Greetings from the BYU Math Department! We are grateful for all that has happened here in the last six months, and trust that you have reason to be grateful as well!

Our graduate and undergraduate programs are continuing to move forward, in both quantity and quality. As we proudly mentioned, last year we placed 7th in the nation in the prestigious Putnam exam. This year we are very optimistic. High quality undergraduate research remains one of the thriving hallmarks of the BYU Mathematics Department. This is reflected in improved placement of our graduates.

The new Applied and Computational Mathematics Emphasis (ACME) is up and running! The first cohort of 19 students are intensely engaged in their first semester of field-specific coursework. Professors Jeff Humphreys and Tyler Jarvis are both teaching the students and continuing to write the textbooks. A small army of graduate students are helping to develop the eight lab courses that will accompany the traditional lab instruction.

Our faculty continue to advance professionally. Supposedly the “year of the Government sequester” was going to be a bad year for receiving grants from the National Science Foundation, but for us it has been a very strong year. In the last six months Rod Forcade, Jeff Humphries, Tyler Jarvis and Michael Dorff have received large NSF grants.

This year we welcome two faculty members! Jared Whitehead joined us last month from Los Alamos National Laboratories. His research area is the mathematics of circulatory systems, such as the weather and the layers of the earth that push tectonic plates. Ben Webb will join us next fall, from the prestigious Rockefeller University. His research is on dynamic networks and their spectral properties. We consider ourselves to be very fortunate to have hired these two outstanding individuals!

Lisa Winegar joined our staff last spring. She is primarily in charge of coordinating internship and employment opportunities for our students. She is a much-needed addition and we are delighted to have her aboard! We will need internships for our traditional mathematics majors this coming summer, and for the ACME students next fall. If you have any useful information or contacts, please feel free to contact Lisa at 801-422-5925 or lisa.winegar@math.byu.edu.

If you and your family are in town for homecoming next year, please join us for the annual Alumni Tailgate Party (indoors). Attendance doubled this year!

We are deeply grateful for the many different dimensions in which you have helped Mathematics at BYU to advance!
Fame and publicity—two concepts usually foreign to the world of mathematics. Last year, however, three BYU students used their skills to prove that math can be something worth talking about. Two epic YouTube videos and over 110,000 views later, the BYU "mathletes" have seen their share of mathematical fame.

The story began back in 2006 when Sam Dittmer became the country's high school math champion. Two years later, while a senior in high school, Sam was titled Indiana's "Mr. Math" by the Governor himself. Turning down offers from prestigious universities such as MIT and Stanford, Sam decided BYU was his top pick due to the opportunities to work with professors one-on-one. As a BYU freshman, Sam led the 2008 Putnam team to land themselves in 23rd place out of 405 college teams.

Then in 2011, Sam Dittmer, along with peers Hiram Golze and Tianyi Yang, participated in the Intermountain Mathematics Competition, which involved five other universities in the region. Based on the top three students’ scores, the BYU team dominated the other teams with a score of 159—second place going to the University of Nevada, Reno, with a score of 71. Best of all, BYU beat out their main rival, the University of Utah, who took third place. Just a week after the Intermountain Math Competition, the team competed in the Virginia Tech Competition and came in third out of 98 other schools, beating universities such as Duke and Yale.

The fun didn’t end there. As Sam, Hiram, and Tianyi continued to be recognized for their outstanding mathematical feats, their unique skills caught the eye of BYU’s University Communications. The math trio soon found themselves in circumstances far from their comfort zone of computing and solving.

On February 13, 2012, Sam, Hiram, and Tianyi showed up for their first day ever on a production set. They would be starring in a music video revolving around the question, “What if we treated star students like star athletes?” With the help of a director, the boys had to learn...
How to act like the star athletes so many of their peers adore (see photo to right). The “BYU Mathletes” music video was posted to YouTube and was enjoyed by thousands of viewers within just a matter of days. Major media outlets, such as The Washington Post, CBS, and The Huffington Post, picked up on the unique and catchy video, and the BYU Mathletes were semi-viral hits.

On December 1, 2012, math students around the nation sat down to participate in the 73rd William Lowell Mathematical Putnam Competition. The competition would turn out to be a record-breaking one for Brigham Young University. Out of over 500 universities participating in the exam, BYU placed seventh: the highest rank ever achieved by a BYU Putnam team. The team—now made up of Sam Dittmer, Hiram Golze, and Peter Baratta—had made BYU Mathematics history.

“This means a lot—it tells the world that we are doing great things here,” said BYU math professor Tyler Jarvis. “They’re going to have to take us seriously now that our name is up there with the big boys.”

With such incredible results, the creation of a second “Mathletes” video was not surprising. This time the film took a humorous spin on the challenges of trying to turn math geniuses into actors. Sam, Hiram, and Peter were great sports as the director attempted to bring out the inner-athlete in them.

This year, the William Lowell Putnam Mathematical Competition will take place on Saturday, December 7. The Mathematics Department looks forward to more successful results from this year’s Putnam team.

To view the entertaining Mathletes videos, visit the following links:

- BYU Mathletes Music Video http://goo.gl/F6a3dd
- BYU Mathletes Recalculated http://goo.gl/14jVWj

Faculty Successes

Once again, the Math Department faculty have proved themselves worthy of recognition. They have continued to bring in awards and honors for Brigham Young University. Their achievements are impressive and a testament to the ongoing success of BYU Mathematics.

Dr. Jessica Purcell: National Science Foundation Career Award

Dr. Purcell has been given the most prestigious award handed out to young faculty in the nation. The award recognizes junior faculty across the nation who are outstanding teachers, scholars and researchers. The award generally supports five years of research, and programs of education and outreach for local public schools.

Dr. Tyler Jarvis: Savage Teaching Award

Nominees for the Savage Teaching Award are widely recognized as successful teachers who positively influence their students with effective teaching and who foster excitement about mathematics in and out of the classroom. Dr. Jarvis is the eighth recipient of this award.

Dr. Michael Dorff: National Science Foundation grant

Dr. Dorff has received a four-year grant for just over $2,000,000 to increase the number of students in mathematical sciences prepared to enter and succeed in careers in business, industry, and government.

Dr. Rodney Forcade: Office of Naval Research grant

The Multidisciplinary University Research Initiative (MURI) will be shared by six people from five universities (BYU, Duke, University of North Texas, Central Michigan, University of Maryland). BYU will receive about $2,000,000 for 3-5 years.
Dr. Thomas Bell graduated from BYU with an M.S. in Mathematics in 2007 and went on to receive a Ph.D. in Mathematics from the University of Oregon in 2013. He served as an instructor while working on his post-graduate degrees from 2005-2013. He began his service as a temporary faculty member in the BYU Math Department in August of 2013. Dr. Bell has been married for eight years to his wife, Melissa. The couple has no children, but has recently acquired a poodle named Ellie.

Mark Abramson graduated from BYU with a BS in Computational Mathematics. He worked as an Advanced Cruise Missile Avionics Analyst and, in 1994, received his MS in Applied and Interdisciplinary Mathematics from the University of Michigan in 2012. He was employed as a postdoctoral research associate at Los Alamos National Laboratory from 2012 to 2013 and was hired at BYU in October of 2013. Dr. Whitehead is married to Samantha, with whom he has four children.

Annette Thacker graduated from BYU with a BS in Math Education. After serving a mission in Japan, Annette taught middle school math for five years. She received the NOYCE Foundation Research Grant and participated in the Silicon Valley Math Initiative. Annette then pursued a law degree at BYU with a focus on educational issues. Annette currently resides in Washington DC where she works at the District of Columbia Office of the State Superintendent of Education.

Calculus the Musical
by Jennifer Maroney

The Math Department is excited to announce the upcoming performance of Calculus the Musical. The performance is on Friday, March 28 at 7pm in the Joseph Smith Building Auditorium on BYU campus. This musical introduces an array of mathematical concepts using musical parodies spanning many music genres. The show is starting its third touring season and has been delighting audiences all across the nation. Attendance to the performance is free, but does require an admission ticket. If you would like to receive your free admission tickets, please contact events@math.byu.edu.

Second Annual Alumni Tailgate Party
a Success
by Annie Tyler

Brigham Young University Math alumni and their families enjoyed the second annual Alumni Tailgate Party on Saturday, October 12th. Though most alumni only traveled a short distance, one woman came all the way from Pennsylvania to visit her daughter and attend the events of Homecoming weekend. Approximately one hundred alumni enjoyed seeing old friends, catching up with professors, and eating a delicious lunch. The Math Department enjoyed entertaining the alumni for the afternoon and is grateful for their continued support. Every year, the annual Alumni Tailgate Party will always be held the Saturday of the homecoming football game. Mark your calendars for next year’s homecoming tailgate party!

Mark Abramson
Alumni

Dr. Stephen Humphries and graduate student Joseph Adams enjoy their food while visiting with alumni.

Annette Thacker, ’01
Alumni

Annette Thacker graduated from BYU with a BS in Math Education. After serving a mission in Japan, Annette taught middle school math for five years. She received the NOYCE Foundation Research Grant and participated in the Silicon Valley Math Initiative. Annette then pursued a law degree at BYU with a focus on educational issues. Annette currently resides in Washington DC where she works at the District of Columbia Office of the State Superintendent of Education.

Mark Abramson graduated from BYU with a BS in Computational Mathematics. He worked as an Advanced Cruise Missile Avionics Analyst and, in 1994, received his MS in Applied Math and Operations Research at the Air Force Institute of Technology (AFIT). Other accomplishments include: working in Korea as a Senior Logistics Policy Analyst, receiving a PhD from Rice University, and working as an Associate Professor of Mathematics at AFIT. In 2008, he retired from the Air Force as a Lt Col and received a MS in Aeronautics and Astronautics. He currently is a senior mathematician at Boeing in Bellevue, Washington.

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