The Colorado Chapter of Keramos



2019-2020 Annual Report

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Keragram Summary Article

The Colorado School of Mines Keramos chapter has had an exciting year of continuing and building upon traditions while creating new memories and remaining flexible when presented with new circumstances. For the portion of the semester held on campus, weekly meetings were held and the glass shop remained consistently busy. This year, we expanded outreach activities and continued to strive for the professional development of all chapter members. In addition to this, we continued building a strong sense of community between members.

Memorable moments from this year include our chapter's participation in conferences, educational outreach events, social events, and expansion and continued maintenance of the glass shop. This year, our chapter had members attend several different academic and professional conferences, including the MS&T, TMS, and GPC. Professional development in our chapter was highlighted this year with career day preparation meetings, presentations from graduate students, and the annual etiquette dinner that was expanded this year to invite Colorado School of Mines Materials Advantage members. The glass shop was very popular on campus this year, with more classes being added to accommodate the demand. Keramos members continue to assist by volunteering during sales, working as teaching assistants, and demoing glass blowing techniques all under the supervision of our amazing glass shop managers. Outreach continued to be a focus this year, with chapter members volunteering at several events, most focused on STEM education. A day for educators in K-12 to dive into materials science demonstrations was originally planned for spring 2020, possible with our CGIF grant. Unfortunately due to the COVID-19 pandemic, the event will now be passed forward, along with the funding, to the executive team for the 2020-2021 year. The plan remains faithful to the original grant proposal, with a date change and a possible digital option depending on the state of the pandemic. Our end of semester plans, including spring initiation and several social events were also changed, but the chapter successfully adapted and was able to find unique ways to have these events.

This year, our chapter continued to progress and we are proud of all that has been accomplished. This year especially has shown that our chapter is innovative and dedicated, and we are so excited to see what the Colorado School of Mines Keramos chapter becomes in years ahead!

Alexandria Mares President 2019-2020

Chapter Advisor Executive Summary

The Colorado chapter of Keramos grew quickly and is now at a steady state--this is not a negative thing, as the chapter is one of the strongest in the country and is also one of the stronger organizations on campus. A big part of the chapter's success comes from close collaboration with the local Material Advantage chapter (CSMMAC), and this year even more than in the past, Keramos maintained their own identity separate from CSMMAC without any hint of competition. The chapter's weekly meetings this year happened to conflict with other obligations for me, so they were essentially advisor-less for the majority of the year; it is more than a little humbling to report that they did even better without me getting in the way.

As you will see throughout the report, the chapter is quite active, continuing a large number of activities for their own members, others on campus, and the broader community. Keramos continues to manage the hot glass shop, which is more popular than ever, in addition to carrying out outreach activities large and small, social gatherings and professional development activities for the chapter, and joint events with CSMMAC. The big CGIF-funded event this year (an effort to extend the success of last year's MS&E day for 100 middle-school children to a similar event specifically for teachers with the hopes of multiplying the impact) was unfortunately postponed by the COVID-19 situation but remains planned and ready. Even with the second half of the semester taking place entirely remotely, the chapter still managed to initiate a new class and an honorary member. Not only that, but the chapter hosted a (remote, simultaneous Netflix) movie night for multiple Keramos chapters across the country. This spirit of support and drive to keep everyone engaged is representative of the overall culture of the Colorado chapter, and it is one of the many reasons that it continues to be such a privilege to serve as their advisor--even (*especially*) when they don't even need me!

Geoff Brennecka Faculty Advisor, 2019-20

Annual Plan for Upcoming Year

Over the past year, the Colorado chapter of Keramos continued its pursuit of excellence in educational outreach, professional development, and service to the ceramics community. Through these activities, a strong camaraderie was formed among Keramos members in this chapter and with other chapters. The hot glass shop has continued to grow, seeing full attendance at Soda Lime Saturdays. Additionally, holiday glass sales have expanded to become more popular and more profitable.

In the coming year, the chapter plans to reach new heights of involvement from members in professional development, educational outreach, and social events. In the face of the COVID-19 pandemic, the chapter is preparing for the possibility of a shift to online activities into the fall of 2020. The day planned to provide materials science demonstrations to K-12 educators, possible due to generous funding from the Ceramic and Glass Industry Foundation (CGIF), is being replanned with a focus on online meetings and pre-filmed demonstrations. The event can then be accessed by more educators, furthering materials science education.

The chapter looks forward to more participation in professional development in the form of industry speakers and trips to conferences such as MS&T and the Conference on Glass Problems. Last year at MS&T a chapter member won 'honorable mention' for their aesthetic mug made in the hot glass shop. In the coming year, our chapter would like to enter other events at MS&T such as the mug drop and disk golf competitions. The Colorado Keramos chapter also looks forward to sending more members to the Conference on Glass Problems, where there are numerous networking opportunities.

Keeping with tradition, the chapter will continue to hold events such as Soda Lime Saturdays, the Etiquette dinner, and its many pun-themed events such as Cornamos and Care-amos. The chapter will continue to welcome new members and continue its collaboration with the Materials Advantage Chapter at the Colorado School of Mines (CSMMAC).

The entire chapter is looking forward to another outstanding year as we continue to develop scholarly habits, professional skills, and lasting friendships.

Samantha Baumann President Elect 2020-2021

List of Officers

Outgoing Officers (2019-2020)				
Position	Name	Email	Address	Phone
President	Alex Mares			
Vice President	Mary Dougherty			
Treasurer	Nathan Martin			
Secretary	Olivia Denonno			
Herald	Nyomi Martinez			
Glass Shop Manager	Samantha Baumann			
Glass Shop Manager	April Garlin			
Glass Shop Manager	Emma Braun			
		Incoming Officers (20	20-2021)	
Position	Name	Email	Address	Phone
President	Samantha Baumann			
Vice President	Emma Braun			
Treasurer	Addison Wong			
Secretary	April Garlin			
Herald	Shannon Rogers			
Glass Shop Manager	TBD	-	-	-

List of Active Members

Active Undergraduate Members			
Name	Initiation Date	Email	Phone Number
Addison Wong	Spring 2018		
Alexandria Mares	Fall 2018		
Allison Caster ¹	Spring 2020		
Anyka Bergerson-Keller	Spring 2019		
April Garlin*	Fall 2019		
Cierra DellaRova*	Fall 2019		
Colin Gilgenbach	Spring 2018		
Emma Braun*	Spring 2020		
Grace Rome*	Spring 2020		
Isabel Govett	Fall 2018		
Joseph Kurutz*	Fall 2019		
Kevin Miles*	Spring 2020		
Mary Dougherty	Fall 2018		
Michael Thuis	Fall 2018		
Monica Carreta	Spring 2018		
Nathaniel Martin	Fall 2018		
Nyomi Martinez	Spring 2019		
Olivia DeNonno	Fall 2018		
Samantha Baumann*	Fall 2019		
Summer Camerlo*	Fall 2019		
Walker Hayse*	Fall 2019		

Active Graduate Members			
Name	Initiation Date	Email	Phone Number
Brian Davis	Spring 2018		
Bobby Puerling	Spring 2018		

Enrique Pacheco	Fall 2018	
Jake Ivy	Spring 2013	
John Copley	Spring 2017	
Katie Gann	Spring 2017	
Michael Walden	Fall 2013	
Rachel Sherbondy	Spring 2015	
Stuart Shirley	Fall 2017	
Valerie Jacobson	Fall 2016	
Victoria Avance	Spring 2017	

*new initiate within last academic year

¹ Honorary Member

Active Faculty Members			
Name	Initiation Date	Email	Phone Number
Allison Caster	Spring 2020		
Brian Gorman	Fall 1993		
Garritt Tucker	Spring 2018		
Gerald Bourne	Fall 2017		
Geoff Brennecka	Fall 1997		

Fall & Spring Initiation



The chapter was able to initiate nine new members during the 2019-2020 school year. The emergence of COVID-19 concerns pushed us to execute an entirely virtual initiation for our spring 2020 initiates, during which we initiated three students and one honorary member. Completing this event online allowed students worthy of membership to still be celebrated and for chapter morale to be maintained despite the occasionally dispassionate nature of virtual events. While we were not able to celebrate after our virtual initiation as we typically would, it is the hope of the executive team that this fall will present the opportunity for an in-person initiation and celebration to occur. If coronavirus concerns persist, however, we will be prepared for such.

List of Graduating Members

Graduating Members			
Name	Graduation Date	Email Address	
Alex Mares	May 2020		
Summer Carmelo	May 2020		
Cierra DellaRova	May 2020		
Anyka Bergeson-Keller	May 2020		
Walker Hayes	May 2020		
Joey Kurutz	May 2020		
Nyomi Martinez	May 2020		
Nathaniel Martin	May 2020		
Olivia DeNonno	December 2020		
Mary Dougherty	December 2020		

*staying at Mines for graduate school, mines.edu email address remains valid

Honorary Member



The Colorado Chapter of Keramos initiated Dr. Allision Caster, a professor in the chemistry department at Colorado School of Mines.

Dr. Caster earned her B.S. in chemistry from the University of South Dakota in 2004. She then went on to earn her from Ph D the University of California-Berkeley where she was also a National Science Foundation graduate fellow. Caster completed a postdoctoral fellowship at the University of Colorado Anschutz Medical Campus in bioengineering where she developed non-invasive laser and x-ray based microscopy techniques for examining

the chemistry of natural and manmade structures.

Dr. Caster teaches Molecular Engineering and Materials Chemistry, a class that many Materials and Metallurgical Engineering students take in place of the second general chemistry course. The basis of this course is the process-structure-property relationship that is a key aspect of materials science. Dr. Caster also organizes the lab for this course which provides a hands-on experience to help solidify some of the conceptual concepts of the course. Many members of the Colorado chapter of Keramos took and enjoyed this course, and several members believe this course is how they were introduced to and became interested in materials science.

At Colorado School of Mines, Dr. Caster strives to implement more active learning strategies in her courses, specifically in the labs, in order to improve student involvement. She seeks to utilize and show students modern interdisciplinary research in both the classroom and the lab. Dr. Caster is making a difference at Mines and putting the needs and wants of the students first, making her a great professor and someone we are honored to have as a part of our organization.

Treasurer's Report

Keramos' funds were organized into two accounts this year; the student activities account and the hot glass shop account. The student activities account encompasses Keramos dues, fundraising sales, and day to day club purchases. The Hot Glass Shop accounts for sales outside of university fundraising events and for glass shop maintenance and purchases. Last year, there was a third account for grants and donations, however, this year the grant received from CGIF was placed in and remains in the Hot Glass Shop account.

This year, the glass shop continued to bring in funding from glass shop sales throughout the year. These sales were very successful this year in spite of some being canceled due to the COVID-19 pandemic. This year, more funding was also contributed to the glass shop with several pieces of equipment needed to be repaired or replaced, such as the door to the furnace. The glass shop also bought a new annealer this year, and funding was transferred from the Student Activities account to the Hot Glass Shop account. This is why the Student Activities account has a lower balance. These expenses were in addition to the typical expenses of the glass shop that include purchasing both clear glass and colored frit and typical maintenance.

The report below shows the initial and final balances of the two accounts managed by Keramos, with the \$1500 CGIF grant included in the Hot Glass Shop account. The initial balances are from August 2019 and the final balances are from April 2020.

Student Activities (Account #1) Initial Balance: \$5686.53 Final Balance: \$3853.76

Hot Glass Shop (Account #2) Initial Balance: \$2720.46 CGIF Fund: \$1500 Final Balance: \$4576.65

In the upcoming year, Keramos plans to increase the balances in these accounts through fundraising and glass shop sales. Keramos hopes to increase membership over the coming years and be able to have funding for events and conferences for members, as well as funding for outreach events. In addition to this, Keramos plans to build up the Hot Glass Shop accounts specifically so that expenditures such as a new melter in the future will be able to be budgeted for well in advance. Finally, Keramos has plans to use the CGIF grant for a teaching local teacher materials science demos and lessons to take back to their students.

Chapter Activities

Educational Outreach

Celebration of Mines

The Colorado School of Mines' Student Activities Office hosts the Celebration of Mines every year to allow students who are new to campus to interact with clubs and organizations. Keramos teamed up with the Colorado School of Mines Material Advantage Chapter (CSMMAC) to present a booth for incoming students to spread information about the materials engineering program and the offerings of more specific societies like Keramos. Keramos showcased glass and ceramic pieces to spark conversations about outreach, professional development, social events, and the glass shop.

Joy Carnival

Keramos members supported the service fraternity APO in their annual carnival to inspire interest in STEM in kids of all ages. Keramos hosted a booth showcasing glass pieces and models of crystal demonstrations structures The of materials properties changing with temperature with liquid nitrogen experiments made materials science more tangible to the younger kids while remaining educational for their families and other students. This event allows for building new relationships with other organizations and the promotion of ceramic engineering to the next generation of ceramists and engineers.



Lockheed Martin Explorer's Post Hot Shop Tour

Lockheed Martin Explorer's post is an organization that strives to get students in the Denver-Metro area excited and interested in science. The organization held campus-wide tours at the Colorado School of Mines, and Keramos assisted by doing demonstrations of glass-blowing in the glass shop and explaining some of the science behind glass blowing. It was a great event to increase student's interest in materials science.

8th Grade Career Expo



Keramos partnered with the Colorado School of Mines Materials Advantage Chapter to host a booth at the 8th Grade Career Expo. Approximately 8,000 students from local school districts came to talk to representatives from a variety of different industries the students may be interested in working in. Keramos represented the ceramics industry, and showed the students videos of glassblowing, talking about pursuing a degree Materials Science and demonstrated in

material properties through demonstrations. The Keramos and CSMMAC volunteers smashed Prince Rupert's drops, pulled fibers from jolly ranchers, and did several different demonstrations with liquid nitrogen, all to show the students how exciting the materials science industry is.

Professional Development

MS&T Conference

In October, Keramos members attended the Materials Science and Technology (MS&T) conference in Portland, Oregon. 9 members actively participated in events, including the annual Keramos convocation and business meeting, the aesthetic mug drop competition, technical lectures and presentations, and the student poster contest. The mug submitted won runner up for the most aesthetically pleasing mug.



TMS

Two members of the chapter attended TMS in San Diego, California. While there, members attended lectures, networked with industry professionals to create new connections, and came home with a Materials Bowl win for the third year in a row.

Congressional Visit Days

Members had planned on attending Congressional Visit Days (CVD) to discuss the importance of funding of research in general materials, glass, and ceramic science and engineering. There were planned meetings with Colorado legislators including senators Cory Gardener and Michael Bennet, and representatives Diana DeGettee, Joe Neguse, Doug Lamborn, and Ed Perlmutter. This annual meeting represents an opportunity to bring the importance of STEM research funding by sharing the impacts on our lives as students, and young professionals.

Etiquette Dinner



To expand members' knowledge of guidelines to follow for team dinners with prospective employers, Keramos started an annual etiquette dinner that was continued this year. We joined with the Colorado School of Mines Materials Advantage Chapter to share a meal while enjoying a refined meal of Chick-Fil-A accompanied by a presentation on etiquette rules. We successfully catered the event with two courses and enjoyed the presentation. Attendees shared their experiences at interviews and formal dinners and everyone walked away with new knowledge on how to succeed in their next formal dinner.

Career Development Focused Meetings

The Colorado School of Mines' career fair in September provides an opportunity for students to investigate and speak with top companies to secure interviews and positions in their fields. Keramos arranged a meeting to cover resume basics and methods to approach interview questions the week before the fair. This meeting provided a timely reminder for students preparing for interviews and speaking with recruiters.

Service to Ceramics Community Glass Shop Management



The glass shop has continued to grow in popularity in its third year of operations. Both the fall and spring semesters had completely full registrations with 28 students in the fall and 18 students in the spring. The excitement of the shop has grown to the point that these classes, offered with no prerequisites in order to encourage any major to learn about the scientific properties of glass, are offered on a lottery basis to the student body as a whole. Because the class was offered only on an undergraduate level, the spring semester was the kick-off of the Shop Pilot Program for graduate students and faculty members interested in learning how to glass blow. The pilot program was anticipated to be two 6 week courses focused on solid pieces and blown

pieces respectively, and payment for these classes was 60% alloted to Keramos funds and 40% alloted to the running of these classes through TA and supply costs. We were able to have 5 participants in the program but unfortunately were only able to complete the first phase of the class due to campus shutting down. With some changes to the format, we look forward to starting the second wave of the pilot class this upcoming fall.

It has been exciting to see the increased engagement in the shop based on the enthusiasm of the students learning how to blow glass and participate in our open shop studio times. The glass shop also is proud to now have an Instagram page (@HappyLittleGlassShop) where we share glass shop and materials related content.

Soda Lime Saturdays

Soda Lime Saturdays (SLS) have continued to be a success throughout the school year. The doubled amount of SLS sign up slots from last year have been filled each Saturday. Near the end of the semester, students in the glassblowing class come in and help guide others to create their own paperweight. This has helped the students not only understand the steps in this process but also allows



them to see how to teach others if they are interested in volunteering in the future. This year there were 5 SLS events in the fall and 3 more in the spring semester. One of the SLS's was held as a special Family and Friends night for the users and students of the shop. On this night, gaffers invited 1-2 of their family members and friends into the shop and created their own paperweights. We were glad to host this special SLS to help others see a glimpse into what their family member/friend does in the shop. Two of the SLSs held were in a joint collaboration with the Colorado School of Mines Material Advantage Chapter (CSMMAC). These events invited members of CSMMAC into the shop and got them not only interested in glassblowing but the Keramos chapter as well.

Glass Shop Sales



This year, the glass shop was able to hold three sales in the fall semester and one in the spring. As a great source of fundraising and attention for Keramos, it was a beneficial way to show off the newest pieces coming out of the shop and talk to campus about Keramos as an organization. In tradition for the shop, we held our S-Keramos sale for halloween where our main sellers were pumpkins and other fall-themed pieces.

Additionally, we held our Festimos Sale for the holiday season in late November where we focused on selling ornaments as well as pieces that would be great presents for students and faculty to give their families. In the spring, we held our classic Flower Sale in honor of Valentine's Day which is always one of our more popular events. A new sale event was also added this year to take place during the fall Career Fair to give more of an outward front for Keramos and the glass shop to the 250+ visiting companies who come to campus each semester.

Glass Shop Donations and Outreach

Beyond the sales, the glass shop also had several requests for commissioned pieces over the course of the year not limited to pieces for faculty celebrating milestone teaching years, for university guests from Universidad Nacional de San Agustín in Peru, and for display pieces for various offices around campus. In the spring semester, the shop donated several pieces to the Brave Young Hearts silent auction. This organization provides fun outdoor adventures to children with terminal or life-threatening illnesses. We donated five pieces to their auction to help them raise money to continue these great adventures. In the same semester, a glass dinosaur was donated as a prize at the Adams County 8th grade career expo. This was awarded to the student with the most positive responses from professionals.

Alumni Engagement

Many Keramos alumni are attending the Colorado School of Mines for graduate school and remain involved in activities and meetings. Several graduate students presented the ceramic-focused solution which won last year's Henderson Mine Challenge. As the Colorado Chapter of Keramos grows and more members graduate and move to alumni status, we hope they will be able to come back to give presentations on their careers, give professional advice, and attend social events.

Participation at Annual Convocation and Business Meeting



MS&T

Four of our members attended the annual convocation and business meeting at MS&T19 alongside the rest of the conference proceedings. It was an excellent opportunity to network with other chapters, hear their thoughts and ideas about bylaws, chapter proceedings, and professional aspirations. Our Vice President joined the President of Missouri S&T and the University of Illinois Keramos chapters to a CGIF meeting to

share the impacts CGIF grants have had on our chapters individually and as a larger Keramos community.

Interchapter Communications and Collaboration Movie Night

In the wake of the COVID-19 crisis that developed in the spring of 2020, the chapter organized a synchronous inter-chapter movie night to interact with other chapters despite the physical distance. Members watched Spider-Man: Into the Spider-Verse with a syncing app called Netflix Party all at the same time. There were members from multiple Keramos chapters, and we hope it becomes a recurring event.

Monthly Phone Calls

Each month, the presidents of Keramos from each chapter met in a video conference. This was a great opportunity to get ideas and advice from other chapters. These meetings also provided an opportunity to make changes we would like to make to bylaws and competitions at MS&T.

Social Events

Scare-amos



For Halloween, Keramos members met to watch Charlie Brown and the Great Pumpkin while enjoying popcorn, apple cider and pumpkin pie. It was a great event to gather and enjoy getting to know each other and enjoy some great snacks.

Care-amos

Keramos members met during faculty appreciation week at the university to write cards to the Materials & Metallurgical Engineering Department. Members creativity hand-made and decorated funny cards to express our appreciation for all our department faculty does for us. Members also submitted online cards to patients at the Children's hospital, sending science themed puns to brighten their day.





Valentine's Event in Glass Shop

This year Keramos had several glassblowing workshops exclusively for Keramos members, most notably being the Valentine's Day workshop. Keramos traditionally has sold flowers in the glass shop and students trained in the glass shop make these flowers throughout the year. This year, to help make these flowers, Keramos members learned how to make flowers and got to keep them for Valentine's Day. Not only was this a fun event to teach members about the glass shop, but now that they are trained, they will be able to help make flowers in the future to sell.

Plaque Making



New members spent some time getting their hands dirty by creating their Keramos plaques. This Keramos tradition provides an opportunity for initiates to connect with the founding ideas of Keramos, work with ceramics outside of an academic setting, and connect with senior members and their fellow initiates.

Conclusion

The Colorado School of Mine chapter of Kermas has had a memorable year. New relationships were made both within and outside of the chapter, with social events, attendance at conferences, and collaborations with other organizations on campus. The hot glass shop continued to expand and has proven to be an established part of the Mines campus. The glassblowing class was expanded to include graduate students and faculty, sales continued to be a success, and the glass shop played a key role in Keramos outreach this year with donations and demonstrations. Outreach continued to be a focus of our chapter, with members volunteering at a multitude of events. It is incredible to see the younger generation become excited and interested in science, and our chapter members loved coming up with new ways to demonstrate materials science concepts in a fun, easy to understand way. Although the CGIF funded project planned this year was not able to come to fruition, a new plan has been set in place for next semester and we are excited to use what we learned from volunteering at other events to make our event a success. In the spring semester, our chapter was faced with the university shutting down due to the COVID-19 pandemic. Despite this, we held an initiation, meetings, elections and a social event that brought together Keramos members from different states. Our chapter has excelled this year in spite of unforeseen circumstances, and we cannot wait to be back together next semester.