



Chapter of Excellence Application

2021-2022

Colorado School of Mines Material Advantage Chapter
CSMMAC

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2021-2022 Officers



Rebekka Olson, **Chair**



Camden Gruchow, **Vice Chair**



Darrien Hammond, **Treasurer**



Carmen Sanchez, **Secretary**



Alex Hopkins, **Outreach Chair**



Kelsey Ferro, **Outreach Chair**



Neil Stockmal, Outreach Chair



Tatum David, Social Chair



Chris Currie, Social Chair



Caleb Schenck, Social Media Chair



Sarah Case, Snr Rep



Aidan Ravnik, Jr. Rep

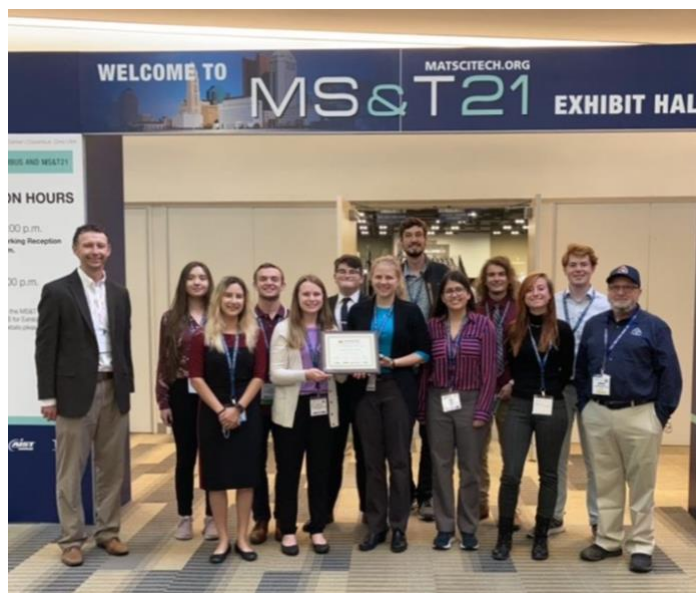


Claire Vozel, Soph. Rep

Chapter Overview

The past 2021-2022 school year has been a very eventful year for the Colorado School of Mines Material Advantage Chapter (CSMMAC). CSMMAC students attended both the MS&T and TMS conferences this year to network with metallurgical and materials professionals and attend technical lectures. We were excited to accept our Chapter of Excellence Award at MS&T.

This year the executive committee aimed to increase student participation as we transitioned back to in-person activities. We looked for ways to continuously improve engagement. Some key strategies to reach this goal were finding professionals in the field with unique topics to provide engaging lectures at our weekly meetings, increasing the quality of our social events, and trying to provide more outreach opportunities for our members to educate others about metallurgical and materials engineering. Our Vice Chair worked to reach out to different contacts to find a variety of professionals with different backgrounds to provide our chapter with a broad range of topics. The Vice Chair and Chair even found a contact for speakers from Sierra Space sitting next to them on the plane to Columbus, OH for the MS&T Conference. The Social Media Chair also found a great speaker from networking at the MS&T Conference. To increase the quality of our social events, we provided more incentives to attend including food and prizes for trivia nights. We also hosted a few larger events each semester to encourage more participation. These social events are important for members of our chapter to get to know each other personally and take a break from academics to reduce stress. Since we were able to do in-person outreach events, we were able to partner with several middle schools and high schools to do materials science demos and describe the science behind the demos to the students.



Calendar of Events

8/27/2021 – Outreach Event: Celebration of Mines
8/30/2021 – Welcome Meeting
9/8/2021 – Technical Meeting: Jacob Feldman from GE Aviation
9/13/2021 – Technical Meeting: Bryce Wilcox, Nathan Jackson, and Josh Agapito from Milwaukee Tool
9/14/2021 – Technical Meeting: Tanner McAdoo from Nucor Steel
9/18/2021 – Outreach Event: Discover Mines
9/20/2021 – Technical Meeting: AIST
9/22/2021 – Outreach Event: Mitchell Elementary Math and Science Night
9/27/2021 – Technical Meeting: Mike Hill from Skyworks
10/4/2021 – Technical Meeting: Andrew Ruzek from Materion
10/11/2021 – Intern Panel
10/16/2021 – Outreach Event: Discover Mines
10/25/2021 – Technical Meeting: Grant Hudish from CoorsTek
11/1/2021 – Technical Meeting: Charles Lewinsohn from Ultra Safe Nuclear
11/8/2021 – Technical Meeting: Emmanuel De Moor from Colorado School of Mines
11/15/2021 – Technical Meeting: Elizabeth Dickey, AcerS President
11/18/2021 – Outreach Event: JFK Demo Day
11/22/2021 – Technical Meeting: MME Alumni Advisory Board
11/29/2021 – MME Course Feedback
12/1/2021 – Social Event: CSMMAC Game Night
12/9/2021 – Social Event: Review Day Burritos
1/24/2022 – Technical Meeting: Nyomi Lewis from Materion
1/31/2022 – Technical Meeting: Lisa Bernau and Jim Hendrickson from Cleveland Cliffs
2/7/2022 – Technical Meeting: Casey Davis and Ty Porter from Exponent
2/14/2022 – Technical Meeting: Adam Polizzi from Elementum
2/23/2022 – Social Event: CSMMAC Trivia Night
2/26/2022 – Outreach Event: Girls Lead the Way
3/7/2022 – Technical Meeting: May Martin from NIST
3/9/2022 – Outreach Event: Major Fair
3/14/2022 – Social Event: Pi Day Celebration
3/15/2022 – Outreach Event: CSMMAC Mentorship Social
3/20/2022 – Outreach Event: Explore Mines
3/28/2022 – Technical Meeting: Dr. Bourne from Colorado School of Mines
4/4/2022 – Technical Meeting: Megan Shibao, Michelle Hoffman, and Scott Mitzner from Sierra Space
4/6/2022 – Social Event: SkateSMMAC
4/10/2022 – Outreach Event: Explore Mines
4/11/2022 – Technical Meeting: Michael Short from MIT
4/18/2022 – Technical Meeting: Suveen Mathaudhu from Colorado School of Mines
4/25/2022 – Technical Meeting: Bryce Wilcox from Milwaukee Tool
4/30/2022 – Outreach Event: Rocky Mountain MESA
5/2/2022 – MME Course Feedback
5/3/2022 – Social Event: End of Year Party
5/5/2022 – Social Event: Review Day Burritos

Chapter Management

The many events that were put on by this year's executive board would not have been possible if not for the organizational structure in place. Throughout the year, the CSMMAC board communicated effectively to ensure things ran smoothly. The board held weekly officer meetings to plan and assign tasks to keep people accountable for their roles.

Recruitment Efforts

The traditional recruitment activities for CSMMAC include Celebration of Mines, Discover Mines, and Explore Mines which are discussed in the Service section. The Discover Mines and Explore Mines events this year were held back in-person, but the school decided to keep the virtual event option as well. This change allowed CSMMAC and the MME department to reach more prospective students. To encourage more new students to attend, in addition to emails, all CSMMAC events were announced weekly in core classes to ensure all MME students were aware of the meetings. All of our events were also included in the "Daily Blast," an email sent out by the school that encompasses all campus events and opportunities. Including our events in this school-wide email was a new initiative to reach more students that might be interested in our organization.

Bylaws Overview

Bylaw Revisions: The meeting to review bylaws and suggest changes is an important meeting that keeps CSMMAC applicable and properly serving the MME student body. This year there were no proposed revisions after reviewing. The change we made last year to add a Social Media Chair was a success. The Social Media Chair posted on LinkedIn about all of our weekly meetings to thank the speakers and inform members about the great speakers we continue to have the opportunity to listen from. There are 188 members on the LinkedIn which includes current students, faculty, alumni, and others who are interested in following the chapter's activities.

Dues: During the Fall and Spring semesters, dues are usually collected by the Secretary and Treasurer; however, they were not required this year. CSMMAC did not spend as much money during the 2020-2021 school year as expected due to restrictions with COVID, so our chapter was able to function without requiring additional funds from students.

Elections and Officer Transitions: Elections for CSMMAC were held on March 28th. At the beginning of our fun Pi Day Meeting, current officers gave a presentation about the officer roles they held on CSMMAC and requirements/expectations of officers was discussed. Officer transition documents and guides were updated to inform the incoming executive board of challenges encountered this past year, and advice on planning successful events. Meetings were held between current and incoming executive members for each position to talk and answer any questions. The new 2022-2023 executive board was invited to the last officer meeting of the year to gain an idea of how meetings are run. The incoming executive board plans to meet during the summer to discuss plans for the fall.

Officer Duties

Each officer position played a crucial role in the operation of CSMMAC. Executive board roles are laid out in the chapter bylaws. The responsibilities of each role are unique and help delegate the responsibility of running the chapter and successfully planning and executing a wide variety of events.

Chair: The main point of contact between the chapter and ASM Rocky Mountain Chapter, the public, partnering societies at Mines, and Colorado School of Mines (Mines). The chair is responsible for all chapter activities and assumes all duties that are not otherwise delegated by the Bylaws.

Vice Chair: Supports the Chair and aids whenever and wherever the Vice Chair can be of assistance to the Chair. Duties include organizing speakers from professional societies, industry, within the department or Mines to present at meetings.

Treasurer: Oversees all the fiscal responsibilities including producing a semester budget, tracking membership dues, and documenting CSMMAC funds and expenditures. Serves a vital role in club functioning within the requirements of the school.

Secretary: Documents topics discussed at CSMMAC meetings and maintains all chapter records and takes attendance at meetings.

Social Chair(s): Coordinate social activities each semester including the Fall BBQ, End-of-Year Departmental Spring Party, Review Day Burritos, and much more. The Social Chair(s) plays a key role in member recruitment and retention.

Outreach Chair(s): Organize and develop outreach activities to support departmental recruitment, campus events, and community service with an emphasis on exposing STEM to K-12 students.

Social Media Chair: Posts recaps of the weekly meetings and additional events on the CSMMAC LinkedIn page and is in charge of creating the CSMMAC Material Destruction YouTube Channel (airing in the next few years).

Class Representatives: Promote activities happening for each respective grade level and increase involvement of students.

Keramos Representative: Relayed information to CSMMAC exec board about events happening and worked with Chair to create joint CSMMAC-Keramos events that would benefit both organizations.

Material Advantage Scholarship Database

CSMMAC encourages members to apply for Material Advantage member organization scholarships as well as scholarships associated with materials companies such as Newmont and the Ellwood Group. CSMMAC maintains a document containing information about recurring scholarships and informs members of other scholarships through the weekly CSMMAC email.

Keramos

Keramos has seen incredible expansion over the past year, going from 6 active members to 25 active members. This has accompanied greater cooperation with CSMMAC in putting on events, a partnership Keramos hopes to expand in the coming year with the major event Future Ceramist's Day.

One of the primary focuses of Keramos has been to manage the hot glass shop on campus. This duty includes hosting Soda Lime Saturday events for the campus as well as for specific groups and organizations. Additionally, the course The Art and Science of Glassblowing is extremely popular and brings many new students to the MME department. In addition to managing the glass shop, this past semester Keramos secured two pottery wheels and has begun to build a list of experienced users of the pottery studio. It is the goal of Keramos to offer monthly 'Play with Clay' events as a joint social event with CSMMAC. The glass shop and pottery studio will be and have been instrumental in giving students the hands-on experiences with ceramics that Keramos strives to deliver to campus.

Technical Programming



CSMMAC holds weekly meetings to provide our members with speakers from various metallurgical and materials fields. Both academic and industry speakers share their career paths, current work, and advice during lunchtime presentations. Some of the topics that speakers have covered this year include hydrogen embrittlement, metallic additive manufacturing, failure analysis, and many more. There were also a

variety of industries such as aerospace, steel, and semiconductors that our members had the chance to learn about. Our chapter takes pride in having a “famous” person, known for their work in metallurgical and materials fields, present at a meeting each semester. For the fall semester, we hosted Dr. Elizabeth Dickey virtually. For the spring semester, we hosted Dr. Mike Short from the MIT Nuclear Science and Engineering department.

Academic and Laboratory Speakers

Charles Lewinsohn – Ultra Safe Nuclear:

Dr. Charles Lewinsohn spoke to CSMMAC about his experiences in technology development. He discussed the ideas of liquid sodium batteries and how he predicts they may become important to energy storage in a renewable dominant electric grid.

Emmanuel De Moor - Colorado School of Mines

Dr. De Moor, the MME thermodynamics professor, presented about his background to CSMMAC members. He discussed what his college experience was like in Belgium at Ghent University. His unique experience was very intriguing to the students. I think all of the students left the talk with a greater appreciation for the culture at Mines and the supportive professors and faculty.

Elizabeth Dickey – President of The American Ceramic Society:

Dr. Elizabeth Dickey spoke to CSMMAC virtually about her research in creating multilayered ceramic capacitors. She discussed many of the challenges associated with these complex devices. She was a highly esteemed speaker to have presenting to CSMMAC.

May Martin – National Institute of Standards and Technology (NIST):

May Martin discussed her research with hydrogen embrittlement. She also described how NIST promotes safe, competitive, and effective manufacturing.

Gerald Bourne – Colorado School of Mines:

Dr. Bourne, a professor at Mines and a CSMMAC advisor, spoke about his career journey and some of his research highlights. He provided helpful and entertaining life advice.

Michael Short – Massachusetts Institute of Technology (MIT)

Dr. Michael Short gave a great talk on CRUD resistant coatings for nuclear power plants and on detecting radiation damage in centrifugal enrichment facilities. He was a highly esteemed speaker to have presenting to CSMMAC members.

Suveen Mathaudhu – Colorado School of Mines

Dr. Suveen Mathaudhu presented a fun talk about the ultimate superhero material. He presented the science behind the marvelous materials which inhabit the superhero metaverse. He also talked about how engineers are the real-life superheroes.

Industry Speakers

Glenn Culbertson and Jake Feldman – GE Aviation:

Glenn Culbertson and Jake Feldman presented about how materials scientists and engineers help build and maintain safe jet engines. They also discussed more about their company and how GE Aviation designs and produces engines for commercial and military purposes.

Bryce Wilcox, Nathan Jackson, and Josh Agapito – Milwaukee Tool:

The engineers from Milwaukee Tool gave a presentation about their company and how they innovate in materials engineering. Their presentation was done virtually on Zoom, but CSMMAC members were excited about the fun swag they shipped us.

Tanner McAdoo – Nucor Steel:

Tanner McAdoo, a recent Mines alumni, presented on his transition from college to industry. His presentation showed how he was able to use the skills of problem-solving that he gained at Mines to apply to his job in industry.

Michael Hill – Skyworks:

Dr. Michael Hill gave a presentation about producing oxides for electrical, coatings, and other applications. He also talked about the company Skyworks which focuses on making high-quality and high-demand products.

Andrew Ruzek – Materion

Andrew Ruzek presented about his role in developing beryllium products. Some of the work he is doing applies to creating the James Webb space telescope which was exciting.

Grant Hudish - CoorsTek

Dr. Grant Hudish spoke about his career at CoorsTek, and the path he took to get there. He gave some great advice about graduate school for CSMMAC members that were interested.

Nyomi Lewis - Materion

Nyomi Lewis, a recent Mines alumni, presented about imposter syndrome. She talked about how imposter syndrome affects many people and how it can be hard as an engineer in industry or as a student at Mines where you are surrounded by very smart people. She discussed her struggles with imposter syndrome and provided advice about how to work on overcoming it.

Lisa Bernau and Jim Hendrickson – Cleveland Cliffs

Jim Hendrickson spoke about the opportunities at Cleveland Cliffs. Lisa Bernau spoke about some difficulties that they face with continuous casting and how they problem-solve to figure out a solution. Both speakers shared their career and life advice with the students.

Casey Davis and Ty Porter – Exponent

Casey Davis and Ty Porter spoke about failure analysis and litigation. They discussed some of the high-end projects they have worked on. It was great hearing about their work experiences and their career paths.

Adam Polizzi – Elementum 3D

Adam Polizzi talked about his journey from being a custom glass installer to helping develop novel methods of metallic additive manufacturing. He went over his work with powder-creating powders for powder bed diffusion.

Megan Shibao, Scott Mitzner, and Michelle Hoffmann – Sierra Space

All three speakers had very different backgrounds and different areas of work at Sierra Space. It was great to hear about the variety of work Metallurgical and Materials Engineers can do. It was fascinating to hear about the development of the Dream Chaser, a multi-mission space utility vehicle that will head to low-Earth orbit destinations with crew and cargo.

Bryce Wilcox – Milwaukee Tool:

Bryce Wilcox presented about how machine learning is a growing area of science and is becoming very influential within the realm of materials engineering. He discussed how he uses machine learning in his career as a materials engineer, and he gave us some helpful resources to get started.

Additional Meeting Events

CSMMAC Welcome:

For our first meeting, we had the MME department head, Ivar Reimanis, present about the MME major and opportunities within it. The CSMMAC officers also presented and introduced what CSMMAC is and described the different events and opportunities that come with the organization.

Intern Panel:

During the fall semester, CSMMAC hosted an intern panel of 5 CSMMAC students. We had students with internships in the steel industry, the mining industry with extractive metallurgy and mineral processing, the ceramics industry, and undergraduate research. This meeting was a great way for underclassmen to ask questions and advice for internships.

Student Feedback Sessions:

Two student feedback sessions were hosted, each was held near the end of the semester. The purpose of these sessions was to receive and record student feedback for the MME department classes. The recorded feedback was then given anonymously to the department head for further consideration.

Career Development

One of the primary roles of CSMMAC is to provide professional development opportunities to students outside of the classroom. Additionally, students were involved in some exciting materials student competitions.

Technical Meetings

MS&T 2021: The chapter covered the cost of registration and travel for 12 members who wanted to attend the conference. Students enjoyed networking and listening to interesting technical talks. Two Mines students participated in the mug drop which the other students enjoyed watching and cheering on. One of the Mines mugs made by Mitchell Lensing won 2nd place for aesthetics! Those that attended found the conference very beneficial.



IMAT 2021: At this conference, CSMMAC students participated in the poster competition, earning 1st and 2nd place.

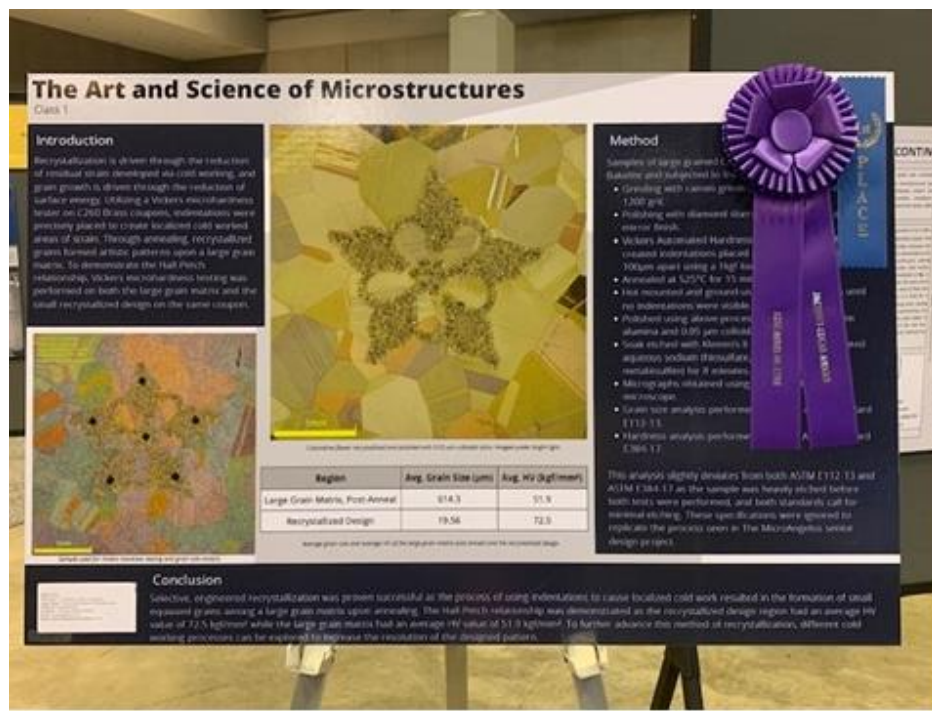
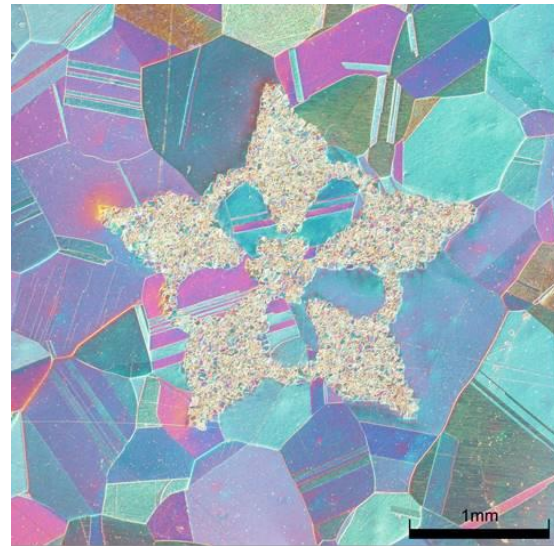
AWS 2021: Three CSMMAC students attended the AWS conference virtually in November 2021. This event was a great experience to gain knowledge without the restriction of traveling.



TMS 2022: The chapter covered the cost of travel for 12 members who wanted to attend the conference. The students were required to pay their own registration fees. Four undergraduate students participated in the Materials Bowl. After weeks of preparation, they were excited to earn 4th place against some tough competition. Five students submitted a blade for the bladesmithing competition which was exciting to see on the nice display at the conference. All of the members who attended enjoyed the fun networking mixers, the engaging technical talks, and the opportunity to meet new people.

Metallography Contest, hosted by the International Conference & Exhibition on Materials Science and Metallurgical Engineering (IMAT):

The Spring 2021 Senior Design Team, The MicroÅngelos, were charged to create an entry for the International Metallography Society Metallography Contest held at IMAT 2021 in St. Louis. Preston Cole, Robert S. Crow IV, Grace A. Rome, Carmen M. Sanchez, Gregory D. Vigil, and Addison C. Wong comprised Dr. Gerald Bourne's Spring 2021 Senior Design team. Dr. Bourne asked the MicroÅngelos to design real microstructural features using their knowledge of processing, structure, and properties, to create an artistic feature in a microstructure that they could image and submit to the IMS contest, with no false coloring or image alterations. The flower in the images is a columbine, the State Flower of Colorado. The MicroÅngelos submitted to several classes in the competition. They won first place in Class 1 (light microscopy) and Class 3 (student entries), which entered them into further competition. The Class 3 submission won The George L. Kehl Award, a prestigious award, recognizing outstanding achievement by undergraduate students. The Class 1 submission won the Best in Show Jacquet-Lucas Award. The winning submission of the George L. Kehl Award was featured as Image of the Month in *Sliplines*, a publication by IMS, for October 2021, and the winning submission of the Best in Show Jacquet-Lucas Award was featured in the November issue of *Sliplines*. The students received plaques plus monetary awards for their achievements.



Cast in Steel 2022 Competition, hosted by Steel Founders Society of America (SFSA):

The Mines team, consisting of Daniel Bourque, Jamie McIntyre, Myles Murphy, Mason Weems, and Naya Winkelstein, submitted a 30-inch sword weighing approximately 2.5 pounds. Additionally, the team had to submit a short video showcasing the process and a technical report explaining historical relevance, sword testing, and scientific data around alloy choice. The competition was held in Columbus, Ohio, where several teams from around the country (and several



from Mexico) tested the performance of their blades against a steel conduit and a pool noodle. The edge of the blade sustained minor rolling from the steel conduit and was sharp enough to easily slice through the pool noodle. However, the rolling on the edge was enough to eliminate Mines from the Top 5 swords for performance. Overall, the Mines team performed well earning 2nd place for “Best Video” and Honorable Mention for “Best Handle.” For those competing in future competitions like this, it is important to have a more forgiving timeline to account for unforeseen complications. Winning the competition is within reach when time is given more consideration. The sword itself will be sold by SFSA in an auction to fund scholarships for student programs it supports.

ASM Rocky Mountain Chapter

CSMMAC is active in the ASM Rocky Mountain Chapter. Rebekka Olson served as the student representative to the ASM chapter as part of her duties as CSMMAC Chair. She attended meetings and was able to connect the professional chapter to the collegiate chapter.

ASM Meeting Attendance: Faculty, graduate, and undergraduate students attended the monthly ASM meetings virtually.

Service

This year CSMMAC participated in an abundance of outreach activities, volunteering over 55 hours as a chapter while interacting with students of all ages. Through the events that were hosted, students interfaced with the community and generated interest in STEM, materials engineering, and metallurgy.

Campus Activities

Celebration of Mines - 8/27/21:

This is an event at the beginning of the school year showcasing and celebrating the numerous organizations and clubs at Colorado School of Mines. Our club educated students and community members about our organization, demonstrated several applications/examples of Materials Engineering, and talked about career prospects and personal experiences/internships at the event. For students interested in MME or CSMMAC, an email sign-up was also collected at this event for future communications throughout the semester. In addition to the in-person event, CSMMAC created a video for students to watch that showcased what Metallurgical and Materials Engineering is as a major.

Discover Mines - 9/18/21 and 10/16/21:

Prospective Mines students, normally in the latter years of high school, joined a fair hosted by the Colorado School of Mines to find out more about potential majors and organizations at the school. CSMMAC always assists the MME department with this event, providing volunteers who were able to answer student and family questions about Mines and college life in general. There was both an in-person and remote option, so that as many prospective students as possible could be involved. The virtual booth also included information about the major, a live Q&A chat, and videos and pictures for the prospective students to learn more about MME. This event was also another great way to raise awareness of what Materials Engineering is and also to give back to the school for its continued support of CSMMAC.

Explore Mines - 3/20/21 and 4/10/21:

Similar to the previously discussed Discover Mines, accepted Mines students were able to join either virtual or in-person fairs hosted by Colorado School of Mines to explore different majors and organizations including MME and CSMMAC. CSMMAC members again volunteered to answer any questions students or families may have had while also showcasing the MME department and CSMMAC.

Major Fair-3/9/2022

This event involved describing the Metallurgical and Materials Engineering major to undecided mines student. Chapter members answered questions regarding course content, scheduling, employment options and more.

K-12 Outreach

Mitchell Elementary Math and Science Night- 9/22/2021

CSMMAC members demonstrated materials science concepts to elementary school students to increase interest in materials science in particular and engineering in general. These included Prince Rupert's drops, Nonnewtonian fluids, and fatigue.

JFK Demo Day-11/18/2021

CSMMAC and Keramos worked together to demonstrate ACerS demonstration kits to students at John F. Kennedy High School. These experiments included fiber optics, shape memory alloys, fluorescent, and other material science-related demonstrations. Volunteers also answered questions about college and engineering. The below image is of CSMMAC volunteers presenting to the students.



Girls Lead the Way - 2/26/22:

This is a campus-wide outreach event, inviting female high school students from across the Colorado area to explore STEM engineering careers at Mines. CSMMAC partnered with the Society of Women Engineers to explain materials science concepts and show off applications of material science. Volunteers also answered questions about MME, Mines, and college life in general.

Rocky Mountain MESA- 4/30/22:

CSMMAC volunteers demonstrated materials science experiments to underserved middle and high school students. The students learned about shape memory alloys, polymers, piezoelectrics, and other materials science topics.

Mentorship Program

In the spring of 2022, upperclassmen were partnered with underclassmen either in or interested in the Metallurgical and Materials Engineering (MME) program at Mines. Upperclassmen provided insight and recommendations about classes and anything related to MME. This program was developed by the outreach chairs in the 2017/18 executive board and has continued since then due to positive feedback from mentees and the desire of upperclassmen to help get underclassmen involved in CSMMAC and other campus activities.

Social Activities

Students had a chance to de-stress from school and homework during the semester by attending one of the many events put on by the social chairs. Social events were also an opportunity for CSMMAC members to meet and get to know one another which helped make our organization feel welcoming and inclusive.

Welcome Back BBQ:

At the beginning of the school year, CSMMAC hosted a barbeque to welcome students and faculty back to school. This event was a great place for students and professors to mingle, enjoy good barbeque food, and play some lawn games.

Game Night:

CSMMAC hosted a game night with two Jackbox Game packs. This event allowed students to meet others within CSMMAC at the beginning of the year.

Trivia Night:

Hosted trivia, quizzing students on science television facts. The winners received unique student-made prizes, including a glass-blown vase. The event had 20 participants who enjoyed light snacks. There was active participation and socialization among many student groups thought the event.

Pi Day Trivia:

Our Social Chairs hosted a Pi day trivia for our meeting on March 14th. Our members enjoyed fun trivia about the mathematical pi as well as the food pie. CSMMAC purchased pie and some students brought in their homemade pie for their peers to enjoy.

Review Day Burritos:

To decrease the stress of finals testing, CSMMAC continued the tradition of spoiling the students of the MME department with breakfast burritos.

SkateSMMAC:

This spring, CSMMAC hosted a larger social event at a Skate City near Golden. CSMMAC rented out the skating rink for students and faculty to enjoy a night of roller skating.



End of Year Party:

This year's end of year party celebrated the graduating seniors and was held outside on the Hill Hall lawn on the Mines campus. Students were able to play lawn games with their fellow graduating MME students, non-graduating students, and professors and enjoyed locally catered Sherpa House.





*The George S. Ansell Department of Metallurgical and
Materials Engineering
1500 Illinois Street, Golden, Colorado 80401-1887*

May 11, 2022

To whom it may concern:

We are writing a very positive letter of support on behalf of the Colorado School of Mines Material Advantage Chapter (CSMMAC) for the Chapter of Excellence Program. CSMMAC has been integral to the Metallurgical and Materials Engineering (MME) department and Colorado School of Mines activities for several years. In the past year, the students started transitioning back to in-person activities while still having the flexibility to offer hybrid and remote activities when needed. The practices that CSMMAC has established to reach students in multiple formats will continue to enable the chapter to reach a diverse and large audiences. In particular, CSMMAC once again benefitted from an excellent leadership team who set the direction of the chapter and maintained a high level of positive activity on multiple fronts.

Given the opportunity to have in-person activities, CSMMAC renewed their focus on professional development opportunities for the members through technical talks from a variety of industries and fields. The held weekly meetings, most of which included a technical talk. The industries represented included steel, ceramics, aerospace, tools, failure analysis, and academia. Clearly, there was a strong appeal for these types of activities as the students were very engaged in the talks, and there was often a line to talk with the speakers after the meeting. Because of the strong engagement and opportunity to network with students, the chapter already has multiple groups interested in speaking at meetings next year.

The renewed opportunities for in-person activities also enable CSMMAC to focus on student competitions, the success of which was another major highlight for the chapter this year. Students in the chapter participated in and won awards at the MS&T, IMAT, and TMS annual conferences in diverse events ranging from mug drop to the International Metallographic Society Metallography contest. Additionally, students from the chapter won multiple scholarships from the partner societies.

Outreach continues to be a core, high priority activity for CSMMAC, and is utilized to serve the Mines and external communities. These events inspire students at multiple levels in STEM areas and sometimes help recruit them to pursue materials engineering degrees. Often, the MME department solicits help from CSMMAC, particularly with demonstrations and sharing student experiences. CSMMAC participated in several outreach activities over the past year, many of which were in person again! The chapter also held successful in-person social activities this year, which are critical to community building for the department.

The Metallurgical and Materials Engineering department at Mines considers CSMMAC to be core to its activities and continues to utilize CSMMAC for input on our curriculum and courses as well as evaluation of teaching assistants and faculty for awards. We are extremely fortunate that we can tell incoming students that they have the opportunity to get involved in a chapter annually considered amongst the best in the world. This year is no exception! We are very proud of this group! Please let us know if you have any further questions.

Sincerely,

CSMMAC Co-Advisors

Jerry Bourne

Geoff Brenneka

Kip Findley