



Keramos Annual Report
Fall 2018 – Spring 2019

University of Illinois at
Urbana-Champaign

University of Illinois at Urbana-Champaign

Chapter Summary

Keragram

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. To facilitate this growing program, we are pleased to announce plans to buy a new kiln. This was made possible through a very generous grant from the Ceramic and Glass Industry Foundation. With this new kiln we expect Play with Clays to continue to expand.



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.

Officers for the Upcoming Year

President

Amy Merkelz



Vice President

Jose Mancias



Treasurer

Colleen Moauro



Professional & Alumni Relations Chair

Gillian Niezyniecki



Herald & Secretary

Talen Sehgal



Herald & Webmaster

Noah Hanselman



List of Active Members

Advisor: Nicola H. Perry

Spring 2016 Initiates

| | | | |
|------------------|------------------|---------------|--------------------|
| Collin Anderson | Joshua Khazanov | Audrey Lee | Benjamin Perkinson |
| Christopher Beck | Elisabeth Lang | Brendan Wolan | Mitchell Schroeder |
| Piush Behera | Michael Toriyama | | |

Fall 2016 Initiates

| | | | |
|----------------|---------------|------------------|------------------|
| Naomi Benson | Jacob Maher | Jai Sharma | Whitney Tso |
| Mary Jablowicz | Caelin Muir | Monica Paul | Ethan Wisniewski |
| Sai Komaragiri | Shunya Namiki | Jeffrey Schooler | Eric Krupinski |

Spring 2017 Initiates

| | | | | |
|----------------|--------------------|--------------|-------------------|------------------|
| Humza Ahmad | Kevin Halloran | Jiwoo Lee | Jarod Meyer | Justin Silberman |
| Dylan Blake | Lukas Janavicius | Matthew Lee | Sarah Pirih | Edward Thomas |
| Julia Brodecki | Aneesh Jonelagadda | Samuel Li | Alexander Prather | Jingyi Wen |
| En Ju Cho | Namita Kulkarni | Mengke Ma | Paige Prendergast | Hongtao Yang |
| Kelsey Golk | Bao Lam | Jose Mancias | Julia Schultz | |

Fall 2017 Initiates

| | | | |
|-----------------|--------------|--------------------|-----------------|
| Sean Halloran | Tyler Jensen | Madeleine McDonald | Katherine Vuong |
| Ari Harding | Brian Liu | Laion Neves | Rachel Yuan |
| Hannah Harris | Raka Mahakul | Gina Oshana | |
| Justin Huy Pham | Noah Vivo | | |

Spring 2018 Initiates

| | | |
|---------------|-------------------------|--------------|
| Talen Sehgal | Clarissa Domanus | Abigail Berg |
| Vineet Tagare | Alberto Martinez-Garcia | Jeremy Shin |
| Justin Gruber | Colleen Moauro | Jay Baek |
| Amy Merkelz | Timmy Dong | |

Fall 2018 Initiates

| | | | |
|---------------|----------------|-------------|------------------|
| Alison Nunes | Matthew Wu | Kevin Lee | Charlotte Israel |
| Amay Nirula | Wonjoon Suk | Jin Woo Kim | Adam Ladd |
| Elena Di Mare | Sankhya Hirani | | |

Spring 2019 Initiates

| | | | | |
|--------------------|---------------------|--------------------|---------------------|-----------------|
| Alekh Beri | Matthew Larson | Adam Zatar | Noah Hanselman | Dana Yun |
| Alexander Swett | Grace Levita | Donghyun Lee | Joe Boyce | Tommy Yang |
| Alex Futterer | Varun Sharma | Bonian Pan | Andrij Kozych | Samuel Feathers |
| Patrick Gardocki | Lucas Carrillo | Jordan Meyer | Adamaris Nuñez | Cole Klobuchar |
| Meera Jagannathan | HuiZhi Tao | Haibo Gao | Jon Ripper | Ian Flueck |
| Elizabeth Atkinson | Trisha Gupta Sharma | Alymuhammad Gilani | Gillian Niezyniecki | |

Initiation Class Photos

Fall 2018



Spring 2019



Graduating Members' Contact Information

All of this year's graduating members are listed below, but not all graduates have responded to requests for contact information.

| Name | Email | Phone Number |
|--------------------|-------|--------------|
| Monica Paul | | |
| Jeffrey Schooler | | |
| Adam Ladd | | |
| Piush Behera | | |
| Caelin Muir | | |
| Mitchell Schroeder | | |
| Eric Krupinski | | |
| Collin Anderson | | |
| Abigail Berg | | |
| Jiwoo Lee | | |
| Kelsey Golk | | |
| Whitney Tso | | |
| Michael Toriyama | | |
| Jeremy Shin | | |
| Benjamin Perkinson | | |
| Audrey Lee | | |
| Christopher Beck | | |
| Shunya Namiki | | |
| Brendan Wolan | | |
| Jacob Maher | | |
| Joshua Khazanov | | |
| Alexander Prather | | |

| | | |
|------------------|--|--|
| Brian Liu | | |
| Laion Neves | | |
| Hongtao Yang | | |
| Ethan Wisniewski | | |
| Jai Sharma | | |
| Brendan Wolan | | |
| Jacob Maher | | |

Treasurer's Report

During the 2018-2019 academic year, the University of Illinois Keramos Chapter received \$1900 in initiation fees and \$1378.33 from other sources. A large source of income was from a corporate donor, Chevron, who donated \$1500 for professional development programs. In total, \$2775.91 in expenses were incurred, resulting in a net gain of \$166.87. Please note that any income or expenses incurred after 4/15/2019 are not included. The table below shows the balance immediately available to our chapter through our club bank account, and does not include the balance of our University of Illinois Registered Student Organization account, which was not used for any transactions this academic year.

| Balance | | | | \$ 2,591.37 |
|------------|-------------------------------|--------------------|--------------------|--------------------|
| Date | Item | Debit | Credit | |
| 9/4/2018 | Food for Mentor Session | \$ 157.68 | | |
| 9/6/2018 | Food for First GM | \$ 96.91 | | |
| 9/10/2018 | Irish Nachos at Social Event | \$ 9.30 | | |
| 10/9/2018 | Supplies for Mentorship Event | \$ 25.88 | | |
| 10/12/2018 | Illini Rec Room Fees | \$ 285.55 | | |
| 10/17/2018 | Lodging at MS&T | \$ 1,677.92 | | |
| 10/22/2018 | Departmental Reimbursement | | \$ 350.00 | |
| 11/13/2018 | Initiation Dinner | \$ 95.97 | | |
| 11/15/2018 | Initiation Fees | | \$ 450.00 | |
| 12/12/2018 | Supplies for Mentorship Event | \$ 15.17 | \$ - | |
| | | <u>\$ 2,364.38</u> | <u>\$ 800.00</u> | <u>\$ 1,026.99</u> |
| 1/31/2019 | Supplies for Play with Clay | \$ 40.48 | | |
| 1/31/2019 | Play with Clay Supplies Grant | | \$ 100.00 | |
| 2/13/2019 | Ceramic Rose Fundraiser | | \$ 32.00 | |
| 2/28/2019 | St Patricks Day Fundraiser | | \$ 30.00 | |
| 3/19/2019 | Etiquette Dinner Fees | \$ 350.00 | | |
| 3/19/2019 | Fees reimbursed by SHPE | | \$ 816.33 | |
| 4/7/2019 | Catering for Initiation | \$ 306.60 | | |
| 4/7/2019 | Initiation Fees | \$ - | \$ 1,450.00 | |
| | | <u>\$ 697.08</u> | <u>\$ 2,428.33</u> | <u>\$ 2,758.24</u> |

Chapter Activities

Educational Outreach

-MATLAB Tutorial

After the popularity and positive feedback of last year's session, we held another MATLAB tutorial in January. Underclassmen are expected to have a basic knowledge of MATLAB in their early courses such as MSE 201 and MSE 206, where they expand upon this knowledge to use MATLAB to solve materials science and mechanics problems. Computational modules that use MATLAB are present in a majority of core materials science courses. Our MATLAB tutorial is designed to be a refresher for students with MATLAB experience while walking through the basics at a pace that students with no prior knowledge can follow. We covered a breadth of topics in MATLAB including remote access, basic syntax, vector math, how to plot data, and other basic functions.

-Gripe Sessions

At the end of each semester Keramos hosts a gripe session for undergraduate students to voice any criticism, praise, or suggestions about classes in the Materials Science and Engineering (MatSE) department. We also use an online form so students who cannot attend the gripe session still have the chance to share their thoughts. The Keramos Exec board collects the feedback and presents it to the department. We value this connection between our organization and the MatSE department. As the MatSE curriculum transitions away from concentrations, we foresee the gripe sessions becoming even more valuable; we hope they will facilitate a smooth transition for undergraduate students.

-Student Panels

We hosted several student panels throughout the year. Our student panels typically consist of three or four upperclassmen with experience in a certain area, such as undergraduate research. Underclassmen can ask them questions about their experience or for advice. This year's student panels covered topics such as internships, research, and studying abroad. We provide these panels in hopes that underclassmen will benefit from older students' knowledge and advice, while also fostering a supportive community in both Keramos and the MatSE student population at large.

Engineering Open House (EOH)

Engineering Open House is an extremely popular event at the University of Illinois at Urbana-Champaign which takes place over the course of two days in March. During these two days every department in the College of Engineering presents projects

demonstrating the amazing capabilities of engineering to the public. People of all ages come from to visit, including school trips, families, and alumni. There are usually about 25,000 visitors. Many high school students use EOH as an opportunity to see if engineering and the U of I are a good choice for them. The projects are created by a variety of engineering societies, organizations, research institutes, classes, and startup companies. They are then judged based on different categories to determine which exhibit will receive one of the coveted EOH awards.

This year Keramos expanded its exhibit to two separate demonstrations for Engineering Open House (EOH). We continued to have the Oobleck demonstration to demonstrate non-Newtonian fluids. The kids enjoyed getting to play with the Oobleck and explore its shear-thickening behavior in our hands-on exhibit. We got to teach the public about how non-Newtonian fluids can be found in a variety of products, including ketchup and honey. Non-Newtonian fluids are a great example of how interesting material properties are found all around us in our everyday lives. We also added a new project: we created a miniature fluidized bed. This was constructed from a plastic container filled with sand and a series of PVC piping with small holes. When compressed air is sent through the pipes, the solid sand flows and behaves like a liquid. Fluidized beds are used in industrial applications such as applying coatings uniformly to metal pieces or to encourage a chemical reaction between two powder reactants. Both kids and adults enjoyed our presentation of the fluidized bed. These exhibits were a great opportunity to show kids and adults the different properties of solids and liquids, and how materials engineers can use or alter these properties for different purposes.





Professional Development

-Tech Talks and Professor Lunches

We continued to host monthly professor lunches with professors in the MatSE department. This year we tried to make the events thematic. In the fall, we hosted a freshman professor lunch, which featured professors who teach 100- and 200-level courses in the department. We also had a lunch with the directors of graduate admissions for both the MatSE department and the Electrical and Computer Engineering department in the spring for students interested in attending graduate school. We hope to continue to increase attendance at these lunches by promoting the events more often next year.

-Guest Lecture with Prof. Brett Kaufman

During the fall semester Keramos hosted a lecture from Prof. Brett Kaufman, an archaeologist in the University of Illinois at Urbana-Champaign's classics department. Prof. Kaufman's research focuses on ancient engineering and design, particularly in the Mediterranean and the Near East, where he has led several excavations. It was fascinating to learn about the intersection of history, archaeology, and materials science. Prof. Kaufman is currently teaching a course called Archaeology and Science, where students about ancient engineering and use lab equipment such as the SEM to analyze artifacts. This course is quite popular among materials science students as a general education elective.

-Career Fair Preparation Events

Before each of the engineering career fairs we hosted valuable professional development events to help materials science and engineering students prepare. We

continued to provide resume review sessions, during which upperclassmen helped younger students edit their resumes to be structured, professional, and to showcase their achievements. This event was well attended by underclassmen, particularly freshmen. Resume reviews are a great chance for freshmen to see the professional development benefits of joining Keramos. This year we also hosted a mock career fair. Two senior Keramos members with prior internship experience created mock companies and acted as recruiters so underclassmen could practice their elevator pitches before the actual career fair. We hope to expand this event to help freshmen and sophomores enter the career fairs with confidence.

-Etiquette Dinner with SHPE and Chevron

Professional development and networking have always been priorities of our chapter of Keramos, and the Etiquette Dinner that we held in March was the perfect opportunity to combine both of those. We worked with the U of I chapter of the Society of Hispanic Professional Engineers (SHPE) to plan the event, which was sponsored by Chevron. 25 students from each organization, along with some representatives from the recruiting team at Chevron, were able to attend the 2-hour dinner in order to learn about the rules of propriety at business meals. It gave us a great opportunity to learn, as well as network with other engineering students and the Chevron recruiters. Everyone involved had a lot of fun, and we are hoping to make this a recurring event with SHPE.



Fundraising

We continued our tradition of selling ceramic hearts and roses on the Quad for Valentine's Day. Some of the hearts were pre-made with cheesy Valentine's Day quotes, while others were customizable. This year we made \$32.00. The roses sold particularly well! Next year we hope to increase sales by promoting the fundraiser on social media

well before the event, as well as adding a pre-order option. We also had a St. Patrick's Day Ceramics Sale, where we sold decorations for St. Patrick's Day! During this sale we made \$30.00. Both events went well and were great projects for the Heralds and the Play with Clay sessions. We hope to continue to expand our fundraisers and share the beauty of ceramics with more people!



Play with Clay

Play with Clay is a weekly event hosted by our Heralds where students can learn about and experience ceramic processing and design. The Heralds teach new students how they make the slip used during Play with Clay sessions. Students can slip cast or use throwing clay to create a variety of objects from turtle figurines to plates. They can also glaze their pieces. Issues with our current kiln has slowed project firing time, but we hope to resolve this problem with the purchase of a new kiln made possible by a generous CGIF grant. Another difficulty is maintaining our molds, some of which have begun to crack.

The Heralds have started making new molds, including a coffee mug mold. We hope to continue to make molds of objects with a practical use, as most of our current molds are of pigs. They also prepared the mugs for the mug drop competition. The Heralds also made decorative ceramic wares for the Valentine's Day and St. Patrick's Day fundraisers. Finally, each year the Heralds create two or three pigs (using our abundance of pig molds!). These pigs give to professors who have exhibited excellence in teaching and/or outreach. The Professor Pig is a highly coveted award amongst faculty in the MatSE department.



Service

-Destination Technology

The UIUC Keramos and MA chapters continued their relationship with Destination Technology this year. In the fall, small groups of MA and Keramos members taught middle school students in Peoria about air-related science through a variety of demos over the course of three separate weekends. Some popular topics included learning about vacuums and foam materials. In the spring, we hosted the same students during EOH. Members volunteered as tour guides to show them exhibits all around EOH. We also supplied lunch to the kids. Our tour guides kept a positive attitude despite the rainy weather, and the kids had a great time exploring EOH! We hope to continue this relationship with Destination Technology and teach more kids about the world of engineering.



-Engineering Council Food Drive

In November Keramos participated in the Engineering Council food drive. This is a competition between engineering organizations and societies to donate the most food to the drive. All food is donated to the Eastern Illinois Food Bank. There was a modest amount of involvement from our chapter, but we hope to encourage more people to donate next year as this is a great way to give back to the local community.

Interchapter Communications and Collaboration

While we had some great conversations with other Keramos chapters at the Materials Science and Technology Conference (MS&T) that spawned a lot of ideas for improving our society, especially our mentorship program and our fundraisers, we did not have interchapter events after MS&T. This is one area in which we hope to improve next year. Interchapter events are a lot of fun for Keramos members, and we hope to give our members these experiences again next year.

MS&T Convocation and Business Meeting

The U of I Keramos and MA chapters sent twelve students to the 2018 Materials Science and Technology Conference (MS&T) in Columbus, Ohio. Our students got to participate in many of the events at MS&T, including the mug drop competition, the student speaking competition, the student networking mixer, and the annual convocation and business meeting. The University of Illinois at Urbana-Champaign Keramos Chapter was represented by Amy Merkelz, Jeffrey Schooler, Colleen Moauro, and Bao Lam. We were very honored and grateful to receive a grant from the Ceramic and Glass Industry Foundation (CGIF) this year. During the business meeting we discussed our chapter events with other Keramos chapters and exchanged ideas on a variety of mentorship, fundraising, and professional development events. We also got to give input on changes to the ceramic mug drop and disc throw competitions.

This year we prepared three mugs for the mug drop competition. Our Heralds prepared two mugs for dropping and one mug for the aesthetics competition. One of our dropping mugs tied for second place! It was a very competitive year for the mug drop, and we were quite pleased with our results. Next year we want to continue our success and vie for first place. The Heralds also attempted to prepare one entry for the disc throw; unfortunately our disc exploded in the kiln. Alison Nunes was our student speaker, and she did a fantastic job explaining her research about building stable environments for stem cells to thrive in. We are very proud of her for placing second in the competition.



Social

-E-Week

This year one of our Heralds, Talen Sehgal, lead a joint MA/Keramos E-Week team. E-Week is a weeklong competition between teams of engineering students at the U of I to celebrate National Engineers Week. Our team participated in events such as Jurassic Park trivia, tug of war, and bags. The team won first place in the Amazing Race event! This was a great team bonding experience between MA and Keramos members. Team members also got to work with other engineering RSO's teams. We hope to continue to lead a team in the future as a way to build camaraderie among Keramos members.



-Mentorship program

Our freshman mentorship program continued to grow this year. 35 incoming freshmen were paired with upperclassmen to give them a contact in MatSE and another resource to help them navigate the transition into life at the University of Illinois. At our mentorship kickoff in September, everyone was able to meet and mingle with undergraduate students in all grades while eating pizza and playing board games. As the semester progressed, mentorship social events were held every two weeks. Some of the favorites were a Baking Competition, Yard Games on the Quad, and Bowling in the Illini Union. This program is one of our most effective methods to get freshmen interested and involved in our organization. It provides many different activities to appeal to all kinds of students' interests and allows younger students to meet and get to know upperclassmen, which helps grow the community within MatSE here at Illinois.

