

# Keramos

Annual Report  
2009-2010



University of Washington  
Chapter

For the 2009-2010 school year, the members of Keramos have been involved in many successful outreach events, networking opportunities, and competitions. The Keramos club tied for 1<sup>st</sup> place at MS&T's Mug Drop, won the esthetic mug and esthetic ball competition, and received the Sapphire Chapter award for 2008-2009 at MS&T. The Keramos club orchestrated 8 different outreach events, 4 more than last year. Two Keramos officers are members of the ACerS' President's Council of Student Advisors. The Keramos club took over instructing the junior slip casting lab and has taken upon itself to cast crucibles for use in research and teaching labs. The club has completed a remodel on the student study lounge. Finally, Keramos traditions have been restored by implementing the procedures for new member induction. The following document includes a summary of all financial transactions, events, and activities that the Keramos club has conducted over the past year.

Chapter Adviser Dr. Raj Bordia

Current President Elliott Fray

## *Projects Completed*

### **Service**

- In October 2009 six members of Keramos attended the MS&T Conference in Pittsburgh, PA. The University of Washington Keramos chapter competed in and tied for 1<sup>st</sup> place in the ACerS Mug drop and won the aesthetic mug and ball competition.
- 8 Outreach events were conducted since November 2009. The outreach events were designed to show elementary, middle, and high school students the interesting science concepts behind ceramics and materials. These events included; Echo Lake Science Night, PSEC Engineering Science Fair, Hamilton International Middle School, and UW Bothell Student Mentor Night, among others.
- Two members, Elliott Fray and Tim Carruthers, oversaw the instruction of a Fall General Studies 197 course on ceramic materials / glazes and the Winter Junior Slip Casting and Rheology Lab.
- Kaydee Smith renovated the MSE student study lounge
- Produced Ceramic lab supplies (Crucibles, Boats, Substrates) for use in research and instructional labs

## **Professional Development**

This year, Keramos members have participated in numerous professional development activities. 10 members toured Renton Coil Spring in January, which gave them the opportunity to familiarize with industry, experience an industrial working environment, and network with local professionals. This tour was sponsored by the Puget Sound chapter of ASM International. Therefore, Keramos members were able to interact with professionals from several local companies who were also touring the facility. Keramos has also been actively interacting with the junior and senior members of the University of Washington Material Advantage student chapter and the University of Washington student SAMPE chapter. This has greatly increased the number of professional development opportunities available to Keramos members, including the Renton Coil Spring tour. Members have been consistently attending professional dinners and meetings hosted by the local ASM and SAMPE professional chapters (ASM sponsors Material Advantage) as well. At these events, students are able to socialize and network with local industry professionals, as well as seek out job and research opportunities. These dinners often include a presentation by a local professional. This March, Professor Raj Bordia gave a presentation on his research with ceramics. Students were encouraged to ask questions and engage in discussion about this research.

## **Social Involvement**

- Members of Keramos actively promoted student participation in societies, competitions and outreach events, in addition to participating themselves.
- 3 Barbecues: The student barbecues are organized and run by Keramos members and have been key to getting Juniors and Seniors interested in the Materials Societies. The barbecues also improved the Material Science Community at the University of Washington by bringing together undergrads, graduates, and faculty of different backgrounds in an environment that is promoting of intellectual conversation.
- Competed in TMS Material bowl competition in Seattle.
- The end of the year banquet, which consisted of dinner and an awards ceremony, was key to enhancing student and faculty relations. Our elected Keramos Herald, Kelsi Hurley, was instrumental in planning and executing this year's dinner.

- The club was able to send two members, Mark Van Reenen and Elliott Fray to the 2010 ACERS PCSA meeting.

## Meetings

- June 2009 – August 2009: Bi-weekly meetings included inventory evaluation, ceramics processing, structure, mug design, and toughening mechanisms were discussed.
- September 2009 – October 2009: Weekly meetings included slip casting various mug designs and compositions to test for properties and possible improvements in materials processing.
- November 2009 – March 2010: Bi-weekly Keramos meetings where processing, design, structure, and toughening mechanisms were taught by example of slip casting.
- Five Keramos Officer Meetings: Keramos officer meetings included reviewing dates of social events, new officers were selected, new members were initiated, and the officers reviewed financial records during every officer meeting.

## *Future Plans*

Over the past year, Keramos activities have included: tours of local companies, the MS&T Mug and Putter contest, promoting interest in the Materials Societies among the undergraduate MSE students, and many outreach events targeted at elementary, middle, and high school level students. The future plans for the Keramos club are to continue promoting student research into ceramics, and widen the interest in Keramos. Continuing emphasis is going to be applied to creating more definition between the MA and Keramos chapters at the University of Washington while maintaining communication. We also believe that informing community college students of the Materials Science field and the many types of jobs available is essential to a sustainable club and rich Engineering society.

Topics that may be included in our community college outreach events include:

- Fuel Cells (Bloom box)
- Piezo / Pyro / Ferro electric Materials
- Space Shuttle Ceramic Tiles
- Superconducting magnets and Fusion Reactors
- SiC Composites as Structural Materials for Gen IV Reactor Cores

## *Financial Report*

- Starting June 1<sup>st</sup>, 2009 the balance is \$4,565.10
- As of April 9<sup>th</sup>, 2009 the balance is \$2,382.65

Event	Expenses	Income	Club Balance	Month	Members Involved
End of Year Banquet	2439.68	2539.00	4664.42	June 1st 2009	6
New Member BBQ	51.32		4613.10	June 22 <sup>nd</sup> 2009	15
Travel Expenses MS&T	2000		2613.10	Nov. 10 <sup>th</sup> 2009	6
Ceramic Lab Expenses	89.77		2523.33	Dec. 3 2009	4
Ceramic Lab Expenses	12.20		2511.13	Dec. 3 2009	4
Mug Fund-Raiser	360.48		2150.65	Apr. 7 2010	5
Travel Reimbursement from Keramos National		232.00	2382.65	Apr. 7 2010	

## *Active Members*

### **Faculty:**

Raj Bordia, Professor; Guzhong Cao, Professor; Brian Flinn, Associate Professor; William Scott, Professor Emeritus; Alan Miller, Professor Emeritus; O.J. Whittemore, Professor Emeritus.

### **Post-Graduate:**

Sam Schleh, Elliot Baker, Tyson delos Santos

### **Graduate Students and Post-Docs:**

Kevin Strong, Jessica Torrey

**Undergraduate Students:**

Kelsi Hurley, André Gillian, Chris Wituchowski, Dirk deGroot, Brad Carr, Tim Carruthers, Lars Bouge, Kaydee Smith, Eric Woodhouse, Mark Van Reenen, Nick Singh, Alex Wilson, Elliott Fray

**New Initiates:**

Dan Buck, Twyla Sampaco, Albert Tien, Erika Mole, Nathan Lowman, Sam Finkle, Guy Guday, Kasim Siddiqui, Kevin Babauta, Jill Kuchman, Bridget Sexauer, Brad Duvall, Andrey Maslov, Elizabeth Merten

**Total Non-Faculty Members:**

*Elected Officers (2010 – 11)*

President:	Dan Buck
Vice President:	Twyla Sampaco
Secretary:	Jill Kuchman
Treasurer:	Brad Duvall
Herald:	Bridget Sexauer

Service

<b>Event</b>	<b>Date</b>	<b>Duration (hrs)</b>	<b># of Participants</b>	<b>Man Hours</b>
Remodel Materials Science Student Lounge	June, 09	10	1	10
Mug Drop Competition (MS&T)	October 09	9	6	54
MS&T Materials Camp	October 09	4	2	8
Teaching General Studies 197 Ceramic Materials and Glazes	October 5 <sup>th</sup> – December 18 <sup>th</sup> , 2009	33	2	66
Puget Sound Engineering Council (PSEC)- UW Bothell Mentor Night	November 17 <sup>th</sup> , 09	4	5	20
Teaching Junior Laboratory Slip Casting / Particle Rheology Lab	January 4 <sup>th</sup> – March 11 <sup>th</sup> , 2010	60	2	120
Hamilton International Middle School Science Night	January 21 <sup>st</sup> , 10	3	4	12
Echo Lake Elementary Science Night	January 28 <sup>th</sup> , 10	4	3	12
Seattle Math Science Engineering and Achievement (MESA) Days	February 6 <sup>th</sup> , 10	4	3	12
Puget Sound Eng. Council – Engineering Week Fair at the Museum of Flight	February 13 <sup>th</sup> , 10	7	4	28
Mad About Science, Technology, Engineering and Math Day – Bothell Campus UW	February 20 <sup>th</sup> , 10	4	3	12
Kennydale Elementary Science Carnival	March 4 <sup>th</sup> , 10	4	5	20
Junior led Outreach Event	March 18 <sup>th</sup> , 10	3	4	12
Producing Ceramic Lab Equipment	October 09 – April 2010	30	3	90
<b>TOTAL MEMBER HOURS</b>				<b>476</b>

Professional

<b>Event</b>	<b>Date</b>	<b>Duration (hrs)</b>	<b># of Participants</b>	<b>Man Hours</b>
Renton Coil Spring Tour	January 12, 09	5	10	50
Fatigue Technology Incorporated Professional Dinner (SR-71 Lecture)	September, 09	4	5	20
Puget Sound Engineering Council – Professional Dinner	November 5 <sup>th</sup> , 09	3	3	9
ASM/SAMPE Professional Dinner	December 8 <sup>th</sup> , 09	3	2	6

Students Night / Speaking Contest	February 9 <sup>th</sup> , 10	4	10	40
Materials Science Alumni Pizza and Professional Development Night	February 16 <sup>th</sup> , 10	4	9	36
Professional Dinner (Ceramic Coatings Lecture)	March 9 <sup>th</sup> , 10	4	6	24
<b>TOTAL MEMBER HOURS</b>				<b>185</b>

Social

Event	Date	Duration (hrs)	# of Participants	Man Hours
End of Year Banquet	May 09	3	6	18
New Member BBQ	June-09	4	15	60
Undergraduate Orientation BBQ	September 09	4	9	36
Post MS&T Barbeque	December 4 <sup>th</sup> , 09	3	9	27
ACERS Ceramics Conference	January 10	8	2	16
TMS Materials Bowl	February 14 <sup>th</sup> , 10	3	4	12
Keramos Initiation BBQ	April 10	3	20	60
<b>TOTAL MEMBER HOURS</b>				<b>229</b>

Meetings

Event	Date	Duration (hrs)	# of Participants	Man Hours
Five Officer Meetings	April 09 – April 2010	5	5	25
Bi-weekly Ceramics Processing Meetings (MS&T)	June 09 – August 2009	36	3	108
Weekly Ceramics Processing Meetings (MS&T)	September 09 – October 2009	48	4	192
Twice Monthly Meetings	November 09 – April 2010	18	4	72
<b>TOTAL MEMBER HOURS</b>				<b>397</b>

Totals

Categories	Totals
Service	476
Professional	185
Social	229
Meetings	397
<b>GRAND TOTAL</b>	<b>1287</b>