For more information, contact:
Greater Cincinnati STEM Collaborative

Mary Adams
adams2m2@ucmail.uc.edu
513-767-8029

Melisse May
may.melisse@gmail.com
513-800-7999

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Overcoming myths, fears and messages opens girls to growing STEM fields

The Girl Scouts *Imagine STEM* (science, technology, engineering and math) curriculum are nudging over 50 seventh to ninth-grade girls at Woodward Technical High School toward high-paying careers that fill a growing regional job vacancy.

According to the Greater Cincinnati STEM Collaborative (GCSC), 30,000 regional jobs in healthcare, advanced manufacturing and engineering go unfilled each year. The non-profit GCSC creates hands-on learning for students to fuel the local STEM pipeline by gathering education, community and business partners.

Two years ago, the collaborative convened a meeting to discuss the lack of women and girls entering STEM careers that could fill the gap. Gathering the girls was a no-brainer for Mary Adams, a retired P&G executive. "Who wakes up in the morning thinking about girls, then thinks about them all day long?" she asks. "The Girl Scouts; they were a pretty obvious partner."

The Girl Scouts offered national research and a program focused on "the commonalities of girls who *like* the STEM experience," explains Chris Salley Davis, director of program and partnerships for the Girls Scouts of Western Ohio. "Instead of focusing on why girls don't participate in STEM," she says, "the Girl Scout Research Institute took a different angle. [Researchers] found that girls who have role models, hands-on experiences and can actually see themselves in careers – that it's real life for them – are more likely to be interested in STEM."

Additionally, the scouts want to reach high-school girls, who tend to opt out of scouting, "with a topic they really need," Davis says.

The organization, also partnering with the GCSC, hosts STEM: Girls Discover! April 9 at the Cincinnati Museum Center. Free and open to all girls, the STEM partner fair connects visitors with hands-on stations, information on careers, how to pursue and support those careers. Junior scouts in grades four and five are eligible for a $35 overnight that includes the fair, robotic and engineering workshops and a private Omnimax screening. For more information, visit: *www.gswo.org/en/events-repository/2016/stem_girls_discover_.html*

Launched in February, the eight-week Girls in STEM program is being tweaked, according to Davis. "It's exciting that we're learning right alongside the girls." A fine-arts major who enjoys problem solving, she discloses, "I'm one of the kids missed by STEM. What I like about art and working with the Girl Scouts is problem solving, critical to STEM." As a result, she's working to ensure this generation of local girls isn't missed.

The success of GCSC STEM Bicycle Clubs at Woodward made the school another clear partner choice.

Midway through the current program, Woodward ninth graders screwed up their faces or cheered out loud as they sampled the vinaigrettes they

concocted in a food-science unit emphasizing emulsification. The twenty-two girls sopped up their dressing with bread in victory or defeat. Some kept refining and those with good recipes recorded them. They rated emulsification, separation, flavor and aroma.

"The key is whipping and not too much salt," Jessica Link, who co-leads the program at Woodward for the Girl Scouts, advises the girls. "And don't ask me to taste yours if it has dill; I don't like dill." Link says Girl in STEM "is a significant opportunity that reverses the (scout) stereotype held by high schoolers.

Woodward Resource Coordinator Casey Fisher said the success of last year's STEM Bicycle Club, which drew more boys, sparked her interest in something just for girls. "I want them to see they can do more than hair and make-up; that they are capable of doing these jobs. Sometimes they're intimated by the word STEM and we want them to shed their fear."

As a technical-career high school, Woodward offers a variety of options in health technology, advanced manufacturing and building technology, including certification, paid internships and work readiness upon graduation. There's also the college path. Girls in STEM is another choice that, so far, seems to excite participants.

As she worked to whip up her vinaigrette, Ceaizah Miller has begun thinking seriously about a STEM career. "I didn't know all of the stuff you can do." Next time, she and her classmates will extract DNA from a banana.

Stumbling blocks for girls entering STEM fields are a general anxiety about math, believing STEM is only engineering and not a *helping* profession. The Woodward program aims to shatter those illusions.

Former P&G engineer Melisse May, part of the GCSC Leadership Circle and a STEM advocate, has been working locally with girls and their STEM beliefs. "Our lead message is you don't have to change who you are to help change the world. Girl Scout research says girls want to help, but are not aware they can with STEM careers. We don't want them to block out STEM's rich texture or rainbow of opportunities."

As for math, it's a myth that there's a math brain. "Math dysfunction is rarer than reading dysfunction, according to May. "Your brain actually grows practicing math. Kids get off track when they don't take algebra in eighth grade; then they're not prepared if they decide STEM fits down the road. We want to help girls see the possibilities and reach what they call their 'swaggy' potential."

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