

The Power of Scientific Meetings

Researchers Collaborate on Research as a Result of 2013 Annual Meeting

by Susan V. Fisk

Besides being researchers in soil science and SSSA members, Dan Ferreira and Kosuke Noborio had nothing in common—until 4 Nov. 2013. Ferreira teaches at Kennesaw State University, in Georgia, and Noborio works on the other side of the world at Meiji University in Japan.

But 4 November was the day of the symposium at the ASA, CSSA, and SSSA Annual Meeting titled “Battles of Soil Scientists in Fukushima, Japan,”¹ with Noborio presiding and Ferreira attending. From that symposium, came an in-person meeting between the two researchers at the 2014 Annual Meeting in Long Beach, discussion about potential research collaboration, and an invitation for Ferreira to visit Japan. These results show the power of scientific meetings in spurring creativity and collaboration among scientists to the benefit of society.

“After I attended the 2013 meeting in Tampa, that sparked my current research,” Ferreira says. Fukushima is an area that was contaminated by radiocesium after the Fukushima Daiichi nuclear disaster in 2011. The disaster was spurred by an earthquake and resulting tsunami; clean-up efforts are ongoing.

Remediating Radiocesium

Ferreira’s research is looking at ways to use plants (phytoremediation) to help clean up the contaminated soil.

“The way that radiocesium is incorporated inside the interlayers of 2:1 clays like vermiculite makes it

very difficult to remove using ordinary remediation methods. However, phytoremediation techniques can often succeed in removing heavy metals from soils where other techniques fail. My colleague Matt Weand, a physiological ecologist at Kansas State University, and I have identified certain plant species that we think will be effective at accessing the radiocesium inside the clay mineral interlayers.

“I invited Kosuke to meet with me at the 2014 Long Beach meeting,” Ferreira says. “We went out for lunch and began discussing my idea for remediating radiocesium in the soil downwind of the Fukushima Daiichi power plant and potentially collaborating on it in the future.”

In May of 2016, Ferreira traveled to Japan, at the invitation of Noborio, visiting research fields of Noborio’s teams. He also presented lectures at two universities—Meiji University and the University of Tokyo. Ferreira gave two lectures at Meiji University. One lecture was for undergraduates about environmental pollution and remedial technologies. The second was a higher-level talk for graduate students about his doctoral research on ion exchange mechanisms in the nanopore channels of zeolite minerals.

Helping the People of Iitate Village

Noborio is researching land in Iitate Village, 24 miles northwest of the Fukushima Daiichi Nuclear Power Plant, outside the initial radiation exclusion zone. However, wind patterns brought radioactive particles to the heavily agricultural area, resulting in the evacuation of all 6,000 residents. Limited access is now in place.

“Visiting Iitate Village in Fukushima Prefecture and discussing the research projects that Kosuke and his students are performing in the region really opened my eyes about the nature and severity of the challenges that the people in that area are facing,” Ferreira says. “Seeing the problems that the radiocesium soil contamination has caused firsthand has given me new ideas for research projects to try and help the people of Iitate Village.”

Ferreira credits the 2013 ASA, CSSA, and SSSA Annual Meeting with not only creating this new professional relationship, but also sparking ideas for future research. “It all started with that session at the meeting in Tampa.”

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Dan Ferreira (left) presenting Kosuke Noborio with gifts from the USA (a Kennesaw State University t-shirt and Georgia peach preserves).

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¹ See <https://dl.sciencesocieties.org/publications/meetings/2013am/11722>