearly 7000 points in the end.

The next morning the meeting officially began. Participants were given a multitude of opportunities for talks and discussions in a range of topics. One of the highlights was the Earl

Robert Devaney lecturing on the Fractal Geometry of the Mandelbrot Set

Raymond Hedrick Lecture Series where invited speaker Robert Devaney of Boston University gave a series of three lectures over the three days of the meeting addressing Complex Dynamics and Crazy Mathematics. On the first lecture of the series, Devaney described The Fractal Geometry of the Mandelbrot Set. His lectures continued on the following days exploring Exponential Dynamics and Topology and concluding with Sierpinski Galore. In these lectures, Devaney offered the audience a vast array of information on Cantor bouquets, Julia sets, and Sierpinski curves.

Later in the afternoon, students were offered a student lecture given by Sommer Gentry of the United States Naval Academy. Gentry's lecture: Faster, Safer, Healthier with Operations Research, focused on the important but little known field of Operations Research. According to Gentry, Operations Research "is the discipline of applying advanced analytical methods to help make better decisions." Through Operations Research, mathematics has been used to solve important problems within the real world ranging from the planning of UPS package delivery routes to optimizing chemotherapy treatments in cancer patients.

Students also had the opportunity to attend a similar talk on Friday by Tom Pfaff of Ithaca College. Pfaff gave students A Mathematical Tour of the State of the Planet in which he led students through many of his calculations he has made on the effects humans have had on climate change in the past 50 years. Pfaff also demonstrated some startling predictions that can be made with simple mathematics about coming climate change in the next 150 years.

J. Lyn Miller from Slippery Rock University begins to award presenters

Moreover, many undergraduate students had the opportunity to present their own work through the MAA Student Paper Sessions. These sessions spanned across both Thursday and Friday on topics such as Mathematical Economics, Teaching Algebra Concepts through Technology, The Helmholtz Equation, and many more. Overall, there were over 200 student presenters and was a great success. Students were well prepared for their talks, each lasting 15 minutes including questions from the audience. My presentation on Mathematical Economics: The Leontief Input-Output Model, focused on the economic model of the United States economy created by Wassily Leontief in the 1930s. After my material was presented to the audience, several mathematicians asked thought provoking questions and provided useful advice for further research on the topic. Following the sessions, students gathered in the evening for an Ice Cream Social where outstanding presenters were given awards and the students celebrated the success of the meeting.

On Saturday, as the meeting began to come to a close graduate students came together to give a series of talks to undergraduate students. The aim to the talks was to excite undergraduates and prepare graduate students for giving future talks as they search for jobs. Just a few of the topics in the talks included Playing with Bubbles, Solving the Pirate Game, Why Should I care about i?, and Mutually Orthogonal Latin Squares. After each of the talks, each graduate student was paired with an undergraduate student and a faculty member from a college to give feedback about their talk.

Overall, the annual meeting provided a vast amount of opportunities for a wide range of mathematicians to gather and learn about the important research being explored in the field. This meeting not only allowed for a large realm of presenters to lecture, but also provided a great environment for intriguing discussions and positive connecting to occur.

A detailed description of the conference could be found here:
www.maa.org/mathfest/info/ProgramBook.pdf