

## STUDENT LIFE

# Getting to the Root of STEM Education

Undergraduates reach out to young students to boost science learning.

Interview by Kathleen McGarvey

George Iwaoka '16, a biology and economics major, and Jenny Yoon '16, a microbiology major, established the student organization STEM Initiative—STEM is an acronym for science, technology, engineering, and math—to connect young students with undergraduates who are passionate about math and science. Now in its second year, the group has started an after-school science program at Adlai E. Stevenson School No. 29, a Rochester city school, and a Family Science Day.

## How did you develop the idea for the STEM Initiative?

We both went to the same vocational magnet high school in Hackensack, New Jersey, attending its Academy of Medical Science and Technology. We were encouraged to seek STEM education through coursework and research from a very early age, and we were fortunate enough to freely pursue higher-level education in the sciences. After coming to Rochester, we immediately realized that STEM education was lacking just a few steps away from campus. We wanted to create opportunities for undergraduates to volunteer for science tutoring and workshops. So we decided to act on that.

## How does it work?

We have more than 300 members on our mailing list, and as of November, 68 students had attended at least one volunteer session at School 29. At Family Science Day last April, we had 21 on- and off-campus organizations host STEM activities at booths, while more than 300 family members from the Rochester community attended to enjoy fun and educational hands-on science.

STEM Initiative doesn't offer incentives for people to volunteer. We want volunteers to be passion-driven. As corny as it may sound, we think many of our volunteers keep volunteering with us because they see how the kids react when they see cool chemical reactions or build exciting

things. You can see them become more and more interested as we have more workshops with them.

## What made science exciting and accessible for you, and how are you trying to duplicate that for students at School 29?

Our high school put a lot of money into funding a research program—we housed

local community asking us to collaborate with them or volunteer at their events.

Finding a good balance between the quality of the lessons and the resources we provide has been a challenge. We need to provide supplies, and we've been running on a minimum amount of money. We hope in the future to have a constant budget to create more complex lessons that will leave



**HANDS ON:** Students explore density and liquids as STEM Initiative volunteers Matthew Mullen '15 and Vivy Ngo '18 look on.

two biosafety-level labs, two electron microscopes, and a lot of other instruments that you wouldn't normally find in a public high school. In an environment where we were supported in researching any topic, science became something more enjoyable than memorizing facts in a textbook. When you're the one controlling test reactions and building things, you start to understand why things might work. We want the kids at School 29 to feel the same, so we strive to include a hands-on component for every lesson we do with them.

## What has been the biggest challenge, and the biggest surprise?

The biggest surprise by far has been the support and interest we've been getting. We're a very new organization, but we have people from both the University and the

a lasting impression on our students.

We've realized how receptive and attentive young students can be if encouraged with a supportive attitude. In the beginning, students had a difficult time participating or asking questions—but by the end of the semester, they'd interrupt lessons with questions so they could engage and learn, volunteer for demonstrations, and even request specific lessons.

## What are your future plans?

Within the next year, we're hoping to expand to other campuses, starting with local universities. We're also thinking about registering as a not-for-profit organization, which would open the doors to collaborations, grants, and so on. But we want to establish some traction before we take this big step. 