

# SMART Showcase School Profile

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## Soaring Toward STEM Success with the Engineering and Aerospace Sciences Academy

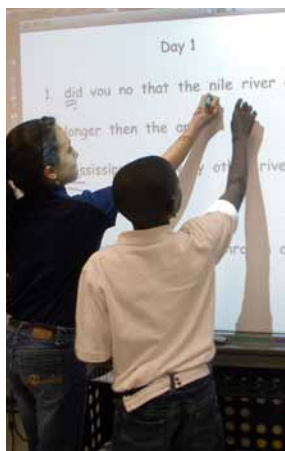
By **Wendy McMahon**

From their science lab at the [McMinnville High School](#) Engineering and Aerospace Sciences Academy (EASA), students look out to a real North American X-15 rocket-powered spacecraft. Not a poster of an X-15, not a replica – a real 14,600 lb. (6,620 kg) aircraft.

The X-15 is one of the many pieces of air- and spacecraft on display at the [Evergreen Aviation & Space Museum](#) in McMinnville, Oregon, which houses six classrooms for the EASA program. Students in the program attend EASA classes for part of the week at the museum and take their elective classes at McMinnville High School.

Program organizers believe that providing the 96 EASA students with easy access to real-life engineering feats such as the X-15, to instruction from teachers who are experienced engineers and to technology products like the program's five [SMART Board™ interactive whiteboards](#) will help prepare students for success in science, technology, engineering and math (STEM) careers.

"The goal is that these students will really get an engineering focus or a pathway that will set them apart and lead them on to that kind of a career track," explains Steve Denney, Instructional Technology Coordinator for the McMinnville School District. "Because it's so specialized, they get college credit for some of the classes, so they're really getting a step-up by participating in this program."



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**Michael Roberson**

Math and Physics Teacher  
EASA Program  
McMinnville, Oregon

### Immersing students in STEM subjects

The approach in the EASA program is to make teaching and learning integrated and hands-on. In their projects class, students work on real-life projects, including planning new roads and constructing new computer programs. The knowledge they need to complete these projects comes from classes such as "Chemistry for Engineers," "Engineering Orientation" and "Graphics/3D Modeling." History classes focus on the history of inventing and English classes on technical writing – all resulting in the students' total immersion in a STEM learning environment.

Michael Roberson, a math and physics teacher in the EASA program, says the SMART Board interactive whiteboards and [SMART Notebook™ collaborative learning software](#) are a constant in the program's classes, used daily by teachers and students.

"They're just an integral part of the instruction," explains Roberson. "It helps tremendously that our students can make a visual connection and those connections can be modified on the fly. If you're in the middle of something and it's not making sense, you can change it there on the interactive whiteboard or you can move to the Internet and pick up a new source or find related articles."

Roberson's classes use the SMART Board interactive whiteboard extensively when conducting physics experiments. He connects his Vernier LabQuest™ equipment to the interactive whiteboard and students use their fingers to manipulate data directly on the SMART Board interactive whiteboard. Students also use Microsoft® Excel® software with the interactive whiteboard, manipulating data and graphs while solving problems.



If you would like to visit McMinnville High School to talk with educators about their success and see firsthand how they're putting SMART products to work, visit the [SMART Showcase School](#) section of our education website. From this page, you can also find a Showcase School or District in your area.

### Supporting independent learning

Aside from using the SMART Board interactive whiteboard and SMART Notebook software for their lessons and experiments, students also use SMART products to create and deliver presentations about their current projects.

Students in the EASA program do a lot of independent learning, choosing the topics they'd like to research, exploring projects individually and as teams, and gathering research. Roberson explains that using the SMART Notebook (SE) Student Edition software bracelets to store project research and presentations has been great for his students, because it allows them to access their work anywhere, including opening it on any SMART Board interactive whiteboard to discuss work with the class or get direction from teachers.

### Effectively communicating concepts

Dr. Owen Griffiths, an engineering teacher, has found that even one of the most basic functions of the SMART Board interactive whiteboard – taking notes – is an extremely effective tool for his classes. Griffiths, who worked as an engineer, staff scientist and engineering manager before joining the EASA program, uses the interactive whiteboard to capture, save and edit all of his class notes and lesson plans. He's found that he can create specific lesson plans for each class and feels that the SMART Board interactive whiteboard fits well with the EASA program's mandate.

"We want to connect with regular students. Effectively, more of the students that we want to recruit into the program over the next several years are going to be regular kids, and the challenge is always to figure out better ways of effectively communicating concepts and information to them," says Griffiths. He believes this goal can be achieved with high-quality instructors in the EASA program and the use of effective resources to support them – resources such as the SMART Board interactive whiteboard. **EC**

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