

Roll over, Euclid: there's a 'new' math on Earth

Pi and Ice Cream lecture dishes out bite-sized math tidbits with a smile

ALLISON GERFIN
Copy Editor

Non-Euclidean geometry sounded a bit dry. I didn't even know there was such a species. But the first thing I discovered at the Pi and Ice Cream lecture on April 11 is students learn what is called Euclidean geometry—the stuff of high school and undergraduate math classes. This is not the whole world of geometry though.

Dr. Karen Marrongelle, a professor at Portland State University with a Ph.D. in Mathematics Education, unceasingly smiled with the love of math during her lunchtime lecture in Pauling on a rainy Thursday. Her enthusiasm was charming and sunny. How could I not want to learn about non-Euclidean Geometry?

The gist was this: Euclid came up with his "Elements of Geometry" in the 3rd century B.C. This reflected how the ancient Greeks viewed their world, and we have since been following his teachings to figure all flat-plane and solid objects. Like, if I walk in a straight line from Barlow to the cafeteria, and my ex-boyfriend is going from the gym to Pauling, will we intersect? If so, where? And how far out of his way will he go to avoid me?

In the late 17th century A.D.,

mathematicians finally started questioning Euclid's theorems, and a couple of famous math guys figured out non-Euclidean, or spherical, geometry for a little something Euclid missed—the surface of a sphere, such as the Earth. Then we'll fast forward to Albert

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Einstein: He couldn't have developed his theory of relativity without using spherical geometry, according to Marrongelle.

And it's not just the physicists who love this stuff. Engineers and manufacturers rely on spherical geometry to design products and translate flat blueprints into round widgets—from hair dryers to nuclear reactors. It's also used to find efficient flight paths for airplanes or anything else following the Earth's curvature.

Mark Yannotta, a math instructor, added a point about spherical

geometry that throws out conventional wisdom: "Sometimes the closest distance between two points is not a straight line." Roundness changes everything. While I might not need this information on a day-to-day basis, it's good to have this long-held misconception corrected.

Another mind-blower was that the sum of the three angles in a triangle doesn't always add up to 180 degrees—something I would have died believing as mathematical gospel if I hadn't attended. If you go from Portland to New York then to Cancun, you not only get jet lag but rack up more than the usual 180 in those turns. (I would tell you how many, but I haven't quite figured it out yet.) I needed the ice cream after these shocks.

Yannotta obtained a grant to start the Pi and Ice Cream series to help students connect mathematics to other studies and to life; previous speakers have discussed the history of math and the role of math in art. The Mathematics Department has picked up sponsoring the series, and next year there will be two presentations.

It was interesting and actually mostly understandable (my eyes glazed only briefly, I swear). Between Marrongelle's enthusiasm and scoops of ice cream, it wasn't nearly as dry as I expected.



About 40 students and faculty watched Dr. Karen Marrongelle of PSU use her Vis-a-Vis on a globe to clearly illustrate the esoteric business of non-Euclidean, or spherical, geometry. The nice doc explained how this math differs from what we usually learn.

Micro-truck designer breaks competitor Carnegie Mellon's 7 year winning streak

SHADRA BEESLEY
Staff Writer

For seven years, Carnegie Mellon, a Pennsylvania robotics college, held first place in the Society of Automotive Engineers Micro-Truck Baja Design competition. That was before Clackamas student Mark Neubauer showed up.

In October 2000, the SAE held its annual Truck and Bus Show in Portland. Neubauer heard about the Micro-Truck design competition from a friend, and decided at the last minute to enter. When he left with the first place title and \$700 prize, he decided he'd definitely be back in 2001.

Micro-trucks are remote control cars, redesigned to be self-mobile. The creators of these machines equip the trucks with motors, batteries and other self-contained controls. Competitors are required to conform to SAE specifications, but they are given a lot of freedom. Entries are judged mainly on performance, presentation and design. Although the contest does include a race, speed has little affect on the overall score.

Neubauer explained that designing these small machines takes a lot of work and planning.

"You really have to think out your vehicles. You can't just throw something together and throw it out on a track," he said. Neubauer has been studying electrical engineering for two years. His skills

and love for cars have helped him build vehicles that repeatedly outperform his opponents.

The 2001 SAE competition was held Nov. 12-14, and Neubauer traveled to Chicago to defend his title. He was very excited to visit a place almost 1,500 miles away. It was his first trip outside the Pacific time zone, and he was thrilled to see new sights. He also became the Baja Design champion for the second year in a row, once again preventing Carnegie Mellon from reclaiming the title.

Carnegie Mellon and Clackamas were the only two schools that entered the competition last year. Neubauer was happy to secure his first-place position, but he was disappointed that more schools didn't

compete. The fact that this 14-year-old tradition may not be a future concern Neubauer. He is encouraging the SAE to do more advertising and is looking for more Clackamas students who want to compete.

Neubauer's main goal now is to form a team of students to collaborate on a micro-truck design for the competition this fall, which will be held in Detroit at the Cobo Center. Neubauer is eager to share this opportunity to build, design, and travel with other students who are studying engineering or manufacturing. Any students who would like to be a part of the team can e-mail Mark Neubauer at neubee12@yahoo.com.



PHOTO COURTESY OF MARK NEUBAUER

Carnegie Mellon students work on their vehicles at the 2001 SAE competition Nov. 12-14 in Chicago.

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