

[MUSIC PLAYING]

NARRATOR: Girls Who Build is an outreach effort focused on getting high school girls excited about science and engineering. We hold hands on workshops where girls learn from industry experts and experiment with technologies, like wearable electronics and robotics.

For our latest workshop, 40 girls came to the MIT Lincoln Laboratory Beaver Work Center to learn all about cameras.

We wanted to show the girls how optics, sensors, and image processing combine to make apps they use everyday, like Instagram, work.

GIRL: I got to see how filters work and how they're made and how I can make them too.

NARRATOR: The girl tore apart old digital and film cameras to see how they're made. Then they built their own cameras using a Raspberry Pi computer and camera module.

GIRL 2: It was just cool how we had to make the camera and put the different parts together. It was made everything a lot more clear about how normal cameras work.

NARRATOR: The girls heard from speakers who talked about how cameras are used in fields as diverse as searching for exoplanets, underwater salvage, improving cancer treatment, and 3D tomography.

GIRL 3: My favorite part of the day was listening to all the key note speakers because they were all so passionate about what their field was. But it all connected to one core idea of the camera technology.

GIRL 4: Whoa.

GIRL 5: I mean, you can move all the way around here though.

GIRL 4: That's so cool.

KRISTEN RAILEY: I started Girls Who Build because I am a female engineer who didn't grow up fixing cars with my dad. I had no previous exposure to power tools, circuits, or programming before college.

It's my vision that when girls enter college, they have the same hands on engineering background as their peers. I want them to realize they can use power tools, code, and solder too. The issue isn't an inability or intelligence, but just a lack of exposure to these things.

I would like girls to discover the amazing power of engineering, even before they apply to college.

GIRL: I was definitely thinking about computer science as a profession so I thought this was a super cool way to get more experience out of that before I went off to college.