

PROFESSIONAL PREFACE

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The Newsletter for Student Members of The Minerals, Metals & Materials Society

WELCOME!

During 2008 and 2009, TMS will once again be offering a number of scholarship and contest opportunities to help you further your materials education and professional development. We are interested in increasing our student participation in these events! Stay tuned for information on a full program of student activities in conjunction with the TMS 2009 Annual Meeting and Exhibition in San Francisco, California. The 3rd Annual TMS Materials Bowl will give student chapters a chance to once again square off with one another in a Jeopardy-style knowledge and trivia competition. In addition, please consider entering our student poster contest. It is a great way to showcase your research efforts and accomplishments! Many career-building and networking opportunities will also be available at the meeting. Please come by and join us!

If you have any questions about your TMS membership through the Material Advantage partnership, please let me know. I would be happy to assist you in any way that I can. I hope that everyone has an academically and personally rewarding semester!

Remember, following your graduation, TMS offers you a complimentary one-year professional membership. We invite you to take advantage of this opportunity to become involved!

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2008 SUPERALLOY SCHOLARSHIP WINNERS ANNOUNCED

At the October Materials Science & Technology 2008 (MS&T'08) conference in Pittsburgh, Pennsylvania, two students are accepting scholarships from the International Symposium on Superalloys. Each student receives a \$2,000 cash scholarship and up to \$500 to travel to MS&T'08 to accept the award. The award is available to undergraduate and graduate students majoring in metallurgical and/or materials science and engineering with an emphasis on high-temperature, high-performance materials.

This year's winners are Rudder Wu, a student at Imperial College in London, and Kimberly Maciejewski, a student from the University of Rhode Island.



Rudder Wu

"I am extremely honored and grateful to receive the TMS Superalloys Scholarship," said Wu. "I would like to thank TMS for recognizing my academic achievements and providing a platform where students can freely network and exchange information with scientists and engineers from all over the world. I would also like to gratefully acknowledge Professor Alan Atkinson, Dr. Hiroshi Harada, and Professor Roger Reed for their invaluable support and guidance throughout my postgraduate research studies."



Kimberly Maciejewski

"I am grateful for this award and truly appreciate the financial support to further my education and research," said Maciejewski. "It will assist me in attaining my scientific goals in the area of high-temperature superalloy research as well as in broadening my skills and knowledge in the field of mechanical engineering."

TMS Student Scholarships and Awards

To view additional student scholarship and award opportunities available from TMS, visit the student award web site at www.tms.org/Students/Awards.html. TMS offers more than \$50,000 annually in scholarships and awards. Applications for most 2010 scholarships are due March 15, 2009.

Additional TMS student scholarship and award winners will be announced in the February issue of *Professional Preface*.

STUDENTS REPRESENT TMS AT JUNIOR EUROMAT CONFERENCE

With the support of the TMS Foundation, two students traveled to Lausanne, Switzerland, this summer to attend the Junior Euromat 2008 conference. Chris John Paul Samuel and Kirsten Kepple won the chance to represent TMS at this unique student conference after demonstrating high-quality work at the TMS Technical Division Student Poster Contest, held at the TMS 2008 Annual Meeting in New Orleans in March. Created to provide young material scientists a forum for presenting and discussing research, Junior Euromat is a poster conference where materials science and engineering students display their work and provide brief oral presentations.

Samuel, a student from the University of Alabama, presented his work on specimen configurations for Gleeble dilatometry, which won the graduate division award from the TMS Materials Processing & Manufacturing Division. Kepple, a student from the Georgia Institute of Technology, presented her work on neuronal growth on carbon nanotubes, which won the undergraduate prize in biomaterials at the TMS student poster contest.

Junior Euromat is held once every two years by the Federation of European Materials Societies. This year's conference was held July 14–18.



TMS Student Ambassadors Christopher John Paul Samuel and Kirsten Kepple traveled to Lausanne, Switzerland, to represent TMS at Junior Euromat 2008.

PLANNING FOR THE TMS ANNUAL MEETING?

The TMS 2009 Annual Meeting will provide an opportunity for students to meet with scholars from other materials programs throughout the world, to network with established professionals, and to learn about recent technical developments in the broad field of materials science and engineering. Some advance planning can help both student chapters and individual students to get the most out of their annual meeting experience. Here are a few tips for planning your trip:

- **Plan to Serve:** For the second year, TMS is planning a community service project in conjunction with the TMS Annual Meeting. On Saturday, February 14, students and professional members will band together in a local service project to benefit the San Francisco community.
- **Get There Early:** When making travel arrangements, be sure to arrive in time to participate in the service project (February 14) or to take advantage of all the student activities taking place on Sunday, February 15.
- **Create a Materials Bowl Team:** Gather your best and brightest students to compete in the third annual materials bowl. In this materials-themed quiz-show competition, each student chapter can enter one team of up to four students each to compete for cash prizes.
- **Enter the Student Poster Competition:** The TMS Technical Division Student Poster Contest provides an opportunity to show off your research and earn a little cash. The best-in-show poster wins \$2,500, with additional \$500 awards given to division winners in both graduate and undergraduate categories.
- **Secure Individual Travel Scholarships:** Students can apply for grants from the Electronic, Magnetic & Photonic Materials Division; the Structural Materials Division; or the Materials Processing & Manufacturing Division.
- **Apply for Chapter Travel Reimbursement:** TMS offers \$500 travel reimbursement to each student chapter that sends representatives to the TMS Annual Meeting.

Further information on these opportunities can be found on the TMS student web site at www.tms.org/Students/Students.html.

STUDENT CHAPTER SPOTLIGHT: 2008 WORLD MATERIALS DAY AWARD WINNERS

In 2008, two Material Advantage student chapters were selected to receive the World Materials Day Award. This award is given annually to student chapters that have promoted the wider knowledge of materials and their importance in everyday life to young people. The contest promotes outreach projects for K–12 students, and winning chapters should demonstrate projects that inform students about the field of materials engineering and encourage them to learn more about the study of materials.

This year the World Materials Day awards went to Material Advantage chapters at the University of Connecticut and Florida International University. Below is a look at some of the outreach activities performed at each school.

University of Connecticut

To coordinate activities on-campus and at local schools, the University of Connecticut's Material Advantage chapter has its own outreach committee made up of active students. For the 2007–2008 school year, the outreach committee reported making contact with more than 200 students at twelve events, including:

- **Outreach to First-Year Students:** Volunteers talked to students in the Engineering 100 classes at the University of Connecticut, the program's introductory engineering course. Because students usually declare a major after taking this class, Material Advantage volunteers performed materials science and engineering demonstrations in the hopes of attracting students to the discipline. In addition to demonstrations, student chapter members spent time with the students, allowing them to ask questions about the major and career opportunities. This personal interaction allowed them to recruit people who may not otherwise have known about the materials field. The group performed similar activities at Connecticut's fall Involvement Fair and School of Engineering Open House.
- **Connecticut Science Technology Engineering and Math (STEM) Program:** This student chapter also collaborated with the Connecticut STEM program to provide a three-hour activity for approximately 50 middle school students who would be working on research projects. Ten volunteers rotated in three groups to provide MSE lab tours, a hands-on physics activity, and education about roadshow demonstrations. The program concluded with a panel session where students had the chance to ask questions about career opportunities and the field in general.
- **CT Global Fuel Cell Center Partnership:** In the fall, the student chapter partnered with the CT Global Fuel Cell Center to teach children about alternative energy. Through the fuel cell center, students borrowed three fuel cell car kits and a large remote-controlled fuel cell car to demonstrate how fuel cells and solar cells work.
- **Society for Photonic Instrumentation and Engineering Partnership:** In the spring, the University of Connecticut group collaborated with the Society for Photonic Instrumentation and Engineering for a roadshow demonstration of light, sound, and optics to fifth graders.

Florida International University

One of the objectives of the Material Advantage Chapter at Florida International University is "to promote materials science and engineering in high schools." In 2007 and 2008, the group's efforts to achieve this objective included the following activities:

- **Nano-Club:** Florida International helped to establish a "Nano-Club" at Coral Park High School in Miami, Florida, as a way of generating interest in materials science and engineering among students through fun activities. Volunteers attended a Nano-Club workshop at the high school, where they demonstrated shape-memory alloy experiments and later returned to the school to present a talk on nanotechnology and advanced materials.
- **Engineering Gala:** At the annual Engineering Gala, a university-wide event that brought more than 1,000 students and teachers from Miami high schools to Florida International University, the Material Advantage chapter organized a tour of the school's Plasma Forming Laboratory and demonstrated the plasma spraying process for the students. "The students were amazed and delighted to see the plasma plume and were very much interested in the process," the Florida International group reported. "They asked a lot of questions ranging from application of the process to the science behind it. It was a great experience for the members to explain the process to high school kids in a simple, interesting, and effective manner." Chapter members then gave a talk on nanotechnology for the visiting students.
- **Nanoweekend:** The chapter also sent representatives to the Nanoweekend Event at the Miami Science Museum, where they demonstrated a superconductivity experiment and showed shape-memory alloys.