



Canadian Mathematical Society
Société mathématique du Canada



2011 International Mathematical Olympiad
Team Biographies

**MATTHEW BRENNAN – TEAM MEMBER**

Matthew Brennan was born in Toronto, Canada, in 1994. He is currently finishing Grade 11 at Upper Canada College in Toronto.

Matthew was first introduced to math contests in Grade 8 and began preparing for the AMC contests and math Olympiads in Grade 9. Since then, his interest in mathematics and math contests has become a serious pursuit. Although Matthew enjoys all Olympiad math problems, he particularly likes synthetic geometry problems and rarely leaves his house without several in his pocket.

This year, Matthew ranked 8th in the Canadian Math Olympiad and 2nd in Canada in the Asian Pacific Math Olympiad. He also obtained the highest score in Ontario in the AMC 12A and qualified for the USA Math Olympiad. In 2010 Matthew ranked 2nd in Ontario in the AMC 10A and 14th in the Junior USA Math Olympiad.

Aside from mathematics, Matthew has obtained prizes in math, history, biology, chemistry, art and Latin. He enjoys badminton and is a member of the Upper Canada College Varsity Badminton Team. He plays the trumpet in his spare time and has been a member of his school's Wind Ensemble for five years. He is head of his school's Math Society and has tutored his peers in math and chemistry. He volunteers in the creative arts program at Holland Bloorview Kids Rehabilitation Hospital on weekends. Matthew also enjoys movies, traveling and food.



HEINRICH JIANG – TEAM MEMBER

Heinrich Jiang was born in Darmstadt, Germany, in 1993. He and his family moved to Canada when he was 4 years old and he currently resides in Windsor, ON.

From an early age, Heinrich was encouraged by his father to develop skills in mathematics. In Grade 5, he started participating in a math enrichment program run by Bruce White, a teacher at Honourable Vincent Massey Secondary School, to further develop problem solving skills. Since then, Heinrich has been part of the enrichment program which has inspired him to study mathematics seriously. The challenge of solving tough problems drives him to study this field.

In 2010, Heinrich received Honourable Mention on the Asian Pacific Mathematics Olympiad (APMO), Division 2 on the Canadian Mathematics Olympiad (CMO) and a score of 23 on the USA Mathematics Olympiad (USAMO). In 2011, Heinrich received a Bronze award on APMO, Division 2 on CMO, and a score of 19 on USAMO.

Heinrich also participates in programming competitions. In 2010, he qualified for the Gold division of the USA Computing Olympiad (USACO) and qualified for the second stage of the Canadian Computing Competition (CCC) where he placed 10th in the country.

In his free time, he enjoys practicing classical music on the piano and playing video games.

Heinrich is currently a grade 12 student at Honourable Vincent Massey Secondary School and will attend Princeton University in the fall to study mathematics.



JAMES RICKARDS – TEAM MEMBER

James Rickards was born in Winnipeg, Manitoba in 1994. Born into a military family, he has lived around Canada and the US, ending up in Ottawa for high school at Colonel By Secondary School.

James started to show interest in math in elementary school, learning how to do square roots by hand. As he rose through the grades, he studied math more and more in his spare time by reading books. In middle school, he competed in the Mathcounts State Competition for three years, though he never reached the national level. This helped push him to study even harder. James credits hard work for his successes; all of his math knowledge since grade 5 has been gained from books or the internet.

In grade 9, James made the Canadian Math Olympiad, USAMO, and was top 5 in the Fermat Contest. He was rewarded with invitations to both the Waterloo Seminar and the National Math Camp. In grade 10, he progressed quickly, winning 2nd on the CMO, 5th in Canada on the APMO, and top 5 on the Euclid Contest. In Grade 11, he was selected for the Canadian Winter Olympiad Training Camp, received honourable mention on the CMO, and was finally selected for the IMO.

In grade 9, James found mathematical stimulation from meetings with Professor Barry Jessup from the University of Ottawa. He also participated in their Putnam preparation sessions, hosted by Professor Pieter Hofstra. He credits Jessup and Hofstra with his introduction to post-high school mathematics.

In grade 10, James wrote an article on polynomials, and sent it off to the American Math Monthly, the most read math journal in the world. This article was published in the April 2011 edition of the Monthly, and he thus became the youngest person to be published in the journal.

In addition to mathematics, James is also a licensed glider pilot, flying his first solo flight at the age of 14. He enjoys hiking, camping, fishing, being outdoors, playing sports, and games of all sorts. He is an avid follower of hockey and supporter of the Ottawa Senators.

**MARIYA SARDARLI – TEAM MEMBER**

Mariya Sardarli was born in Kyiv, Ukraine in 1994. She immigrated to Canada with her family in 1999 to Edmonton, Alberta where she currently resides.

Mariya has shown talent in mathematics since a very young age, but her potential was not explored until she enrolled in Professor Andy Liu’s problem solving club at the University of Alberta in Grade 5. Unlike the computational mathematics offered in the school curriculum, the math club has a distinct focus on “fun”, recreational math. There she saw how math results could be used in unexpected ways to solve problems and she became hooked.

Mariya completed her high school math courses through correspondence in Grade 6 and in Grade 7 started taking math courses at the University of Alberta through a non-degree program. It was also at this time that she began taking math contests more seriously. She began participating in the Tournament of the Towns and was invited to attend the Tournament of the Towns Seminar in Russia. In Grade 7 she was a member of the Edmonton team which participated in the International World Youth Mathematics City Competition in Changchun, China where she received a bronze medal on the individual portion of the competition, and received silver individual medals in the two subsequent years she participated.

In 2010, Mariya made significant progress in Olympiad math contests. She won a Silver Medal on the Asian-Pacific Math Olympiad, and received a score of 22 on USA Math Olympiad. In 2011, Mariya won First Place in the Canadian Math Olympiad, and received an Honorable Mention on the Asian-Pacific Math Olympiad.

In her free time, Mariya likes to shop and go on Facebook. She is currently in Grade 11 at Strathcona High School and will be attending Princeton University to study mathematics next fall.



ALEX SONG – TEAM MEMBER

Zhuo Qun (Alex) was born in Tianjin, China in 1997. He came to Canada in 2002, and is currently living in Waterloo, ON. He took an interest to math at a young age; in Grade 1, he wrote the Pythagoras Contest, intended for 6th graders, which really got him interested in competitions. Alex was assisted by a great teacher, Mr. Jack Bristow, who interested him in contest math and allowed for him to take contests of varying levels, including the COMC (Canadian Open Math Challenge) and AMC-10 (American Math Competition) in Grade 4.

Alex got interested in solving Olympiad-type problems in Grade 5, after taking the USAMO (United States of American Mathematics Olympiad) in Grade 4 and realizing the toughness of the problems. He was determined to get better at the hard problems, because they were a big challenge for him to solve. With the continued help of Mr. Bristow and books that his father bought for him, he became more and more interested in the concept of a hard but fulfilling problem once solved.

In Grade 7, he was invited to the 2010 CMS Winter Camp, which is a training camp for the top 12 members to identify potential for the Canadian IMO Team. It was the first camp that Alex attended, and it allowed him to greatly improve his math skills, for it was the first time he did only math for an extended period of time. He received an honourable mention in the APMO (Asian Pacific Math Olympiad) and a 1st place finish in the CMO (Canadian Math Olympiad) en route to being invited to the 2010 IMO. In Grade 8, he received a gold medal in the APMO, an honourable mention in the USAMO, and 3rd place in the CMO, and as a result, made the IMO team again.

Outside of Olympiad mathematics, Alex received a perfect 150 on the AMC 12B and 8th place on the Mandelbrot contest this year. He also placed in the top group of the Euclid and Hypatia competitions and received a perfect 150 on the Fermat contest.

Outside of mathematics, Alex enjoys playing chess and solving the Rubik's Cube, as well as other similar thought-games and puzzles. He also likes physics and chemistry and will continue to pursue his scientific interests in high school.

**HUNTER SPINK – TEAM MEMBER**

Hunter Spink was born in Vancouver, British Columbia, and currently resides in Calgary, Alberta. He is currently completing Grade 12 at Western Canada High School in Calgary, and will be attending Cambridge University in England this October.

Throughout the earlier grades, Hunter always showed a keen interest in problem solving, and frequently excelled in competitions, especially chess, winning city and provincial championships and ranking at the top in his grade for Canada. Hunter felt his calling was in mathematics when in grade 6, he solved the problem of which numbers could be written as the sum of consecutive integers by constructing a table, and finding a winding pattern through the table which he proved would enumerate all numbers which were not powers of 2. Shortly after, in grade 8, he devised a method for computing base 2 logarithms by hand. After many years in the Math Circles program at the University of Calgary, Hunter came to know Richard K. Guy, whom Hunter says has been an ongoing inspiration to pursue mathematics further, and Adrian Tang, who, set up an advanced math circles program specifically geared at Olympiad-level math.

After participating in this program in Grade 9, Hunter received Honourable mention in the Canadian Mathematical Olympiad CMO and second place in the Asian Pacific Mathematical Olympiad APMO, which earned him a spot on the 2009 International Mathematical Olympiad team where he won a silver medal. In 2010, he was a winner of the United States of America Mathematical Olympiad USAMO, and was invited to write the 2010 IMO, where he won a gold medal with an 11th place world standing. This year, he won a silver standing in the APMO, and top 6 in the CMO, earning him a spot on this year's 2011 IMO team.

Hunter is the recipient of the prestigious Blythe Cambridge Commonwealth Scholarship to study mathematics at Cambridge University in England.

Besides mathematics, Hunter likes programming, skiing, and physics. His mathematical interests currently lie with group theory, analysis, and number theory.

**DORETTE PRONK – TEAM LEADER**

Dorette Pronk was born in Rotterdam, The Netherlands, and is an Associate Professor of Mathematics at Dalhousie University, Halifax, Nova Scotia, where she has worked since September 2000. She obtained her M.Sc. in Mathematics from Utrecht University (1991) and her Ph.D. in Mathematics, also from Utrecht University (1995), The Netherlands. From 1998 till 2000 she worked as Assistant Professor of Mathematics at Calvin College, Grand Rapids, USA. From 1995 until 1998 she was a Postdoctoral Fellow at Dalhousie University, Halifax, Nova Scotia.

Dorette Pronk served as Deputy Leader Observer with the Canadian IMO Team to Taiwan (1998) and Romania (1999), as Deputy Leader with the Canadian IMO Team to the USA (2001) and Mexico (2005), and as leader with the Canadian IMO Team to Germany (2009). She was a recipient of an NSERC UFA Award (2000 – 2005) and her research interests are category theory and algebraic topology.

Dorette has supervised several honours students in mathematics and one Ph.D.-student. She is currently supervising an MSc-student and her second PhD student will start with her this fall.

Dorette is involved with Nova Scotia Math Circles, a program that seeks to show high school students the importance and beauty of mathematics. She has prepared presentations on topics related to fractals and geometry and presented them both to high schools visiting at Dalhousie University and to classes in schools around Nova Scotia.

Her hobbies include playing the recorder, liturgical dance and choreography; she is also very interested in Asian cultures, and uses what she has learned during her sabbatical visits to Asian countries to help Asian students at Dalhousie University adapt to Canadian culture.

**DAVID ARTHUR – DEPUTY LEADER**

David Arthur was born and raised in Toronto. He received a Ph.D. in theoretical computer science at Stanford University in 2009, and is now a software engineer at Google Inc.

Although he is acting as a coach now, David also participated actively in Olympiads as a contestant when he was younger. In 1999 and 2000, he won bronze and gold medals for Canada at the International Mathematical Olympiads in Romania and Korea. He is also the first Canadian to have ever won a gold medal at the International Olympiad in Informatics. David continues to participate in math and computer science competitions to this day, and he has won around \$100,000 in prizes.

In his spare time, David loves playing games of all sorts, from bridge to basketball. When he is feeling less competitive, David listens to classic rock, and watches whatever movies he can find.

**JACOB TSIMERMAN – DEPUTY LEADER OBSERVER**

Jacob Tsimerman recently completed his Ph.D. in Mathematics at Princeton University with Peter Sarnak. Starting this fall, he will begin a 3 year postdoc at Harvard as a junior fellow.

Jacob was on the 2003 and 2004 Canadian IMO teams, getting two gold medals and attaining a perfect score at the 2004 IMO. He also participated in the Putnam Competition in 2005, placing in the top 15.

In his spare time, he enjoys doing recreational mathematics, listening to music, and reading comic books. His hobbies include judo, playing the guitar, and learning to dance tango.