

# SciTech Days at the Carnegie Science Center

Every March and November, the Carnegie Science Center (CSC) hosts a four-day STEM-fest for middle and high schoolers. SciTech Days is an opportunity for lucky students to spend a morning at CSC to participate in workshops and programs that feature the growth areas of Pittsburgh, like biotech, nanotechnology, IT, robotics and environmental technology.

When I visited in March, CSC buzzed with energy and excitement as kids, teachers and chaperones swarmed around tables and interactive exhibits from leading STEM companies and higher education organizations. The real fun started when CSC employee, Kaitlyn Zurcher, escorted me into a long quiet hallway with classrooms on either side. Inside each room, volunteer professors, engineers and other professionals joined CSC educators to present workshops on various STEM topics. Signs posted outside each door indicated subjects like:

- Roots, Shoots and Solutes
- OUTBREAK! Biotech Workshop
- Ecosystems, Toxins and Your Health
- CSI Workshop – Art & Science of the Heist

"Which one do you want to try?" Kaitlyn asked me. One? They all sounded interesting. Here were my favorites:



## What's the buzz: Bees and the ecosystem



A small group of teens are studying dozens of deceased bee bodies stuck with pins in a shadowbox display. Some of these creatures, which come from all over the world, don't even look like bees to me. I thought those big, bright blue insects were horseflies and I couldn't believe those tiny gnats were actually bees.

"When I was in the third grade, I learned that worker bees are all female," one boy says.

"That's right," replies the instructor, an enthusiastic woman wearing a red CSC shirt.

She explains that there are at least 20,000 species of bees and those worker girl bees produce only a quarter teaspoon of honey during their short lifespans. It surprises me that it takes a whopping 40

liters of wax to build a hive.

That's a lot of bees.

The drones, all boys, serve only one purpose in their lives and that is to impregnate a queen, but not in their own colony.

"That's their mother," the instructor delicately points out.

Unfortunately, the drones that are lucky enough to "visit" a neighboring queen die after mating.

Poor guys.

## Resistance fighting disease with nanotech

"What are you doing?" I whisper to four girls who are huddled around a computer playing a game.

"We're trying to figure out a way to prevent people from getting infected with MRSA," one whispers back.

The object of the game is to select a combination of actions, like Disinfect, Basic Medical Care or Hygiene Training, to fight the infection. Based on their choices, the running, onscreen tally of how many people are "infected" with MRSA goes up or down.

It sounds easy, but no matter what course of action the girls select, the number of sick people increases. At first, the tally showed five sick people, but it rose to nine infected souls by the time they hit the red Try Again? button for the umpteenth time.

"Are you getting frustrated?" the instructor asks the group.

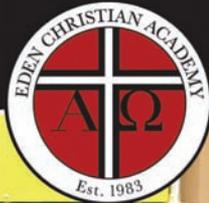
"Yes!" respond fourteen good sports.

The instructor describes how scientists combat diseases using nanomaterials, which are tiny particles that can only be seen by a super powerful microscope.



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Now these kids know that if Nano-technology was one of their options, they wouldn't have had to press that Try Again? button so many times.

### Augmented reality virtual reality lab

This has to be the most popular workshop because every seat is taken. At the front of the room, a couple of kids wear cumbersome headsets and wave their arms in response to things nobody else can see. The rest of the kids, seated around about a dozen tables, laugh and talk as they fiddle with iPads and cardboard boxes with programmed iPhones inside.



"Hey, I'm in a business meeting," a boy exclaims as he holds a box up to his face like an old fashioned View Master.

"I know, right, bro?" another boy responds.

A nice girl lets me look in her box to watch a video of a white-robed instructor teaching a group of kids seated in a circle and I chat with a volunteer, who explains how virtual reality can be integrated into the classroom. It is so noisy in the room I have a hard time hearing her explanation.

No matter. The volume and enthusiasm in every room prove that SciTech Days is a great field trip for kids. ■

\* Photo credit BeckyThurner

After visiting SciTech Days, writer Ann K. Howley was excited to share interesting bee facts with her husband. "Did you know the stinger is part of a bee's female reproductive system?" she asked. "Ouch," he said.

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