

## Migrant students immersed in engineering

Migrant Education students Brianna and Ruby worked for several weeks this summer at Farmersville High School on a product that could potentially save lives by preventing brain injury. The young women were part of Migrant Education's annual Summer STEM Program and they designed a helmet that would keep its wearer safe. The students' design featured two interlocking pieces that would move to absorb an impact. During several initial tests, a liquid-filled capsule placed inside the helmet leaked upon impact, indicating injury to the wearer. The students returned to their desk to fortify the helmet with additional padding. On their final test, the young engineers strapped their helmet to a mannequin's head and raised it on a pulley to over seven feet. They then released the mannequin, sending it plummeting to the sidewalk. The result? The capsule in the helmet remained intact, indicating no injury was sustained.

Each summer, Migrant Education students enter the world of engineering with projects that replicate work done by a variety of engineers. Beginning in June, the Migrant Education Program offered its three-week Summer STEM Program at 36 school sites throughout Kings and Tulare counties. The program served nearly 550 students with grade-specific science, technology, engineering and mathematics (STEM) lessons developed by Engineering is Elementary (EIE). Migrant teachers were trained in advance to guide students through real-world applications of engineering principles.





As packaging engineers, students in kindergarten, first and second grades utilized ordinary materials to design and build containers to ensure the health of plants for the consumer market. After addressing the plants' needs for water, sun and air, the students included in their designs how the packages would be transported and displayed, along with instructions to consumers on how best to care for the plant.

Gloria Davalos, Migrant area administrator, taught the middle school curriculum in the past. "Students are learning that there is a vast number of jobs in the sciences," she said. "Through the STEM Program, they now know that scientists and engineers were responsible for helping to design or develop nearly all products they can imagine. And year to year, they're retaining their knowledge of the engineering design process – to identify the need, research the problem, develop solutions, create a prototype, test it, and so on. The STEM Program is providing our students a unique learning experience that's building their problem-solving skills."



This year, students in grades 3-5 were introduced to the field of biomedical engineering. They explored how human feet vary in shape, weight and structure, then used this information to design and create shoes. They also measured the range of motion in knees and how knee joints work. After learning about the structures of the knee, they had to design and create a knee brace that would restore movement to a model with an injured knee.

As biomechanical engineers, sixth- and seventh-graders explored the brain and how a concussion can alter its structure. Students learned ways people can protect their heads by using a helmet. To illustrate the effects of concussion on the brain, students, wearing obscured goggles, were challenged to walk an obstacle course and write simple words.

For students unable to attend one of the school-based STEM Programs, Migrant staff members provided in-home math lessons this summer. This in-home program served 750 additional students in 41 districts. Teacher Todd Canterbury, who works in a Special Services Intervention Resource Classroom during the school year, shared that he was able to work with siblings on consumer math lessons prior to the family's relocation to the Oregon area for work in the fields. "I was able to teach both the brother and the sister the concept of simple and compound interest," he said, noting that they scored 90% on a post-test given at the end of their lessons. "Before the family left, we were able to go to Bank of the Sierra and open a savings account for the brother and a checking account for the older sister. It felt fantastic to see that they understood the principles of saving and that we could do this for them." While high school students in Migrant's in-home program received lessons over three weeks in consumer mathematics, younger students were learning math through grade-appropriate games.

The Migrant Education Program has also been busy organizing Migrant Student Leadership Institutes for middle and high school students. This summer, nearly 140 students will attend one- to two-week programs at CSU Channel Islands, Cal Poly Pomona, UC Santa Barbara, Fresno State, and West Hills College. While the programs vary from campus to campus, Migrant

students enjoy instruction in math and language arts, robotics, and sports, while living and dining alongside college students.

For information on Migrant's summer program, call Tony Velásquez at (559) 651-3035.

*Photos above:*

*~ Students in middle and high school developed helmets to protect wearers from injury. Farmersville students Ruby and Brianna fastened their helmet to a mannequin's head, dropping it seven feet. Their test revealed that the fluid-filled capsule, placed inside the helmet, did not rupture, indicating that no brain injury was sustained.*

*~ K-2 students in Migrant Education's Summer STEM Program were involved in designing a plant packaging system that would protect and sustain plants during transportation.*

*~ Students in grades 3-5 talk to Migrant Education's Gloria Davalos about what they learned about knee injury and how they designed a brace.*

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## TCOE honors 41 retirees



Last month, the Human Resources Division honored **41 employees who retired** from the Tulare County Office of Education during the 2018-2019 school year. At a reception held in the Redwood Conference Center on June 12, Cherí Barnes, Human Resources analyst, shared that

the retirees had a combined total of **over 950 years of service** to the students of Tulare County. The retirees in attendance represented Information Systems, Early Childhood Education, Special Services, School Health Programs, and Court/Community Schools. Tulare County Superintendent of Schools Tim Hire thanked the retirees for making a difference in the lives of many young people and for supporting their programs and Tulare County school districts. To see more photos of the retirement celebration, visit TCOE's Facebook page at [@TulareCountyOfficeOfEducation](https://www.facebook.com/TulareCountyOfficeofEducation) or online at [www.facebook.com/TulareCountyOfficeofEducation](https://www.facebook.com/TulareCountyOfficeofEducation).

### **2018-19 Retirees**

Sandra Alcaraz, Early Childhood Education Program, 22 years  
Michael Aulds, Special Services, 23 years  
Cynthia Bartlett, School Health Programs, 8 years  
David Bertles, Court/Community Schools, 16 years  
Patty Blaswich, Internal Business Services, 26 years  
Joe Boss, Court/Community Schools, 25 years  
Enid Brinkman, Human Resources – Credentials/Retirement, 41 years  
Arlete Cabral, Special Services – AcCEL, 22 years  
Guillermina Cary, Early Childhood Education Program, 23 years  
Robyn Cooper, School Health Programs, 14 years  
William Dadds, Special Services – AcCEL, 4 years  
Sandra DeLeon, Early Childhood Education Program, 26 years  
Susan Fabro, School Health Programs – Early Childhood Education, 9 years  
Edward Garcia, Jr., Early Childhood Education Program, 27 years  
Marina Gonzales, Special Services – AcCEL, 49 years  
Judy Goodin, Early Childhood Education Program, 22 years  
David Graham, Special Services – AcCEL, 30 years  
Michaela Gutierrez, Special Services – Mild to Moderate Programs, 30 years  
Baudelia Haro, Early Childhood Education Program, 15 years  
Sallie Kleppe, Special Services – Related Services, 29 years  
Linda Lanting, Early Childhood Education Program, 20 years  
Ines Leonardo, Special Services – AcCEL, 29 years  
Carolyn Lyon, Special Services – AcCEL, 20 years  
Melanie McKimmons, Bright Start Parent/Infant Program, 29 years  
Jennifer McReynolds, Special Services – AcCEL, 25 years  
Pete Murrieta, Early Childhood Education Program, 20 years  
Esther Olvera, Early Childhood Education Program, 18 years  
Sherri Pack, Special Services – AcCEL, 21 years  
Arlene Parreira, Special Services – Mild to Moderate Programs, 22 years  
Bryan Patterson, Information Systems, 29 years  
Norma Prieto, Early Childhood Education Program, 24 years  
Alicia Raya, Early Childhood Education Program, 22 years  
Selinda Reitzel, Special Services – Mild to Moderate Programs, 38 years  
Marie Rubio, Early Childhood Education Program, 3 years  
Julie Ruiz-Gonzales, Early Childhood Education Program, 40 years  
Kathleen Rumelhart, Teacher Induction Program, 16 years

Aleida Trevino, Early Childhood Education Program, 25 years  
Mary Jo Trovao, Special Services – AcCEL, 19 years  
John Vaca, Court/Community Schools, 15 years  
James Vidak, Administration, 31 years  
Sue Winters, New Teacher & Leadership Development, 22 years

*Photo above:*

*~ Nan Arnold, RN (center), manager of School Health Programs, poses with two coworkers who retired this year from her program – School Nurse Cynthia Bartlett, RN (left) and Robyn Cooper (right).*

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### **Student event dates set for 2019-20 school year**



Information on the **Tulare County Office of Education's 2019-2020 student events** is now available online. Teachers and administrators are encouraged to visit [tcoe.org/StudentEvents](http://tcoe.org/StudentEvents) to see event dates, contact information and any available flyers.

This year, the long-running Arbor Day Celebration will be integrated into the STEAM Expo on March 14 at the TCOE Planetarium & Science Center. UC Master Gardeners will be on hand at the STEAM Expo to conduct some of the same hands-on lessons students have enjoyed at Arbor Day for decades.

The 20-year-old CyberQuest event has been replaced by the Tech Rodeo Student Showdown. Event organizer Katherine Goyette reports that students will come prepared with research they have collected on a previously assigned topic. They will then use technology tools to create a

demonstration of their research in real time. Educators attending the Tech Rodeo event, which is scheduled for Saturday, January 18, 2020 at the Porterville Military Academy, will have the opportunity to observe students at work, thereby building their own capacity to design similar learning experiences back in their classrooms. The new event reflects the ISTE (International Society for Technology in Education) student standards.

The annual Tulare County Office of Education Calendar of Student Events brochure will be mailed to all school site principals and district superintendents later this month.

*Photo above:*

*~ Mock Trial is one of dozens of student events offered by the Tulare County Office of Education each year. Educators are encouraged to visit [tcoe.org/StudentEvents](http://tcoe.org/StudentEvents) this month to find information on student events scheduled for the 2019-20 school year.*

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## Coming Up!

- **Newsies tickets on sale**

Tickets are available at TCOE offices on Mooney Blvd. and Doe Ave. for Theatre Company's summer musical, playing July 19-27.

View more events at [tcoe.org/CalendarofEvents](http://tcoe.org/CalendarofEvents).

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To receive *News Gallery Week*, visit [tcoe.org/GetTheGallery](http://tcoe.org/GetTheGallery), or contact Jennifer Fisher at [jenniferf@tcoe.org](mailto:jenniferf@tcoe.org) or (559) 733-6172.

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