GRANT RECIPIENT REPORT

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INSTITUTO TECNOLÓGICO DE MORELIA

KENT D. PEASLEE JUNIOR FACULTY AWARD

Several activities and a research project were conducted for the 2022–2023 year, including building student interest in the steel industry and connections with a steel-producing company, participating in the Sixth Colloquium of Iron and Steel and developing content for K–12 students. The research project studied the effect of Cr and cooling rates in hypoeutectoid steels under forced-convection conditions.

In collaboration with Ternium Mexico, 80 senior-year students from the Metal–Mechanical Engineering Department of Instituto Tecnológico de Morelia (ITM) had the opportunity to interact with professionals from Ternium Mexico, where they could solve some of their concerns regarding the steel industry.

A seminar related to the AIST Steel Intern Scholarship Program and the Real Steel Video Contest was held at ITM, and 65 students attended the event. Mauricio Rodríguez and Agueda Garnica, former Steel Interns and the winners from the 2022 Real Steel Video Contest, shared tips for the application process and editing for the contest.

López-Cornejo had the opportunity to financially support 66 students to visit four steelmaking facilities: Fundidora Morelia foundry, Gerdau Corsa, ArcelorMittal Lázaro Cárdenas and AMI Automation.

At the Sixth Colloquium of Iron and Steel, undergraduate and graduate students had the opportunity to network with those in the industry, learn about new iron and steel technologies, and get access to professional opportunities in the steel industry. The event was held on 25–27 April 2023 at ITM. More than 300 students from both ITM and the Instituto Tecnológico de Querétaro participated. The event was attended by speakers from companies such as Ternium Mexico, ArcelorMittal, Nucor-JFE Steel Mexico, Primetals Technologies, AMI Automation, General Electric, Deacero, Gerdau Corsa, RHI Magnesita and Lule & Lowry Steel Process Consultants.

Another effort this year was to develop and deploy materials science content and hands-on, minds-on instructional strategies to inspire, engage, and empower future generations to create STEM solutions for 21st century challenges. This entailed developing an annual K–12 program to offer activities such as steel-related workshops at high schools, using short experiments to show students how steel is essential to society.

Fifty students from a technical high school in Morelia attended the Industrial Technologies and Services Studies Center Career Fair, where AIST ITM student chapter members shared highlights of their materials engineering careers. AIST ITM student chapter members also attended a local elementary school science fair, where they had the chance to show around kids the wonders of minerals, the rock cycle, and the relationship between the processing and properties of metals.

López-Cornejo also launched a 3D printing workshop to high school students. With millions of sciences, technology, engineering, and mathematics job vacancies unfilled and on the rise, 3D printing easily introduces kids to STEM concepts, reshaping how they learn about these fields.