



Educator Case Study

AN INVENTEAM STUDENT INSPIRED TO TEACH SCIENCE AND LEAD HER OWN INVENTEAM®

In 2011, Clara Mabour was a senior at Northeast High School in Oakland Park, Fla. An immigrant to the U.S. from Haiti at age 6, Mabour took her education very seriously. A simple question by her teacher, Randa Flinn, would change the trajectory of her life, ultimately catapulting her into the world of teaching STEM. Mrs. Flinn's question: Do you want to join my Lemelson-MIT InvenTeam?

Mabour joined Northeast High School's first Lemelson-MIT InvenTeam, which was awarded a \$10,000 grant in the 2011-2012 academic year to build a portable water filtration system for emergency relief after natural disasters. Clara, then a senior, was the team's leader. In the following year, Clara went off to college and two members of the InvenTeam still in high school presented their portable water filtration system at the 2013 White House Science Fair. They were honored when President Barack Obama offered to ride the bicycle that powered their invention.

The InvenTeam experience, introducing Mabour to real-world problem-solving, was so profound that she dug into STEM when she got to college. She went on to earn a bachelor's degree

in environmental sciences with a focus on water. Then, with the encouragement of Mrs. Flinn, she brought her talents back to her alma mater, Northeast High School. Mabour is now employed as a biology and global perspectives teacher. "I don't know that I would have stayed in the sciences as strongly as I did without the Lemelson-MIT InvenTeam experience," she says.

“ The InvenTeam experience introduced me to real-world problem solving and was so profound that I dug into STEM when I got to college. ”

Eager to share her love of invention with her students, Mabour applied for and received the Lemelson-MIT Excite Award in the summer of 2017 during her first year of teaching. As part of this honor, she attended EurekaFest on the MIT campus in Cambridge, Mass., where she participated in a professional development opportunity focused on invention education. In the fall, the team of high school students she assembled was awarded the \$10,000 InvenTeam grant, making Northeast High School a two-time InvenTeam grant winner. Northeast High School

is the only site in the Lemelson-MIT program's 15-year history with InvenTeams where a former InvenTeam student came back to apply for the grant as an educator, leading a team at their alma mater.

Mabour's 2018 InvenTeam tackled the challenge of disrupting the breeding of mosquitos to prevent the spread of fatal diseases such as Zika, malaria, and dengue fever. They invented a motorized agitator that keeps water moving so mosquito eggs have no way to thrive (check out the invention details inside [ASK magazine](#) for Cricket Media's special invention issue). The concept is so compelling that, after they presented at EurekaFest in June, the team applied to and was accepted by Microsoft's #MakeWhat'sNext patent program. The program promotes young female inventors and helps them with the lengthy and expensive patent process to protect their intellectual property.



Carrying on the legacy of invention that Mrs. Flinn began is important to Clara. Northeast High School "is producing students who are going to go out and be ready for their career before they enter college," she says, adding, "and that was sparked by the [InvenTeam] project and the Lemelson-MIT Program."

Mabour hopes she can be as inspirational to her students as Mrs. Flinn has been to her. She gives credit to Flinn for seeing something in her that she didn't see in herself, beyond high school, into college, and then as she started her career. "She was a phenomenal teacher, and still is. I'm just grateful for having her as an adviser. I would call her weekly from college and tell her that

I'm struggling. She would say, 'You'll be fine.'" Mabour even jokes that Mrs. Flinn brushed her off when she protested about teaching because she didn't think she liked children. "I guess she could see through my façade that I did like children, I just didn't know it," she says.

Today, Clara still visits Mrs. Flinn's office to ask for advice and bounce ideas back and forth. Mabour is thrilled to be able to champion the project-based learning, with an emphasis on soft skills, she learned from Flinn and the Lemelson-MIT InvenTeam program.

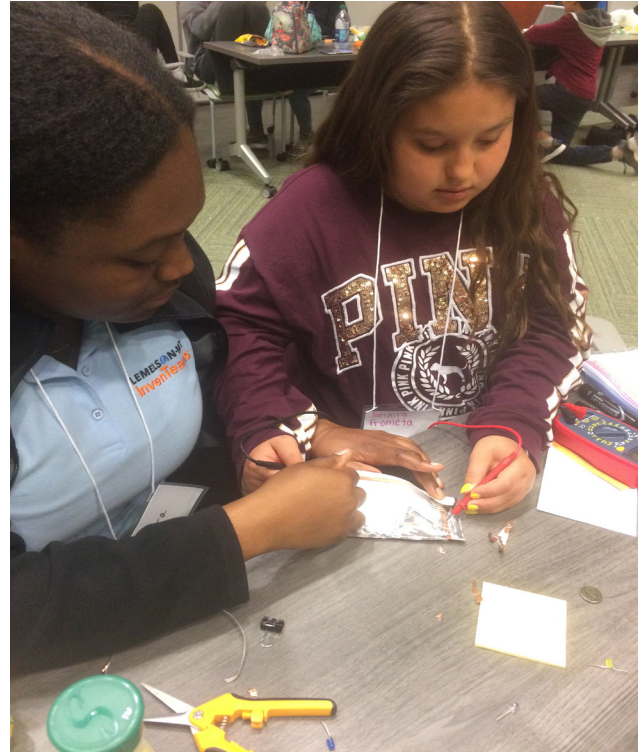
“ Carrying on the legacy of invention that Mrs. Flinn began is important to me. Northeast high School is producing students who are going to go out and be ready for their career before they enter college and that was sparked by the InvenTeam project and the Lemelson-MIT Program. ”

– Clara Mabour



She applauds Mrs. Flinn for being so detail-oriented as to emphasize the power of thank-you cards, saying that simple gesture bonded the community to their invention efforts. For her part, Flinn says Mabour inspires her by being so enthusiastic about teaching invention. "I'm so grateful that Clara came back to our school because I feel so good about this invention process and project-based learning being carried on," she says. She's also impressed that Mabour is engaging students in invention at a younger age. Mrs. Flinn's InvenTeam was comprised mostly of seniors, while Mabour's team included all grades, including freshmen. "What I am most excited about is getting three more years to help them develop their skills," Mabour says.

Mrs. Flinn and Ms. Mabour have high hopes for invention education continuing on and even expanding at Northeast High School as they both aim to attract more teachers to their cause. The secret to doing that, in addition to the passion they both exude, will be to show the confidence and interpersonal skills in addition to their technical skills that students gain from invention education. Mabour sums it up this way, "We have to show other teachers that your students are not only impacted academically but as a whole being."



ABOUT LEMELSON-MIT INVENTEAMS

Lemelson-MIT InvenTeams are teams of high school students, educators, and mentors that receive grants up to \$10,000 each to invent technological solutions to real-world problems. The InvenTeam initiative is administered by the Lemelson-MIT Program, a sponsored program under the School of Engineering at the Massachusetts Institute of Technology. The Lemelson-MIT Program is funded by The Lemelson Foundation. Learn more at lemelson.mit.edu

