

## Member News



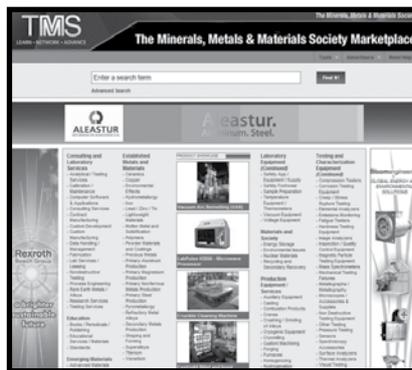
*Updates on friends and colleagues in the materials community*

### TMS Marketplace Streamlines the Search for Industry Resources

Offering a quick, convenient tool to research metals and materials industry-related products and services is the new TMS Marketplace, accessed through the TMS Web site at [www.tms.org](http://www.tms.org).

This new, online supplier directory created especially for the materials science and engineering (MSE) community combines a Google™-style search engine with the Yellow Pages to enable targeted searches of an array of specialized providers and producers. Users have the option of performing keyword-driven searches or utilizing

an alphabetized directory broken into product categories to research, select,



and purchase the industry resources they need.

A key benefit of the TMS Marketplace is its capability of cutting through the clutter of a general internet search so that users can easily locate products and services unique to the MSE industry. Its Request for Information feature also allows users to instantly contact participating suppliers and a downloadable Desktop Search application enables access to the Marketplace at any time, even when not logged on to a browser.

### Bement to Lead New Purdue Institute

Arden L. Bement, director of the National Science Foundation (NSF) and TMS member since 1965, has been named director of Purdue University's new Global Policy Research Institute (GPRI) in West Lafayette, Indiana. Bement will begin his new post on June 1. Among other initiatives, the GPRI plans to offer faculty and student fellowships, a certificate program in public policy, and a master of science degree in public policy and public administration.



Bement was appointed to his six-

year term as NSF director by President George W. Bush in November 2004, after serving as acting director for 10 months. Prior to his service with the NSF, Bement was the David A. Ross Distinguished Professor of Nuclear Engineering and former head of Purdue's School of Nuclear Engineering. He also held appointments in the School of Materials Engineering and the School of Electrical and Computer Engineering. He joined the Purdue faculty in 1992 after a 39-year career in industry, government, and academia and is a member of the National Academy of Engineering, fellow of the American Academy of Arts and Sciences, and fellow of the American Association for the Advancement of Science.

### In Memory of Doris Kuhlmann-Wilsdorf, 1922-2010

Doris Kuhlmann-Wilsdorf, a pioneering professor at the University of Virginia and TMS member since 1976, died March 25 in Charlottesville. Born in Bremen, Germany, Kuhlmann-Wilsdorf joined the University of Virginia faculty as a professor of engineering physics in 1963 and was the first woman named as a full professor at the university outside the Schools of Medicine and Nursing. She became a chaired University Professor of Applied Science in 1966, a title she held for more than 40 years.

Kuhlmann-Wilsdorf was interna-

tionally recognized for her work in plastic deformation, surface physics, and crystal defects. She wrote more than 300 scientific papers, received a number of awards and honors, and started two companies, HiPerCon, for high-performance contacts, and Kuhlmann-Wilsdorf Motors. A lead gift from one of her former students led to the construction of Wilsdorf Hall, a five-story structure linking the university's materials science and chemical engineering buildings, named in honor of her and her late husband, Professor Heinz G.F. Wilsdorf.

#### THINKING OF STARTING A BUSINESS? TURN TO THESE TMS RESOURCES

**Consultant Tool Box:** A new TMS benefit for 2010, this on-line library was designed with members in mind who are considering a career in consulting or who have already established engineering consulting practices. Many of the tools available—sample business plans and model contracts; articles offering business development advice; and access to information on tax, legal, and management issues—can benefit almost any type of business venture.

**TMS e-Mentoring:** Another new TMS benefit for 2010, this service gives members the opportunity to conveniently and confidentially pose questions to an experienced TMS member on issues and options, as well as strategies for ensuring continued professional growth.

**Networking Opportunities:** One of the best ways to meet people helpful to your new business is through the networking opportunities available through TMS. Scan the home pages of TMS's 30 technical committees to see if there is one that might match your particular interests. And browse the TMS on-line Membership Directory to identify colleagues who could develop into valuable business contacts.

*Access these and other helpful resources by logging into the TMS Members Only home page.*



## TMS Member Profiles

### Meet a Member: Erin Diedrich Forges Ahead

By Lynne Robinson

Where heat and metal meet, Erin Diedrich brings a world of beauty alive.

Wielding an oxy-acetylene torch, Diedrich has released a sea monster from an ordinary piece of rebar and coaxed a delicate, leafy vine to sprout from steel with a hammer and chisel. A junior in materials science and engineering at Washington State University (WSU) and recipient of the 2010 TMS Extraction & Processing Division Scholarship, Diedrich says that creating hand-forged artistic pieces “supplements my education. I get to manipulate and play around with steel in a creative environment, and the only restrictions I have are my own skills.”

Diedrich began exploring metalworking as an art form in an introductory welding class at South Puget Sound Community College in her hometown of Olympia, Washington. “I decided to major in materials science and engineering just before I started my welding class, and part of the reason I took it was to see if working with metal would be a good fit,” she said. Inspired to create a steel sea monster garden ornament for her mother, Diedrich consulted with her welding instructor on how to get started. “He suggested that I use some forging techniques for part of it, and showed me some of the basics,” she said.

From there, Diedrich moved on to such ambitious projects as candlesticks and coffee tables featuring hand-forged scroll work. She notes that her boyfriend, Loren Patterson, who owns a welding and fabrication business, “has been the source of most of my applied knowledge in metal working.” Patterson works with her on developing and completing her projects, using a forge that he built himself. Unlike the smoky blacksmithing forges of old, Patterson’s features a fuel-injected system that runs on propane with a solenoid valve and digital heat control, as

well as a ceramic fiber interior with a refractory coating.

Diedrich, who sketches and paints as well, describes her art as “generally abstract with lots of flowing lines and curves.”

“When I do scroll work, I usually like to do a tapered tip to start the scroll. From there, I just start putting bends and curves where I think they should

go, and modify or adjust them using the torch after I get the general shape right,” she said. To give the impression of vines on a coffee table she made for her parents, Diedrich forged leaves and long stems from ½ inch round stock, reduced the diameter of the bar with Patterson’s hand-built rolling mill, and then hammered the leaves flat, using a chisel to make the veins in the leaves.

Once she has forged all the separate pieces for her creations, Diedrich joins them using metal-inert gas (MIG) welding, and then gives the metal either a brushed finished or a traditional beeswax finish.

Diedrich says that the biggest challenge she faces in her metalworking hobby is finding time, particularly since she can only work on projects during school breaks. “My projects tend to have a lot of intricate details that can be tedious, so I have to have patience with the rate of my progress,” she said. “My knowledge of blacksmithing techniques is very limited compared to the possibilities, so I will always have plenty to learn.”

Despite time limitations and a steep learning curve, Diedrich feels fortunate that she has found a hobby that meshes her artistic talents with her career goals of working in the steel industry, focusing on processing and mechanical properties. “I think the most satisfying thing about metalworking is that it is relatively uncommon, especially for a woman,” she said. “I would recommend it to someone as a good way to be creative and put science to use.”

“This hobby has only made me more confident that I want a career in metallurgy.”



Figure 1. Diedrich works on tapering a piece of round stock, which will eventually be used for a coffee table.



Figure 2. Diedrich prefers intricate designs in her work and is seen here creating one of many bends and curves in a graceful metal vine.



Figure 3. Much of Diedrich’s work ends up as gifts, like this coffee table that she made for her parents.

Each month, *JOM* profiles a TMS member and his or her activities both in and out of the realm of materials science and engineering. To suggest a candidate for this feature, contact Maureen Byko, *JOM* editor, at [mbyko@tms.org](mailto:mbyko@tms.org).