



*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.*

Volume 54 Number 1

Summer 2013

### President's Message

Just a quick note from your Keramos National President to first thank all of our Keramos members for your continued support of this great professional fraternity! I want to take a minute of your time to mention a few of the exciting things that Keramos is doing. Your Keramos Board of Directors has been extremely active this past year and the excitement for Keramos continues to build.

First, we have a **new ceramic competition** that has been approved by the Material Advantage Committee and will have its inaugural run at MS&T '13 in Montreal, Canada. You will learn more about this student conceived, student planned, and student driven event in the *MS&T 2013* and *Student Representative* sections below.

Second, we are working with a major university to initiate a new Keramos Chapter. It's probably a bit premature to officially announce the new chapter, but they are currently working on their by-laws and constitution after meeting the rest of the requirements for establishing a new chapter. Our goal is to initiate their chapter at the 2013 Convocation!

Third, the Keramos chapters have been extremely busy as well this year, so please take the time to read about the activities of a couple of your chapters below.

Finally, your Board of Directors has been holding monthly teleconferences with the student chapters. This has resulted in a considerable amount of additional interaction with the chapters. On those calls, we respond to questions from the chapters, share best practices, and inform the chapters of upcoming deadlines. We received a total of six chapter reports so far this year. That's a record for on time (due April 15, 2013) reports from the chapters in my time on the Board. We are still hoping to receive reports from the rest of the chapters, albeit a bit late, so please encourage your chapter to submit a report. Our goal is to have representation from each and every chapter at the MS&T '13 Convocation.

Thanks again for your continued support of Keramos.



Dr. Greg Hilmas, Curators' Professor of Materials Sciences and Engineering Missouri University of Science and Technology in Rolla, Missouri.  
ghilmas@mst.edu

### National Board Member Contact Information

We want to hear your opinions, thoughts, and other information you would like to share; e-mail us:

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

Join us on Linked In ([www.linkedin.com](http://www.linkedin.com))! Search Keramos under groups to join.

## 2013 Convocation – MS&T 2013 in Montreal, Quebec Canada

Dr. Kevin Fox, Vice President; [Kevin.Fox@srmf.doe.gov](mailto:Kevin.Fox@srmf.doe.gov)

The Keramos Board of Directors is gearing up for our Annual Convocation and Business Meeting to be held in conjunction with the MS&T'13 Conference and Exhibition. This year's activities will be on Sunday, Oct. 27, in Montreal, Quebec.

The meeting will open with the Student Chapter Business Meeting at 8 a.m. in the Hyatt Regency Montreal. The students will meet to discuss best practices at their chapters and they will elect a new student representative to the Board of Directors.

The full Keramos Convocation and Business Meeting will begin at 9 a.m. in the Hyatt Regency Montreal. All Keramos members are welcome and encouraged to attend. The Board will provide travel assistance to each chapter's delegate. We'll hear reports from each of the student chapters, share ideas for successful activities and discuss plans for the next year.

This year's convocation will also feature Dr. Wayne Huebner, department chair and professor of Ceramic Engineering at Missouri University of Science and Technology, as the recipient of the Greaves-Walker Roll of Honor award. At 11 a.m., we'll feature a lecture by our Career Speaker, Dr. George Wicks, past president of the American Ceramic Society. And at noon we'll sit down for a lunch with the Keramos Chapter Advisors and Board of Directors in the Hyatt Regency Montreal restaurant.

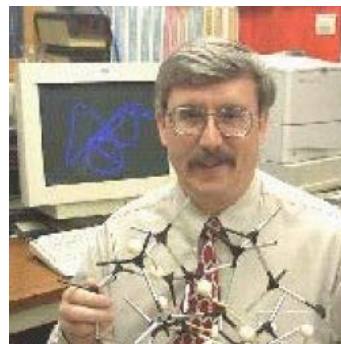
Don't miss the Mug Drop Contest, which is tentatively scheduled for the morning of Tues., Oct. 29, in the Exhibit Hall at the Palais de congress de Montreal. Participation in the Mug Drop has been increasing annually, with dozens of ceramic and glass mugs dropped from increasing heights. All Material Advantage students are invited to participate, and prizes will be given for the mug that survives from the highest drop height as well as for the best looking mug. The rules have been modified this year such that each mug must have been heated to at least 1000 °C. While the University of Illinois chapter has been very successful with their geopolymer mugs in past years (which typically survived drops of over 10 meters!), they were supportive of this change to the rules and are looking forward to the challenge.

Finally, Keramos will be introducing an **exciting new contest** developed this year by our student members: Ceramic Disc Golf! You've probably seen updates on the development of this contest in past Keragrams. Come see the contest in action, also tentatively scheduled for the morning of Oct. 29 in the Exhibit Hall. Students will fabricate ceramic discs and attempt to "putt" into a goal from increasing distances. Prizes will be awarded for longest putt and best looking disc, and all Material Advantage students are invited to participate.

We hope you'll be able to join us in Montreal!



Dr. Wayne Huebner



Dr. George Wicks

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### Members We Lost

The Officers of the National Board extend their sympathies to the families and friends of the following members:

Roland "Bud" Adams (TX'56)

Ralph D. Allen (IA'49)

Kenneth A. Baab (OH'42)

Charles Brackbill (PA'48)

Dudley P. Frame, Jr. (OH'42)

Irving W. Gower (NC'55)

William A. Graff (IL'46)

Donald J. Stefl (NJ'47)

C. Rogers Westlake (IL'47)

### ***Message From Your Student Representative***

Hello. My name is Steven Ashlock and I am honored to be this year's Student Representative to the Executive Board. My job is to reach out to the presidents of each of the chapters and discuss ways to improve Keramos. This year I have been working on a new student competition, the Ceramic Disc Golf Challenge. This was an idea proposed by the representatives from each chapter at last fall's annual convocation. It has been my job to write up the rules and work on getting the competition approved. It is my pleasure to report that the competition has been approved and will run this fall in Montreal. I would like to thank everyone who has been a part of this process. We are all looking forward to the challenge of a new competition. Have a great summer and start of the semester. See you all in October.



Steven Ashlock, [sma9t2@mst.edu](mailto:sma9t2@mst.edu)

### **The State of the Treasury**

The Board of Directors has an aggressive goal in preparation for the annual MS&T meeting in Montreal this October. We would like to raise our treasury to \$9,000 to account for the needed support of our student chapter delegates on this international trip. Currently, our treasury stands at \$6,200 so we have very little time to raise the \$2,800 needed to meet our goal. Please join me and the rest of the Board in helping us attain this goal so we can ensure a strong turnout at the Convocation in Montreal. The best way to support these delegates is to donate above and beyond your annual dues. You can donate using one of two methods: (1) PayPal at <http://ceramics.org/classes/keramos>; or (2) by continuing to send your checks to our General Secretary, Dr. Robert Schwartz.

Late last fall, the Board also began to give Keramos more visibility on the web through a new LinkedIn group site (<http://www.linkedin.com/groups/Keramos-National-Professional-Ceramic-Engineering-3573516>). This is a closed site for Keramos members only. The site already boasts 200 members and is growing membership by the month! Please join the site and connect with your fellow Keramos members for technical discussions, job searching, networking, and to find out the latest information on upcoming Keramos events.

Dr. Brian Gilmore, Treasurer; [bgilmore34@att.net](mailto:bgilmore34@att.net)

### **Alumni Support**

Our alumni play a crucial role in sustaining and 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. Thank you to those who sent in their dues and special thanks to the alumni listed below who have contributed beyond their annual dues:

**Richard A. Alliegro**  
**Wate T. Baker**  
**David Clark**  
**Delbert Day**  
**William Fahrenholtz**  
**Barton Holl**  
**James Hurst**  
**Jerome J. Krochmal**  
**Chris McLeod**  
**Katherine Markx Olson**  
**Madison Reed, Jr.**  
**Roderick Schutt**  
**Wilkins Smith**  
**Merton Van Dresser**

**Neil N. Ault**  
**Joseph M. Baranski**  
**William Crandall**  
**Robert Degenkolb**  
**James C. Frederic**  
**Dale Hjort**  
**James R. Johnson**  
**John H. Kroehling**  
**Mark Mitchell**  
**Leigh Phillips**  
**Frances Rensvold**  
**John M. Shepherd**  
**R. Francis Tatnall**  
**R.A. Verneti**

**Janet E. Bailey**  
**Maynard Bauleke**  
**Donald Crosby**  
**Richard Deno**  
**Irwin & Lenore Gordon**  
**Lyle A. Holmes**  
**William J. Kelly**  
**Donald L. Kummer**  
**Carleton B. Moore**  
**Thomas I. Prokopowicz**  
**William H. Rhodes**  
**Dorothy M. Smith**  
**Robert D. Thorson**  
**Kent Weisenstein**

**Joseph Bailey**  
**Robert Brown**  
**William Daniels**  
**Edward Duderstadt**  
**Bill F. Hammetter**  
**M. Harlan Horner**  
**Donald E. Kraft**  
**James McCauley**  
**Edward Mueller**  
**John C. Pulver**  
**Ralph Rose**  
**Jason Smith**  
**Bruce Tuttle**

# CHAPTER NEWS

## ARIZONA



Arizona's chapter outreach activities this year have been especially active, with a broad strategy of interacting with several age groups to educate students and to promote materials science and engineering as a possible major. In coordination with our local chapter of Material Advantage, the chapter engaged with students at local elementary, middle and high schools to educate them about what the field has to offer. The chapter also works closely with MSE faculty to assist in the annual Meet Your Major fair and other activities intended to increase the visibility of the major within the campus community. The consequence is that undergraduate enrollment in MSE is up more than 40% from last year.

Our website, [Keramos.arizona.edu](http://Keramos.arizona.edu), serves as a great way for learning about the chapter's activities and is a good resource for professional development by featuring an exhaustive list of scholarships and fellowships. Several pages are dedicated to a slideshow of our group's travels

and activities. Also, our fundraiser was a big success this year. Members made glass flowers from a borosilicate base and incorporated coloring for an additional fee.

Keramos hosted a BBQ at the off-campus research facility, the Arizona Material Laboratory, which was attended by over 50 professors, students and staff, and also participated in the MSE Homecoming, where many members had opportunities to interact with MSE alumni who are currently at Raytheon, Honeywell and other large companies.



## IOWA



The Iowa Keramos chapter has been active with monthly meetings and has hosted speakers from both industry and academia. The chapter also held social gatherings where more was learned about making ceramic pottery, glassblowing and slip-casting. Each new initiate was required to create a ceramic plaque from slip-casting. Additionally, a number of slip-casting molds were used to create ceramic ornaments used for fundraising and outreach.

The majority of our members attended the MS&T conference this year in Pittsburg. Representatives brought back a wealth of outreach ideas. Many of these plans will be utilized next year, such as "Break Stuff Day" where students can bring various items, dip them in liquid nitrogen, and smash them to relieve stress from studying for finals.



At each of our monthly meetings, we had a guest speaker who either works in industry or is performing research in ceramic science. Our most notable speaker was Dr. Scott Beckman, a professor at Iowa State University. Dr. Beckman discussed the importance of theory and modeling in ceramic engineering. It was exciting to hear about the importance of predictive modeling, and members were talking about Dr. Beckman's presentation for many days.

This year, our chapter decided to explore the artistic side of ceramics. We set up a demonstration by the gaffers guild and learned about many techniques they use to produce and form the glass. We also spent a Saturday morning at the campus art activity center learning how to create pottery on a potter's wheel.

The other important activity performed by our chapter was a revision of our bylaws. We voted to lower our GPA requirement and changed the requisite course from a 300 level specialization course to a 200 level course that first discusses ceramics. This will increase the availability of our chapter to Iowa State students and will lead to increased membership in future years.

## MISSOURI



This past year has been a productive year for the Missouri Chapter of Keramos. We initiated twelve new members in December and they completed the requirements for membership: attending an etiquette dinner (a formal dinner designed to teach students about proper etiquette during a profession setting); participation in a career fair; and creating a Keramos plaque of fired and glazed clay. New initiates also took a pledge quiz that contains questions about the history of Keramos, the Missouri Chapter and ceramics in general.

The chapter participated in events that help to spread knowledge of ceramic engineering and promote science and engineering in general. Our chapter members also participated in volunteer events, such as the canned food drive held by MA and Gaffer's Guild, the MA spring park clean up and the Materials Science and Engineering Department's annual phone-a-thon to raise funds for undergraduate scholarships and lab equipment.

We have found that events such as the Boy Scout Merit Badge University and open houses are a great way to expose young students to ceramic engineering. In February, Boy Scouts from all over Missouri converged onto the S&T campus and participated in a session on composites. Their project was to glue a layer of tissue paper around the outside of a Styrofoam airplane to increase its tensile strength. At the end of the day, the scouts took their planes outside and flew them to see how the tissue paper had increased their durability.



Keramos members also participated in Materials Science and Engineering Department open houses during the year. Potential students tour the undergraduate lab to learn about different ceramic topics. Students are introduced to the many applications of ceramics in electronics, piezoelectric materials and sing crystals of silicon; the tours also include thermal shock demonstrations done with quenched alumina media and bond rigidity is demonstrated by racquet balls frozen in liquid nitrogen. Keramos members also assisted with the ASM Materials Camps, where campers designed a set of "shoes" that would allow them to walk across one of the swimming pools on campus. The "Walk on Water" contest is often the highlight of the week for the summer campers, as their designs often cause them to get quite wet after falling into the pool.

Keramos hosted two lectures this year for the S&T weekly Ceramic and Metallurgical Engineering seminars. We were proud to have Dr. Jill Glass of the Sandia National Labs visit Rolla and speak on the research she has completed on glass fracture. Also, the monthly Keramos luncheons have proven to be a great success. They provide a good mix of networking and professionalism and allow members to get a different perspective from graduate students and faculty. We have had some excellent professional development events as well. Students were offered practice

interviews by faculty and graduate students, and the graduate student round table gave undergrads a great opportunity to talk about the prospect of grad school. We have also expanded our mentoring program between all the new pledges and active members.



The main achievement of this academic year has been the increased enthusiasm and member participation of the chapter. Our chapter always embraces to opportunity to meet and network with students from Keramos chapters across the nation and we participate regularly in the monthly teleconference with the Keramos Board of Directors. We look forward to the convention in Montreal to learn new ideas to improve our chapter.

## CHAPTER NEWS

### NEW YORK



Two inductions were held this year for Keramos at Alfred University. Both inductions included get-acquainted sessions where inductees learned about Keramos's history and why it is such a beneficial fraternity to be a part of. Nine members were inducted in the fall and eight members were inducted in the spring.

This year we decided to increase activity in the chapter by having weekly study nights after the meetings. They were very successful and often had a large turnout. Many of our chapter members found these to be helpful, because the older members were able to pass on their knowledge and teach the younger members.

As our community-oriented activity, we presented a liquid nitrogen demonstration to an invited group of top-ranking high school girls. The demonstration consisted of breaking a racketball, freezing marshmallows and other various fun tricks.

And for the first time in many years we had a fundraising booth at our annual Hot Dog Day Festival. The booth included a game where the player had to throw a ball into ceramic pieces made by art students at Alfred University. We also sold salt dough pendants and tee shirts at the booth. Another fun chapter activity was a "play with clay" event in which more artistically inclined students taught the others how to throw on a wheel. It was a great success with a large turnout of 15 people participating, giving many people a chance to do something new.

To follow tradition, Keramos continued to give awards at the Alfred University honors convocation. The recipients were nominated by and voted on by Keramos members and a plaque was donated by Keramos for the John F. McMahon Ceramic Teaching Excellence Award. This year's winners were:

- John F. McMahon Ceramic Teaching Excellence Award: Dr. Nathan Mellott
- Dr. Richard C. Martin Outstanding Senior Scholarship: Catherine Sahi
- Dr. Richard C. Martin Outstanding Teaching Assistant Award: Dimple Pradhan
- Advancement of Women in Engineering Award: Devyn DeVantier

### SOUTH CAROLINA



Each year Clemson University Keramos students partner up with members of other materials student organizations to run a two-night series of interactive tours for the general engineering department.

Keramos members made and distributed ice cream made from milk, sugar and liquid nitrogen. In return for ice cream, freshmen engineering students were asked to fill out a survey on how the Materials Science Department could improve the tours. The feedback was so helpful that this will become a norm for the members of Keramos. This year, there were seven tours per night, and each tour consisted of 20 freshman general engineering students. By doing these tours, more than 250 students were exposed to our department.



### *South Carolina (continued)*

There were two sets of guest speakers for our chapter this year. During the fall semester, we hosted a set of speakers from Timken. They began with some metal trivia, and then described the various processes that occur at their manufacturing facility. In the spring, speakers from Duke Energy came to describe material degradation management in nuclear power facilities. Students were shown what things can go wrong, how these failures happen, and what materials engineers are doing to prevent and fix the issues.

Early in the year, Keramos and Material Advantage continued the tradition started last year of hosting a Welcome Back Dinner for the Materials Science Department. Professors and students had the opportunity to interact outside of the classroom. Keramos also assisted with the Materials Science Department homecoming tailgate, and their team won third place in a trivia contest. And an “End of the Year Party proved to be a great way to advertise the organization and generally encourage communication within the major.

## WASHINGTON



Members of the University of Washington chapter of Keramos have been busy putting together outreach activities, networking, assisting the department, building ties with other organizations, and staying active while maintaining department camaraderie and supporting good causes.

We participated in four outreach events in 2013, at Hamilton International Middle School, the annual PSEC Engineering Fair, Echo Lake Elementary, and John Rodgers Elementary. These events serve as opportunities to bring materials science and engineering to the local community with the hopes of exciting interest for the field in young minds. Among many other demonstrations and activities, a ceramic space shuttle tile and its superior insulating properties as well as slip casting were demonstrated.



## Alumni Notes

### *We Want to Hear from You (Really! We do!)*

**Richard Alliegro** (NY'51 52) – Keep ceramic engineering alive! It's been a rewarding and satisfying career in ceramics!  
**Wate Bakker** (IA'80) – Keep up the good work. **Robert Brown** (SC'59) – May Keramos continue to be a beacon for the ceramic scientists in the country and free world! **David Clark** (FL'76) – Keep up the good work! **William B. “Bill” Crandall** (NY'43) – Happy to see a few names that I recognize; at 91 there are only a few left from my class. **Dick Deno** (WA'67) – Hi to the 50's and 60's UW crew. Go Huskies! **Edward Duderstadt** (MO'55) – Proud of the Missouri S&T [Rolla] chapter! **Jim Frederic** (SC'65) – Keep up the good work! **Jim Hurst** (GA'57) – Keep up the good work! **Donald E. Kraft** (IL'52) – Still enjoying retirement! **John H. Kroehling** (VA'47) – turned 89 in 2012. Still consulting on design and maintenance of catalytic oxidizers. **Leigh F. Phillips** (NY'51) – We need a membership list to locate “lost” colleagues. **John Preston** (GA'67) – Retired this past year. Would like to hear from GA Tech chapter. **Madison Reed, Jr.** (TX'55) – My ceramic engineering/materials science degrees have opened opportunity doors all my life. **Roderick H. Schutt** (IL'69)– Retired 4/1/13 from General Shale Brick after 42 years in the industry. **Wilkins Smith** (GA'65) – Go GA Tech. Keramos! Keramos! Brick! Brick! Brick! **Kent Weisenstein** (MO'59) – My friends at Missouri S&T [Rolla] seem to be leading the charge. Keep it up. Keramos is a great cause! **Merton Van Dresser** (IA'49) – Excellent newsletter! **Robert Verneti** (IL'62) – Keep up the good work!

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Robert W. Schwartz  
General Secretary  
Keramos National Fraternity  
4306 Silver Valley Dr.  
Columbia, MO 65203

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### 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 address above. Your additional contribution is welcomed—we were able to fund travel for eight students to attend the MS&T conference, thanks to your loyal support!

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State & Zip: \_\_\_\_\_

Email: \_\_\_\_\_

Annual Dues (\$10) \_\_\_\_\_ Donation: \_\_\_\_\_

Message: \_\_\_\_\_