

PENNSTATE



The Pennsylvania Chapter of Keramos

Annual Report

April 15, 2014



Dr. R. Allen Kimel
Associate Head for Undergraduate Studies
Material Science and Engineering
College of Earth and Mineral Sciences

The Pennsylvania State
University
124 Steidle Bldg.
University Park, PA 16802

April 15, 2014

National Keramos Officers:

It has been my pleasure to advise The Pennsylvania Chapter of Keramos during the academic year 2013-2014. Over the past year the Penn State chapter has made great strides in re-invigorating the student population involvement in Keramos.

We began the year with our annual, Keramos Industry Tour. We took 16 students, by coach, on a 4 day trip to Bayer Materials, Arcelor-Mittal, and Corning. The trip took place the week before the start of the fall semester. The chapter took 41 students to MS&T in Montreal in the fall. Due to tight budgets within the department, the students took on the challenge of raising the monies to cover the cost of the trip. In coordination with the Material Advantage chapter money was raised through fundraising efforts (in particular, the glass flower sale this year was an amazing success) and students individually applying for funding from external sources. The leadership of the chapter has really ratcheted up engaging industry this year and as such provided many opportunities for students to interact companies through industry sponsored evenings. This stronger engagement was twofold, one part was simply reaching out to industry contacts, but the second part, definitely in the spirit of Keramos, was engaging alumni and inviting them back to speak on their experiences.

In closing, I hold the achievement of the past year of The Pennsylvania Chapter of Keramos in highest regard. The officer/leadership core is getting younger and as a consequence, participation and enthusiasm are growing. I look forward to working with the new officers in the coming year.

Sincerely,

A handwritten signature in dark ink, appearing to read 'R. Allen Kimel'. The signature is stylized and cursive.

R. Allen Kimel, Assistant Professor and
Associate Head for Undergraduate Studies
Materials Science and Engineering

Annual Plan for the Upcoming Year

The new Pennsylvania Chapter of Keramos executive board will focus on improving three main goals during the upcoming school year: community, commitment to professional development, and communication.

The main focus on community will be to increase underclassmen involvement and expand student faculty relationships. To accomplish this, the new board would like to have multiple slip casting events in the beginning of the semester to make mugs and ceramic discs for the MS&T competition in October. This will help generate interest in joining Keramos and highlight interesting opportunities in ceramics processing available for undergraduates. The board also would like to host a student faculty luncheon at the beginning of the semester to strengthen relationships between students and materials science professors and to learn about research and academic opportunities. The new board also wants to increase professional development activities. A void has been left by the loss of the annual Duffers Golf Outing. Duffers served as an important networking event for our chapter and is an event we need to replace. It has been realized that our chapter does not have the number of golfers to consistently put on that event.

The new board would like to take advantage of the exceptional relationship and commitment to employers present at Penn State. The plan is to host multiple company recruiting events for materials science and engineering students. The board also plans to help organize the industry visit before commencement to see a variety of disciplines in industry. Lastly, the board would like to bring back the graduate school panel with current grad students and faculty to provide insight into higher education. In order to make members more aware of the opportunities provided next year, we intend to improve communication outlets.

A continuing problem that our chapter of Keramos has experienced is communicating opportunities through the materials science department and especially Keramos events. We believe a key component that should be added to our chapter is a web presence. We would accomplish this by developing a website to post upcoming events, future plans, scholarship or job opportunities, and to highlight key points in meetings. The board would also like to introduce a weekly newsletter via email to consolidate information that we normally receive from various sources. Finally, in order to have transparency of ongoing procedures and future plans and to be able to sign up for events, the board would like make a google drive and a separate email address for Keramos at Penn State.

Overall, the new executive board believes that the goals for the upcoming year are achievable and they hope to continue expanding the influence and development of our past, current, and future members.

List of Officers

Officers for the 2013-2014 Academic Year

President

Neal Lewis

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Vice President

Nicole Sitler

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Secretary

Cody Kalinoski

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Treasurer

Caleb Young

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Herald

Peter Robinson

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Officers for the 2014-2015 Academic Year

President

Nicole Sitler

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Vice President

Alexander Hall

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Secretary

Rohan Mohana Krishnan

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Treasurer

William Salem

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Herald

Peter Robinson

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Delegates for the 2014 Annual Meeting

Nicole Sitler and Peter Robinson

Alternate Delegates for the 2014 Annual Meeting

Alex Hall, Will Salem

Membership

2013-2014 Inductees

Kathleen Murzynski
Emily Fucinato
Ramya Gurunathan
Emily Cimino
Jie Mou
Zak Khayat
Rohan Mohana Krishnan
Nicholas Simonson
Nathan Kistler
Alexander Hall
Shelby Miller
Mohammed Abu Alsaud
Jawaher Almutlaq
Chris Camilli
Michael Brova
Patrick Walker
Joseph Fignar
Erik Taylor

Undergraduates

Adam Fink
Brittany Bartel
Don Leuthe
Chidi Chukwunenye
Jennifer Distefano
Christopher Erdely
Rachel Guarriello
Caroline Hallowell
Lorraine Hossain
Cody Kalinoski
Erika Kohlhaas
Kuan-Po Lee
Neal Lewis
Ethan Lucas
Tyler Merica
Peter Robinson
Rebecca Rugh
William Salem
Nicole Sitler
Richard Swanson
Zhembal Turgunbayev

Beecher Watson
Yingwei Wu
Yihuang Xiong
Hansheng Ye
Caleb Young
Tianjiao Zhang
Jason Lapano
Dan Kramer
Henry Guth

Graduate

Frederick Lia
Charles Brooks
Jane Howell
Arkapol Saengdeejing
Dennis Shay
Amra Tabakovic
Stephen Weitzner
Martin Antensteiner
Angela Leone

Faculty

James Adair
Paul Brown
Long-Qing Chen
L. Eric Cross
Venkatraman Gopalan
John Hellmann
R. Allen Kimel
Zi-Kui Liu
Gary Messing
Suzanne Mohny
Paul Painter
Carlo Pantano
Clive Randall
James Runt
David Shelleman
Karl Spear
Susan Trolrier-McKinstry

Honorary Member

This year, the Penn State Chapter was unable to nominate an honorary member, and this will be something the new executive board for 2014-2015 will look to do as it is an important part of thanking those who devote themselves to ceramics.

Treasurer's Report

During the 2013-2014 academic year, The Pennsylvania Chapter of Keramos raised \$2,805.73 from various sources. We were very fortunate to have such a successful glass flower sale this year. We tried to rely on our department for financial support a little less this year. Also, due to lack of interest in our students, we were unable to hold our Duffers Golf Outing for the second year in a row which is usually our most expensive event. We look to replace this event in the future.

Overall programs sponsored by the Chapter totaled \$2,198.32. The final balance of the Chapter stands at \$2,752.54.

Beginning Balance	\$ 2,145.13
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Costs	
Holiday Luncheon	\$ 514.87
Pizza For Meetings	\$ 377.86
Dues from 2012-2013	\$ 290.00
Dues from 2013-2014	\$ 180.00
Blue-White Tailgate	\$ 835.59
Total	\$ 2,198.32

Income	
Convocation Travel Reimbursement	\$ 325.00
Flower Sale	\$ 1413.00
Holiday Luncheon – Departmental Support	\$ 589.87
Dues	\$ 360.00
MPIF Donation	\$ 117.86
Total	\$ 2,805.73

Final Balance	\$ 2,752.54
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Chapter Activities

Education and Outreach

MMI Prep School Visit

November 21, 2013

MMI Prep school, from Freeland, PA, came to visit our department in order to learn more about materials science. Their backgrounds varied from science to math to the liberal arts. Dr. Elizabeth Kupp and Dr. Allen Kimel each provided a demo station in our department's building. Dr. Kupp, along with one of our students, performed a sodium alginate snake demo as well as a lesson on ceramics involving powders and explained how processing can be used to give the final product its desired properties. Dr. Kimel gave the students an informative talk on materials science and engineering as a major, and provided several small demos. The students were also able to briefly see members of our glass blowing group work on creating glass objects. After lunch, the students were brought over to the Millennium Science Complex and given a tour by members of Keramos from the third floor view of Mount Nittany down to the state of the art Materials Characterization Lab, complete with a Titan TEM. This visit was an important opportunity for members of Keramos to help the department reach out and inform young students about materials science and engineering.

Glass Flower Fundraiser

February 6-13, 2014

This year, several members of Keramos worked to produce glass flowers in our own Penn State Glassblowing Lab. Members were taught basic skills and safety of handling molten glass. Most of the flowers were made with donated glass while several additional flowers were made with recycled multicolored frit. The molten glass, frit and studio time were generously donated to Keramos by Professor Carlo Pantano, while help was provided by studio workers. We were fortunate enough to have former Herald, and current graduate



member of Keramos, Angie Leone to offer her expertise to help us create over 100 glass flowers. Members volunteered for two weekend sessions to create the flowers, and several additional members helped with the sale of the flowers during the week leading up to Valentine's Day. Each flower that was crafted was grouped into one of several categories such as, short stem, long stem recycled glass, and long stem with colored frit. The flowers were priced for three dollars to twelve dollars depending on the quality. The flowers were sold in our department building in addition to the College of Earth and Mineral Sciences building. In our second year of doing this

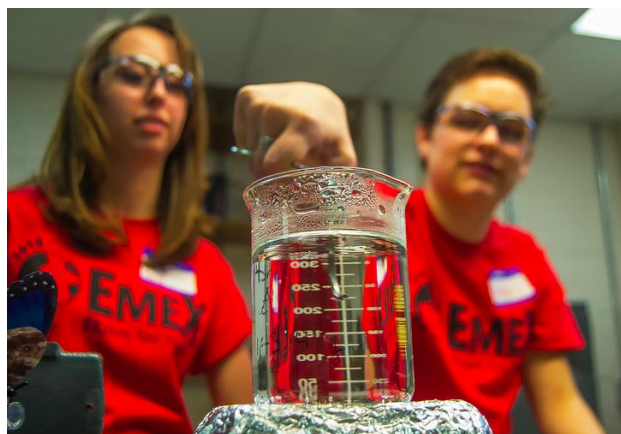
fundraiser we were extremely successful. The flowers sold out a few days before Valentine's Day, earning Keramos a thousand dollar profit.

Again this year the glass fundraiser offered more than just financial stability for Keramos. We were able to reach out and share our organization with people outside the materials science world at Penn State. People were intrigued by our understanding of materials and glass blowing, and will definitely be looking for the same fundraiser next year.

EMEX

March 29, 2014

Keramos volunteered for the Earth and Mineral Sciences Exposition (EMEX) which is an exposition for incoming and prospective students interested in majors in The College of Earth and Minerals Sciences. Keramos members led parents and students around campus and answered questions about the department as well as materials science in general. A main part of our involvement was showcasing and providing tours of our new state of the art facility, the Millennium Science Complex (MSC) and Materials Characterization Lab (MCL). Keramos students also led demonstrations in glass blowing, polymers, shape memory alloys and observing metallic microstructures with optical microscopy. This was a great opportunity for Keramos students to emphasize the sense of community in our department, as well as the professional and academic opportunities as a materials science and engineering student at Penn State.



Professional Development

Industry Visit

August 19-21, 2013

Keramos members were fortunate enough to benefit from our third annual industry trip. This year we visited Bayer-Materials facility in Pittsburgh, PA, an Arcelor-Mittal plant in Cleveland, OH, and Corning in Corning, NY. The trip was fully sponsored by Arcelor-Mittal, who covered the entire cost for all 16 students to participate in the trip. The three day trip allowed students to see different types of industries in materials science as well as talk to industry professionals about careers and working in industry.

At Bayer-Materials students were able to tour a pilot scale facility and talk with materials scientists in the polymer industry.

At Arcelor-Mittal, students toured a steel plant to see steel producing, quality control, and to talk with a metallurgist about the industry.

At Corning, students toured the catalyst support plant and had a discussion with ceramists. Students also got to visit the Corning Glass Museum.



Bayer MaterialScience



ArcelorMittal



CORNING

Corning Inc. Visit

September 18, 2013

Mike Hinman, Penn State alumnus, former Keramos president, and process engineer at Corning came to talk to Keramos students about life after graduation and give a brief presentation about Corning. He showed how Corning is a world leader in different areas and their impact on the world. In addition to being a useful way for students to learn about Corning, it was important for students to be able to talk with an industry professional fresh out of college. Many students who are preparing to graduate and transition to industry received valuable information on how to make the transition smoothly.



CORNING

Students were also able to make a valuable relationship from Mike's visit that aided in attending career fairs because they already had their "foot in the door". This also gave a chance for Corning to get to see interested Materials students and for students to talk to a professional engineer and learn more about the company in an informal session.

Resume Workshop

January 29, 2014

Prior to the spring engineering career fair, Keramos hosted an informal resume workshop for Keramos members and other materials science students. Senior members of the executive board offered tips for an exceptional resume, and provided perspectives on what in a resume distinguishes a student from the masses of engineering students. Students also discussed possible interviewing situations and how to approach and communicate with company representatives. This workshop enabled underclassmen to navigate the career fair for the first time and upperclassmen update and review their resumes. The event also helped executive board members get to know some of the younger members of Keramos and encourage them to get involved early.



Halliburton Information Session

February 26, 2014

In conjunction with Penn State's graduate student group, MRS, Jeff Thomas of Halliburton was brought in to talk to a mixed group of undergraduate and graduate students. This information session proved to be useful for both groups as Mr. Thomas provided information about Halliburton's Drill Bits and Services, and how materials research is important to the oil and natural gas industry. Mr. Thomas touched on opportunities at Halliburton for materials scientists with only a B.S., and also for materials scientists with higher degrees. The information session was especially helpful for our undergraduate members who are looking to go to graduate school before heading to industry. This information session came at an important time, as shortly after the department sent out job and co-op opportunities with Halliburton's Drill Bits and Services. Additionally, it was an interesting opportunity for students to see how materials science is important to many different industries.

HALLIBURTON



MPIF Information Session

February 27, 2014

Dean Howard, Vice President of Sales at North American Hoeganaes and Penn State alumnus, came in to talk to students about the powder metal industry. Dean gave a brief presentation on the Metal Powders Industries Federation (MPIF), and described the technology that is used in the industry. He also placed an emphasis on the opportunities that powder metallurgy has for young graduates and students looking for internships. It was a great opportunity for



our students to discuss powder metallurgy with Dean and listen to how his career has evolved over the years. Most of our students are ceramists so it was interesting to discuss the similarities and differences between powder metallurgy and ceramics processing. Dean's visit was important because it will establish a relationship between MPIF and Penn State that will allow our students to have an important contact in the powder metallurgy industry. This session already proved valuable as one of our graduating seniors landed a job with Hoeganaes after attending the information session with Dean

Service

Student-Faculty Holiday Luncheon

December 10, 2013

At the end of the fall semester, our Keramos chapter teamed up with our department and the graduate student group, MRS, to provide a holiday luncheon for faculty, staff, and students. The event was a great way for all members of the department to come together and enjoy good food and holiday music just before the end of the semester. This event helped to boost the relationship between undergraduate and graduate students. Students and professors were also engaged and able to get to know one another outside the classroom, which is something Keramos wants to promote at Penn State. Our executive board raffled off gift cards at the luncheon to boost the holiday cheer and keep the event light and entertaining. Additionally, our chapter asked undergraduate members to come with a toy to donate to the U.S. Marine Corps Reserve Toys for Tots program. We had successful turnout and were awarded a Commander's Award for our donation efforts.



Department Materials Science and Engineering Awards Banquet

April 3, 2014

The Annual Spring Banquet for the Material Science and Engineering Department was held Thursday, April 3 at the Nittany Lion Inn. The purpose of this event is to recognize the outstanding students and faculty for their accomplishments. This year the Keramos executive board volunteered at the registration table to help signing guests in, and one of our members also served as a Master of Ceremony. We also encouraged students to be actively involved with the voting for the faculty member of the year award. Additionally, members of our external advisory board (EAB) were in attendance and students were able to consult them about life as a materials scientist and get tips on moving forward with a career. The EAB has members that range from entrepreneurs to CEOs to even a lawyer, all with materials science degrees from Penn State.

We are proud to announce that several Keramos members won awards this year at the Annual MatSE Banquet: Lorraine Hossain received the Materials Science and Engineering Service and Leadership Award; Nathan Kistler won second place in the Undergraduate Poster Competition; Erik Taylor won third place in the Undergraduate Poster Competition; and Chidi Chukwunenye received the George W. Brindley Award in Nonmetallic Crystal Chemistry.

Alumni Relationships

Blue-White Tailgate

April 12, 2014

Our chapter's largest alumni involvement comes every year at Penn State's spring football game. In years past we have roasted a pig overnight behind our department's building and held a tailgate away from the stadium the morning of the game. This year, we switched things up and held a tailgate at the stadium before the game. We had the event catered and opened the tailgate to alumni, faculty, staff, graduate students, and undergraduate students. With the luck of gorgeous spring weather, the tailgate was a tremendous success. The growing relationship with



undergraduate students and graduate students was evident as many students were discussing classes, graduate school options, and different career paths. Our members were also able to network with alumni who attended and get to know industry professionals in the laid back setting of a Penn State football game. We had around 60 people attend the event and it was a fun day hanging out with fellow Penn State materials scientists.

Annual Convocation

Materials Science and Technology (MS&T) Conference

October 27-29, 2013

This year Penn State's Chapter of Keramos an exceptional showing at the Materials Science and Technology conference, as we were able to take 41 undergraduate members combined with our Material Advantage chapter. Our students benefited greatly from hearing professional talks, attending the student speaking competition, networking with companies, and attending the Penn State Reception where they were able to meet and network with alumni. Our President Neal Lewis participated in the first "Lunch with Industry" event, and was able to network with Penn State alumna and material scientist for GE Global Research Dr. Kristen Brosnan.

Officers Neal Lewis, Nicole Sitler, Cody Kalinoski, and Peter Robinson attended the Keramos Convocation and received many great ideas from other chapters. We liked many fundraising ideas we heard including the padfolio fundraiser that the Missouri Chapter put together. We also liked the idea of using graduation regalia as a point system to improve participation, but unfortunately due to Penn State restrictions we were unable to implement the idea. We were all honored to be there to welcome in the Connecticut Chapter.

Interchapter Communication

Due to our entire board having the same class on Wednesday afternoons, we were unable to join in on the monthly teleconferences. We did share what our chapter was up to with Ivy, the student representative. But we were unable to talk with chapters during the teleconferences to get ideas and discuss possible events that other chapters were thinking about. Hopefully next year we can work harder at being more communicative with other chapters. It would be beneficial for our chapter to open communication with chapters that regularly dominate the annual competitions at MS&T. Penn State has not had an entry in the mug drop competition in a while and we would benefit from hearing the structure, organization, and time frame that other chapters have in place to consistently have entries.

Social Activities

Break-Stuff Night

December 13, 2013

This year Keramos hosted Break-Stuff Night prior to finals week to provide a little study break to the students. At this event, students get to dip any objects they want into liquid nitrogen and then smash it in the Ceramics Processing Lab. There was extra space to break things, due to the lab being empty in preparation for renovations. This was a great chance for students to relieve some stress during finals preparation time and learn about the glass transition temperatures of various materials at the same time. We had about 15 students attend this year, and we plan on holding the event next fall as well.

College of Earth and Mineral Sciences Casino Night

January 24, 2014

This year a large group of Keramos members attended our college's annual Casino Night together. We enjoyed a nice dinner and played casino games with fake money. The night was a great way for our chapter to bond and interact at the beginning of the spring semester.



Socials

January 24, 2014 and April 1, 2014

This year, Keramos continued to host socials to improve relationships between members and to get to know new members outside of the classroom. These were great opportunities for members to relax and just hang out together without the stresses of homework and classes. At these events, members hang out, play games, dance to music, and get to know each other better. Networking between members is just as necessary as any other networking with companies or professors as it promotes the sense of brotherhood and camaraderie.

Summary

The Pennsylvania Chapter of Keramos, currently comprised of 48 undergraduate members, had a successful year providing service to our department, educating young students about the benefits of materials science, providing professional development opportunities to our members, engaging alumni, and growing camaraderie among members.

Education and Outreach

Chapter members were able to get involved in many of the department and college activities such as providing tours and conducting demos for young high school students as well as students already accepted to Penn State for the next academic year. A successful event at getting ourselves known and promoting ceramics was our second annual glass flower sale. We were able to sell over one hundred glass flowers to people outside of our department in order to raise money for our chapter as well as educate people on ceramics and glass science.



Professional Development

This year, Keramos was able to further expand on its progress from last year's efforts to emphasize corporate relationships and networking. Our chapter was able to offer information sessions for traditional ceramic companies such as Corning Inc., but also we were able to bring in some new companies, such as Halliburton, to showcase the vast opportunities available to materials scientists.

Service

Keramos always looks to help our department with events to promote materials science and ceramic engineering as well as positive relationships between students and faculty. With our holiday luncheon and help with the Awards Banquet, our chapter was able to help improve on the relationships between undergraduate students, graduate students, and professors.

Alumni Relations



One of our big alumni events, the Duffers Golf Outing, has been difficult to put on consistently due to lack of participation. However, we have been able to work on alumni relations with different events this year. The majority of our professional development events this year featured Penn State alumni, and we were able to put on a tailgate for Penn State's spring game for alumni to attend and network with our students.

Interchapter Activities

Our chapter had failures in communicating with other chapters this year as class schedules held us out of teleconferences. We were able to learn greatly from other chapters at the Annual Convocation, even if we were unable to implement some new ideas due to Penn State restrictions. This year has showed us that as a chapter we need to work on communicating better with other chapters, especially the new chapter and those trying to rebuild and grow.

Chapter Bonding Activities

Our department has been fortunate enough to have our building renovated, but this fortune has led to breaking up a department that has been close-knit with the help of our centralized location on a large campus. To help combat this, Keramos has provided social events to help our students gain valuable relationships in order to remain close-knit during the upcoming transition years.

We provided a liquid nitrogen “break stuff night” for students to freeze items and break them before finals, which is always a hit. We also held socials in order to help members to get to know one another, especially the new members.