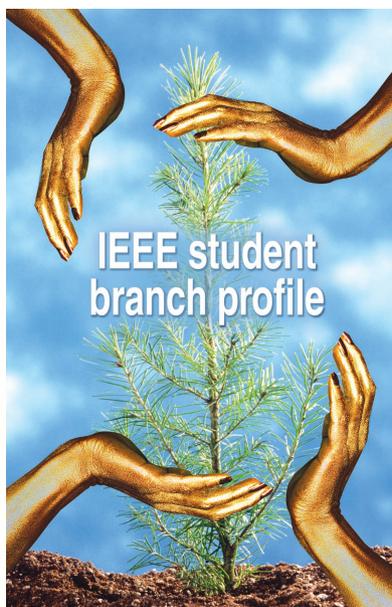


Resting inside of a caldera and possessing a population of less than 10,000 residents is usually an effective method of remaining shielded from society at large. Despite its volcanic geography and small town atmosphere, the city of Socorro has been successful at latching on to the wave of attention focused on New Mexico.

Ask any preteen or teenager what they know about the state of New Mexico and Albuquerque is invariably noted as home to the fictional East High Wildcats from the trio of *High School Musical* movies. UFO conspiracy theorists out there see Socorro as the hub of one of the most significant reported sightings—police officer Lonnie Zamora’s run-in with an oval-shaped object devoid of windows or doors and the appearance of what appeared to be “children” dressed in white overalls. For those bent on documented facts, the Trinity site, 50 miles to the southeast, is where the first atomic bomb test took place in 1945.

Through it all has stood the New Mexico Institute of Mining and Technology (NMT). Founded in Socorro in 1889, the school’s Student Branch (SB) was established in the mid-1990s when a few motivated students decided to incorporate the IEEE into their small school, according to Eric Martinez, the SB’s chair.

“Even though our college is small compared to the larger universities, we established an active group... about 20–25 active students and growing,” Martinez says. “At the beginning of the semester, we participate in our school’s club fair. Also, we visit the electrical engineering and control systems classes to mention our first meeting. This is where we get many e-mails from interested students, and we make sure the first meeting is at a time that does not conflict with any other large student meetings. Lately, we have attracted students beyond electrical engineering and computer science. Students and faculty from chemical, materials, and explosive engineering have participated in our activities. They joined IEEE because they enjoy it, and their respected fields are headed towards electrical engineering. Once our members become interested



What’s mine is yours

CRAIG CAUSER



The SB took an up close look at a radio antenna during a trip to the Very Large Array radio astronomy observatory.

in our branch, they are more willing to participate in our activities.”

One consistent goal is organizing informative meetings so that members get something positive out of the get-together other than free pizza. In 2008, the SB’s meetings featured six speakers, a video presentation, and a student paper contest. The speakers included local professors and engineers who spoke about their experiences and professions and included tips on how to become engineers beyond the classroom. Dr. Scott Teare, NMT’s electrical engineering department chair, advised the group on how to write research papers and grants while electrical engineering Professor Dr. Ronald Thomas highlighted his research and results on volcanic lightning in Alaska. Dr. Gilberto Zamora, the local IEEE Graduates of the Last Decade (GOLD) chairperson (and no relation to the aforementioned Lonnie Zamora), educated the SB about the GOLD program and how to get involved and remain active IEEE members after graduation.

To lighten the mood prior to finals week, the last meeting of the year showcased the talents of comedian Gabriel Iglesias.

Tour de force

Residing in Socorro, there is little of variety to do around town, so students rely on the SB for activities and fun, Martinez admits. The SB contacted IEEE Members to set up a diverse number of engineering tours during 2008. During a trip to Advent Solar, which creates photovoltaic cells for solar panels, the students visited the manufacturing plant where its founder, James Gee, showed the group the panel process whereby machines quickly and accurately create the photovoltaic panels in a clean-room environment. Approximately 50 miles west of Socorro sits the Very Large Array (VLA) radio astronomy observatory at the National Radio Astronomy Observatory (NRAO), where scenes from the 1997 Jodie Foster film *Contact* were filmed. At the NRAO, the SB learned about the engineering required to upgrade the antennas to use modern electronics. They proceeded to enter one of the large dishes, each of which possesses a diameter of 82 feet and weighs 209 metric tons. The tours were beneficial because each

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posed real engineering problems and how the workers came up with solutions. It also helped members to get to know the local companies for future internships or jobs.

The SB crossed the caldera to attend the 2008 IEEE Region 6 Southwest Area Conference in Tucson, Arizona. One SB member is from Tucson and served as a tour guide for the group. Five NMT SB members and an advisor took time out of their busy schedules to support the local SB in Tucson. The group utilized its conference down time by exploring the University of Arizona and attending a local concert.

"These events keep the members active," Martinez adds. "Plus, participating members get first choice of tours and conference trips when space is limited. One way to get involved outside of being an officer is to participate in our image committee. This committee spreads the word about our meetings by hanging flyers, contacting the school government, and writing columns for the school newspaper. This helps other students learn about and get involved with the IEEE."



Voluntary association

As much as the NMT SB members appreciate the time provided to them by engineering professionals, the group has equally benefited from serving others. Members volunteered for a trajectory event during the Science Olympiad at NMT. The Science Olympiad consists of local middle and high schools that compete in various scientific events; at the NMT event, students brought homemade devices designed to launch a ball at two targets. Participants were given the target distance and height and needed to adjust their devices to try to hit the center of the target. Other SB members helped with the statewide science fair that was held at NMT. Volunteering for these events allowed the active members of the branch to travel to the IEEE Southwest Area Conference in Arizona.

"Big Brothers Big Sisters is opening up a local chapter in Socorro, so we will get some members to volunteer with that," Martinez explains. "We will work with the robotics club to enter the Micromouse competition at the IEEE Area Conference and we're already talking to the Air Force Research Laboratory (AFRL) to set up a tour to see their creations like their cryogenics lab, micro satellites, and 90 Ghz transmitter. We're planning a trip to Sacred Power, a plant that uses the photovoltaic cells for personal and commercial use. We also want to take a camping trip with the Biology Club and possibly have some sort of competition between the two clubs. Even though we are very busy with school as electrical engineers at a challenging school, we were fortunate to have so many students take time out of their busy lives to participate in the IEEE."

—Craig Causer is the managing editor of *IEEE Potentials*.



Inside a Very Large Array radio antenna. From left, SB members Joey Fernandez, Matt Paiz, Thomas Hall, Eric Martinez, and Josh Aragon.



Students about to launch their ball during a trajectory event during the Science Olympiad at NMT. The SB members volunteered to help with the event, which involves local middle and high school students.



Advent Solar founder James Gee leads the SB on a tour around the plant.