Budapest Semesters in Mathematics

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The BSM Beat

Alumni newsletter for the BSM program

The Rubik's Cube
An Iconic Hungarian Invention

The Rubik's cube is one of the most recognizable toys in the world and one of the most famous Hungarian inventions!

Erno Rubik invented the cube in the early 1970's while working at the Department of Interior Design at the Academy of Applied Arts and Crafts in Budapest. He obtained the patent for the cube, which he called the "Magic Cube" in 1975. Tibor Laczi, a Hungarian businessman, took the cube to Germany's Nuremberg Toy Fair in February 1979 where it was discovered by Ideal Toys which signed a deal with Rubik to release the cube worldwide. In an attempt to give the cube a more recognizable name, Ideal Toys called it "Rubik's Cube" after its inventor.

By 1981, Rubik's Cube had become a worldwide craze and around 200 million cubes were sold in the period from 1980 to 1983. In March 1981, at the height of the craze, the first speedcubing championship was organized by the Guinness Book of World Records in Munich, Germany and a Rubik's Cube made the cover of Scientific American.

Many people could solve one or two side, but solving the whole cube remained elusive for many. As a result, many books were published with instructions for solving the puzzle and at one point in 1981, three of the top ten best selling books in the United States were books on solving the Rubik's Cube. In fact, the best selling book of 1981 was *The Simple Solution to Rubik's Cube* by James Nourse which sold over 6 million copies! The cube was so popular that ABC Television developed a cartoon show called *Rubik, the Amazing Cube*.

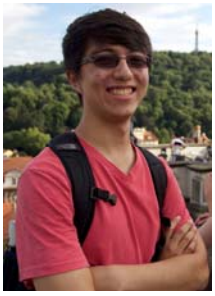
In the early 2000's, the cube began to gain popularity again and over 15 million cubes were sold worldwide in 2008. Many internet and YouTube sites now allow fans to learn to solve Rubik's Cube and also to see some of the world's fastest speed cubers solve the cube in incredibly short times!

Inside this issue:

Spring Semester 2017

- Students arrive for language intensive course: January 18th
- Orientation and welcome party: February 5
- Classes begin: February 6
- Classes end: May 19th
- Final exams: May 22-24
- Program ends: May 25

Student Spotlight, Keaton Ellis, BSM Spring 2017



Keaton Ellis was born in Urbana, Illinois, but he has grown up in Texas, Michigan and now Maryland where he is currently a junior at the University of Maryland. Keaton learned about the BSM program through a professor of his, Dr. Michale Coti Zelati, who suggested the program after he asked about potential opportunities for math majors outside the classroom.

Going to BSM will fulfill his desire to engage in interesting mathematics while studying abroad in Eastern Europe, which he loved after visiting Prague and the surrounding area last summer. In addition to wanting to study abroad, Keaton learned of the excellent tradition in combinatorics that the Hungarians are so proud of and this affirmed his desire to attend.

Keaton became a math major because he really enjoyed math in high school. His high school teachers encouraged him to consider majoring in a STEM field because of his love for math and his college professors, such as Dr. Wiseley Wong, also encouraged him beyond what he thought he was capable of doing. He took combinatorics last spring and really enjoyed the class because of the simplicity of the questions and the difficulty of the answers. Many combinatorial problems had him thinking in a totally different way, which was both incredibly challenging and extremely interesting.

In addition to being a math and economics double major, Keaton is the President of the Rubik's Cube Club and the Treasurer of the Math Club at UMD. As President, much of Keaton's effort is spent organizing large cubing competitions at Maryland, with competitors coming from around the United States to compete against each other at the highest level. For the Math Club, Keaton gives informal talks on topics he finds interesting, such as the Rubik's Cube.

Last summer, Keaton traveled to Eastern Europe to compete in the European Rubik's Cube Championship! He really loved the amazing cultural diversity he found in Europe. On one continent, he met people from vastly different lifestyles and backgrounds. While in Hungary this spring, Keaton is looking forward to going to a bathhouse and attending European Rubik's Cube competitions. He also really enjoys architecture and thinks that ancient buildings are really interesting.

In addition to his interest in math, Keaton solves Rubik's Cubes at a very competitive level. Cubing, as it is known, is a very large part of his life. He organizes competitions and runs a small cubing You Tube channel in his spare time. He is best known in the cubing community for a crazy world record day back on November 21st. On that day, he broke the previous record of 5.25 seconds with a 5.09 second solve! Unfortunately, someone else broke his record by the end of the day! Because of official rules stating that records are recorded only at the end of the day, he never technically had a world record for the puzzle. Maybe this year will be his year!

What's happening in Budapest in the Spring 2017 Semester?

- 75 students will attend the program
  - 4 seniors
  - 66 juniors
  - 5 sophomores
- Students from 48 different schools
- Students from 3 countries
- 35 female students, 40 male students
- There are 48 math majors, 8 math and computer science major, 4 math and physics majors, 5 math and economics major, 1 math and biology major, 2 math and art majors, 1 math and religion major, 1 math and chemistry major, 3 math and statistics majors, 2 math and philosophy majors.
- Interesting tidbits about the class: One student's grandparents immigrated to the US from Hungary, one student has a Hungarian parent, one student spent a summer volunteering as a trail maintenance worker in a national park, one student spent spring break volunteering to train service dogs

Alumni Spotlight, Jonathan Shapiro, BSM Spring 1987 (30 years ago!)

Jonathan Shapiro was born in Queens, New York in 1966 and just turned 50 (on December 1!). He went to UC Berkeley for both his undergraduate degree and his Ph.D., which he completed in 1995.

Jonathan first received a flyer about the BSM progrm sometime around early 1986, but he ignored it the first time until a second packet of information arrived shortly after. He became interested because he wanted to do something where he could see more of the world and since he was a self-described "math geek" this seemed like a perfect opportunity. He didn't know anything about Budapest except that it was behind the Iron Curtain so it seemed much more exotic and foreign. He applied for and participated in the program in Spring 1987.

Having loved math since middle school, Jonathan never really considered being anything but a math major. He participated in math contest and hung out with other math people at his high school (Gunn High School in Palo Alto, CA). He studied math at Stanford with Professor Paul Cohen while in high school and went to college at Berkeley because it was a great place for math and only about an hour from home.

Jonathan is now a full professor at Cal Poly, San Luis Obispo where he began teaching in 1998 after spending three years as a visiting professor at Northwestern University. His research is in the area of operator theory and functional analysis. He teaches many calculus classes since there are many engineering students at Cal Poly but he enjoys teaching any of the undergraduate or graduate level courses. He loves all aspects of being a professor except for grading papers! Jonathan notes that San Luis Obispo is a great place to live, recently being named the best college town in America by one of the college ranking sites.

Having attended one of the earliest BSM semesters, he has lots of great memories from his time in BSM. He loved meeting all of the people and doing new and exciting things, which seemed nonstop for the entire semester! He loved traveling to the Tatra mountains in Czechoslovakia (now Slovakia) to ski for the first time. He traveled all around Eastern Europe—Prague, Krakow, Bucharest and many places in Hungary. He met many wonderful Hungarians and the woman he lived with (Nelli Montagh, along with her son Balazs, in an apartment on Vaci utca) was wonderful. She was still there in 2013 when he visited Budapest!

Jonathan's favorite classes were definitely Conjecture and Proof and a course in analytic number theory. His BSM experience really changed his life quite a bit. He went back to Budapest in 1989 for six months and got to know many more Hungarian students while teaching English. Later, when he got married (to Cathy) back in the US and had a son, they named him Zoltan since he always liked that name in Budapest. Zoltan is now 21 years old!

In addition to math, Jonathan does a lot of photography and you can see many of his photos from his 2013 trip to Budapest on the BSM Forever Facebook site. Above is a picture of Paul Erdos from his visit to the BSM students in 1987.

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The BSM organization would like to keep in touch with all of our alumni. If you move or your contact information changes, please contact us to update your information so we may continue to send you the BSM Beat and keep you informed about upcoming alumni reunion events. You will find an information update form on our website, www.budapestsemesters.com, under the Alumni heading or you may contact us in any of the following ways:

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Have you updated your alumni contact information lately? Do so today!

Share the news about BSM!

BSM Alumni, we would like to encourage you to share your experiences with the Budapest program with others, particularly those of you who continue to work in higher education. If you are currently a math professor, and if you are interested in giving a talk to the math majors at your institution about the Budapest Semesters in Mathematics program, we have a complete PowerPoint presentation already put together that we would be happy to share with you.

In addition, if you are a graduate student or a math professor who will be attending a Regional Undergraduate Mathematics Conference and would be interested in being on a panel about academic or summer opportunities for math majors or would be willing to sit at a table and hand out brochures and talk to undergraduates about your experience with BSM, please let us know. We would be happy to help you make contact with the RUMC organizers, provide you with brochures and handouts and we can also provide you with a small stipend to reimburse you for travel expenses.

To request the BSM PowerPoint or to inquire about representing the BSM program at an undergraduate math conference, contact Dr. Kendra Killpatrick at Kendra.Killpatrick@pepperdine.edu.

If you have further ideas about ways in which you can share information about the Budapest program with undergraduates, feel free to contact us and we will help you in whatever ways we can! You, the alumni, are our most valuable resource for recruiting the next group of talented BSM students.

BSM Alumni Directory

The BSM Alumni Directory will be emailed once a year to all alumni who have given us a current email address. If you haven't updated your contact information, you can do so now by going to the webpage and clicking on Update Your Contact Info. Please encourage other BSM alumni you may know to fill out the form so we can make the directory as up to date as possible!