

Keramos Annual Report

University of Illinois at Urbana-Champaign

Academic Year 2022-2023

Ceramics Building,
University of Illinois.—27



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Table of Contents

I.	Forward from the Faculty Advisor	-----2
II.	Annual Plan for the Coming Year	-----3
III.	List of Officers	-----4
IV.	Active Members	-----5
	a. New Members	-----6
	b. Graduating Members	-----7
V.	Honorary Keramos Member Nomination	-----8
VI.	Treasurer's Report	-----9
VII.	Chapter Activities	-----11
	a. Note on Keramos/MA Partnership	-----11
	b. Fundraising Efforts	-----11
	c. Educational Outreach	-----11
	d. Professional Development	-----13
	e. Service Events/Outreach	-----15
	f. Social Events	-----16
	g. Play with Clay	-----17
	h. Initiation	-----18



A Brief Forward from Illinois' Faculty Advisor

I have been honored to serve as the faculty advisor for the University of Illinois' Chapter of Keramos for the year 2021-2022 and to work with a fantastic group of students on the executive board. As in other years, the student leaders are to be commended for their oversight of the chapter and hard work to promote ongoing membership and community. This year has been one of transitions from remote activities to returning back to in-person events – with all the attendant joys of reuniting face-to-face as well as challenges when the normal routines of transitioning leadership and momentum of chapter visibility and participation have been disrupted.

The events and updates from this academic year are detailed in the following report. The number of people initiated into Keramos membership within this Chapter were 11 in the fall and 15 in the spring. Events this year have included trivia night and Keramos Cares-The-Most **fundraisers** which raised visibility of the play-with-clay activities; **educational outreach** through study sessions, gripe sessions, student panels and an Engineering Open House booth (about 25,000 people attend EOH); **professional development** through resume reviews, company and research info sessions, professor talks, and participation at MS&T and TMS conferences (including Diamond award and Most Improved award for the Chapter); **service activities** including after school program involvement and blood drive; and **social events** including a mentoring program and Women in MatSE meetups. Perennial Play-With-Clay and Initiation activities complemented the year's programming. As is clear from this list, the Chapter remains highly active and involved in the university, professional, and surrounding communities.

The Chapter has successfully carried out remote elections for next year's executive board. I look forward to working with Bailey Wooldridge (incoming President), Kira Martin (incoming Vice President), James Heaton (incoming Treasurer), Andrew Lum (incoming Professional and Alumni Relations Chair), Meghan Oh (Herald/Secretary), and Robbie Nollett (Herald/Webmaster). In summary, the Illinois Chapter of Keramos remains strongly committed to student professional development, education, and service, as evidenced by the wide variety of successful events held this past year.

Sincerely,

Nicola H. Perry

Assistant Professor, Materials Science & Engineering, University of Illinois, Urbana-Champaign



Annual Plan for the Coming Year

Dear Keramos National Board,

I am honored and excited to be elected as the President of the University of Illinois Urbana-Champaign Alpha Chapter for the 2022-2023 academic year. I was initiated into Keramos in Spring 2020 and have been lucky enough to serve as Treasurer for the 2021-2022 school year. My experience as Treasurer has allowed me to understand how our executive board functions. In this role I have made connections within the Materials Science and Engineering Department as well as the University of Illinois as a whole. My time in Keramos has allowed me to see firsthand how our members interact and to understand exactly what they want out of this organization. In the coming year, I hope to continue to grow our sense of community and create new connections for Keramos.

The past year has brought with it the new challenges of a post-pandemic normal. Our Chapter has successfully reinstated its former programming with regular professional development and weekly Play with Clay events. We have, however, faced difficulties in member involvement and attendance at our events. In the next year I plan to work with my executive board to generate new avenues of communication in an effort to maximize participation at all of our events. In addition to enhancing communication, I hope in the coming year to restart our ceramic glass shop, which was left largely unused even in pre-pandemic years. I intend to transform the space into an area that our members can utilize for hands-on learning and creativity in the glass realm, similarly to how our Play with Clay Sessions help teach clay ceramic processing techniques. I expect that with more effective communication and a wider variety of events, attendance and involvement rates will increase as well.

Professional development is a major focus for many of our members. The Fall and Spring Career fairs, though, have been said to be discouraging to students in smaller departments like Materials Science and Engineering. In the next year, I plan to continue working closely with our Material Advantage Chapter to cosponsor professional events with prospective employers and University faculty. I trust that with more positive connections between companies and our Materials Science and Engineering student organizations, on-campus recruiting will be more successful for our members.

The upcoming year is bound to introduce new challenges for this executive board. I am confident that our chapter will recover from any obstacle as well as it has transitioned into this new normal. I have high expectations for the next year and am eager to get to work furthering the Keramos identity on our campus.

University of Illinois Keramos Chapter President 2022-2023

Bailey Wooldridge





List of Officers

2021 - 2022

2022 - 2023

President	Noah Hanselman 	Bailey Wooldridge
Vice President	Jessica Lawson 	Kira Martin
Treasurer	Bailey Wooldridge 	James Heaton
Professional and Alumni Relations Chair	Kira Martin 	Andrew Lum
Herald/Secretary	Meghan Oh 	Meghan Oh
Herald/Webmaster	James Heaton 	Robbie Nollett



Active Members List

Spring 2018 Initiates

Jay Baek	Alberto Martinez-Garcia
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Fall 2018 Initiates

Alison Nunes	Jin Woo Kim
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Spring 2019 Initiates

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

Fall 2019 Initiates

Paloma Alcala	Vansh Gupta	Kevin Lee	Avery Maloto
Nihar Mara	Brisa McGrath	Patrick McNutt	Amanda Mittanck
Yassin Mohammad	Meghan Oh	Kacper Rebeszko	Corynne Roberts
Joshua Simpson	Talha Tariq		

Spring 2020 Initiates

Mostafa Abdalla	Katelyn Bagwell	Valeria Cruz	Xiangrui Deng
Maryanne Derkaloustian	Julia Dreher-Thelkeld	Simon Grimm	Ryan Halton
James Heaton	Charlotte Holas	Nithiyassri Vivagandran	Jan Lakomy
Jessica Lawson	Nathan Levandovsky	Eden Li	Maria Castellanos
Jenna Ornas	Catherine Ott	Julia Prendergast	Micah Rubel
Malik Siddique	Stephen Skala	Bailey Wooldridge	Christina Yu
Lucas Zaczek			



Fall 2020 Initiates

Adrian Aguero	Doha Amer	Janak Bachkaniwala	Cole Benvau
John Chen	Gavin Depew	Erin Falsey	David Hodges
Henry Hwang	Alexander Kosyakov	Eric Li	Kira Martin
Maritza Murillo-Hernandez	Kelly Perozek	Sara Pfeil	Jessica Rangel-Galera
Katie Roche	Sofia Vargas	Hanlin Wang	

Spring 2021 Initiates

Katrina Arsky	Nicole Bremner	Daniel Cudzich	Thomas Gomez
Michael Han	Kayla Huang	Nathanial Inumerable	Saagar Kolachina
Alexander Lussier	Akhita Mattapalli	Robert Nollett	Sathvik Pai
Harrison Patel	Evan Saebeler	Ella Schwartz	Sanjay Sibi
Montserrat Solis	Suhaas Sura	Lydia Taylor	Shivam Taylor
Jake Tokarewich	Aleah Treiterer	Nadya Widjaja	



New Initiates This Academic Year

Fall 2021 Initiates

Aniket Khanna	Hanniel Malonzo	Yousef Noori	Eddie Oh
Colin Shan	Sai Shruti Sood	Vaanchit Srikumar	

Spring 2022 Initiates

Andrew Lum	Piya Kapoor	Alice Gao	Meera Karthi
LJ Kim	Aarav Seth	Hayden Gantt	McKella Susralski
Abby Sreden	Christian Papachristodoulou	Ray Tsai	Punn Chotiprasidhi
Son Pham	Steven Endres	Jeyan Francis Cornelio	



Graduating Members This Academic Year

Paloma Alcalá 	Clarissa Domanus
Timmy Dong	Justin Gruber
Hannah Harris	Amy Merkelz
Colleen Moauro 	Vineet Tagare
Elena Di Mare	Ryan Halton
Sankhya Hirani	Kevin Lee
Amay Nirula	Adamaris Nuñez
Catherine Ott	Talen Sehgal
Wonjoon Suk	Peter Walker
Matthew Wu	Tommy Yang



Honorary Keramos Member Nomination

Due to her research in developing new, lightweight and adaptive structures for infrastructure as well as her contributions to simulation of new materials in the civil and environmental disciplines, The University of Illinois at Urbana-Champaign Keramos is pleased to nominate Ann Sychterz for the 2021-2022 academic year. She received her B.A.Sc from the University of Waterloo in 2021 in Civil and Environmental Engineering, then received her Master's in 2014 where she designed and built pedestrian bridges. She continued on to receive her Ph.D. in 2018 from the Swiss Federal Institute of Technology Lausanne, where she worked with algorithms and diagnostic tools to



assess the strength of infrastructure and detect damage. Then, she completed a postdoctoral position at the University of Michigan to optimize origami structures, funded through the Swiss National Science Foundation Early Postdoc Mobility Grant. Throughout her career, she has also held many positions in industry, from Walterfedy in Kitchener, Canada, and MMM Group in Toronto, Canada. At both positions she worked in large-scale projects focusing on sustainability of infrastructure.

Her current work at the University of Illinois focuses on the sustainability of infrastructure and determines the best material for low energy cost and necessary mechanical properties. This primarily focuses on developing adaptive structure that can conform and be modified to the changing environment. Creating simulations and sensors that can monitor how materials change in their environment is an important aspect of ensuring the proper material is selected for a specific infrastructure design. She has received many awards for her work such as the Office of Risk Management & Insurance Research Faculty Fellowship from the Gies College of Business in July of 2021 and the Levenick Sustainable Teaching Fellowship from the Institute for Sustainability, Energy and Environment in February 2021. She has also received the Faculty Fellowship from the National Center for Supercomputing Applications in September 2020.



Treasurer's Report

The University of Illinois at Urbana-Champaign Chapter of Keramos obtained a total of \$4,531.50 and spent a total of \$3,277.38 over the course of the 2021-2022 school year. The amount gained was provided mainly through University of Illinois SORF Funding, Initiation dues, and Fundraising efforts. Money was spent this year on reimbursements for members of the Executive board to travel to MS&T and TMS annual conferences and on catering for our initiation ceremonies. Two fundraisers were held this year: a Materials Science Trivia Night and a Valentine's Day Ceramic Sale. Both Fundraisers were successful and engaging to the members. The final balance is \$1,254.12 greater than the initial balance for the academic year. The following table contains the annual expenditure report for the UIUC Chapter.

Date	Amount	Total	Note
6/7/2021	—	\$5,641.87	Beginning balance
9/20/2021	\$100.00	\$5,741.87	Remaining spring Initiation dues
10/7/2021	\$75.00	\$5,816.87	SORF funding for 3 members MS&T registration
10/26/2021	-\$25.00	\$5,791.87	Reimbursed MS&T registration
10/26/2021	-\$25.00	\$5,766.87	Reimbursed MS&T registration
10/28/2021	-\$25.00	\$5,741.87	Reimbursed MS&T registration
11/4/2021	-\$323.35	\$5,418.52	Initiation noodles and company catering
11/9/2021	\$550.00	\$5,968.52	Fall initiation dues
1/27/2022	\$44.00	\$6,012.52	Trivia night fundraiser deposit
2/17/2022	\$2,947.00	\$8,959.52	SORF funding for TMS
4/1/2022	-\$2,555.68	\$6,403.84	SORF TMS reimbursements
4/1/2022	-\$323.35	\$6,080.49	Initiation noodles and company catering
4/13/2022	\$65.50	\$6,145.99	Valentine's fundraiser Deposit
4/13/22	\$750.00	\$6,895.99	Spring Initiation deposit



Chapter Activities

Note on Keramos/MA at Illinois Partnership

Material Advantage (MA) is another materials science and engineering student organization at the University of Illinois. Many of our events are co-sponsored in an effort to increase turnout and provide the best possible service to our materials science and engineering (MatSE) community here at the University of Illinois. Many Keramos members are also MA members. Keramos at Illinois, however, keeps many separate components including our bank accounts, fundraising efforts, and several Keramos-only events. These events include the Keramos Initiation, Play with Clay and many professional events. We at Keramos at Illinois keep our proud and unique Keramos traditions, even as we collaborate with MA to better serve the MatSE at Illinois.

Fundraising Efforts

- ❖ Keramos Trivia Night Fundraiser
 - To raise funds for the organization, the Keramos Treasurer hosted an exciting Trivia Night. With the help of a graduate student and former Keramos member, questions were expertly crafted in relation to the material science and engineering program at Illinois as well as Keramos. The winners of the trivia night were given clay pieces made by the Heralds during Play with Clay.
- ❖ Keramos Cares-The-Most
 - This fundraiser was organized by our Heralds and took place in the days leading up to Valentine's Day. The idea behind the event was that purchasers could buy ceramic Valentines-theme items made by the Heralds and students during Play with Clay. This fundraiser was also a great way to give students the idea to learn about events that Keramos holds, namely Play with Clay, and also learn how to get involved.



Educational Outreach

- ❖ Study Sessions
 - Study sessions spanned the entire year and mostly revolved around lower level MatSE classes the week before an exam. Upperclassmen Keramos members shared some of their knowledge with MatSE students in the class of interest by answering questions, explaining key concepts and completing worked example problems. This was a great way to introduce members of the MatSE general student body to Keramos, providing us with another opportunity to encourage underclassmen to join Keramos.
- ❖ Gripe Sessions
 - These events occur at the end of every semester and revolve around student feedback to the department. Keramos at Illinois is lucky enough to have fantastic relationships with our previously mentioned partner organization Materials Advantage (MA) as well as with the MatSE department faculty.



This event was made in coordination by all three organizations. Keramos and MA invite the MatSE general student body to attend a meeting and go through all the undergraduate MatSE courses that had been offered during the semester. Students who were registered in each class give feedback about that class. Students also provide feedback about the MatSE curriculum in general and some of the practices used by the department. Keramos and MA condense and refine that feedback and meet with several representatives of the MatSE faculty.

❖ Student Panels

- Keramos holds student panels throughout the year that typically revolve around upperclassmen's personal experiences getting internships, conducting research and applying to graduate school. In the fall, Keramos held a Concentration student panel near the time to register for courses for the following semester. This allowed for students, primarily freshman, to hear about upperclassmen's reasons for choosing a concentration and how other students could get involved. The concentrations included polymers, metals, ceramics, electronic materials, biomaterials, computational, and even included information about students who choose not to focus on one specific area of materials science.

❖ Engineering Open House

- The annual Engineering Open House (EOH) is a massive and very popular two-day event hosted by the entire College of Engineering at the University of Illinois. Prospective students, children and their parents and teachers come to the Engineering Quad in late March every year, and about 25,000 people are expected to turn out annually. This year, Keramos had an Oobleck booth to teach students about the unique properties of this non-Newtonian fluid with amazing demonstrations of Keramos members running across the material and playing with the Oobleck at the booth.



Professional Development

❖ Resume Reviews

- As part of Keramos' services to our MatSE community and members, we provided experienced upperclassmen to look over resumes of underclassmen in the days leading up to each career fair. For younger students, getting help from their peers is often less intimidating than getting help from professionals and can even be more



instructive, as they can hear advice from people who were in their place only a couple years ago. Additionally, not only was the option available for students to get their resumes reviewed live, students could also send in their resume to be reviewed without the pressure of having it reviewed in front of them.

❖ Professor Talks

➤ A new event this year was hosting a Professor from the university to talk about their research, courses taught, and ways for undergraduates to get involved in various aspects of Materials Science and Engineering. This fall, Professor Pinshane Huang, who taught MSE 182, the first course many students take in the MatSE department, met with members to discuss her research and how students could get involved in on campus research. This course was very enlightening and had a large turnout due to most MatSE students knowing Professor Huang.

❖ Company Info Sessions

➤ Our professional chair is responsible for keeping contact with and finding new company contacts. These contacts often visit once a year to talk to Keramos about their company, what they are looking for in applicants, and how to apply to materials science positions. These info sessions are fantastic networking opportunities for Keramos members, and these are some of our most popular and talked about events. Companies that talked to Keramos this year included Garmin, Intel, Chevron, and Caterpillar.

❖ Research Information Session

➤ There are a lot of scholarships and funding opportunities available for students involved in undergraduate research. It can also be intimidating for students to apply for these scholarships or research positions when they have never done it before. Therefore, by teaming with the Office of Undergraduate Research, students were not only able to learn about how to get involved in research, but also applying for scholarships such as Clare Boothe Luce Research Scholars, Illinois Scholars Undergraduate Program, and many more!

❖ MS&T Columbus 2021

➤ At MS&T, Keramos at Illinois participated in the mug drop competition. Our Heralds created mugs for the mug drop competition, which finished 3rd in the dropping competition with a height of 135 cm. Keramos at Illinois also received the Diamond award and the Most Improved Award. The student networking mixer and the annual convocation and business meeting were also attended by several representatives of Keramos at Illinois. During the business meeting, our chapter's events and policies were discussed and ideas were exchanged with other Keramos chapters. This is always an opportunity we look forward to, so we can learn from our sister Keramos chapters.





❖ TMS Anaheim 2022

- Keramos and MA worked together to organize a trip to the Minerals, Metals and Materials Society conference (TMS) in the spring. This year's conference was hosted in Anaheim, California. The Illinois team placed 9th out of 12 teams in the annual Materials Bowl competition. It was an exciting opportunity to showcase our materials knowledge with many other students from around the nation. We networked and discussed with other chapters on how to participate in the bladesmithing competition next year. We learned best practices for the event and efficient ways to craft a blade given our limited metalworking experience.



Service Events and Outreach

- ❖ Destination Technology
 - Keramos has a wonderful and long-lasting relationship with a Peoria, IL based program called Destination Technology. This is an after school and weekend program for elementary and middle school students where they learn about different aspects of the world and participate in educational and problem-solving activities. Throughout the year Keramos students drove to a middle school in Peoria, IL to teach students about this year's theme, Water. Throughout the visits the students were taught about pollution, recycling, and energy. Keramos helped run experiments to demonstrate these aspects and various unique properties of water.
 - ❖ Blood Drive
 - Keramos and MA hosted our own blood drive on campus in Fall of 2021 through the American Red Cross. The event was fully scheduled and had upwards of 40 willing participants. Participants received hours for donating blood and volunteering to run the drive.
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Social Events

- ❖ Welcome Barbeque
 - Every year Keramos co-hosts a Welcome Barbeque with MA in the early Fall to make the incoming MatSE freshman feel welcome and give them the opportunity to meet some upperclassmen. This is also an opportunity for Keramos members to socialize with underclassmen and explain the great things about Keramos and what it can provide to them through involved membership. Burgers, hotdogs, veggie burgers, veggie dogs, chips, and soda were served on the Engineering Quad.
- ❖ Curtis Apple Orchard
 - Another much anticipated annual event that is held in the fall is the trip to our local apple orchard. Again, co-hosted between Keramos and MA, over 15 people attended. Attendees picked apples, went to the gift shop for donuts and cider and many pictures were taken. This was a great way for MatSE students to get to know one another in an off-campus setting. This year, the students had an impromptu “Apple Party” the next day to learn how to make various treats with all of the apples they got at the Orchard. This included apple pie, cider, apple fries, and many other amazing treats.



- ❖ E-Week
 - E-week is a weeklong competition of engineering students hosted by Engineering Council at Illinois to celebrate National Engineers Week. Keramos and MA had a joint team called Material Girl and this year’s theme was Pirates of the Caribbean. The competition is a bizarre mixture of wacky athletics and engineering trivia. Some competitions include the E Week Mile, Obstacle Course, Broomball (a made-up sport that is both a cross between field hockey and ice hockey and remains remarkably popular at the University of Illinois as a whole), Midnight Trivia, Darts, Water Pong and an
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online Oregon Trail competition. E-week is an opportunity for Keramos and MA members to bond and compete to show their MatSE pride.

❖ **Mentorship Program**

- Annually in the fall we start our freshman mentorship program. This program is co hosted with MA and pairs up incoming freshmen with upperclassmen mentors. Mentors give their freshman and transfer student mentees a new connection in MatSE as well as insight into what it is like to go to school at Illinois. Mentors provide career, academic and social advice to their mentees. Groups were created instead of the traditional one mentor one mentee system in order for mentees to bond with fellow freshmen in their group as well. Each group had 3 to 5 mentees and 2 mentors. Throughout the fall semester mentorship events are being set-up. Most of these events are social in nature and freshmen are encouraged to come to Keramos' other professional and service events that occur outside the mentorship program.



❖ **Women in MatSE Meetups**

- One of our re-occurring social events are the Women in MatSE Coffee Chats. Often co-hosted with MA, these coffee chats are casual meetups of undergraduate women studying Materials Science and Engineering at a local café, restaurant or a member's apartment. These chats are an opportunity for the women in MatSE to get to know one another, share stories and advice, and grow as a community. Often these meetups also serve as mentoring opportunities, as upperclassmen share their experiences with freshmen and sophomores to help guide them during their college journeys.

Play with Clay

Keramos at Illinois' crowning jewel in many of our executive board's minds is the weekly Play with Clay events hosted by our Heralds. No other event so perfectly espouses the values of Keramos as Play with Clay. The Heralds make clay slip from scratch in the days leading up to Play with Clay. Keramos members can then slip cast or use throwing clay to create whatever they want from the ever-expanding library of molds Keramos has in our ceramics lab. Keramos members glaze their creations and between Play with Clay sessions the Heralds use our



brand-new Kiln to fire the pieces. Play with Clay is a time for Keramos members to socialize, bond together, learn about ceramics processing, unwind, and to live a part of Keramos tradition that has been going on about as long as the Illinois Chapter of Keramos has existed. Our Heralds are always working on new molds, for example a coffee mug mold. They are always perfecting their craft as well, and with our new kiln much more is possible. Our Heralds are starting on new methods for the mug drop competition and disk throwing competition. Finally, the last important role of the Heralds is to make ceramic 'professor pigs' to give to two MatSE professors who have exhibited excellence in their teaching and particular care with their students. The Professor Pig is certainly a talked about award among the MatSE faculty, and this year we proudly presented the Professor Pigs to Dr. Nagel, the head advisor for the department, and Professor Bellon, who taught MSE 402, Kinetics, in the spring!

Keramos Initiations

The Keramos Initiations at Illinois are all-afternoon events and possibly the most anticipated Keramos event of any semester. Keramos Initiation is the time to expand our Keramos at Illinois family. The events of initiation start with the candidates congregating to pay membership dues, followed by professional pictures of every candidate being taken and a group photo of all the candidates. Then the initiation ceremony occurs, strictly following the official Keramos ceremony requirements. After this, the candidates are given a tour of our ceramics lab by our Heralds and finally we eat a catered meal together. Keramos initiation, and therefore membership, has been growing every year for as long as our records go back! This fall the Keramos Initiation gained 10 new members and the spring had a surprising 2 new members for a total of 30 new initiates this year!