

# INSIGHT

## Business leaders + math teachers = success in the classroom and the workplace



Rena Cotsones  
Northern Illinois University

What do Rockford area math teachers and the employees of ThermoFisher Scientific, Woodward and members of the Carpenters Local 792 have in common? Quite a bit, as it turns out.

This summer, a group of 18 Rockford area math teachers had the opportunity to see how the skills they are teaching their students are being applied in the "real world," thanks to a professional development program administered by the Northern Illinois University Department of Mathematics. Funded by the Illinois Mathematics and Science Partnership program, this partnership focused on excellence in math teaching, with a special emphasis on enhancing teacher leadership and student engagement.

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NIU math professors Helen Khoury, Ph.D. and Mary Shafer, Ph.D., principal investigators on the project, partnered with Alignment Rockford and local companies to provide the teachers with experiences that helped them gain a fresh perspective on how and what they do in the classroom with their students translates to the business world.

At Thermo Fisher Scientific, Chris Budde, General Manager, and Jeff Lee, Director of Operations, talked about how math and algebra skills are applied in all departments of the company. At the Chicago Regional Council of Carpenters Apprentice and Training Center, Jim Emerson of Carpenters Local 702 outlined how the skilled trades utilize math, geometry and algebra proficiencies. At Woodward, Terry Voskuil, Director of Technology of Turbine Systems and Joel Kleckler, Principal Engineer, demonstrated how mathematical principles go into the development of new engineering systems and processes.

"The teachers really enjoyed the experiences at the businesses and the related discussions. Teacher participants developed classroom activities for their middle school and high school mathematics students that connect to how mathematics is being implemented

in industry," said Dr. Khoury.

Jo-Ann Valdivia, Math Department Chair at Jefferson High School, said, "I was very impressed by everything we saw. I was especially intrigued when Nikki Jarrett at Thermo Fisher Scientific shared real-life applications for polynomials and the opportunity for hands-on investigation with ph. This topic was later discussed in another area of mathematics, logarithms, showing students connections between mathematical concepts. We are already creating lessons for these topics."

The series of visits confirmed the value of the high school redesign currently underway in Rockford public schools, noted Laurie Preece, executive director of Alignment Rockford.

"This professional development was very timely because it focused on algebra applications in a wide variety of occupations. Academies strive to present math curriculum in occupational contexts, so learning how chemists, engineers, tradesmen and women, accountants, CNC operators and biological researchers all use math is very supportive of Rockford Public Schools' high school redesign," Preece said.

This fall, teacher participants in this continuing grant program, will join Dr. Khoury and Dr. Shafer in Chicago for additional professional development experiences at the regional conference held by the National Council of Teachers of Mathematics.

"Supporting middle and high school mathematics teachers, and their school administrators, to make mathematics meaningful, relevant and enjoyable in the classroom is a major goal of ours," Khoury said. During follow-up sessions in 2012-2013, and during three weeks in Summer 2013, mathematics teacher participants will continue to experience and learn how mathematics, and specifically geometry, gets implemented in the sciences, engineering, business and technology. In the process, teachers will enhance their own knowledge of mathematics and of mathematics teaching.

*Rena Cotsones is assistant vice president, regional engagement/Rockford for Northern Illinois University.*

*The view expressed are those of Cotsones' and do not necessarily represent those of the Rockford Chamber of Commerce.*

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