Education

Ant research takes students from the classroom to the rainforest

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By Kristen MIller

Group of Wayzata High students experience real-life science in Costa Rica

Students from Wayzata High School traveled in June to Costa Rica to research leaf cutter ants. Front: Mari Leland, Sandrine Sugi,Neha Gunapati, Priya George, Taryn Stanley, Jenna Larson; Back: Stuart Leland, Asha Hurreh, a lab partner from Texas, Cathy Want, Hayden Thome and Molly Carroll. (Submitted photos)

It isn't too often when high school students can take their experiments from the classroom into the real world, as 12 Wayzata High School biology students did this summer as part of the Costa Rica Science Research Experience.

For the fifth year, Wayzata High School Biology teacher Toni Leland escorted students to South America to study leaf cutter ants in the Costa Rican rainforest.
While the experience is sanctioned by the school district, the trip is through Seeds of Change, a Minnesota-based non-profit with a mission of enhancing bioscience education for high school students and creating more science-related careers.

As part of the research experience, students spend seven days do real-life science on leaf cutter ants, something the students only studied in textbooks and videos in class.

In Costa Rica, students had the opportunity to dig their own colony of ants and study their bacteria, behavior, and food resources – all under the supervision of Adrian Pinto of the University of Costa Rica.
While there, students stayed on a cacao farm, growing what will become chocolate, in the small village of Colonia La Libertad, where all of its residents are self-sufficient.

Because this is college-level work, students also have an opportunity to earn three college credits
Junior Molly Carroll was first introduced to the program when her sister Bridget participated in 2014. Seeing that the program helped her sister determine a career path in biology, Carroll also wanted the experience as she looks toward a career in food chemistry.

Carroll really liked the scientific process that the Costa Rica Experience allowed rather than the canned science she had only known inside the classroom. Canned science is when teachers provide a set of instructions, which then lead to a specific or correct answer. The motivation also revolves around a grade.

In the real-world experiment, students have more control of what they want to do and learn. "I really like the scientific process," Carroll said, which is something most high school students don't get the chance to experience.

Carroll plans to enter her Costa Rican research project into the Minnesota Science Fair in February at the University of Minnesota.

Sandrine Sugi and Jenna Larson work on their experiment.

Junior Mari Leland also enjoyed the freedom she found in doing real-life experiments with the ant colony. She also enjoyed working as a team and "making mistakes together and learning from it."
"It's a big learning experience," Leland said. Not only do students learn about Costa Rica, ants,

and biodiversity, but they learn how to really work in a team, she said.

Leland was surprised by how motivated she was to wake up at 5 a.m. to work on the scientific process. At the end of the 10 days, it was hard for her to leave, she noted.

Senior Priya George had considered this trip for two years before convincing her parents just how beneficial the international trip would be.
"We learned so much about biodiversity and the rainforest … and finding applicability to real life," George said.
Being able to apply science somewhere other than the classroom was the most beneficial to her, along with being able to take a leadership role and having creative freedom.

It was also a great cultural experience. "I met so many wonderful people there," she said. "They were all really welcoming."
"I also learned that ants and bugs aren't as gross as they seem," George said. "After awhile, you just get used to them."

Sandrine Sugi and Jenna Larson work on their experiment.

The Costa Rican Science Research Experience is open to high school biology students as sophomores and juniors (exceptions have been made), on a first-come, first-serve basis with a good recommendation from a science teacher. The goal has been to have 16 students participate in the trip. Applications become available the second week of school outside Leland's room, A406. The cost is $3,500 ($200 more for college credit), and scholarships are available. Students can also raise money by selling Costa Rican coffee.

Students who participate in the Costa Rican Experience also have the opportunity for continued studies offered by Seeds of Change, including the study of sea turtle migration and bioinformatics.

Contact Kristen Miller at Kristen.Miller@ecm-inc.com.

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