



2017 Colorado Mathematics Awards

*The 22nd annual reception to recognize outstanding performance
in national and international mathematics competitions and contests
by Colorado middle school, high school, and undergraduate college students.*

Thursday, May 18, 2017

4:15 – 6:45 p.m.

**Grant-Humphreys Mansion
770 Pennsylvania Street -- Denver, Colorado**

Program

4:15 – 5:00

Refreshments

5:00 – 6:30

**Welcome: Dr. Richard Gibbs, CMA Co-Chair and Emeritus Professor of Mathematics,
Ft. Lewis College**

**Recognition of Underwriters: Dr. David Carlson, CMA Co-Chair; Adjunct Faculty, Josef
Korbel School of International Studies, University of Denver**

**Remarks: Mr. Raymond Johnson, Mathematics Content Specialist, Colorado Department of
Education**

Presentation of Awards:

- **MATHCOUNTS:** presented by Ms. Noelle Cochran, P.E., National Society of Professional Engineers of Colorado, and Colorado MATHCOUNTS Coordinator
- **American Mathematics Competition 8:** presented by Mr. Howard Selbst, Falcon Creek Middle School, Aurora (retired) and Colorado AMC 8 Director
- **American Mathematics Competitions 10 and 12:** presented by Mr. Raymond Johnson
- **Moody's Mega Math (M^3) Challenge and U.S.A. Mathematics Olympiads:** Dr. Gibbs
- **American Regions Mathematics League Colorado Team 1:** Ms. Silva Chang, Director, Colorado Math Circle, Dept. of Applied Mathematics, University of Colorado Boulder
- **William Lowell Putnam Mathematical Competition, International Mathematical Contest in Modeling, and Interdisciplinary Contest in Modeling:** Professor Michael Jacobson, University of Colorado Denver and Chair, Mathematical Association of America, Rocky Mountain Section (MAA-RMS)
- **MAA-RMS Burton W. Jones Distinguished Teaching Award recipient, Professor Diane Davis, Metropolitan State University of Denver; and Early Career Teaching Award recipient, Professor Mary Pilgrim, Colorado State University-Ft. Collins; recognized by Prof. Bill Emerson, Metropolitan State University of Denver, and Governor, MAA-RMS**

6:30 – 6:45

Refreshments

MATHCOUNTS

MATHCOUNTS is an after school program for 6th, 7th, and 8th graders which leads to a series of three-hour competitions at school, chapter, state, and national levels. The top four students at the state competition represent their state at the national competition. Each year, approximately 140,000 students nationwide participate in school MATHCOUNTS competitions, with about 40,000 students participating at chapter competitions. In 2016-17, approximately 1060 students from 128 schools in Colorado participated in eight chapter competitions, while 172 students from 61 schools participated at the state competition in March at the University of Denver.

First Place Colorado Team (and Coaches)

Min Young Chang, Zion Choi, Brandon Dong, and Grace Zhang, Challenge School, Denver (Matt Bixby)

Colorado MATHCOUNTS Team (and Coach)

Rahul Thomas, Campus Middle School, Englewood (Katie Brehmer, Andrew Ying, and Dotty Dady); **Grace Zhang** and **Brandon Dong**, Challenge School, Denver (Matt Bixby); and **Anthony Wang**, STEM School & Academy, Highlands Ranch (Merry Wong). **Team Coach:** Matt Bixby, Challenge School

The Colorado team placed 16th in the national MATHCOUNTS competition in Washington D.C. March 13-16.

Honorable Mention (and Coaches)

Zion Choi, Challenge School, Denver (Matt Bixby); **Aiden Lee**, Campus Middle School, Greenwood Village (Katie Brehmer); **Sarah Mitchell**, Hamilton Middle School, Denver (Justin McDonald); **Randy Ngo**, Morey Middle School, Denver (Alisha Janes); **Kyle Wang**, Summit Charter Middle School, Boulder (Cecilia Davis); and **Ryan Zhang**, Kinard Core Knowledge Middle School, Ft. Collins (Cecilia Bonertz)

American Mathematics Competition 8

The AMC 8 is a 40-minute 25-question multiple-choice exam given in November. Students in 8th grade and below are eligible. In 2016, more than 108,000 students from 1875 schools nationwide participated. More than 950 students in Colorado participated.

AMC 8--Top Colorado Individual Winners (and Coaches)

- (1) **Anthony Wang**, STEM School & Academy, Highlands Ranch (Merry Wong) A perfect score!
- (2) **Brandon Dong**, Challenge School, Denver (Matt Bixby)
- (2) **Aiden Lee**, Campus Middle School, Englewood (Katie Brehmer)
- (2) **Ryan Liao**, Ken Caryl Middle School, Littleton (Minru Liao)
- (2) **Rahul Thomas**, Campus Middle School, Englewood (Katie Brehmer, Andrew Ying, and Dotty Dady)
- (2) **Kyle Wang**, Summit Charter Middle School, Boulder (Cecilia Davis)
- (2) **Ryan Zhang**, Kinard Core Knowledge Middle School, Ft. Collins (Cecilia Bonertz)

6th Grade First Place: **Anthony Chui**, Challenge School, Denver (Matt Bixby)

Honorable Mention (and Coaches)

Anthony Chui and **Grace Zhang**, Challenge School, Denver (Matt Bixby); **Peter Reasoner**, homeschooled, Denver (Yulia Trousova); and **Stephen Zhang**, Campus Middle School, Greenwood Village (Katie Brehmer)

American Mathematics Competitions 10 and 12

Each contest is a 75-minute 25-question multiple-choice test with approximately 12 common problems between them. Students in grades 10 and below are eligible for the AMC 10 exam; students in grades 12 and below are eligible for the AMC 12 exam. The contests were administered in two versions on different days in February. Nationally, more than 79,000 students from more than 3520 schools participated in the AMC 10 exam in February, while more than 68,000 students from more than 3500 schools took the AMC 12 exam then. In Colorado, more than 660 students participated in the AMC 10, and more than 490 students took one (or both) of the AMC 12 exams.

AMC 10--Top Colorado Individual Winners (and Coaches)

- (1) **Austen Mazenko**, Cherry Creek High School, Greenwood Village (Dotty Dady) A perfect score!
- (1) **Rahul Thomas**, Campus Middle School, Greenwood Village A perfect score!
(Katie Brehmer, Andrew Ying, and Dotty Dady)
- (3) **Derek Li**, Cherry Creek High School, Greenwood Village (Dotty Dady)

8th Grade First Place: **Rahul Thomas**, Campus Middle School, Greenwood Village (coaches listed above) A perfect score!

AMC 10--Honorable Mention (and Coaches)

Sonia Chu, Rock Canyon High School, Highlands Ranch (Ming Song, Erynn Albert, and Silva Chang); **Sarah Gao** and **Michael Hu**, Cherry Creek High School, Greenwood Village (Dotty Dady); **Anudeep Golla**, Fairview High School, Boulder (Del Ebadi, John Cawelti, and Silva Chang); **Akshat Jain**, Stargate School, Thornton (Ken Haney); **Amber Liu**, Rock Canyon High School, Highlands Ranch (Ming Song and Silva Chang); **Nina Ning**, Silver Creek High School, Longmont (Hilarie Roberts); and **Cedar Turek**, Steamboat Springs High School (Norbert Turek)

AMC 12—First Place Colorado Team (and Coach)

Hongyi Chen, Hannah Zhang, and Warren Woo, Fairview High School, Boulder (Emily Silverman and Silva Chang)

AMC 12--Top Colorado Individual Winners (and Coaches)

- (1) **Hongyi Chen**, Fairview High School, Boulder (Emily Silverman and Silva Chang)
- (2) **Hari Sowrirajan**, Cherry Creek High School, Greenwood Village (Dotty Dady)
- (3) **Hannah Zhang**, Fairview High School, Boulder (Emily Silverman and Silva Chang)

10th Grade First Place: **Sarah Gao**, Cherry Creek High School, Greenwood Village (Dotty Dady)

AMC 12--Honorable Mention (and Coaches)

Anurag Golla, Andrea Lin, and Warren Woo, Fairview High School, Boulder (Emily Silverman and Silva Chang); **Toby Lee and Avi Swartz**, Cherry Creek High School, Greenwood Village (Dotty Dady); **Aaron Lou**, Highlands Ranch High School (Anthony Verbsky); and **Stephen New**, Ft. Collins High School (Chris Suppes)

American Regions Mathematics League (Colorado Team 1)

In 2016, 2100 students from the U.S. and eight other countries formed 15-member teams to compete at the national ARML competition. The Colorado A1 team placed 5th in the Western Division and 30th nationally. This year's team members are listed below:

Hongyi Chen, Anudeep Golla, Anurag Golla, Andrea Lin, Kevin Wang, Hannah Zhang, and Stephanie Zhang, Fairview High School, Boulder; **Sonia Chu**, Rock Canyon High School, Highlands Ranch; **Matthew Iverson**, Liberty Common High School, Ft. Collins; **Benjamin Kitchen**, Denver School of Science and Technology; **Taha Krarti**, Niwot High School; **Austen Mazenko and Avi Swartz**, Cherry Creek High School, Greenwood Village; **Erik Svenneby**, Grandview High School, Aurora; and **Rahul Thomas**, Campus Middle School, Greenwood Village. Team Coach: Silva Chang, Director, Colorado Math Circle; Dept. of Applied Mathematics, University of Colorado Boulder.

American Invitational Mathematics Examination and the USA Math Olympiads

The *American Invitational Mathematics Examination* is a 3-hour 15-question examination with each answer a 3-digit number. Two versions of the exam were administered on different days in March to students achieving Honor Roll status on the AMC 10 or 12 exams. In 2017, nearly 4300 students nationwide participated in the AIME.

The *USA Math Olympiad* and the *USA Junior Math Olympiad* are 9-hour 6-question essay examinations given in April to the top 500 or so students participating in the AMC 10 and 12 exams and the AIME. The top 6 USAMO students will comprise the USA team at the International Mathematical Olympiad to be held July 12-23 in Rio de Janeiro. Nationally, 292 students were invited to take the USAMO exam, including three students from Colorado. Nationally, 224 students qualified for the USAJMO exam, including one from Colorado.

USA Math Olympiad Qualifiers: **Hongyi Chen**, Fairview High School, Boulder (Emily Silverman and Silva Chang); **Aaron Lou**, Highlands Ranch High School (Anthony Verbsky); **Avi Swartz**, Cherry Creek High School, Greenwood Village (Dotty Dady).

USA Junior Math Olympiad Qualifiers: **Austen Mazenko**, Cherry Creek High School, Greenwood Village (Dotty Dady). **Austen is a 9th grader who received a perfect score on the AIME!**

Moody's Mega Math (M³) Challenge

The M³ Challenge is an applied mathematics modeling contest open to high school students across the U. S. Teams of 3-5 students and one teacher-coach had 14 hours during a weekend (Feb. 24-27) to prepare a report on a real-life problem. The challenge is sponsored by The Moody's Foundation (a charity of Moody's rating agency) and awards \$150,000 in scholarship prizes each year to top teams. This year, 1406 teams participated; there were 6 Finalist teams, 6 Semi-Finalist teams, and 78 Honorable Mention teams.

One Colorado Team received an Honorable Mention award!

Golden Senior High School

Shamik Bhat, Justin Fink, Chris Shull, and Tanner Taylor (Shannon Garvin)

William Lowell Putnam Mathematical Competition

The *William Lowell Putnam Mathematical Competition* is a collegiate examination sponsored by the Mathematical Association of America. It is a 6-hour 12-question essay examination given on campus on the first Saturday in December. All undergraduates are eligible. In 2016, 4164 students from 568 institutions in the U.S. and Canada participated. Fourteen colleges and universities in Colorado participated.

Top 500 Individual Winners (and Coaches) from Colorado Institutions

- (1) **Ibraheem Khan**, University of Colorado Boulder
- (2) **Nicholas Boschert**, University of Colorado Boulder
(Professors Keith Kearnes, Alexander Gorokhovskiy, and Sergei Kuznetsov coached both students)

Mathematical Contest in Modeling (MCM)

The *Mathematical Contest in Modeling (MCM)* is an international contest for college undergraduates and high school students. Teams of three students worked for 96 hours over a weekend (Jan. 19-23), using applied mathematics to solve their choice of one of three real-world problems. In 2017, solutions were submitted by 8843 teams from 13 countries, including 311 teams from the U.S. and six teams from Colorado institutions.

Out of 8843 teams worldwide, 18 were Outstanding and 23 were Finalists— including one from Colorado!

Zachary Foreman, Robert Lewis, and Samuel Stanton, University of Colorado Denver (Professor Gary Olson)

Interdisciplinary Contest in Modeling (ICM)

The *Interdisciplinary Contest in Modeling (ICM)* is an extension of the Mathematical Contest in Modeling (MCM) and held during the same 96-hour weekend. It is designed to develop and advance interdisciplinary problem-solving skills as well as competence in written communication. In 2017, solutions were submitted by 8085 teams from eight countries, including 161 teams from the U.S. and six teams from Colorado institutions.

Out of 8085 teams worldwide, 14 were Outstanding and 23 were Finalists—including two from Colorado!

Christopher Arehart, Nicholas Inslee, and Jacob Vendl, University of Colorado Boulder (Professor Bengt Fornberg)

Ellen Considine, Suyog Soti, and Emily Webb, University of Colorado Boulder (Professor Anne Dougherty)
All three team members are freshmen!

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Colorado Mathematics Awards Steering Committee Members and Contributors

Dr. Richard Gibbs and **Dr. David Carlson**, reception co-chairs; **Ms. Silva Chang**, Dept. of Applied Mathematics, University of Colorado Boulder; **Mr. Paul Gulman**, P.E., National Society of Professional Engineers of Colorado; **Ms. Rhonda Naylor**, Campus Middle School (retired) and Past President, Colorado Council of Teachers of Mathematics; **Mr. Raymond Johnson**, Mathematics Content Specialist, Colorado Department of Education; **Mr. Howard Selbst**, Falcon Creek Middle School (retired); and **Mr. Rocke Verser**, independent computer consultant.

Benefactors (\$1,000 or more) *Dr. David Larue [former Steering Committee member] and the McGraw-Hill Foundation*

Supporters (\$100-\$499) *National Society of Professional Engineers-Colorado; Rocky Mountain Section of the Mathematical Association of America (MAA); and CMA Steering Committee members*

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Contributions and other expressions of support for the Colorado Mathematics Awards (CMA) annual event may be sent to: FLC Foundation, 1000 Rim Drive, Durango CO 81301-3911. Please write CO Math Awards on the memo line.

Pictures of students and teacher-coaches may be viewed at: <http://cma.coloradomath.org>.