

Faculty in the Field



MARIE-THÉRÈSE DE BELDER

■ (1) Farzana Gandhi presents her design to members of the community as part of a participatory workshop for feedback. The center diagram shows how modules can be linked together to create bigger structures. (2) The unit can be driven along its route using a bicycle. Visitors will be able to pedal the bike in place, serving two purposes: to generate power for lighting, sound, and the cart's devices and to promote exercise and wellness. (3) The cart's surface is painted with chalkboard paint, inviting visitors to document herbal remedies.

Three NYIT professors are using their know-how to help improve the lives of others—and shape the career paths of their students.

By Robin D. Schatz

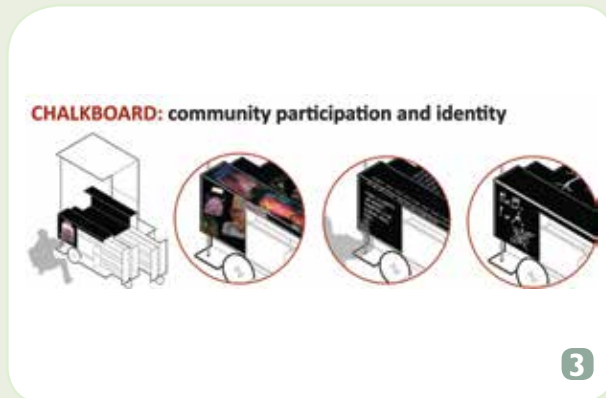
Wellness on the Move

Farzana Gandhi, assistant professor of architecture and principal of FG Design Studio, is well-known on campus for projects that make “small changes of large social significance.” In 2012, she was part of the NYIT team that patented a roofing system made of water bottles to provide emergency shelter in developing countries. Recently, she launched a student design competition to incorporate plastic water bottles into a combined bus shelter, recycling station, and information kiosk at NYIT’s Old Westbury campus.

Now, Gandhi is focusing on the New York City community with El Timbiriche, a mobile wellness unit that addresses health issues in Brooklyn. “You don’t have to use expensive, high-tech interventions to produce social change,” she says. “Often, smaller projects can make a big impact on the community.”

Through a competition sponsored by DesignNYC that paired architects with non-profits, Gandhi was chosen to work with El Puente, an organization serving Latino communities in south Williamsburg that promotes a holistic approach to health and wellness.

Her challenge was twofold: to design a cart that archives the tradition of “curanderismo,” an approach to healing that uses herbs and other natural remedies, and to disseminate those cures along with other health information throughout the community.



Many members of Brooklyn’s Latino community practice curanderismo. “A lot of this information is not documented; it’s simply passed down from one generation to the next,” Gandhi says. “El Puente charged me to make this tradition visible in the public realm.”

The community’s health problems are also pressing. The population faces high rates of obesity, diabetes, and asthma. According to El Puente, people in its service area lack primary care physicians and nearly a third of young adults are uninsured.

Gandhi needed to come up with a plan that addressed both problems. To help design the mobile unit and conceptualize how it would engage with the community, she hired two of her former architecture students, Daniel Horn (B.Arch. ’13) and Eiman Al Sakha (B.Arch. ’12), as research assistants.

El Timbiriche (which means “a small kiosk” or “shop” in Spanish) is about the size of a city hot dog stand and made of recycled perforated panels. A bicycle provides the means to move it. Community involvement was critical. “To me, it’s important to have a dialogue with the people using this unit,” Gandhi says. “It’s a way to empower them with a creative process that they can use to address future problems and in future arenas.”

The experience helped Horn shape his own career goals. “I’m really interested now in urban design and master planning,” he says. Horn is well on his way—he recently landed a job as a design specialist at Brooklyn-based Perez Architecture, helping to rebuild

homes affected by Hurricane Sandy.

El Puente hopes to deploy the first mobile wellness unit on the streets this summer. For Gandhi, the project has led to new opportunities, including a collaboration to develop a similar system in Africa. “I’ve always been very interested in how we can use our design skills to reach the larger masses,” she says. Based on her work, Gandhi is doing just that.

Read more at farzanagandhi.com.

Building Blocks

In the fall of 2012, NYIT engineering students faced off against one of their greatest challenges: a classroom full of third graders. The students were at P.S. 241, a science, technology, engineering, mathematics (STEM)-focused magnet school in Harlem, N.Y., as part of a 10-week service-learning class organized by Jim Martinez, Ph.D., assistant professor of instructional technology in the School of Education.

Martinez is passionate about developing “technology-rich,

Working with the elementary school’s teachers, the NYIT students integrated instructional technology with project-based learning. Everyone benefitted from the project. The elementary school children experienced what it takes to think like an engineer—one of the STEM fields they are being encouraged to pursue—while the NYIT students got real-world experience that was often eye-opening.

“Some of them were unaware of the issues of segregation these STEM magnet schools are designed to address. Some of them were unaware that using technology in schools was so difficult. And some were surprised that the teachers found their skills as emerging engineers so valuable,” Martinez says.

Raffael C. Rabelo was one of the students working with the children. He used the game Jenga to demonstrate the concept of stability to second graders. Rabelo even returned to the school on his own the following spring and used a 3-D modeling tool to show second and third graders how to design a variety of projects, such as zoo equipment and bridges.

THEODORE SAVONTE



■ The NYIT team of students at P.S. 241 was divided into three groups: (left) The classroom team worked directly with the children, teaching them engineering concepts through activities; (center) the technology team provided information technology support; (right) the documentary team produced a video chronicling the venture.

collaborative learning environments that employ group-focused teaching and learning.” A former elementary and middle school teacher, entrepreneur, and corporate systems integrator, he has taught numerous workshops that train STEM teachers to incorporate instructional technology into K-12 classrooms.

Many of the participants, however, aren’t always able to incorporate the methods and technology they’ve learned. “You don’t take a workshop and then suddenly think like a technology person,” says Martinez. He found a perfect way to address the problem: NYIT engineering students.

With the help of Amy Bravo, assistant dean of career services, Martinez launched the intervention at P.S. 241. He enlisted Richard Meyers, associate professor in the School of Engineering and Computer Sciences, to co-teach the class. It was so successful they offered it again the following year.

Everyone at the school was thrilled. “It was the perfect example of how to bring in engineering concepts and modeling tools in a way that was beyond the reach of the teacher,” Martinez says.

The service-learning project earned Martinez and Meyers an NYIT presidential award for engaged teaching and learning in 2013. Next on Martinez’s agenda: setting up similar programs for three District 28 magnet schools in Queens, N.Y., that have secured federal funding. This time, Martinez hopes to expand the disciplines involved—which translates to more professional development opportunities, service-learning courses, and internships for NYIT students.

“The scale of this has changed,” says Martinez. “Now we’re in a position to integrate service learning and professional development, and we have to design a whole new program.”

Learn more at bit.ly/NYIT-PS241.