

Internships for teachers connect math and science with real life

By [Tom Marshall](#), Times Staff Writer

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TAMPA — As science lessons go, loading containers onto a ship doesn't seem very complicated.

But sitting atop a giant gantry crane this summer at the Port of Tampa, watching workers hoist 30 to 40 containers an hour onto ships bound for the four corners of the earth, science teacher Timothy Leeseberg saw all sorts of ways to inspire his students at Stewart Middle School, a Hillsborough County magnet that stresses technology.

Fail to calculate mass and buoyancy properly, and you've got a disaster on your hands.

"If you take too much off one side of a ship, you can easily roll one of these ships over," Leeseberg said.

Such insights are the idea behind an internship program for teachers run by the state Technological Research and Development Authority, with \$300,000 in funding from the nonprofit Helios Education Foundation.

"Ideally it's a way for teachers to gain an understanding of the workplace applications of math and science," said Diane Matthews, education director for the state research authority.

"Nowadays there are so many jobs out there requiring science, technology and math skills," she said. "If you can make those subjects more relevant for students and relate them to work, they're going to be more interested and motivated."

Leeseberg was one of seven middle school teachers in the Tampa Bay region who worked full-time this summer at companies involved in science and technology. He rotated through six firms at the Port of Tampa, developing lesson plans and ideas for a possible maritime career track in Hillsborough schools.

His internship spanned the range of those career possibilities. He saw refueling operations with the Tampa Bay Pilots Association, studied phosphate mining and shipping at the Mosaic Company and witnessed the logistics of fixing vessels with International Ship Repair & Marine Services.

"One ship I was working on, they had to replace almost half the bottom of a ship," he said. "It was pre-fabricated before the ship even arrived."

Leeseberg plans to develop middle school electives on maritime careers and introduce lessons involving the physical sciences. He also plans to help his students understand what they'll need in "soft skills" — punctuality, appropriate dress, communication habits — to land a job.

Another intern, math teacher Michelle Kadel, spent the summer in the air quality division at HSA Engineers & Scientists. Her work involved studying home damage and health claims for insurance companies.

"There are so many snowbirds, and they come back after a couple of months and wonder, 'Why is there so much mold in my house, why is there water all over the place?'" she said.

As a former engineer, Kadel found it relatively easy to slip into the daily routine, collecting data and writing reports — just as she teaches her students to do at Tyrone Middle School in Pinellas County.

"Taking moisture measurements, recording data," she said. "I really know now that it's critical that I get students not just on computers and the Internet, but get them into Excel spreadsheets and drawing graphs."

Since 1997, the training authority has been running its TeacherQuest summer internships with the state Department of Education with the goal of recruiting, training and retaining highly qualified math and science teachers. With support of the Helios Education Foundation, the initiative expanded this summer into the Tampa Bay region.

"Research is showing kids are not getting the connection between what's happening in the classroom and the real world," said Stacy Carlson, a program director at Helios. "We need to make that real for teachers first."

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To learn more

Teachers seeking internships, or businesses interested in supporting a teacher intern next summer, can contact the Technological Research and Development Authority at (866) 263-9564, ext. 106, or e-mail Diane Matthews at dmatthews@trda.org.

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