



2024 Colorado Mathematics Awards

The 29th annual awards program to recognize outstanding performance in national and international mathematics competitions and contests by Colorado middle school, high school, and undergraduate college students.

Tuesday, May 7, 2024
4:15 – 6:30 p.m.
Maglione Hall – University of Denver

Program

4:15 – 5:00pm Refreshments

5:00 – 6:25pm Welcome: Dr. David Carlson, Co-Founder and Co-Chair, Colorado Math Awards

Remarks: Dr. Joseph Bolz, George Washington High School, Denver Public Schools; CCTM and NCTM Board of Directors. Introduced by **Dr. Raymond Johnson****, Mathematics Content Specialist, Colorado Department of Education and CMA 2024 photographer

Presentation of Awards by CMA Steering Committee members** and other CMA colleagues
Emcee: Ms. Christy Marini, 8th Grade Math and Algebra I Teacher, Campus Middle School, and coach of the 2023 Colorado MATHCOUNTS National Team

- **MATHCOUNTS**: presented by **Ms. Rhonda Naylor****, Campus Middle School (retired), past president of the Colorado Council of Teachers of Mathematics
- **American Mathematics Competitions 8**: presented by **Ms. Marini** and **Dr. Bolz**
- **American Mathematics Competitions 10 and 12**: presented by **Dr. Gulden Karakok**, Professor and PhD Program Coordinator, Dept. of Mathematical Sciences, University of Northern Colorado, and Past Chair, MAA --Rocky Mountain Section and **Mr. Thomas Davids**, Colorado Math Circle Director and Coach, ARML Colorado Teams 1 and 2
- **U.S.A. Junior Mathematics Olympiad and U.S.A. Mathematics Olympiad**: presented by **Dr. Mike Jacobson****, Professor, Dept. of Mathematics and Statistical Sciences, Univ. of Colorado Denver
- **American Regions Mathematics League--Colorado Teams 1 & 2**: presented by **Mr. Davids**
- **Dick Gibbs CMA Scholarship Awards**: presented by **Dr. Jacobson**** and **Dr. Carlson**

6:25pm Closing Remarks: Dr. Carlson

Deep thanks to our other CMA Steering Committee members in preparing for this day!
Sheila Davis, MD MS, Health Chair, Rocky Mountain NAACP State Conference
Paul Gulman, P.E., NSPE, Professional Engineers of Colorado, and MATHCOUNTS volunteer
Pius Kamau, MD, General Surgeon (retired) and Co-founder, Africa Enterprise Group, Denver
Sally Lambert, Engineer (retired), Math Club founder and Coach, Steamboat Springs
Michael Zhang, Student, Cherry Creek H.S.; TEDx Speaker and Organizer; Co-founder, Equity Learning

Special thanks to Sally Lambert for providing engraved medals and to Michael Zhang, Rhonda Naylor, and volunteer Sue Wang for creating, printing, and mounting the certificates into holders. Special thanks also to Krista Weister, Conference & Events Manager, University of Denver!

MATHCOUNTS: Middle School Gateway to Math Competitions!

MATHCOUNTS is an afterschool program for 6th, 7th, and 8th graders which leads to a series of three-hour competitions at school, chapter, state, and national levels. Each year, approximately 140,000 students nationwide participate in school MATHCOUNTS competitions, with about 40,000 students participating at chapter competitions. This year, the state competition for individuals and teams was held in-person at the University of Denver campus on March 16th. The top four finishers are listed in ranked order and comprised the Colorado National Team, which will represent Colorado at the MATHCOUNTS National Competition during May 11-13 in Washington, D.C.

Colorado First Place Team (and Coach)

Aarush Goradia, Alexander Oh, Evan Sun, and Christopher Zhu, Challenge School, Denver (Matt Bixby)

Colorado National Team (and Coaches)

Christopher Zhu Challenge School (Matt Bixby); **Derek Yin**, Altona Middle School, Longmont (Tim Criger); **Aarush Goradia**, Challenge School (Matt Bixby); and **Jasper Huang** Campus Middle School, Greenwood Village (Christy Marini). Team Coach: Matt Bixby

Honorable Mention (and Coaches)

Johnlin Feng, Preston Middle School, Ft. Collins (Tyler Cloud); **Ivan Chang**, Altona Middle School (Tim Criger); **Iris Li**, Stargate School, Thornton (Julie Bassman); **Aarush Shah**, Challenge School (Matt Bixby); **Neo Luo**, Kinard Core Knowledge Middle School, Ft. Collins (Alicia Williams); **Leran Wang**, Campus Middle School (Christy Marini); and **Dylan Jalal**, Challenge School (Matt Bixby)

5-star system for tracking NATIONAL performance on AMC 8, 10 A&B, and 12 A&B contests!

***** A perfect paper! ****Top 0.1% ***Top 1% **Top 2.5% * Top 5%

American Mathematics Competition 8

The AMC 8 is a 40-minute 25-question multiple-choice exam in middle school mathematics designed to promote the development of problem-solving skills. The exam was given during January 18-24, 2024. Students in 8th grade and below are eligible. Nationally, 80,717 students from 2,053 schools participated.

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

- (1) **Joshua Liu******, Davidson Academy Online (Silva Chang, Univ. of Colorado Boulder and Yong Liu)
- (2) **Neo Luo*****, Kinard Core Knowledge Middle School (Alicia Williams)
- (2) **Vincent Pan*****, Belleview Elementary School, Greenwood Village (Jennifer Cohen and Laurie Machado)
- (2) **Darya Yazdi*****, Summit Middle School, Boulder (Maryam Yekta)

Top 6th grader or below: **Vincent Pan*****, Belleview Elementary School (Jennifer Cohen and Laurie Machado) **a 5th grader!**

Honorable Mention (and Coaches)

Jasper Huang** , Campus Middle School (Christy Marini); **Christopher Zhu**** , **Aarush Shah**** , and **Adler Tuley**** , Challenge School (Matt Bixby); **Johnlin Feng**** and **Evan Mainz**** , Preston Middle School (Tyler Cloud); **Derek Yin**** , Altona Middle School (Tim Criger); and **Dillon Greene**** , Cheyenne Mountain Junior High, Colorado Springs (Amy Hammes)

American Mathematics Competitions 10 and 12

The AMC 10 and AMC 12 are both 25-question, 75-minute, multiple-choice examinations in high school mathematics with approximately 12 common problems between them. The AMC 10 is for students in 10th grade and below and covers the high school curriculum up to 10th grade. The AMC 12 is for students in 12th grade and below and covers the entire high school curriculum, including trigonometry, advanced algebra, and advanced geometry, but excluding calculus. Each contest was given in two different versions on different dates in November 2023. The AMC 10A and 10B exams were taken by 30,044 and 22,912 students respectively; many students took both exams. Similarly, the 12A and 12B exams were taken by 21,937 and 16,656 students, respectively. For students who take both versions of the same test, CMA uses the higher national ranking.

American Mathematics Competitions 10 and 12 (continued)

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

- (1) **Joshua Liu*******, Davidson Academy Online (Silva Chang, Univ. of Colorado Boulder, and Yong Liu)
- (2) **Shruti Arun*****, Cherry Creek High School (Jim Padavic, Thomas Davids, and Silva Chang)
- (3) **Eric Chen*****, Cherry Creek High School (Jim Padavic)

Top 8th Grader or below: **Joshua Liu*******, Davidson Academy Online (Silva Chang and Yong Liu)

AMC 10—1st Honorable Mention (and Coaches)

Rohith Thomas***, Cherry Creek High School (Jim Padavic); **Derek Yin*****, Altona Middle School (Tim Criger and Silva Chang); **Amy Zhang****, Lakewood High School (Ana Schultz); **Sophie Cox****, Colorado Academy, Denver (David Smith); **James Lee****, Fossil Ridge High School, Ft. Collins (Todd Pfeifer and Silva Chang); **Alex Zhang****, Ralston Valley High School, Arvada (Silva Chang and Ming Song); **Jonah Wang***, Fairview High School (Dominique Youngren)

AMC 10—2nd Honorable Mention (and Coaches)

Hanbei Bao, **Kaylor Huang**, and **Kevin Yang**, Fairview High School (Dominique Youngren and Silva Chang); **Anirudh Gadepalli**, **Kushagra Singh**, and **Agastya Prabhu**, Cherry Creek High School (Jim Padavic); and **Sabrina Xu**, Rock Canyon High School, Highlands Ranch (Karen Bukowski)

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

- (1) **Srinivas Arun**** Cherry Creek High School (Jim Padavic and Silva Chang)
- (2) **Atticus Wei****, The Vanguard School, Colorado Springs (Vic Dallin and Matt Van Wieren)
- (3) **Jacob Greene****, Stargate School (Silva Chang and Paul Rightmyer)

Top 10th Grader or below: **Shruti Arun***, Cherry Creek High School (Jim Padavic, Thomas Davids, and Silva Chang)

AMC 12—1st Honorable Mention (and Coaches)

Abhinav Krishna**, **Ethan Lou****, **Ayan Vaishnav***, and **Patrick Li***, Cherry Creek High School (Jim Padavic); **Jackson Dryg***, Fossil Ridge High School (Thomas Davids and Silva Chang); **Austin Zhang***, Grandview High School, Aurora (Jocelyn Hatfield); and **Justine Dong***, Fairview High School (Dominique Youngren)

AMC 12—2nd Honorable Mention (and Coaches)

Davin Yin, Fairview High School (Dominique Youngren and Silva Chang); **Jayden Wang** and **Toby Shu**, Cherry Creek High School (Jim Padavic); and **Pei Xiao (Mia) Wu**, D'Evelyn Jr/Sr High School (Cory Ryckman and Silva Chang)

AMC Young Women in Mathematics (YWM) Certificate Program

This Program honors the top-performing female students on the AMC 8, 10A, 10B, 12A, and 12B. The top 5 scorers in each competition nationwide split a \$5,000 scholarship, and the top 5 scorers from each MAA Section in each competition receive certificates. Unfortunately, this year's list of YWM certificate winners has not been released. Last year, **Shruti Arun**, then a 9th grader at Cherry Creek High School, placed among the top five young women nationally who took the AMC 10B exam. The five of them split the \$5,000 scholarship!

American Invitational Mathematics Examination (AIME) and the USA Math Olympiads

The *American Invitational Mathematics Examination* (AIME) is a 15-question, 3-hour examination, in which each answer is an integer number between 0 to 999. The questions on the AIME are much more difficult than those on the AMC 10 and AMC 12. Invitations were issued to approximately 2.5% of all AMC 10 scorers and 5% of AMC 12 participants. Two versions of the exam were administered on different days in February. Last year, 5,861 students nationwide participated in AIME I; an additional 697 students took the AIME II exam on the alternate date.

American Invitational Mathematics Examination and the USA Math Olympiads (continued)

The *USA Mathematical Olympiad* (USAMO) and the *USA Junior Mathematical Olympiad* (USAJMO) are six-question, two-day, 9-hour essay/proof examinations given to the top students participating in the AMC 10 and 12 exams and the AIME.

Currently, approximately 260-270 students are invited to take the USA Math Olympiad (USAMO) exam each year, and 230-240 students are invited to take the USA Junior Math Olympiad (USAJMO) exam. Invitations are based upon weighted averages of student scores on the AIME and the AMC 12 (or AMC 10) exam, respectively.

This year, two Colorado students qualified for the USAMO exam, and two qualified for the USAJMO exam. Top finishers are invited to a 3-week intensive summer program to select and train the six members of the U.S. team for the *International Mathematical Olympiad* (IMO) to be held in Bath, United Kingdom in July.

USA Math Olympiad Qualifiers: **Ethan Lou**, Cherry Creek High School (Jim Padavic), and **Srinivas Arun**, Cherry Creek High School (Jim Padavic and Silva Chang). Srinivas received a **Bronze Winner** award.

USA Junior Math Olympiad Qualifier: **Shruti Arun**, Cherry Creek High School (Jim Padavic, Thomas Davids, and Silva Chang) received **Honors**, and **Joshua Liu**, Davidson Academy Online (Silva Chang and Yong Liu) received **Honorable Mention**. Joshua is an 8th grader!

American Regions Mathematics League – Colorado Teams 1 and 2

Each year about 2000 high school students from the U.S. and other countries form 15-member teams to compete at the national ARML competition in June. In the 2023 ARML Competition, half of the 110 teams competed at one of the four regional sites and the other half (including the Colorado team) competed in person locally.

Last year, Colorado sent two 15-person teams to compete in person at the western regional site in Reno, Nevada, against 106 other teams across four regional sites. Team 1 won 1st place in Division B (out of 49 teams), and their strong performance means that we will compete in Division A this year. The members of these two teams and their schools are listed below:

Team 1: **Shruti Arun, Srinivas Arun, Abhinav Krishna, Ethan Lou, and Rohith Thomas**, Cherry Creek High School, Greenwood Village; **Hanbei Bao, Chris Payne, Davin Yin, and Kelly Young**, Fairview High School; Boulder; **Jackson Dryg and James Lee**, Fossil Ridge High School, Ft. Collins; **Allison Duan**, Peak to Peak Charter School, Lafayette; **Alex Zhang**, Ralston Valley High School, Arvada; **Jacob Greene**, Stargate School, Thornton; and **Ryan West**, ThunderRidge High School, Highlands Ranch

Team 2: **Amanda Chen, Saksham Hassanandani, and Om Khurana** (alternate), Cherry Creek High School, Greenwood Village; **Justine Dong, Kaylor Huang, Jonah Wang, and Kevin Yang**, Fairview High School, Boulder; **Sophia Dai**, Lakewood High School; **Aanshi Shah**, Legacy High School, Broomfield; **Tanush Shekhar**, Peak to Peak Charter School, Lafayette; **Helen Wan**, Pine Creek High School, Colorado Springs; **Matthew Proctor**, Regis Jesuit High School, Aurora; **Sabrina Xu and Dhriti Ramesh** (alternate), Rock Canyon High School, Highlands Ranch; **Tristan Cao and Kyle Zhu**, Stargate School; and **Emma Russell**, Steamboat Mountain School

Teams 1 and 2 Coach and Colorado Math Circle Director, Thomas Davids

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Looking ahead to CMA 2025: In May next year, Colorado Math Awards will celebrate its 30th year of recognizing top performance by Colorado middle school and high school students in rigorous state and national math competitions.



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We're looking for 100 **Friends of CMA**™ to support next year's reception and awards program and the Dick Gibbs Scholarship Award Fund with a minimum \$30 donation. CMA has begun the process to obtain 501(c)(3) tax exempt status, but contributions currently are not tax-deductible. Contributions can be made in cash or by check (payable to Colorado Math Awards) and sent to: Colorado Mathematics Awards, P. O. Box 100754, Denver, CO 80250. Or you may use this QR code.

For more information about CMA, visit us at coloradomathawards.org.