

MS&T '12 Student Wrap-Up

More than 840 students attended the **MS&T'12 conference in Pittsburgh, Pa., on 7–11 October 2012**. In addition to the technical sessions, students had the opportunity to participate in and attend many Material Advantage activities.

Student programs kicked off with the **Material Advantage Chapter Leadership Workshop** on Sunday, 7 October. More than 65 chapter leaders attended. They learned about the four partnering societies and the major benefits that each organization offers, as well as how to manage a Material Advantage chapter. The chapter leaders also shared ideas on how to increase membership and raise funds.

Students also competed in the **Material Advantage Student Speaking Contest** semi-finals, where contestants were narrowed down to four participants for the finals. All contestants received US\$300 in travel expense reimbursement. The winners of the 2012 student speaking contest were:



Winner

Spencer Wells

University of Illinois at Urbana-Champaign

"Mixed Equilibrium Solid Solubility of Ga_2O_3 and SnO_2 in In_2O_3 "

1st Runner-Up

Ruilong Ma

Northwestern University

"Moore's Law and the Diagnosis of Infectious Diseases"

2nd Runner-Up

Jennifer DeHaven

Missouri University of Science & Technology

"Direct Write of Micro-Circuitry via the Development of Capillary Focusing Cold Spray Technology"

Emily Fucinato

Pennsylvania State University

"Single Walled Carbon Nanotubes and Barium Titanate Crystals as an Anti-reflective Coating for Photovoltaic Cells"

The contestants in the semi-final rounds were evaluated by a volunteer panel of judges: Marissa Reigel Savannah River National Laboratory; Sarah Mansuetti, Rex Heat Treat; Sumin Zhu, Vesuvius Research; and Will Pinc, University of Arizona. Final round judges included: Brian Gilmore, Texas Instruments RFAB; Kelly Dallas, ArcelorMittal Americas; and Leigh Duren, Nichols Portland-Parker Hannifin.

Also on Sunday, entries for the undergraduate poster competition were displayed. Judging of the posters took

place on Monday, followed by judging for the graduate student poster contest on Tuesday. The winners of the 2012 student poster contests were:

Material Advantage Graduate Student Poster Competition:

1st Place

Solaiman Tarafder
Washington State University

"Effect of Local Alendronate Delivery on *In-Vivo* Osteogenesis From PCL Coated 3D Printed β -TCP Scaffolds"

2nd Place

Owen James McGann
University of Sheffield

"The Effects of Gamma Radiation in Glasses Intended for the Immobilization of UK ILW Nuclear Wastes"

3rd Place

Jesse Angle

University of California, Irvine

"Thermal Measurements of 3- and 4-Phase Ceramic Composites using OOF2 Analyses"

The winners were selected by a volunteer panel of judges consisting of: Alex Cozzi, Savannah River National Laboratory; Pello Uranga, CEIT; Ed Sabolsky, West Virginia University; Will Pinc, University of Arizona; and Tony Rollett, Carnegie Mellon University.

Material Advantage Undergraduate Student Poster Competition:

1st Place

Nathan Reeves
Walla Walla University

"New Factors in Understanding Glass Dissolution: The Effect of Geometry"

2nd Place

Samantha MacIntyre
Shippensburg University

"The Effects of Sputtering Energy regarding Defect Formation on the Ge(110) Surface as Observed through Scanning Tunneling Microscopy"

3rd Place

Ariel Murphy
University of Alabama

"Quantifying the Beta Phase (Mg₁₇Al₁₂) In the Magnesium Alloy AZ91"

The winners were selected by a volunteer panel of judges consisting of: James Hemrick, Oak Ridge National Laboratory; Mike Alexander, Riverside Refractories Inc.; Connie Herman, Savannah River National Laboratory; and Will Pinc, University of Arizona.

While the semi-final round of the speaking contest was under way, two additional programs were offered for the students. This year, a panel of students served on a committee to evaluate the session topics and select presenters. The students who served on this committee included:

Zahra Ghanbari, Colorado School of Mines
Anthony Ventura, Lehigh University
Troy Ansell, Oregon State University
Kevin Strong, University of Washington
Scott Middlemas, University of Utah

The first session was the **Material Advantage Career Forum**, where representatives from different materials-related careers introduced themselves to the students. The representatives talked about their backgrounds and career decisions that led to their current positions. The students had the opportunity to ask questions of the panel to assist them in the difficult task of making their own career decisions. The Career Forum Panel included:

Kelly Dallas, ArcelorMittal USA
Roger Narayan, North Carolina State
Geoff Brennecka, Sandia National Laboratories
Ron O'Malley, Nucor Corp.

The second session was the **Material Advantage Graduate School Forum**, where representatives from different universities and current graduate students introduced themselves, talked about their backgrounds, the pros and cons of attending graduate school, as well as the process for selecting the right program. The graduate students talked about their backgrounds, why they chose to attend graduate school and how they made their decision to attend graduate school. The presenters were Dr. Doreen Edwards, Dean and Professor of Materials Science and Engineering at Alfred University; and Kevin Strong, a graduate student at the University of Washington.



The third session was **The Art of Networking**, presented by Troy Ansell from Oregon State University, and Chris Dosch from GE Global Research.

A new session added by the committee for MS&T'12 was **Communication Skills: Presenting Technical Information**, presented by Dr. Robert Heard from Carnegie Mellon University. Dr. Heard presented an excellent session that focused on oral and poster presentations, as well as best practices for using visual tools such as PowerPoint.



The final activity on Sunday was the **Material Advantage Student Mixer**, which is always a highlight for students. More than 450 students — most wearing their school colors — networked with each other, leaders from the four partnering organizations, representatives from companies that participated in the Career Pavilion, society members, and the Material Advantage staff liaisons.

The **Material Advantage Ceramic Mug Drop Contest** was held on Tuesday, 9 October. In this contest, students entered mugs fabricated from ceramic raw materials, which were then judged on both aesthetics and breaking thresholds. The speaking contests and poster contests are organized by the Ceramic

Education Council, and the mug drop is organized by Keramos, all on behalf of Material Advantage.

Winners (tied)

Wen Yang
University of Illinois at Urbana-Champaign
and
Rudi Bredemeier
University of Illinois at Urbana-Champaign

Most Aesthetic Mug (tied)

Rebecca Mullen
Missouri University of Science & Technology
and
An Dang
University of Washington

The exhibit hall also included the **Career Pavilion**. Students were provided lunch and were encouraged to visit the companies in the pavilion. Activities wrapped up with the **Material Advantage Student Awards Ceremony**, hosted by the Material Advantage committee past chair, Leigh Duren. The winners of Material Advantage contests were congratulated and presented with awards.

In addition to the MS&T contest awards, the **2012 Material Advantage Chapter of Excellence Awards** were announced. All active chapters were scored based on criteria for programming, career development, service, social activities and chapter management. The 2012 Chapters of Excellence winners, winning US\$400 each, were:

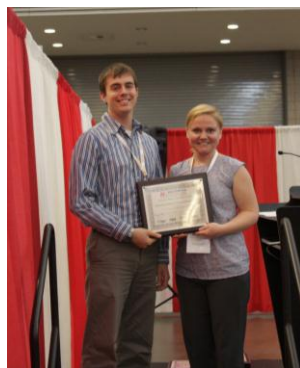
Missouri University of Science & Technology



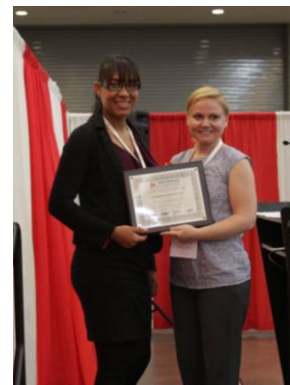
Pennsylvania State University



University of Illinois, Urbana-Champaign



Washington State University



Florida International University (not pictured)

The **Most Outstanding Chapter Award** went to Iowa State University.



The Material Advantage Committee meets each year at MS&T. Many thanks to the committee members:

ACerS

Bill Fahrenholtz, Missouri University of Science & Technology
Kevin Fox, Savannah River National Laboratory
Allen Kimel, The Pennsylvania State University
Edmund Moore, Wright-Patterson Air Force Base
Tricia Freshour, staff liaison

AIST

Ron O'Malley, Nucor Steel-Decatur LLC
John Speer, Colorado School of Mines
Kelly Dallas, ArcelorMittal, USA
Stephanie Will, The Timken Co.
Chris McKelvey, staff liaison

ASM

Leigh Duren, Nichols Portland-Parker Hannifin
Jake Auliff, Sauer-Danfoss
Ryan Deacon, Johns Hopkins University
Anne Stockdale, General Atomic Aeronautical
Candace Cunningham, staff liaison

TMS

Diana Lados, Worcester Polytechnic Institute
Dave Bahr, Purdue University
John Balk, University of Kentucky
Ben Poquette, GE Healthcare
Bryn Simpson, staff liaison