

MSU, AAUW partnership helps girls reach for the stars

"All adventures, especially into new territory, are scary."

Sally Ride,
1st American woman
in space

After the success of the inaugural SpaceTrek in 2012, the partnership of Morehead State University and the American Association of University Women (AAUW) was eager to once again give high school junior and senior girls an educational experience unlike any other. SpaceTrek is an intensive one-week math and space science workshop, allowing the high school girls the opportunity to explore math, science and engineering concepts.

This year's SpaceTrek workshop took place July 13-20, 2013 at Morehead State University's Space Science Center. Twenty-one girls from several high schools across Kentucky and West Virginia and were selected by a competitive process by the AAUW management team. Ten of the twenty-one girls that were selected to participate in the SpaceTrek workshop are students at Rowan County Senior High School. They are, in alphabetical order: Kristen Ammons, Taylor Cash, Katie Cooper, Kendra Holbrook, Emily Moore, Bethany Pace, Sarah Purdy, Danielle Robinson, Elizabeth Stone and Kearston Wayman. The other SpaceTrek students were Allison Adams, Sydnee Bradley, Milan Eldridge, Kennedy Haught, Maggie Smith, and Jenna White were from places such as Frankfort, Lawrenceburg, Louisville, Mt. Olivet, Kentucky and Kenova, West Virginia.

"Our purpose with SpaceTrek was to empower young women and encourage them to follow their dreams."

Jennifer Carter



Kearston Wayman, right, and Kendra Holbrook concentrated on soldering components of their mini-robots in the Space Science Center lab.

Over the years, space science has been a male-dominated field, a fact that has troubled RCSHS astronomy teacher Jennifer Carter and her fellow teacher, Lana Swartz, who teaches physics at Menifee County High School. The idea to create a space science workshop for girls arose when AAUW members Kim Boggs and Dee Werline received information about a similar workshop in California called TechTrek. Joining with other Kentucky AAUW members, including Michele McNeill, fundraising efforts began to help bring to life the first SpaceTrek workshop.

Even with the success of the first SpaceTrek camp, both Kim Boggs and Michele McNeill knew that fundraising would be more important than ever, due to the number of girls that showed an interest in participating in the unique space science workshop. Funding for SpaceTrek2013 came from an

AAUW Community Action Grant, NASA Kentucky, Morehead State University's Office of Research and Sponsored Programs, and the MSU Foundation Office of Advancement. AAUW Kentucky along with Ashland, Bluegrass Central and Louisville branches of AAUW and Ashland Community and Technical College provided vital support to the success of SpaceTrek.

Once the funding had been established, high school teachers Jennifer Carter and Lana Swartz met with Kim Boggs, who served as camp

director, and Michele McNeill, the program director, to establish the agenda and speakers for the camp.

As the programming for the 2013 camp was being planned, Jennifer Carter met Helen Lurie, a communication systems engineer with Planet Labs, Inc. (San Francisco.) Morehead State University had been contracted by Planet Labs, Inc. to track the company's two satellites using the university's 21-meter tracking antenna and radio telescope. Ms. Lurie was at the Space Science Center troubleshooting communication with the company's satellites.

"This was a young woman working in a field that is dominated by men," said Jennifer Carter. "As Helen and I began talking, I told her about SpaceTrek and the

(photos by Darlene Snow)

reason behind the camp. When I asked her if she would be interested in coming back to Morehead for a day to speak with girls, she stunned me when she said that she wanted to come for the entire week and actually work with the girls."

Being able to meet and work with a woman, an electrical engineer working in a male-dominated science field, provided an opportunity for the twenty-one girls



Helen Lurie

at SpaceTrek to learn and be inspired by Ms. Lurie's experiences. She was also able to assist both Jennifer Carter and Lana Swartz, giving them lessons that will benefit their future students.

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Zoa Reynolds, center, an alumna of SpaceTrek 2012, posed with camp director Kim Boggs, left, and program director Michele McNeill. Zoa came back to speak with some of this year's camp participants.

The learning was not one-sided, though. "Helen was amazed with SpaceTrek and what the girls were able to do at this workshop. It was wonderful to see how well Helen and the girls worked together."

Activities and objectives during the weeklong workshop included stargazing and observing orbiting satellites, learning about the physics of the space environment, developing skills in combining technology with various types of engineering, building electronic systems and fabricating miniature robots that the girls took great delight in racing in the lobby of the Space Science Center. Mr. Jeff Kruth and Mr. Bob Kroll, who work with MSU's Space Science Center, were on hand to give the girls lessons in soldering and building the components used in the SpaceTrek workshop. Several alumni of SpaceTrek2012, including Emma Marriner, Zoa Reynolds,

Kristen Royse and Allison Terrell were on hand to give a helping hand to this year's SpaceTrek participants.

The culminating activity of SpaceTrek was going to the roof of the Space Science Center to launch student-built mini-satellites using a high-altitude helium-filled balloon. Students were able to monitor and record temperature increases and decreases using sound emitted by the miniature

After a trip to the Cave Run Lake Spillway, many of the SpaceTrek participants gathered for a group photo.



RCSHS astronomy teacher Jennifer Carter, right, and Lana Swartz, Menifee Co. High School physics teacher, both served as instructors for SpaceTrek.

devices. Before launching the balloons, the SpaceTrek participants learned the relationship between space science, weather and flight,

thanks to guest speakers, including RCSHS aviation instructor and pilot Dennis Bellinger and Ed Ray from the National Weather Service (Jackson, KY office.)

ment and the importance of not giving up their power in a relationship.]

As the workshop came to a close, the twenty-one students had to put together presentations that detailed the science of SpaceTrek and what they had learned. For many students, it was the first time to give a scientific presentation, putting them on edge but also reinforcing all the skills that they had learned at SpaceTrek2013. While, for many, there was frustration both in the labs and during their presentations, there was also the sense of accomplishment and pride at the conclusion of SpaceTrek.

Understanding electricity was one of the many labs that Bethany Pace and the other twenty young women took part in during SpaceTrek 2013.



But the learning did not only take place in the labs at the Space Science Center. As the students took part in activities such as Zumba, yoga, swimming, or observing the stars through telescopes brought to the spillway at Cave Run Lake, the girls learned the importance of supporting one another and becoming a team. Nikki Bryant, a female boxer from Ashland, Kentucky, spoke to the girls about empower-

"Our purpose with SpaceTrek was to empower young women and encourage them to follow their dreams. These twenty-one women are following in the footsteps on a trail blazed by people like Helen Lurie and the late Sally Ride," said Jennifer Carter. "I think SpaceTrek taught them that their goals are obtainable; all they need to do is take that first step on the trail."