# **Keramos Annual Report**

# University of Illinois at Urbana-Champaign Academic Year 2022-2023









# **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 Nomin	nation8
VI.	Treasurer's Report	9
VII.	Chapter Activities	10
	a. Note on Keramos/MA Partner	ship10
	b. Fundraising Efforts	10
	c. Educational Outreach	10
	d. Professional Development	11
	e. Service Events/Outreach	14
	f. Social Events	14
	g. Play with Clay	14
	h. Initiation	15



## A Brief Forward from Illinois' Faculty Advisor

I have been pleased to serve again as the faculty advisor for the University of Illinois' Chapter of Keramos and to work with an exemplary student executive board for the year 2022-2023. The student leaders have worked particularly hard this year to attract new members, differentiate Keramos from the other undergraduate Materials Science & Engineering society at Illinois, and develop strategies to ensure continuity in leadership activities from one year to the next. This year has built on the momentum of in-person events that re-initiated last year but only fully recovered to pre-pandemic levels this year with the re-institution of larger professional events in partnership with companies. The current high level of activity in the chapter bodes well for the coming year.

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 12 in the fall and 16 in the spring. 51 members are graduating this year, so member recruitment will remain a focus in the coming year. Events have included "family feud" and "pie an exec" fundraisers; educational outreach through an Engineering Open House booth (about 25,000 people attend EOH) and middle school science activities via partnership with Destination Technology; extensive professional development through resume reviews, company and research info sessions, lunches with professors, tours of Natrion and Caterpillar, and participation at MS&T and TMS conferences (including mug-drop and bladesmithing competitions); service activities including a blood drive and tours for middle-schoolers; and social events including Play-WithClay activities. The students also selected two professors in the Materials Science & Engineering Department for "Professor Pig" awards, fabricated by the Heralds, and one professor for recommendation as an honorary Keramos member, in consultation with me. Two initiations for new members 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 recently completed elections for the upcoming year's executive board. I look forward to working with Kira Martin (incoming President), Abby Sreden (incoming Vice President), Andrew Lum (incoming Treasurer), Hayden Gantt (incoming Professional and Alumni Relations Chair), Robbie Nollett (Herald/Secretary), and Laura Klusendorf (Herald/Webmaster). In summary, the Illinois Chapter of Keramos remains strongly committed to increasing its beneficial impact on students, department, and broader community, as evidenced by the wide variety of successful events held this past year and plans of the incoming President.

Sincerely,

m Pur

Nicola H. Perry
Assistant Professor, Materials S

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 2023-2024 academic year. I was initiated into Keramos in Spring 2021 and have been lucky enough to serve as the Professional and Alumni Relations Chair and the Vice President during the past two academic years. My experience in these roles has allowed me to understand how our executive board functions. I have made connections within the Materials Science and Engineering Department as well as the University of Illinois as a whole. This past year as Vice President I collected feedback from our members to better understand how this organization can best serve them. I worked closely with our previous President to identify our chapters strengths and areas where we can continue to improve. In the coming year, I hope to continue improving our chapter to best serve our members and grow our sense of community within Keramos.

As every year does, this past year has brought with it new challenges. Besides our regular professional development and weekly Play with Clay events, we successfully reinstated some larger professional events, such as the Etiquette Dinner and Caterpillar Tour, which have not happened since before the pandemic. We have, however, faced difficulties in attracting new members to join Keramos. In the next year I plan to work with the executive board to continue hosting new and unique events to attract new members. Many of our professional events are cosponsored with our Material Advantage Chapter. While this does help increase our turn out, many perspective initiates have cited this as a reason they did not see it necessary to join Keramos. I plan to work with our new Professional and Alumni Relations chair to host more Keramos only professional events. I hope these events will offer members more personal experiences with company recruiters. I expect that these events will benefit our members and help to attract new Keramos members. In addition to creating new professional events, I hope to continue reestablishing our ceramic glass shop, which was left largely unused even in pre-pandemic years. This past year we consulted with the Material Science and Engineering Department on how to revitalize the space. We 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.

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

Kin Mut

University of Illinois Keramos Chapter President 2023-2024

Kira Martin



### List of Officers

2022 - 2023

2023 - 2024

**President** 

Bailey Wooldridge

@illinois.edu

Kira Martin
@illinois.edu

**Vice President** 

Kira Martin

@illinois.edu

Abby Sreden

@illinois.edu

Treasurer

James Heaton

@illinois.edu

Andrew Lum

@illinois.edu

Professional and Alumni Relations Chair

Andrew Lum

@illinois.edu



**Herald/Secretary** 





Herald/Webmaster







### **Active Members List**

### Spring 2019 Initiates

Alymuhammad	Varun Sharma
Gilani	

### Fall 2019 Initiates

Vansh Gupta	Brisa McGrath	Amanda Mittanck	Meghan Oh
Kacper Rebeszko	Corynne Roberts		

Spring 2020 Initiates

Valeria Cruz	Xiangrui Deng	Julia Dreher-Thelkeld	Simon Grimm	
James Heaton	Charlotte Holas	Nithiyassri Vivagandran	Nathan Levandovsky	
Eden Li	Maria Castellanos	Julia Prendergast	Micah Rubel	
Malik Siddique	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	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	Akhila Mattapalli	Robert Nollett	Sathvik Pai
Harrison Patel	Evan Saebeler	Ella Schwartz	Sanjay Sibi
Montserrat Solis	Suhaas Sura	Lydia Taylor	Shivam Tailor
Jake Tokarewich	Aleah Treiterer	Nadya Widjaja	



### Fall 2021 Initiates

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

## Spring 2022 Initiates

L	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	

# New Initiates This Academic Year Fall 2022 Initiates

Celeste Izaguirre	Cesar Gaona	Laura Klusendorf	Fatimah Alhawaj
Muhammad Awan	Zoe Mihevc	Anthony Hyatt	Noha Azizalrahman
Maryam Alramadhan	Adithya Taire	Ryan Lim	Mozah Almulhim

### Spring 2023 Initiates

Youfu Qian	Joshua Miao	Lucy List	Allison Lau
Spencer Biziorek	Mike Costa	Ryan Barnicle	Elena Granzeier
Ravyn Edran	Nicole Poppe	Colin MacLeod	Regina Raemsch
Kaila Kuo	Emir Faisal	Hugo Blancas	Nick Kwentus



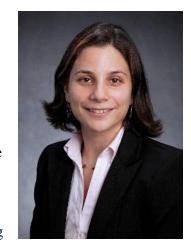
# Graduating Members This Academic Year

Alymuhammad Gilani @hotmail.com	Valeria Cruz @icloud.com
Meghan Oh	Mozah Almulhim
Amanda Mittanck	Vansh Gupta
Kacper Rebeszko	Corynne Roberts
Varun Sharma	Xiangrui Deng
Julia Dreher-Thelkeld	Simon Grimm
James Heaton  Nithiyassri Vivagandran	Doha Amer  Nathan Levandovsky
Maritza Murillo-Hernandez	Maria Castellanos
Julia Prendergast	Micah Rubel
Malik Siddique  @gmail.com	Bailey Wooldridge  @gmail.com
Christina Yu  @gmail.com	Cole Benvau  @gmail.com
Adrian Aguero	Charlotte Holas
Janak Bachkaniwala	Lucas Zaczek
John Chen Erin Falsey	Katie Roche David Hodges
Henry Hwang	Eric Li
Kelly Perozek	Sara Pfeil
Sanjay Sibi @gmail.com	Jessica Rangel-Galera  @gmail.com
Gavin Depew	Sofia Vargas
Harrison Patel Montserrat Solis	Sara Pfeil  Jake Tokarewich
@gmail.com	@gmail.com
Max Johnson	Aleah Treiterer
Eddie Oh	Vaanchit Srikumar
Steven Endres  @gmail.com	Maryam Alramadhan



### Honorary Keramos Member Nomination

Due to her research in designing and understanding new materials and structures that address globally and societally relevant issues, The University of Illinois at Urbana-Champaign Keramos is pleased to nominate Elif Ertekin for the 2022-2023 academic year. She received her B.S. in Mathematics and Engineering Science & Mechanics from Penn State University in 1999. She received her M.S. in Engineering Science from Penn State in 2000. She then went on to receive her M.S. and Ph.D. in Material Science & Engineering from the University of California Berkeley in 2003 and 2006 respectively. She then worked as a Postdoctoral Associate at the Nanosciences & Nanoengineering Institute at the University of California Berkeley from 2007 to 2009. She also served as a Postdoctoral Associate in the Department of Materials Science & Engineering at MIT from 2009 to 2011. Before becoming an Associate Professor in 2017, she worked as an Assistant Professor in the



Materials Research Laboratory and Department of Mechanical Science & Engineering at the University of Illinois. She is currently an Associate Professor for the Materials Research Laboratory, Department of Mechanical Science & Engineering, and National Center for Supercomputing Applications at the University of Illinois. In 2020 she became the director of the Mechanics Program in the Department of Mechanical Science & Engineering.

Her current work at the University of Illinois focuses on computational material design for an array of applications including but not limited to: energy sustainability, next-generation electronics, and environmental remediation. Using a variety of techniques from molecular dynamics to density functional theory, to quantum Monte Carlo methods, her work addresses problems related to mechanical phenomena at the nanoscale, the design of advanced energy conversion systems, and the study of novel surface and interface phenomena. Computational material design, like Elif Ertikin does, is important as it focuses on the discovery of new pathways and mechanics versus just targeting a final property. She has received many awards for her work such as the Dean's Award for Excellence in Research from the University of Illinois College of Engineering in 2015 and 2020 and the Early Career Faculty Fellowship from The Minerals, Metals, and Materials Society in 2016. She was named an Anderson Faculty Scholar at the University of Illinois in 2020 and the Associate Editor of the Journal of Applied physics in 2021.

Overall, it is clear she has a passion for using computational techniques to address current scientific challenges. Elif Ertikin's cross-disciplinary work is significant in the field of Ceramics as novel ceramic materials have the potential to improve current technology such as developing zero-strain materials for energy conversion/storage device or utilizing defects to tailor the optical absorption of solar cells— all research Elif Ertikin's group has worked on. Using the power of data science to discover novel materials, such as Professor Elif Ertikin does in her group, allows for new scientific discoveries at an accelerated pace.





### Treasurer's Report

Through the academic year of 2022-2023, the University of Illinois at Urbana-Champaign Chapter of Keramos obtained a total of \$2,999.32 and spent a total of \$2,685.23. The Highest amounts gained were through funding through the UIUC Engineering Council as well as the induction dues while the largest costs where member reimbursements for travel to MS&T, catering for the initiation ceremonies, and the Fabrication of the Dagger that was submitted for the TMS Bladesmithing Competition. As of writing this, there has been one fundraising event completed: The Keramos Family Feud Fundraiser, which was successful in bringing visibility to our club. Two Planned fundraising events include Pie an Exec and helping a Professor relocate. The final balance shows an overall increase of \$314.04 from the beginning of this Academic year. The following table details the influx of funds.

Date	Amount	Total	Note
8/22/2022	~	\$6895.99	Starting Balance
10/17/2022	-\$7.00	\$6888.99	Mug Firing
11/15/2022	-\$308.58	\$6580.41	Induction Catering
11/16/2022	\$600.00	\$7180.41	Induction Dues
11/25/2022	\$1539.32	\$8719.73	MS&T 22 EC Funding
11/25/2022	-\$1539.32	\$7180.41	MS&T 22 Reimbursements
12/01/2022	\$60.00	\$7240.41	Family Feud Fundraiser
12/01/2022	-\$36.58	\$7203.83	Quick Dry Clay Purchase
2/26/2023	-\$293.80	\$6910.03	Induction Catering
3/03/2023	\$800.00	\$7710.03	Induction Dues
3/23/2023	-\$500.00	\$7210.03	TMS 23 Dagger Fabrication



### 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 Family Feud Fundraiser

To raise funds for the organization, the Keramos Treasurer hosted an exciting game of Family Feud. The questions and answers were made using information gathered about the UIUC Campus and surrounding city from popular forums and predictive searches, with particular emphasis placed on the Materials Science and Engineering department. For those who could not attend the event or wanted to purchase tickets in advance, the money was put towards a stretch goal to shave the treasurer's head so they could appear similar to the famous game show host: Steve Harvey. Although the stretch goal wasn't met, fun was still had and the winner won a box of donuts purchased from a local apple orchard.

#### • (Planned) Professor Relocation

 The Keramos Treasurer is aiding in a professor's relocation to a new home in the community. In doing so, we hope to foster more interaction between the faculty of our department and the students in non classroom settings while also providing a service to the Professor in question.

#### • (Planned) Pie an Exec Fundraiser

This Fundraiser intends to use humor as a way to attract both members inside and outside of Materials Science. Originally some members of the UIUC MatSE department were invited to participate, either by throwing pie or having pie thrown at them, however the chosen date coincided with a Department retreat, meaning that some professors that expressed interest

#### **Educational Outreach**

#### Study Hours

This year we started to host weekly Study
 Hours where members can gather together and

were not able to participate. Hopefully if the event is held again, they could participate.



Keramos members at the first of many Study Hours this semester.



work on homework or prepare for exams together. It is our hope that members will create a tight knit community and aid each other in understanding of their coursework.

#### • 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. It is the largest student-run STEM fair in the United States with an annual turn out of about 25,000 people. Prospective students, families, and class field trips come to the Engineering Quad in late March every year to learn science and engineering. 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. This year our booth was awarded the Best for Kids award from the Material Science and Engineering department.



Our 22-23 Vice President, Kira Martin, on the first day of Engineering Open House.

#### Destination Technology

• Keramos has a wonderful and long-lasting relationship with a Peoria, IL based program called Destination Technology. This is an afterschool 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. This year Keramos students drove to a middle school in Peoria, IL to teach students about this year's theme, Newton's Laws.

#### Course Feedback Session

This year Keramos hosted two course feedback sessions. In these sessions, MatSE students come to voice their opinions on the classes within the department. Anyone who is unable to attend these sessions is encouraged to fill out a form with their feedback. We then synthesize the feedback and hold a meeting with department leaders.

#### **Professional Development**

#### • Chevron Resume Review and Information Session

Prior to the Engineering Career fair on our campus we hosted two events with Chevron. The first event allowed our members to have their resumes reviewed by the recruiters from Chevron. The second event provided information about Chevron's internship program as well as insight into what the company is doing.

#### Professor Lunches

• Throughout the year we host lunches with professors from the MatSE department. In these lunches members in attendance get the opportunity to learn about the professor's research. These lunches are a great way we promote community in the



entire MatSE department. This year we hosted Professor Lunches with Professor Krogstad and Professor Shoemaker.

#### • Blue Origin Meet and Greet

• At this event members were able to learn about Blue Origin as well as hear about open positions.

#### • Professional Headshot Event

 Every semester we offer professional headshots to our new Keramos members as a part of initiation. This year, for the first time, we held a headshot event before initiation for any current Keramos members who wanted to get new and updated headshots taken.

#### • MS&T Pittsburgh 2022

At MS&T, Keramos at Illinois participated in the mug drop competition. Our Heralds created a mug for the mug drop competition, which finished 2nd in the dropping competition with a height of 105 cm. Keramos at Illinois also received the Sapphire 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.



Members of our Executive Board before Keramos Convocation in Pittsburgh.

#### • Anika Therapeutics Tech Talk

 Members heard from President and CEO of Anika Therapeutics, Cheryl Blanchard, via zoom. She spoke of her experience and gave advice to anyone trying to have a career in biomaterials.

#### • Argonne National Labs Talk

One of our members, Alice Gao, led this
event in partnership with her summer mentor
at Argonne National Lab. During this event,
members learned about the internship
programs offered at Argonne National Lab as
well as were informed of deadlines and
events to attend if they were interested in
pursuing a position at a National Lab over
the summer.

#### • Boeing Info Session

The relationship between Boeing and our chapter of Keramos has blossomed this year. We have held multiple events with Boeing



Member, Alice Gao, leading the Argonne National Labs Talk



employees. In these events, members have been able to learn more about the Materials Science department at Boeing and ask any questions they may have.

#### • Natrion Tour

Natrion is a company that is working to create rechargeable, solid-state batteries.
 During our event with Natrion, members were able to tour their research space at the University of Illinois' Research Park.
 Natrion also used this event as a recruiting event for their open positions.
 It is likely that this event will become a staple event for our chapter.

#### • TMS San Diego 2023

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 San Diego, California. The Illinois team placed 10th out of 16 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. For the first time



Members, Abby Sreden and Kira Martin, presenting their dagger at the Bladesmithing contest at TMS in San Diego

ever, Keramos sponsored a team to compete in the 2024 TMS Bladesmithing contest. We hope providing more unique hands-on experiences, such as the glass shop and bladesmithing, will help

encourage new members to join Keramos. Two of our members participated in the Bladesmithing Symposium and gave a presentation on what they have been working on to create a dagger for next year's competition.

#### • Etiquette Dinner

O In partnership with Society of Hispanic Professional Engineers (SHPE) and Chevron, this year we were able to host an etiquette dinner again. Prior to the Covid-19 pandemic this was a regular event that was put on between our organizations, so we were very excited to be able to host the event again. At the dinner an etiquette



One of the tables at our Etiquette Dinner including our Professional Chair, Andrew Lum, and a representative from Chevron



coach taught members about proper dining etiquette. Members of each organization were able to talk with each other as well as representatives from Chevron to grow connections.

#### • Caterpillar Tour

Members were able to visit the Caterpillar headquarters in Peoria, IL.
 At this event, attendees were given a tour of the plant as well as participated in a dinner with Caterpillar Representatives.

#### **Service Events and Outreach**

#### • Blood Drive

 Keramos and MA hosted our own blood drive on campus in Fall of 2022 through the American Red Cross. The event was fully scheduled and had

upwards of 40 willing participants. Participants received one Keramos hour for donating blood or volunteering to help run the drive.

## • Destination Technology Tours

 Along with visiting middle schools in Peoria, IL to volunteer for Destination Technology, Keramos members also hold tours for groups of students who visit



Members attending the Caterpillar Tour in Peoria, IL

Engineering Open House. During these tours, Keramos members show students all the Material Science and Engineering exhibits being hosted during EOH.

#### **Social Events**

#### Holiday Party

 This year Keramos paired with Material Advantage to host a holiday party in December. Participants were able to make clay ornaments and dreidels while they spent time socializing and relaxing after a long semester.

#### **Play with Clay**

The crown jewel of Keramos at Illinois in many of our members' minds is the weekly Play with Clay events hosted by our Heralds. No other event so perfectly espouses the



Members making Dreidels at the MA-Keramos Holiday Party



values of Keramos as Play with Clay. The Heralds make clay slip from scratch in the days leading up to Play with Clay, and 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 a 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 almost as long as the Illinois Chapter of Keramos has existed.



### Photos from one of our weekly Play with Clay sessions

This year, our ceramic processing capabilities were tested. In the beginning of the year, Heralds dealt with the malfunction and breakdown of our kiln, which caused delays in both student ceramic production and the production of our mug for the MS&T mug drop competition. However, through partnership with a local pottery shop, Keramos was able to weather these setbacks and produce a mug and student pieces. In that latter half of the year, the kiln underwent repair and we resumed normal firing processes for Play with Clay. Heralds additionally began a comprehensive organizational process of our Play with Clay location, including facility repairs and inventory.

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 a well-regarded award among the MatSE faculty, and this year we proudly presented the Professor Pigs to Professor Marie Agathe Charpagne, who taught MSE 406 regarding the thermal-mechanical behavior of materials, and Professor David Cahill, who taught MSE 401 regarding the thermodynamics of materials.

#### **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 headshots 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. This fall the Keramos Initiation gained 12 new members and the spring had 16 new members for a total of 28 new initiates this year!