



meet a member

Mentoring Students Is a Cardinal Rule for Materion Engineers

Lynne Robinson



Fritz Gresing



Carole Trybus

Finding Cy was an unexpected bonus. He first materialized while members of a senior design project team at Iowa State University (ISU) were preparing micrographs of a copper-nickel-tin alloy that they were investigating for microstructural and hardness changes after long-term solution annealing. As if to let the students know that their work was on the right track, the outline of Cy—the cranky cardinal mascot of ISU—emerged in one of the images, created by precipitates forming on the grain boundary.

“It’s a great bit of metallography done on a tough system to polish and etch,” said Fritz C. Gresing, Vice President, Technology, Performance Alloys, for Materion Corporation.

Gresing, an active TMS member since 1990, provided mentoring and direction to the ISU student team as a means of expanding Materion’s on-site engineering co-op program to include materials science and engineering. Carole L. Trybus, Principal Engineer at Materion and a TMS member since 1999, joined him in the effort, using her ties as an ISU graduate to help set up the project. “We have witnessed first-hand the synergy that occurs with co-op students embedded in

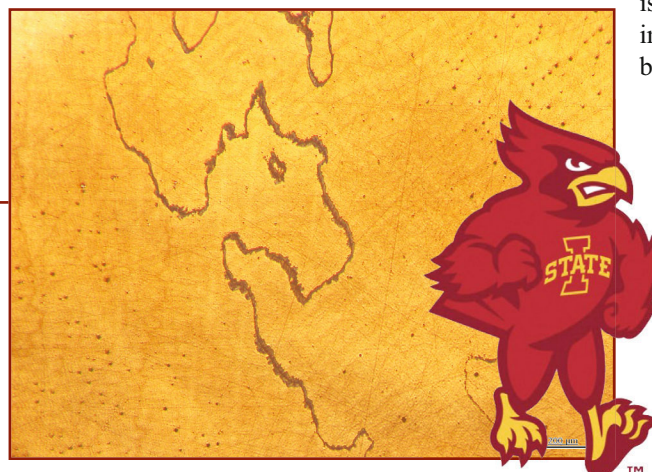
the workplace and wanted to see if we could offer that to materials science and engineering students,” said Gresing. “Our program with Iowa State University was a perfect first step.”

The technical challenge presented to the student group was to examine the hardness and structural effects of different heat treatment temperatures, quench media, and processing times for ToughMet[®], Materion’s copper-nickel-tin spinodally hardened commercial alloy. “Materion had conducted some previous trials, but the program allowed the students to do a comprehensive study,” explained Gresing. “We presented the problem, provided material in the form of as-cast rings, and gave some rough ideas on where to start. The students then developed the plan and ran with it. They did everything themselves and the project’s success was all due to their efforts.”

While the project tested the group’s technical abilities, Andy Meiszberg, a member of the student team, feels that Materion’s expectation of them as professionals was particularly valuable. “From start to finish, we were all learning the skills necessary to perform in a professional environment,” he said. “Communication between professionals

is much different, as you might imagine, than communication between college students.”

“Additionally, the experience made me realize that there is not always a correct answer,” Meiszberg continued. “Academic projects are often ‘loaded’ in the sense that they already have defined solutions. Senior design projects are intended to be open ended, and sometimes have more than one correct



Iowa State University (ISU) students did a double take when Cy, ISU’s mascot (right), seemed to appear in a micrograph (left) during their investigation of Materion’s ToughMet[®] commercial alloy. (Micrograph courtesy of Materion.)

answer. These types of projects are much more typical of what you find in industry.”

Besides gaining “some good and useful information on one of our key alloys,” Gensing said that Materion benefitted from the project by “getting the next generation of engineers and scientists enthusiastic about the field of materials engineering.” In a related effort, Materion is using the Cy micrograph to promote materials science and engineering as a “fun and fascinating” career, Gensing noted. “We want other students to be inspired by Cy and think that they, too, can enjoy working in the field,” he explained.

Gensing said that he and Trybus found that “the energy and enthusiasm of the students are contagious” and is looking forward to building on the success of the ISU project in developing future student mentoring opportunities. “I would encourage all TMS members to participate in such programs,” he said. “We all need to support and help train our future engineers.”



Materion used the ISU senior design project as an approach to extending its successful engineering co-op program to materials science and engineering students. The ISU senior design project team included (from left): Andrew Meiszberg, Victor Lee, Zhenpei Ding, and Tyler Schlueter.

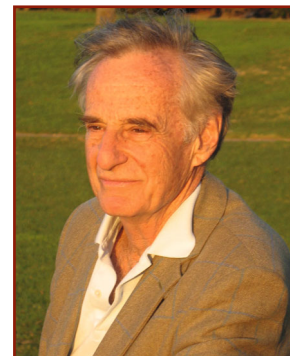
member news

German Materials Society Honors Marc Meyers

Marc André Meyers, Distinguished Professor, Mechanical and Aerospace Engineering, University of California, San Diego, and 2011 TMS Fellow, was awarded the 2014 Heyn Memorial Medal, the highest honor conferred by the German materials society, Deutsche Gesellschaft fuer Materialkunde (DGM).

He was officially presented with the medal at the DGM annual meeting in September.

DGM established the Heyn Medal in 1929 to recognize outstanding achievements in the field of metallurgy and substantial progress in the development of non-ferrous metals.

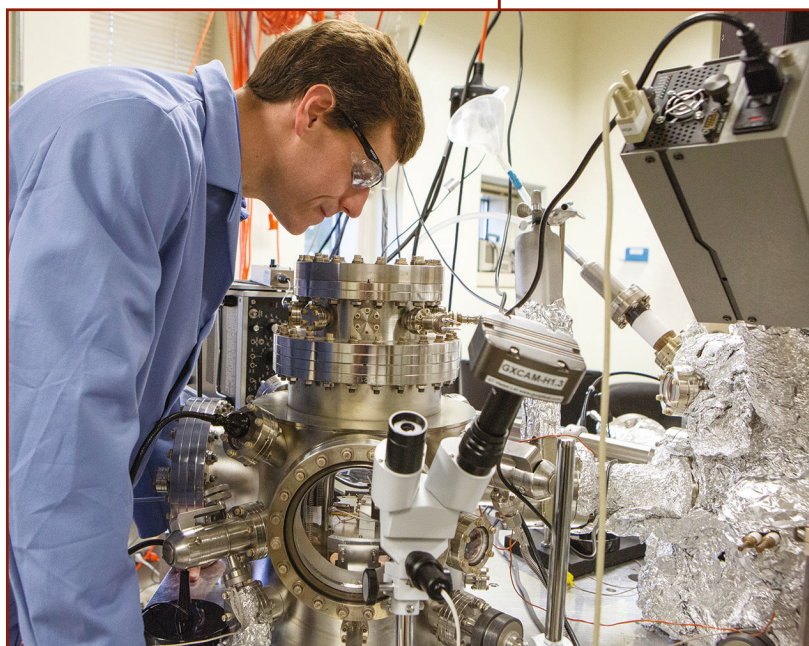


Marc Meyers

Mark Hersam Receives MacArthur Award

Congratulations to Mark Hersam, Professor of Materials Science and Engineering, Northwestern University, for being named a 2014 MacArthur Fellow. Commonly referred to as “genius grants,” the MacArthur Fellows program annually awards unrestricted fellowships of \$625,000 to talented individuals who have demonstrated “extraordinary originality and dedication in their creative pursuits.” Hersam received the fellowship for “bridging the gap between theory and application” in nanomaterials.

Among his many other awards and honors, Hersam received the 2006 Robert Lansing Hardy Award, conferred by TMS and funded by the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME). The award recognizes “a young person in the broad fields of metallurgy or materials science for their exceptional promise of a successful career.”



Mark Hersam (Photo courtesy of the John D. & Catherine T. MacArthur Foundation)

In Memory of William H. Dresher

Konrad Kundig



William H. Dresher

The metallurgical community, and TMS in particular, lost a lifelong supporter on August 10, 2014 with the passing of William H. (Bill) Dresher. Perhaps best known to *JOM* readers as a past member of the TMS Board of Directors, Bill Dresher was also past president of the Mining and Metallurgical Society of America and a distinguished member

of the Society of Mining, Metallurgy and Exploration (SME). He served on the board of directors of the Mining Foundation of the Southwest, at one time as chairman of the foundation's Hall of Fame Committee.

A Philadelphia native, Bill earned a B.S. in chemical engineering from Drexel University in 1953 and a Ph.D. in metallurgy from the University of Utah in 1956. Upon graduation, he joined the Union Carbide Corporation, where, as assistant director of research, he supervised research and development on the extraction and purification of uranium, vanadium, tungsten, molybdenum, and asbestos.

In 1971, he became dean of the College of Mines at the University of Arizona, devoting the following 10 years to increasing the college's enrollment and research income and establishing a degree program in mineral economics. He also successfully lobbied the Arizona State Legislature for the establishment of a formal state geological survey, after which he joked about being appointed as the state's chief geologist, even though he had not taken a single course in the subject.

Bill next accepted the presidency of the International Copper Research Association, Inc. (INCRA), where he funded research to promote product development directed at furthering novel uses for the metal. When INCRA evolved into the International Copper Association, Ltd. (ICA), he remained on board as its vice president of technology, retiring into private consulting in 1995.

Until his death at age 84, he served as chairman of the SciEnTek-12 Foundation, whose annual science fairs have drawn thousands of southern Arizona youth into careers in science and engineering.

Bill Dresher was preceded in death by Ella, his wife of 54 years, and is survived by daughters, Beth Bernitt and Margaret Garcia, and grandsons, Wylan and Jacob. He will be sorely missed by his legion of friends in the U.S. and international metals industries and by all who enjoyed the privilege of working with him.

Konrad Kundig is a metallurgical consultant and former *JOM* editor.

TMS Members Honored at MetSoc 2014 Conference of Metallurgists

Congratulations to the following TMS members who were recognized for their professional excellence at the 2014 Conference of Metallurgists held by the Metallurgy & Materials Society (MetSoc) of the Canadian Institute of Mining, Metallurgy, and Petroleum (CIM), September 28–October 1, in Vancouver, British Columbia.

Silver Medal

Gregory Richards, Teck Metals Ltd.

MetSoc Brimacombe Award

André Phillion, University of British Columbia

Citation: *"In recognition of his research on advanced solidification for light metal alloys through worldwide collaborations and of his leadership in the profession through the organization of international symposia in solidification."*

CIM Fellowship

Kenneth Coley, McMaster University

Environmental Award

George Demopoulos, McGill University

Citation: *"In recognition of outstanding contributions to the environmentally benign disposal of arsenic from metallurgical wastes."*

Distinguished Materials Scientist Award

Comondore (Ravi) Ravindran, Ryerson University

Citation: *"In recognition of his lifelong contributions to materials science research."*

Non-Ferrous Pyrometallurgy Best Paper Award

Joël Kapusta, BBA Inc.

"Sonic Injection in Bath Smelting and Converting: Myths, Facts, and Dreams," *Proceedings of Materials Science & Technology 2013*.

Light Metals Best Paper Award

Mert Celikin, McGill University; Luis Calzado, McGill University; Roderick Guthrie, McGill University; Mihaiela Isac, McGill Metals Processing Centre

"Continuous Casting and Product Characterization of Al-Mg-Sc-Zr Alloys Strips Produced via Horizontal Single Belt Casting (HSBC)," *Proceedings of Materials Sciences & Technology 2013*.

MetSoc Best Paper Award

Kenneth Coley, McMaster University

"Defect Structure of Pseudo Phases of Wüstite," *Canadian Metallurgical Quarterly*, Vol. 52, No.1

MetSoc Doctoral Scholarship

Anthony Lombardi, Ryerson University