



ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Keramos Annual Report
Fall 2017 – Spring 2018

University of Illinois at Urbana-
Champaign

Chapter Advisor Executive Summary 2017-2018

The Keramos Illinois chapter has continued to provide Keramos members with high quality events. Keramos Illinois has continued to provide professional events such as professor lunches, internship panels and events to support students' in their courses such as MATLAB tutorial sessions and material science course based events. Events were designed to foster stronger relationships between students and professors such as professor talks, where a professor can lecture interested students on topics they are passionate about and new ideas for professor lunches included themes such as "Computerized Testing" and "Female Professors." Events offered by Keramos refuse to remain static and continue changing as the years go by.

For another year the chapter received the Sapphire Award for the annual Keramos report during the 2017 Materials Science and Technology Conference in Pittsburgh, Pennsylvania. The chapter was also pleased to receive the Most Improved Chapter award and hopes to continue improving the society in further years. Though disappointed to not have placed in the mug drop, Keramos Illinois hopes to enter multiple strong contestants at the next conference. Play with Clay has also expanded greatly with more people being interested in how to process ceramics while creating intricate pieces to take home and display. The addition of glassworking has also intrigued members to come and make ornaments out of recycled bottles or varying colors.

Continuous collaboration between Material Advantage and Keramos has created strong bonds between the students in material science through improved social events based on the feedback from students. Freshmen involved with the social events have also been given a chance to communicate with Keramos members and have expressed interest in joining. As communication between students has increased, communication between the material science department and Keramos has remained strong, as Keramos continues to offer methods of express feedback to students. Though alumni activity has not been a focus this year, the chapter hopes to create new events involving alumni such as a mentor and mentee program or a job shadowing program in the future.

This year was an exciting year for inter collaboration between chapters. Twenty students from Material Advantage and Keramos traveled to St. Louis to meet the Missouri University of Science and Technology chapter. The chapters enjoyed meeting and trading ideas as they visited glass blowing studios, museums, and toured with Anheuser Busch.

There is no doubt that Keramos will continue to improve with even with a new executive board. With new ideas and innovations in mind along with a smooth transition, Keramos Illinois can do nothing but continue to prosper.

Annual Plan for the Coming Year

For the coming year, we plan to continue hosting general meetings every month and other events for the rest of the MatSE department. We will continue to hold Play With Clay sessions as frequently as possible. We will also continue having the glass art sessions in the Play with Clay sessions as well. We plan to make new molds for these sessions. During these sessions we hope to increase interest and participation in the MS&T mug drop and disc throw competitions.

For the Keramos fundraiser, we had ideas of improving the hearts sale by making the hearts smaller with ribbons attached to create ornaments. We may also make the hearts into magnets as well.

Next year, we hope to have different projects other than Oobleck for Engineering Open House and possibly bring back having two projects to represent. A project based on geopolymers was recommended by one of our members. If we do continue the Oobleck project however, it would be great to expand the project by possibly filling a pool of Oobleck so visitors can try running across it or have a speaker for the Oobleck to 'dance' on.

We also hope to increase alumni outreach as a whole. This will be done by getting in more contact with our alumni board as well as compiling graduating seniors' contact information. Hopefully we will be able to provide our members to connect to seniors in the field of materials science and learn more about life after graduation through job shadows and alumni mentor and undergraduate mentee pairings.

Officers for the Upcoming Year

President
Monica Paul



Vice President
Amy Merkelz



Treasurer
Mitch Schroeder



Herald & Secretary
Jeff Schooler



Herald & Webmaster
Talen Sehgal



Professional Chair
Bao Lam



Current Members

Spring 2015 Initiates

Kyle Berglund	Frank Kelly	David Schmit	Xiaolan Sun
Emily Foley	Bridgette LaFaye	John Shimanek	Jize Zhang
Philip Kagebein	Yiyue Luo	Lauren Smith	

Fall 2015 Initiates

Vasyl Bruchko	Benjamin Fiszbein	Katherine Jennings	Kyle McKillop	Perry Ross
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Spring 2016 Initiates

Collin Anderson	Sarah Gurns	Audrey Lee	Benjamin Perkinson
Christopher Beck	Joshua Khazanov	Brittany Lung	Mitchell Schroeder
Piush Behera	Nayung Kim	Heer Majithia	Michael Toriyama
Erica Belvin	Elisabeth Lang	Devon Papanicolas	Brendan Wolan

Fall 2016 Initiates

Naomi Benson	Jacob Maher	Mauna Pudukollu	Whitney Tso
Mary Jablowicz	Caelin Muir	Daniel Rosenthal	Ethan Wisniewski
Sai Komaragiri	Shunya Namiki	Jeffrey Schooler	Murtaza Zohair
Eric Krupinski	Monica Paul	Jai Sharma	

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	Megke 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	Enola Ma	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	

Initiation Class Pictures

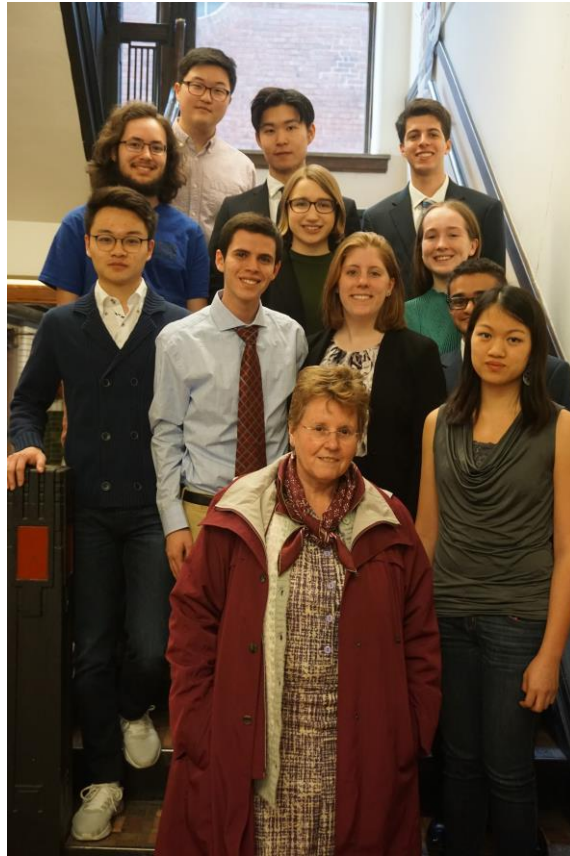
Spring 2017



Fall 2017



Spring 2018



Graduating Members' Contact Information

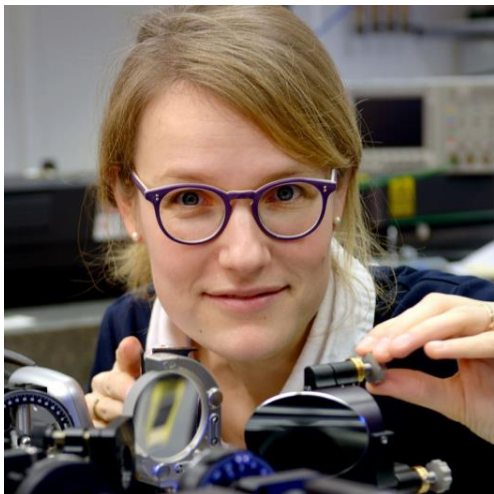
We are obtaining this information at our end of the year banquet. An addendum will be sent later this year when this information is obtained.

Name	Email
Kyle Berglund	
Frank Kelly	
David Schmit	
Xiaolan Sun	
Emily Foley	
John Shimanek	
Jize Zhang	
Philip Kagebein	
Yiyue Luo	
Lauren Smith	
Vasyl Bruchko	
Benjamin Fiszbein	
Katherine Jennings	
Kyle McKillop	
Perry Ross	

University of Illinois Urbana-Champaign

Honorary Keramos Member Nomination

Renske M. van der Veen, Ph.D.



The University of Illinois Urbana-Champaign Keramos Chapter would like to nominate Professor van der Veen to be an honorary Keramos member for the 2017-2018 academic year. Professor van der Veen joined the University of Illinois Urbana-Champaign as an Assistant Professor of Chemistry in April 2015 and is currently working with the Frederick Seitz Materials Research Laboratory and the Materials Science and Engineering Department. Professor van der Veen received her B.S. and M.S. in 2005 from the Swiss Federal Institute of Technology (ETH) in Zürich. She obtained her Ph.D. from the École

Polytechnique Fédérale de Lausanne (EPFL) and the Swiss Light Source in the subject of ultrafast X-ray science in 2010, and worked as a postdoctoral fellow at the California Institute of Technology before becoming a project group leader at the Max Planck Institute for Biophysical Chemistry in Göttingen.

Professor van der Veen mainly focuses on studying atomic-scale mechanisms of light-induced processes, and researches light sensitive materials such as switchable metal-organic complexes, functional nanomaterials, and photovoltaic perovskite materials. We expect great advancements in the knowledge of nanomaterials from her work with ultrafast optical spectroscopy and microscopy in the femto to nanosecond range, ultrafast X-ray spectroscopy and diffraction, and ultrafast electron microscopy (UEM).

Treasurer's Report

During the 2017-2018 academic school year, the Keramos chapter at the University of Illinois at Urbana-Champaign took in a total of \$2,947.00 from initiation, the Ceramic Heart Fundraiser, and other grants and reimbursements, while spending \$2,741.58 on general meetings, social events, and the MS&T conference. The University of Illinois chapter experienced a net income of \$204.42. Please note that further expenses after April 15, 2018 are not included in the report.

Fall 2017	Date	Transaction	Income	Expenses
	9/1/2017	Friday Social		-\$9.31
	9/15/2017	Friday Social		-\$18.62
	9/21/2017	MS&T Travel costs		-2,401.8
	10/10/2017	Travel		-\$90.21
	10/24/2017	Travel Grant	\$425	
	10/28/2017	Travel Grant	\$50	
	11/5/2017	Initiation Dues	\$650	
	11/5/2017	Initiation Pizza		-\$106.90
	12/4/2017	Women in STEM Outreach Event		-\$32.19
	12/22/2017	MS&T Reimbursement (SORF)	\$1220.0	

Spring 2018	Date	Transaction	Income	Expenses
	2/14/2018	Ceramic Heart Fundraiser	\$52	
	4/8/2018	Initiation	\$550	
	4/8/2018	Initiation Pizza		-\$82.55

Initial Balance	Total Expenses	Total Income	Net Income	Resulting Balance
\$7,445.45	\$2,741.58	\$2,947.00	\$205.42	\$7,650.87

Chapter Activities

Educational Outreach

-MSE 307/308 Review

To kick off the semester we hosted a tutorial session for MSE 307 and MSE 308 lab reports in September as we had excellent turn out the previous year. MSE 307 and 308 are Materials Laboratory I and II respectively which all students in materials science are eventually required to take. This is one of the more challenging courses in the curriculum as it is the first time students must write complete lab reports which include abstracts, introductions, procedure, results, data analysis, and conclusions. We had an upperclassman present on some tips for each of these sections of the reports to give the students some idea of what they should be presenting before their first labs were due. Some tips included what software to use for data analysis, which sections to write first or last, and what criteria the graders look for when scoring the reports.

-Undergrad Advising Panel

In November we held an undergraduate advising panel which was hosted by 5 seniors from each of the concentrations in our major which are polymers, metals, electronics, and ceramics. They helped advise underclassmen on what classes they might be interested in taking as we no longer have concentrations in the material science and engineering major.

-Destination Technology

This year, the MatSE department hosted a group of around 40 middle school students from Peoria and led them through the exhibits at Engineering Open House. We have done this same program for at least the past three years and every year the student thoroughly enjoy their time. In addition to showing them around EOH, we also supplied lunch to the students. This program worked well in that the kids had a lot of fun and the teachers said that they are for sure coming back next year. There are a couple of improvements that could be made. First, more communication should occur with the school beforehand to get better numbers as to how many students are coming to make buying food easier. Second, more planning with food should be done so that enough plates and drinks are available for everybody. Finally, the tour guides should learn where more of the exhibits are before leading the groups so that there can be a more effective use of time.

-Women in Math, Science, and Engineering with Introduce a Girl to Engineering Day

We also had members of our executive board help with Destination Technology which is a program to encourage middle school students to get involved with STEM. The theme this year was water, so we showed how different boats float. This year when Keramos volunteered to help the Women in Math, Science, and Engineering with Introduce a Girl to Engineering Day we showed why some chocolates might be more expensive than others by letting them taste different qualities of chocolate and observe the smoothness of them. We explained how processing of the chocolate can affect the grain size which can be observed by taste. Members of Keramos also gave tours during Engineering Open House to different groups of children from schools around the area.



-Matlab

The underclassmen are required to take classes such as MSE 201 and MSE 206 where they are further exposed to the software of Matlab in context of materials science. In February we hosted an event to explain the basics of the language. This was done mostly in context to what would be done in those classes, but more advanced topics were also presented on. Matlab is used throughout most of the materials science curriculum whether in computerized tests or in computational assignments. Topics talked about included, but are not limited to, vector math, graphical analysis, remote access, transferring of data, and basic script writing.

-MatSE Department and Gripe Sessions

The executive board has been continuing to work closely with the MatSE Department to gather feedback on courses and computerized testing. Members of the executive board met with the professors who most prominently held computerized tests.

Furthermore, we continued to hold our biannual “Gripe Sessions” where students could come and talk about what they liked and disliked about courses. There was also an online form they could fill out that went directly to the MatSE Department. We also recommended to the MatSE Department that they create a Piazza or a website where students in MatSE could post to other students and advisors for advice. We hope to continue to foster this connection between our organization and the MatSE Department.

Engineering Open House (EOH)

Engineering Open House is a well-known and loved tradition at the University of Illinois Urbana-Champaign which this year took place March 9th and 10th in 2018. During these two days the entire engineering campus plans projects to present to people of all ages from the surrounding schools as well as people from across the state who might come visit to see whether the University of Illinois Urbana-Champaign is right for them. We get around 26,000 visitors from over 600 high schools. Projects and demos are made by different engineering societies, organizations, research groups, companies, and classes. These exhibits are judged based on different categories to determine awards which are always an honor to receive.

This year we continued using the Oobleck demo to demonstrate the idea of a non-Newtonian fluid. It was great to see how much the kids loved playing with the Oobleck. We explained to the visitors how non-Newtonian fluids can be easily found in places like food and cosmetics. We explained how toothpaste and ketchup were examples of shear thinning while Oobleck was an example of shear thickening and how that differed from a Newtonian fluid like water. Some properties of Oobleck we showed were how you could quickly shake the container of Oobleck and nothing would spill out, how you could punch the Oobleck without any splashing, and how you could bury your hand in the Oobleck and punch the top of it without feeling any pain because of the shock absorbing properties of Oobleck. Both parents and children seemed to enjoy the exhibit very much.



Professional Development

-Internship Panel

Keramos held an internship panel during the middle of September, where 5 upperclassmen explained what their internship experiences were like during the previous summer from places like 3M and Chevron. They explained the process of getting a materials science and engineering internship as well as what the experience of being in an internship was like. Tips were given on how to prepare for the upcoming summer whether applying online or talking to people at the career fair.

-Company Talks

We were also able to connect MatSEs to companies looking to hire during the fall hiring season such as Clorox, 3M, and Oak Ridge. We were lucky enough to host Chevron during one of our general meetings where they discussed the work culture at Chevron and their experiences as materials science engineers. One of the recruiters was an alumni as well and hearing about his experience at Urbana-Champaign was both entertaining and helpful.

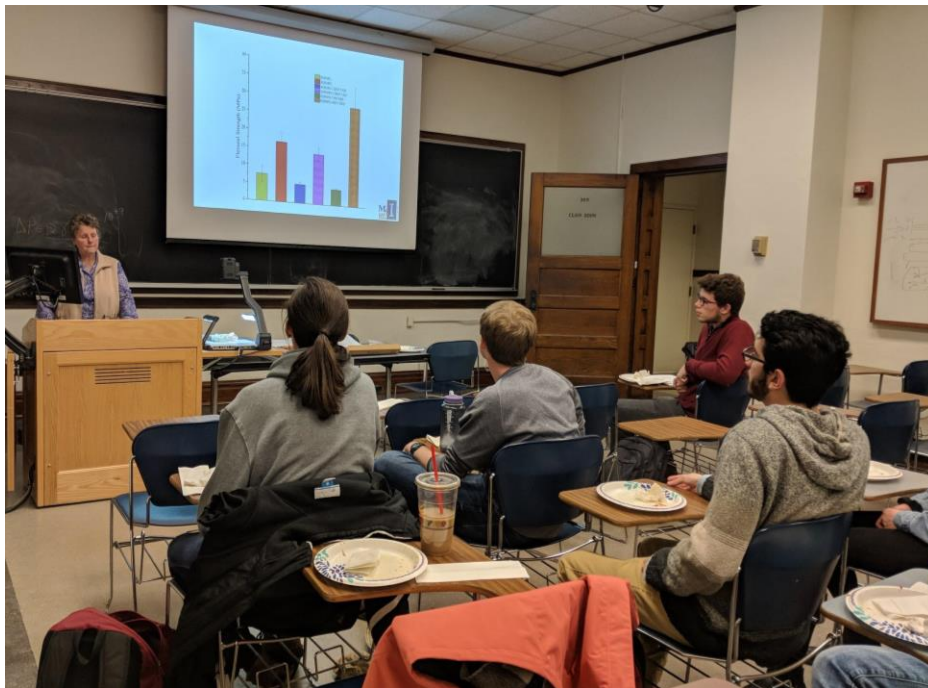
-Professor Lunches

We continued to host professor lunches with the MatSE Department this year where students could sign up to have lunch with professors in the department and ask them about their research, classes, tips, and just get to know more about the people they're learning from while the professors could learn a bit more about some of the

students they're teaching. Students really enjoy these lunches as they get to learn more about their professors in a more comfortable setting versus the classroom.

-Professor Talks

This year we decided to host professor talks by professors in the MatSE Department. This would be a one hour session where the professor can speak or lecture about whatever topic they're most interested in, whether it's their research or another topic of interest. We hope to have more of these in the future as it's another way of getting students in contact with professors and for the professors to teach topics that they may not necessarily be able to talk about in class. We managed to have 2 professor talks in the spring semester of this year, but in the future we hope that we can make this a monthly occurrence so that students have plentiful access to their favorite professors.



Fundraising

-Hearts and Roses

Since selling ceramic roses went well last year, we decided to continue the tradition of selling ceramic Valentine's Day gifts. We decided to change things up a bit this year and sell red ceramic hearts. We gave people the option of designing their hearts at the booth with whatever design they wanted. We also sold some of the extra roses we had from last year's Valentine's Day sale. We made \$52 from the sale. These roses and hearts were sold to the people walking on the University of Illinois Urbana-Champaign main quad. We were given some lovely suggestions to improve the hearts by making

them ornaments or magnets for next year. Hopefully someone's Valentine's Day was brightened by our ceramic hearts and roses.



Play With Clay

Play with Clay

The play with clay sessions are held on a weekly basis with members having the opportunity to come in and experience ceramics processing on a small scale. The heralds prepare a variety of different kinds of ceramics processing including slip casting and clay throwing with both hands and the table. Maintenance of our plaster molds used for slip casting are important as they begin to age. Ceramic glazes, throwing clay, talc and ball clay are all regular expenditures but contribute to the variety of options that Play with Clay has become known for. At the end of the year, the Materials Science department holds an awards ceremony where the heralds make two pigs out of clay to give to two professors who the students have deemed give an exceptional effort towards teaching. The heralds are also responsible for making the mug and discus used in the competitions during MS&T conferences. Finally, the heralds made around 50 ceramic hearts to be sold during a Valentine's day fundraiser which helped raise funds for the chapter.

Service

-Toys for Tots

During the winter we held a Toys for Tots fundraiser, acquiring toys to donate to children. We had bins in multiple locations around campus for students and faculty to donate toys. We donated \$1 for every toy donated and for every \$15 additional dollars donated by others.

Alumni Engagement

Our alumni outreach this year was not as strong as previous years, however we plan on inviting many of the alumni to our end of the year barbeque. This occurs the day after the awards banquet for the MatSE department, and therefore many of the alumni will be on campus. In the future, we hope to interact more with the alumni board to get contact information for both recent and senior graduates of the university. We hope to make connections with alumni in industry and academia to allow our undergraduates the opportunity to get a foot in the door with more employers.

MS&T Convocation and Business Meeting

This year Keramos and Material Advantage sent 12 people to the 2017 Material Science and Technology Conference (MS&T) in Pittsburgh, Pennsylvania. We enjoyed participating in the many opportunities MS&T had to offer such as the annual chapter convocation meeting, student speaking contest, mug drop competition, student networking mixer, and short courses. The University of Illinois Urbana-Champaign Keramos Chapter was represented by Heer Majithia, Audrey Lee, Eric Krupinski, and Jeff Schooler. Our chapter was honored to receive the Sapphire Chapter Award at the annual Keramos convocation along with the award for Most Improved Chapter. At the business meeting, we were able to speak to other chapters of Keramos and talk about what went well in Keramos along with some problems we'd been facing and potential solutions. We also were able to trade fun event ideas and potential meeting ideas between chapters.

We prepared one mug for the mug drop competition this year due to various complications in obtaining materials as well as poor transitioning. This mug was prepared by our Herald Jeff Schooler and was prepared for dropping. Though we did not place this year, we have ambitious plans for the coming year. Our student speaker for this year was Chris Miller and did an excellent job representing the University of

Illinois Urbana-Champaign with his talk on his research on the creation of materials based on bat's wings.



Continuing Collaboration with Material Advantage and AIST

Our chapter of Keramos collaborates heavily with the Material Advantage group on campus to ensure high attendance rates at events. Material Advantage serves the more social aspects of the two organizations, while Keramos hosts more of the professional events. By running the two organizations in parallel, we are able to ensure involvement and funding for both organizations while not creating any divides within the department. We expect this collaboration to continue into the future.

Once again AIST, the Association for Iron and Steel Technology continued to be a great partner to Keramos, as they provided sponsorship for the April General Meeting where we held elections. We purchased pizza for the members to enjoy as they discussed and voted for the future of Keramos and Material Advantage.

Social

-MSE BBQ

For this year we continued holding social events jointly with Material Advantage. We upheld the tradition of holding biannual MatSE barbeques in the Illini Grove and greeted our freshmen mentees and old friends as we welcomed each other back for the new semester in September. We grilled and served burgers and hotdogs for incoming freshmen and returning students alike.

-Curtis Orchards

In October we went to Curtis Apple Orchards. We enjoyed snacking on apple cider, apple donuts, picking apples, and going through a corn maze. COLLIN

-Ice Skating

We had an ice skating event where students came out and skated at the local rink. MA and Keramos paid for skate rentals for everybody who needed them. Overall, we had roughly 15 people come out and skate.

-E-week

We had two teams compete in this year's annual E-Week competitions. This event on campus has different Engineering RSOs compete for superiority. Although we did not win, we had a lot of fun competing.

-Mentor/Mentee Events

We continued our mentor program in which we pair up an upperclassman and a freshman to help guide them in their first year at school. This is a great way to bring people into our program and to get the underclassmen comfortable with the upperclassmen. We hosted many events like barbecues, pumpkin carving, and Friendsgiving. We hope to continue and expand upon this program in the coming year.

Interchapter Communications

-MS&T

Many of our future plans were inspired by other chapters we met at the annual Convocation and Business meeting and we were able to learn about different problems and solutions affecting Keramos including how other chapters were dealing with differentiating from Material Advantage. We also held conversations about meeting other chapters during the school year, which we were able to do with Missouri Science and Technology chapter. Hopefully we continue to meet with them in future years as well as other chapters. We would like to express our appreciation for everyone's ideas, and support.

-St. Louis Trip

This year, we traveled to St. Louis with the Missouri University of Science and Technology. While there, we sampled the local cuisine, went to an art glass studio, visited the St. Louis Arch, and went to the City Museum. This was a joint trip with

Materials Advantage. At the glass studio, we learned different methods of glass work, including how to make a fish. This was an exciting trip, and a great way to meet students from another university.



Keragram

The Keramos Illinois Alpha chapter at the University of Illinois at Urbana-Champaign has continued to thrive this past year. We have continued to increase our attendance at both professional and social events, ensuring the continued success of our chapter. We initiated 25 new members this year, with many of the incoming members being extremely involved already in the chapter and the MatSE department.

This year, we were awarded the Sapphire Chapter award for strong performance. Throughout the year, we hosted a variety of events, in partnership with the Materials Advantage group on campus, such as professor lunches, professor special lectures, ice skating, and even a trip to St. Louis. We have continued our play with clay sessions, starting to make new molds this year. We have also continued the exploration of glass forming techniques and glass art, and hope to increase this movement in the future.

The Illinois Alpha chapter of Keramos is looking upward, with many plans for the future. We hope to reach out to more companies in the Research Park near campus to have more tech talks and company presentations. In addition, we hope to again be a fierce competitor in the mug drop competition. With our incoming class of new members, I have faith that the Illinois Alpha chapter will continue to thrive next year and onward.

