



THROUGH FIRE TO PERFECTION: The purpose of this Fraternity shall be to provide recognition, distinction and honor to those persons in ceramics whose scholarship and character qualify them for such recognition.

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Grand Master Potter's Message

Greetings Keramos members! I will be finishing my term as President (or Grand Master Potter) of Keramos in October 2019 so this will most likely be my last Keragram that I write. It has been a long but very productive run in the Keramos board of directors since starting in 2010 as recording secretary. I'm consistently impressed by the enthusiasm, professionalism, and spirit of service that I see exhibited by each Keramos Chapter and board member.

It is another strong year for Keramos. When I began my term as President, I worked with the Board to set the vision of Keramos for the next few years. Our vision was three-fold:

1. **Extend the reach of Keramos.** We have inducted two new chapters over the last few years, Colorado School of Mines (2017) and Virginia Tech (2019).
2. **Strengthen our relationship with the ceramics/materials community.** We are actively pursuing closer partnerships with the American Ceramic Society, the Ceramics and Glass Industry Foundation, and other materials-related student groups. We are in our second year of partnership with Ceramics and Glass Industry Foundation (CGIF) where Keramos chapters write proposals to CGIF for funding of their ideas to promote and educate students in materials science and engineering on their campuses and surrounding communities. We are co-sponsoring with the President's Council of Student Advisors (PCSA) a Global Young Investigators Forum session at MS&T 2019 (see below).
3. **Improve our financial standing.** The board is in the middle of a fundraising campaign through our membership and partnering with corporate sponsors. I hope by October 2019 Keramos will be financially stronger so please see below for donations!



As you can see, we have accomplished a lot against this vision. There is still more to be accomplished. With the board members and chapters in place, I believe this vision can be extended.

The board and its chapters are busily planning for the Materials Science and Technology Conference and Exhibition to be held this year in Portland, OR on September 29 to October 3, 2019. Our annual Keramos Convocation & Business meeting will be held on Sunday morning, September 29th. We will also be organizing our popular mug drop and disc golf contests set for Tuesday, October 1st. Something new this year is Keramos

will be co-sponsoring a Global Young Investigators Forum with the PCSA for undergraduate research presenters on Wednesday, October 2nd, giving undergraduate students an opportunity to hone their speaking and presentation skills. I hope to see many of you at these Keramos events during MS&T 2019!

Lastly, since I will be rotating off the Keramos board of directors, we are now looking for a new board member to begin as recording secretary in October 2019. This is typically an eight-year volunteer commitment rotating through all four board positions every two years. We are looking for someone from the materials/ceramics industry who is mid-career with an interest in helping jump start the professional development of the next generation of ceramic/materials scientists and engineers. We are interested in high energy, committed volunteers who can devote about 4 hours per month on average and attend the annual Keramos Convocation and Business meeting in conjunction with the annual MS&T meeting. The recording secretary typically participates in all Keramos meetings and records all meeting minutes and manages communications from the board to its chapters, alumni, and partners. Please contact me if you or someone you know may be interested.

Please continue to send your dues and donations to help us in our vision. They are much appreciated by our student members who need funding to attend our annual convocation along with MS&T 2019. We'll continue to use the Keragram to keep you informed of all their accomplishments.

Thank you for your continued support of Keramos.

Fraternally yours,
Dr. Brian Gilmore, President; Brian.Gilmore@pxd.com

Vice President's Message

As you can see from the rest of the reports in this Keragram, this has been an exciting year for our fraternity! A new chapter, successful partnerships with the CGIF and other groups within the ceramics and glass community, and renewed energy across all of our student chapters make this a great time to be a Keramos member. As Brian mentioned above, we are making a concerted effort to improve the finances of the fraternity so that we can better support these energized chapters and their members... to strike while the iron is hot, to steal a phrase from our metallurgy colleagues. Please consider helping us out with this effort in whatever way(s) you can—money is great, but so is time! If you have a Keramos chapter nearby, reach out to them or have us put you in contact to see how you can engage with the current students and all of their activities. I strongly encourage all of you to take a few minutes and skim through the annual chapter reports, which are available by clicking on the chapter names at the bottom of the page at ceramics.org/keramos; I guarantee you'll be blown away by all that the chapters are accomplishing these days!



With all of that in mind, it's a great time to be rotating into the President (aka Grand Master Potter) role this fall at MS&T, and I can't thank the rest of the Board enough for their patience and efforts to bring me up to speed over the past two years. It's an honor to be taking the reins at such a dynamic time, and I look forward to continuing to work with the Board, all of the students, and all of you in the years ahead.

Dr. Geoff Brennecka, Vice President; geoff.brennecka@mines.edu

Vice President's Message



Hello Keramos members, this has been an eventful year. Keramos has successfully partnered with the Ceramics and Glass Industry Foundation (CGIF) to work toward a common goal of reaching a new generation of ceramic and materials engineers through community outreach. With the first round of CGIF funds allocated to our university chapters, we are on our way to enhancing our community service and education of ceramics. A few examples of the inspiring outreach are the Missouri S&T chapter's use of cotton candy machines to explain how fiberglass is made; a tasty example. The Alfred chapter visited a few local ceramic companies to broaden their horizons and increase their networking; the team visited Vesuvius, Harbison Walker International and Ferro Corporation.

The year 2018 was full of challenges with obtaining funds from our community and working with new partners for providing funding to our chapters. Through great challenges comes great rewards. In 2019, we are on our way to a healthy and sustainable treasury. We had a record turnout of donations this year, more than I have seen in my combined tenure as treasurer. This is only possible through your generous donations and support. I am excited and honored to be a part of the board and to continue promoting interest in the professional aspects of ceramic engineering technology and science.

2019 is looking like a record year for our treasury and this will be seen in our communities by more outreach and education on Ceramics and materials. CGIF has sent a second round of funds for our chapters which I am disseminating as you read this message. Colorado School of Mines will host local teachers for a day-long event to discuss materials science and to equip the teachers with Materials Science classroom kits. Congratulations to all for having a positive impact on our youth and our next generation of scientists and engineers who will carry our country into a new era of technology.

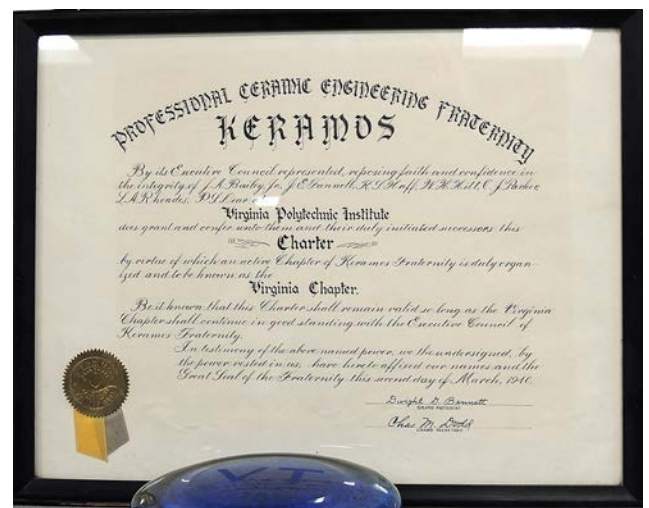
Please feel free to reach out to me and I look forward to meeting my fraternity brothers and sisters at future events.

Elliott Sievers, Treasurer, Daniel.E.Sievers@Boeing.com

Virginia Tech is latest Keramos Chapter

Keramos was approached by Virginia Tech and asked to Charter a new chapter on their campus. Unbeknownst to the Virginia Tech students was the fact that their campus had been chartered in 1940 when the university was known as Virginia Polytechnic Institute and that the chapter had been dormant since the mid-1970s.

The Colorado chapter stepped up and traveled to Blacksburg, Virginia and assisted in the process of reestablishing the Virginia Chapter. Four Colorado Keramos members and their faculty advisor made the trip and spent time getting to know the peer chapter, learning about each other's campuses, conducting the initiation



ceremony, and of course, exchanging ideas over dinner and drinks afterwards. The Colorado chapter relayed ideas and past experiences with everything from outreach and meetings to member development and social events including the now infamous Colorado puns. Having just recently begun their own chapter at Colorado School of Mines, they were able to provide advice that hopefully will aid the Virginia chapter in getting off to a strong start and growing the chapter.



Keramos welcomes (back) the Virginia chapter and wants to specifically recognize Nathan McIlwaine for his efforts in re-establishing the chapter, the faculty advisors David Clarke and Caro Tallon and the first group of Keramos initiates in nearly 50 years

Keramos Convocation and Activities at MS&T 2018, Salt Lake City, Utah

Keramos activities at MS&T 2018 began with a breakfast meeting of the Board of Directors at the Hilton Columbus hotel where we prepared for Convocation and discussed general fraternity business. The conversation started on the topic of streamlining the processes tied to our new relationship with the Ceramics and Glass Industry Foundation (CGIF) in order to maximize benefit to chapters and their communities and minimize unnecessary effort while maintaining an appropriate level of oversight and accountability. One recommendation

was to focus on a single annual proposal cycle for chapters and to consider shifting the timing in hopes of better aligning with semester schedules. We also continue to try to streamline our own financial operations to make things easy for everyone involved, but this is complicated by the very different (and often antiquated) financial operations of the various universities involved. As you have probably noticed, the Keramos Board is making a concerted effort this year to enhance fundraising activities.



Brian Gilmore, Keramos President and Dana Goski, Allied Mineral Products

The morning continued with the annual Keramos Chapter Convocation, during which the chapter representatives discussed their activities and accomplishments for the year. Once again, the Missouri Chapter (Missouri S&T) was awarded the title of Best Chapter for 2018, while the Arizona Chapter (University of Arizona) took home the Most Improved Chapter award. The assembled representatives also discussed and approved rule changes and clarifications for the competitions including allowing unlimited submissions per school with a maximum of one entry per competition per student, and expanding the acceptable mug volume. Convocation also featured an address from Prof. John Hellman from the Pennsylvania State University, the recipient of the 2018 Greaves-Walker Roll of Honor award and a presentation from Career Speaker Dr. Dana Goski of Allied Mineral Products. John discussed what Keramos means to him and all that it has given him over the years, while Dana's talk focused on how to recognize when opportunity is knocking. Later that night, Keramos representatives joined the PCSA alumni reception for an evening of networking and camaraderie.



Elliot Sievers, Keramos Treasurer, Austin Hays, Clemson University and Marcus Fish, CGIF



John Hellmann, Pennsylvania State University and Brian Gilmore

The highlight of every MS&T is certainly the student competitions on Tuesday. The Ceramic Mug Drop Contest had 30 entries and the Disc Golf Competition had 11. The Most Aesthetic Mug this year was a joint effort from Jake Ivy and Kelsey Cannon from the Colorado School of Mines, while Emily Bautista's mug from Virginia Tech took the top toughness prize by surviving drops all the way to 300 cm! The Most Aesthetic Disc award went to Michelle Such from the University of Connecticut, while Danny Drury from Missouri S&T laid the groundwork for a dynasty with his second consecutive victory in the Ceramic Disc Golf competition.



Mug Drop Competition



**Kelsey Cannon, Colorado School of Mines,
and Brian Gilmore**



**Brian Gilmore and Michelle Such,
University of Connecticut**



Ceramic Mugs from the Chapters



**Brian Gilmore and Danny
Drury, Missouri S&T**



Ceramic Discs from the Chapters

Missouri University of Science and Technology Chapter



The Missouri Chapter of Keramos has had a very active and productive year. Top priorities this year included improving internal programming and strengthening our connections with industry professionals. As always, we had a large spread of successful events throughout the year.

We held a total of five Lunch and Learns this year. Two of these focused on returning co-op students sharing work experiences. Others included the MS&T student competitions, professional development and a talk from Steven Ashlock, former president of the chapter.

A major outreach-based undertaking this year was the use of the grant we received from CGIF. We opted to use it to purchase cotton candy machines to use for demonstrations for children of all ages. These demos were centered around educating kids on the industrial process of fiberglass insulation. Members of Keramos took these demos to local schools. Local high schools in Rolla and St. James will receive their own cotton candy machines along with written instructions in order to run their own demos.

The etiquette dinners in both the spring and the fall were also a major success, with both events running at full capacity. The dinner in the fall was sponsored by Kohler and hosted by Dr. Bill Fahrenheitz. This year, the tradition of the American Foundry Society (AFS) planning the spring etiquette dinner was continued, but many Keramos members were still in attendance. The spring etiquette dinner was hosted by Dr. Laura Bartlett and sponsored by Nucor.

We had several fun events both within our chapter and with other organizations. Among these was a Cross Casting Social with AFS where they taught us how to create a mold and cast copper, and Keramos members

showed them how to slipcast. Internal events included Skeramos and Ke-RAVE-mos which were celebrations of Halloween and St. Pat's respectively.

We had a very successful year in recruitment, as we initiated a total of 30 undergraduate students and one professor. With our initiates this year, we employed the Kera-Bear mentorship program. Through this program, new initiates were paired with an active member of Keramos and were able to use them as a resource throughout their pledging process. The program proved to be very beneficial and an excellent way to introduce our new initiates into the organization.

University of Arizona Chapter

After a period of revival last year, the University of Arizona Chapter of Keramos has spent the 2018-19 year focusing on raising membership and conducting outreach.

Participating in events such as the 2018 Southern Arizona Research, Science, and Engineering Foundation (SARSEF) Fair and the 2018 Materials Science and Technology (MS&T) Conference, Keramos has continued the traditions set by officers from the past year.

Several members received funding to fully cover their attendance to 2018 MS&T, where they were able to attend presentations, network with companies, and later share their experience with the other members. Through funding, Keramos was also able to sponsor an award for the SARSEF fair and judge the various high school projects submitted to the competition. The members presented a trophy manufactured by the chapter to the winning high school students.



In keeping with past years, Keramos also hosted a barbeque on the grounds of the Arizona Materials Laboratory (AML), where students were able to spend time with department faculty in a less formal setting, and a friendly game of Bocce ball was played between professors and students.

In addition to continuing participation in annual events, this year Keramos has also begun a program of outreach to high school students. Visiting local high schools, club members taught high school students about the materials science and engineering major by giving presentations, showing demos, and inviting guest professor speakers.

In order to raise interest for the club, Keramos has also begun scheduling plant tours for members and students, with trips so far including companies such as American Aerospace Technical Castings and CalPortland Cement Company.

In addition to these activities, Keramos has also created T-shirts and polos for fundraising, and has hosted social events, such as bowling and hiking trips, to foster a growing sense of club unity.

Colorado School of Mines Chapter

The Colorado School of Mines (CSM) Keramos chapter strove to make the 2018-2019 year one of both preserving our recently established traditions and creating many firsts.

We have continued holding biweekly meetings, many of our pun-themed events, and our glass shop operations. Simultaneously, we have worked to accelerate chapter activities in all realms, particularly in terms of outreach and professional development.

A few key notes from the past year include our chapter's participation in a dozen educational outreach events, reaching top rankings in scientific competitions, our excellent and continually expanding glass shop management, and helping Virginia Tech begin their inaugural year. Through speaking with students of all ages and educators of all levels, and showing them what it means to be a ceramist or materials scientist, we have noticed astounding understanding of the field. We were extremely excited to find success in connecting with others in these events and hopefully beginning the development of the next generation of materials engineers! Simultaneously, the chapter worked to leave its mark at competitions, most notably at MS&T's Aesthetic Mug Competition and TMS's Materials Bowl, where CSM Keramos members played a leading role. When not in the lab, classroom, or conference room, members could be found in the glass shop. Management of glass shop activities became seamless over the course of the year as we implemented new ways to manage space, time, gaffers, gaffers-in-training, and most of all, our Soda Lime Saturday events. It has been wonderful to see members eager to make pieces and to help others in the glass shop, to mix art and science together. Furthermore, we were delighted to receive the chance to help with Virginia Tech's initiation and to share ideas, advice, and our excitement for pun-themed events.

We are elated by the progress our tight-knit chapter has made in such a short time and all that is to come!

University of Illinois at Urbana-Champaign Chapter

The 2018-2019 academic year has been a time of growth for the University of Illinois at Urbana-Champaign Keramos chapter. Our mentorship program has continued to expand, which has led to increased underclassmen participation and initiation into our society, with nearly 30 spring initiates. Many of the new initiates are already involved in numerous events hosted by our chapter, and some of them have been elected as next year's officers. These dedicated and passionate underclassmen will continue this growth of Keramos at the University of Illinois.



We continued to host an array of professional development events with a focus on technical talks and career fair preparation. A highlight of our professional development events this year was the etiquette dinner. Not only were attendees able to learn etiquette necessary at formal dinners, they also networked with members of Society of Hispanic Professional Engineers and Chevron. This was a wonderful opportunity that we hope to continue! Our Play with Clay sessions have continued to be popular events where students gain hands-on skills by making and



glazing ceramic wares and now can be expanded further by the generous grant from CGIF. As this program has grown, we are working with the department to buy a kiln that will be dedicated specifically to this activity.

Looking to the future of Keramos at the University of Illinois, it is clear that we will continue to thrive. Our goal is to always strive to provide more for our members. In particular, next year we plan to expand our professional development events, particularly our company technical talks. In addition, we are renewing our focus on alumni engagement by establishing relationships with recent alumni as well as increasing involvement with the MatSE Alumni Board and Association. We are excited to see the growth of our Keramos chapter as we continue to build a supportive community of materials science and engineering students here at Illinois.

Rutgers University Chapter

Rutgers University Chapter has had another exciting year full of activity. Traditional events such as game nights and study nights have again strengthened the relationships between members of our organization and department, and events such as freshman Majors Night tabling and department tours have introduced new members to our community. Keramos has also been an active partner with the Materials Science and Engineering department, advertising and helping to win the School of Engineering food drive competition, and volunteering at recruitment events, lab tours, and outreach events such as interactive glass activities and lessons with a local high school. Additionally, efforts towards alumni engagement have begun and we welcome all alumni of the Rutgers chapter to join our new LinkedIn group at: <https://www.linkedin.com/groups/12235300/>.



The chapter is very grateful to have received a CGIF grant for the 2018-2019 academic year, and was able to host a successful glass slumping mold activity for department and prospective engineering students. The students were able to cut and grind their own panes of glass and decorate personal pieces to be slumped over unique molds. The event introduced students to the artistic side of glass, exciting students about the unique material properties and promoting an alternative view of the material, all the while subtly providing a physical intuition for concepts such as crack propagation, the temperature-viscosity relationship, and glass transition temperature.

Even more exciting for the chapter was having one of our Rutgers Keramos alumni, Dr. Matt Dejneka, be the Distinguished Lecturer at the Malcolm G. McLaren Symposium, the Materials Science and Engineering department's largest annual event. His "Lessons Learned from 20 Years of Glass Innovation" provided students and faculty insight into his astonishing work at Corning, and offer a podium of inspiration and aspiration for current students to strive for.

A unique attribute to our chapter is our elevated induction chapter requirements. The minimum major and overall GPA cutoff are 3.25, therefore each member represents outstanding scholarship and character driven by great energy and initiative, embodying the national motto of "through fire to perfection". We welcome the new initiates and have begun planning events for the next academic year to integrate new students into the department and introduce them to the missions of Keramos.

Help out the Next Generation of Ceramic Engineers

The Board of Directors uses fraternity funds to send students to the annual Keramos Convocation at the Materials Science and Technology Conference each fall. We need your help in maintaining our ability to help students become new leaders in the ceramic engineering profession. We've established a PayPal account via the Keramos web page to make it easy to pay your \$10 annual membership dues, and additional donations are greatly appreciated. You may also continue to pay dues by mail to the General Secretary, using the form at the end of the Keragram. Thank you for your continued support of Keramos!

Stay Connected with Keramos

Keramos is working to improve its online presence for better communication with students and alumni members. Check out the Keramos web page, hosted by the American Ceramic Society:



<http://ceramics.org/classes/keramos>

We have updated the page with annual reports from each of our chapters, so that you can keep up with their impressive efforts in professional development and outreach.

Keramos has also established a group on LinkedIn to better communicate with our alumni members. It's available here:



<https://www.linkedin.com/groups/3573516>

We're using this group to hold a [discussion about the value of Keramos](#) to our members, and we would very much like to have your input.

Alumni Support

Our alumni play a crucial role in enabling the fraternity to continue to advance and promote professional development for the students. We are very grateful for your continued support – it is making a significant impact for the future. A special thanks to the alumni listed below who have contributed beyond their annual dues:

| | | | |
|---------------------------|-------------------------|----------------------------|----------------------------|
| Samuel Ashby | Janet Bailey | Joseph Bailey | Bernard Bentley |
| Raymond Bertolotti | John Blendell | Luke Bradshaw | Geoff Brennecka |
| Robert Brickhouse | Marshall Bullard | David Clark | Delbert Day |
| Robert Eagan | Bill Fahrenholtz | Kevin Fox | James Frederic, Jr. |
| Brian Gilmore | John Hellmann | Greg Hilmas | Dale Hjort |
| M. Harlan Horner | Edward Kanazawa | Nathaniel McIlwaine | Carleton Moore |
| Katherine Olson | Joseph Palko | John Parrish | Albert Peterson |
| Audrey Prue | Christopher Prue | John Pulver | Kevin Reuwer |
| William Rhodes | Mathew Rotondi | Laura Schell | Alec Seastrom |
| Bob Schwartz | Norman Severin | Ellis Smith | Jeff Smith |
| Matthew Tangeman | E. Thomas Webber | John Witham | Behzad Zakhireh |

Annual Dues

Annual Dues are \$10. Make check payable to “Keramos Fraternity”. If you have not paid your dues this year through ACerS or via PayPal (see link at (<http://ceramics.org/classes/keramos>), please fill in this coupon and mail to the General Secretary.

Jeffrey D. Smith, General Secretary
 Keramos National Fraternity
 222 McNutt Hall
 1400 N. Bishop
 Rolla, MO 65409

Keramos Dues and Comments:

Name: _____

Address: _____

City, State & Zip: _____

Email: _____

Annual Dues (\$10) _____ Donation: _____

Message: _____