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Local STEM effort model for state

BY ADAM CURTIS
HERALD/REVIEW

SIERRA VISTA — When it comes to developing a pathway to cultivate a highly-trained, technical workforce and get those people on the job, few rural communities can bring together a group

like the one that met in Sierra Vista on Thursday.

Sitting in a meeting room at Northrop Grumman's new office on Garden Avenue, the area's heavy-hitters when it comes to Science Technology Engineering and Mathematics (STEM) education and industry, came together

to hear what Science Foundation Arizona had to say. They included leaders from Fort Huachuca, Cochise College, Sierra Vista Unified School District, the chamber of commerce, University of Arizona, the county schools office, Arizona State University and local businesses.

To start off, foundation staff members said the people in that room are part of a model that can be replicated statewide and beyond to develop the scientists and engineers needed to keep this country competitive globally. Next, they highlighted the need for awareness of

various pieces of the local STEM pathway to expand beyond that room, so that other local companies and individuals get involved.

Prior to the foundation's presentation, Ray Haynes, a consultant for Northrop

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STEM: Opportunities for local industry

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Grumman, introduced some of the key players of Innovation Campus, a partnership that aims to provide a pipeline from K-12 education to industry jobs in the field of Unmanned Aerial Systems.

Northrup Grumman assisted in developing the curriculum for Cochise College's recently implemented Unmanned Aerial Systems program, said Kevin Goates, director of the company's technical services unmanned systems sustainment center. Ensuring there is a qualified workforce emerging locally is key to Northrup Grumman, which has had to leave high-paying, quality positions unfilled for lack of quality applicants.

That's a problem Jerry Proctor, deputy to the commander of the Intelligence Center of Excellence and fort commander, has been trying to address since around 2001, when he found that the tenants on post had between 400 and 600 empty positions that they could not fill. That effort continues today with an emphasis on growing qualified applicants in the local area.

"Our education output is our number one national security issue," Proctor said, admitting that the national debt may be tied for number one right now. "We get it from an aspect of how important STEM is for what we do here, what we do in the state and what we do nationally and the good that we can provide in the world."

Cochise College needs to be a focal point for addressing the need for a STEM workforce, President J.D. Rottweiler said. The community college serves as a lynchpin in the middle of the pipeline, providing a link between K-12 schools and universities or even directly to employers.

Much of Science Foundation Arizona's local investment, which was outlined later, goes to programs at Cochise College.

As for the STEM opportu-

nities at University of Arizona Sierra Vista, dean Jim Shockey said there is little available right now, but the campus is working on potentially leasing lab space from Cochise College to get its toe in the door. Shockey said he thinks they are also on the verge of being able to build different kinds of models to expand programs available at the main campus down to Sierra Vista.

After three years in the area, Shockey is impressed with the local resources that can be brought to the table.

"I cannot imagine anywhere else pulling together a group of people like is in the room now," Shockey said.

A model for the state

America needs to develop an ecosystem formed of K-12 schools, colleges, universities and industry-partners that engages students in STEM areas early-on and gives them the pathway to become future scientists and engineers, explained Leo Fine, Science Foundation Arizona's scientific program officer.

There was evidence of such an effort in the room.

"What you're doing in Sierra Vista, with STEM, is a microcosm of what is important for Arizona, which, in turn, is a statement about what is important nationally and globally," Fine said.

Science Foundation Arizona was established in 2006 to be a catalyst that would create the pipelines needed to develop a home-grown workforce ready to fill technical job openings, said Beth Broome, a consultant for the foundation. Since then, the foundation has invested about \$38 million across Arizona and continues to develop new ways to accomplish its mission.

It's currently rolling out a STEM mentoring program by partnering with businesses and colleges to bring people with real world experience into the K-12 classroom, she said. They hope to have



PHOTOS BY MARK LEVY • HERALD/REVIEW

ABOVE: Brian Ten Eyck, left, director of research and development at the University of Arizona, speaks with Northrup Grumman's corporate lead executive for Fort Huachuca, Steve Pedigo, prior to a presentation by Science Foundation Arizona at Northrup Grumman's office in Sierra Vista on Thursday.



LEFT: J.D. Rottweiler, left, president of Cochise College, chats with Jerry Proctor, who is the deputy to the Intelligence Center commander on Fort Huachuca, at Thursday's presentation.

the program in most Arizona counties within a year.

Locally, with the help of National Science Foundation grant money, the foundation invested \$938,000 in STEM outreach programs at Cochise College from 2009 to 2012 and \$436,000 in a more recent Engineering Pathway Partnership Program involving the college, said Caroline Vaningen-Dunn, program manager for the STEM Pathways program. The foundation has helped fund STEM summer camps at the college, which are ongoing, and a STEM

academy, which help get younger students excited in STEM areas.

It is currently funding an internship program started in the summer that has already led to eight student from Cochise College being hired locally in technical fields, Vaningen-Dunn said. She touched on a variety of other ways the college connects the pathway including its Running Start Program, the annual Math and Science Experience, and biannual engineering night.

The beauty of the foundation's investment at the col-

lege is that much of what it had funded is now being incorporated into the ongoing operational budget of the college, she said.

A lot of what is going at the college presents opportunities for local industry-partners to contribute and more partners are needed, Vaningen-Dunn said. It's all part of the STEM Pathway model, which the foundation thinks is worth replicating and scaling for other communities.

"I'm working to make that happen across the state of Arizona," she said.