



Culture, Research, and New Opportunities: One International Scholar's Perspective

Amber Genau

Amber Genau, 2018 JIM/TMS Young Leaders International Scholar, visits the Daibutsu in Kamakura, Japan, before the JIM Annual Meeting begins.

International travel has been an important part of my personal and professional life since my sophomore year of college, when I sailed around the world with Semester at Sea. One of the ports where we docked during the three and a half month voyage was Osaka, Japan. My memories of that visit include hyper-realistic plastic food in restaurant windows, purple sweet potato ice cream, piles of rainbow-colored origami cranes at the Hiroshima Peace Memorial, and uniformed school kids eager to practice speaking English with international travelers. I was honored to be selected to return to Japan in March, representing TMS at the spring meeting of the Japan Institute of Metals and Materials (JIM) through the Young Leaders International Scholar Program.

Because the JIM meeting was the week following the TMS 2018 Annual Meeting & Exhibition (TMS2018), I flew directly from TMS2018 in Phoenix to Tokyo. I spent the weekend before the conference started in Kamakura, a small seaside city just south of Tokyo. Kamakura, the capital of Japan during the Middle Ages, is renowned for its many historic Shinto shrines and Buddhist temples. For two days, I explored the town, the beach, and the hiking trails in the surrounding hills. One highlight was a visit to the Daibutsu, a 45-foot high, 93-ton bronze Buddha statue created in 1252 AD. Inside the statue, my inner metallurgist was thrilled to find a detailed description of how they cast such a giant figure so long ago. (Answer: it was made as a single piece, but poured in sections.)

From Kamakura, I traveled to the Chiba Institute of Technology, the oldest private technical university in Japan and the location of JIM's 2018 Annual Spring Meeting. The well-organized conference included a number of technical tracks, with talks given in both English and Japanese. I presented a talk about my NASA-funded research on ternary eutectic solidification of aluminum-silver-copper. On Monday night, I attended the JIM Awards Banquet, where the tables were loaded with delicacies and the conversation flowed freely.



Genau presents a lecture on her latest research efforts at the 2018 JIM Annual Spring Meeting as a part of receiving the 2018 JIM/TMS Young Leaders International Scholar Award.

After the conference, Shigeru Suzuki, professor at Tohoku University, arranged for me to visit his university in Sendai. First, we stopped at the Fukuda Crystal Laboratory, a spin-off company started by the eminent Tsuguo Fukuda. There, I met with Fukuda himself and heard first-hand about the many accomplishments in his long and varied career. I received a tour of the crystal growth facilities from the delightful and enthusiastic assistant professor Rayko Simura. I was especially excited to see the micro-pull-down furnace Fukuda developed, after having read many of his papers on directional solidification using this device. I then visited Suzuki's lab on the Tohoku campus, where he is part of the Institute of Multidisciplinary Research for Advanced Materials (IMRAM). I enjoyed learning about his work on microstructural characterization of functional inorganics and talking with many of the students and researchers in his group. When he found out I liked sushi, Suzuki kindly invited me to an excellent sushi dinner at the train station before I returned by bullet train to Tokyo.

Before leaving Japan, I had one final day to explore Tokyo, where I found a very fresh sushi breakfast at the famous fish market, strolled through the historic Yanaka district, and spent a few hours relaxing in a traditional onsen (thermal spring bath house).

I am very grateful for this opportunity to represent TMS abroad and to expand my professional network. Many thanks to the TMS Foundation for supporting this award and to everyone at JIM for the warm welcome, particularly



Genau (center) enjoys informal networking over a sushi dinner with Shigeru Suzuki (right) and Junko Nakagawara (left), of Tohoku University.

Hideaki Yamamura, JIM Secretary General, who organized my visit. Japan is a beautiful and interesting country, and despite the language barrier, surprisingly easy to get around. I encourage everyone to visit, and I am hoping for an opportunity to go back soon.

Amber Genau is currently an associate professor at the University of Alabama at Birmingham and is the secretary of the TMS Solidification Committee. She was the 2014 TMS Materials Processing & Manufacturing Division (MPMD) Young Leaders Professional Development Award recipient, and attended the 2017 Emerging Leaders Alliance conference through support from the TMS Foundation.



Give Back to Young Leaders with the TMS Foundation

Established in 2006, the TMS Young Leaders International Scholar Program aims to promote young member activities while strengthening global collaborations. Offered in partnership with the Japan Institute of Metals and Materials (JIM) and the Federation of European Materials Societies (FEMS), these prestigious awards give select individuals the opportunity to present papers at international sessions. The program is funded through the TMS Foundation.

Through generous donations, the TMS Foundation ensures that this program can continue to engage future generations of minerals, metals, and materials professionals in strengthening the international scientific community. Learn more about this and the many other

programs for young professionals and students by visiting the Awards and Programs section of the TMS Foundation website.

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