



Emmanuel De Moor Colorado School of Mines

KENT D. PEASLEE JUNIOR FACULTY AWARD

A variety of activities toward building and expanding connections with the steel industry were originally proposed and a summary of activities is provided here.

Plant tours of EVRAZ Rocky Mountain Steel and AK Steel – Dearborn Works were organized in the spring of 2019 and both were attended by approximately 15 students. The students were enrolled in the iron- and steelmaking course and the tours were organized toward the end of the semester so that the material covered over the semester in the classroom was reviewed and illustrated at the “real-world” industrial scale to help with retention of the covered material.

Furthermore, a graduate student and I visited two Arcelor-Mittal plate steel mills in Pennsylvania, Nucor Steel–Arkansas, Nucor-Yamato Steel Co. and voestalpine Texas.

I worked with the Colorado School of Mines career center to advertise information sessions by steel producers on job opportunities. Twenty-five steel companies attended the CSM career fair. In addition, four info sessions were organized by steel companies to discuss jobs in the industry.

Five seminar presentations on ferrous metallurgy were organized by guest speakers on campus visits during graduate seminars and stand-alone seminars to showcase the high-tech fundamental research currently serving the steel industry and to excite graduate students about ferrous metallurgy and professional research opportunities.

I spoke to the undergraduate Materials Club, Colorado School of Mines Materials Advantage Chapter about research and careers in steel research in addition to highlighting opportunities in steel research as an undergraduate student and scholarship opportunities with AIST.

Another great way to excite students about metallurgy are activities involving casting of red hot metal. CSM has an operating foundry and students from across campus can participate in “free pour” Friday afternoons where, under the guidance of foundry class teaching assistants, students prepare molds and materials, perform casting, break out and clean their castings, and get to take the final result home. At the moment, there is no capability to melt steel and cast iron alloys and the present grant is being utilized to refurbish existing induction heating furnaces capable of melting steel and cast iron alloys.

I am working on a number of proposal initiatives toward developing research funding with public and private funding agencies including the International Zinc Association, the National Science Foundation and Department of Defense agencies along with the Colorado Office of Economic Development and International Trade.