

Students show leadership skills during science fair

Gordon Wolf

Juan Meza wanted to discover the affect of light on worms.

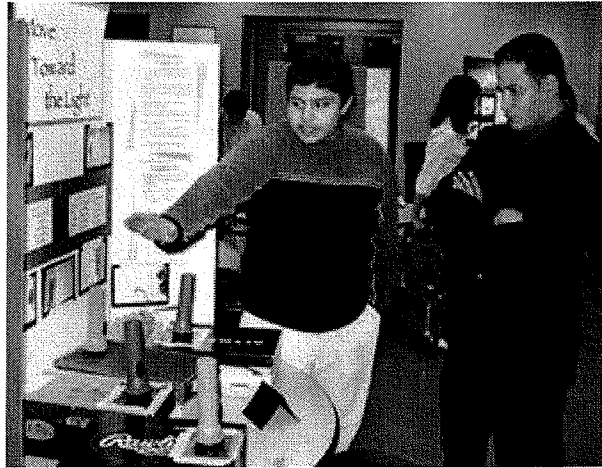
Katherine Ibarra learned that heat damages liver enzymes.

Oscar Portillo found that an apple and a pear produced about the same amount of electric current.

Varerlia Vargas demonstrated that dyes used in candy contain a variety of colors.

Alejandro Medina proved that heat speeds up the decomposition process.

These diverse science fair projects had one major common element; they were all conducted by eighth-graders involved in the Learners to Leaders/Science Bound program at Denison Middle School.



Denison Middle School eighth-grader Juan Meza shows David Ramero from ISU's Science Bound program his science project Thursday evening. Twelve eighth-grade students involved in the Learners to Leaders/Science Bound program conducted a science fair. Photo by Gordon Wolf

The projects were displayed and explained by the students Thursday evening in the Denison Middle School commons during a science fair.

Denison's Learners to Leaders/Science Bound program, which was created last year, is a community educational partnership that includes Smithfield Foods, Inc., Farmland Foods (Smithfield's Denison independent operating company), the Denison Community School District and Iowa State University's Science Bound program.

The following 12 Denison Middle School eighth-graders displayed projects at the science fair:

Juan Meza, "Move Toward the Light"

Katherine Ibarra, "Liver. It Stinks"

Aransa Soriano, Egg-ceptional Enzymes

Andy Cassanova, "Lost in a Fog because of Smog"

Valeria Vargas, "Dyeing for Candy!!!"

Oscar Portillo, "Sake it, Shake it!"

Alejandro Medina, "My, How You've Changed"

Katherine Acosta, "Acid Rain Rocks!"

Andres Castaneda, "Exciting Electrons"

Erica Cardenas, "When Static Electricity Attacks"

Salvador Lopez, "Charged Fruit"

Jessica Lara, "Torture of the Towels"

Each student received a ribbon for their achievement.

Top honors in the science fair went to Acosta, Castaneda, Medina, Meza, Portillo and Vargas.

Judges for the contest included Denison Mayor Nathan Mahrt; Christine Eppstein, director of community affairs with Smithfield Foods; Brian DeSchepper, quality assurance manager with Farmland Foods in Denison; and Lynette McGregeor with ISU's Science Bound program.

Collette Huntley, middle school science teacher, and Kathy Jones, extended learning instructor, team teach the Learners to Leaders/Science Bound program.

Students meet every other Thursday after school, but as the science fair approached, students met more often.

Work on the science projects began around Thanksgiving time, but in the middle of the work, students had to put everything away for the move to the new middle school at the end of December, Huntley explained.

Students found their own project topics, which was reflected in the variety of presentations at the science fair, Huntley added.

Huntley and Jones pointed out the students worked through problems, and if something didn't work, they'd go back to the drawing board and see what they could do to make their project viable.

The students will be invited to continue with the Learners to Leaders/Science Bound program through the 12th grade. If they continue with the program through that grade, they will be able to attend college tuition free if studying math, science or technology.

A person who did just that through the Science Bound program was at Thursday evening's science fair. Dionne Trambo began participating in the Science Bound program as an eighth-grader in Des Moines and now is a senior at Iowa State University. She will graduate this year with majors in psychology and Spanish.

Trambo said because of her involvement in Science Bound, she was able to attend ISU tuition-free.

Trambo added Science Bound helped her stay motivated and taught her discipline. She added she made great friends and had good networking opportunities through the program.

Students participating in the Learners to Leaders/Science Bound program keep a journal, are expected to attend the sessions and must keep their grades up.

The program involves more than the science fair. Students attended an overnight retreat with

their teachers at Springbrook Park in October where they learned about environmental sciences. They have also visited the ISU campus for an engineering demonstration.

Jones said there are a few more trips planned to ISU, and on Thursday night mentioned a project to make and race solar cars.

About a few of the projects

Explaining about his project that involved worms and different colors of light, Juan Meza said he found out worms moved two inches in both directions from blue light. He did the project again, this time, putting the light over the worms. Meza said the worms stayed under the red light because it was a dark color. The worms stayed away from yellow light, didn't move at all under green light and continued to move to and away from blue light. Meza concluded the bright light somehow excites the worms. He said he selected his project because he likes nature and animals, and had seen an example of the experiment in a book. That experiment only involved red light, and Meza decided to use four different colors of light.

Oscar Portillo wanted to see if fruit could produce an electric current. He found that an orange and an apple produced about the same amount of electricity. He also wanted to see if fruit that was denser produced more current; it didn't. Portillo tried to light a light bulb using the current from the fruit, but the fruit didn't produce enough electricity. The apple and the pear had the same amount of electrical current and the orange had the least.

Katherine Ibarra selected her project after doing research on the internet and read a science project that used beef liver. She blended some liver and used an eye dropper to apply a little hydrogen peroxide. The hydrogen peroxide produced bubbles when applied to the liver, because the liver has enzymes and the hydrogen peroxide activates those enzymes. Ibarra said she learned that heat damages liver enzymes, and that liver, if frozen, still has enzyme activity.

Valeria Vargas likes candy and incorporated it in her project. She found a project that examined the dyes used in candy. "I wanted to figure out if a green-colored candy just had green or included other colors," she stated. "At first, I never knew the candy would have different colors." When she applied water to the candy, and then put drops of the liquid mixture on coffee filters, she saw there were many dyes in each color of candy.

Alejandro Medina's project showed how heat and moisture affect decomposition. He filled bags with soil, put meat and apples in each bag, and weighed the bag and its contents at the start and the end of his experiment. Some bags contained wet soil; others contained dry soil. Some bags were put in the freezer, others were left at room temperature and still others were placed under a heat lamp. "The ones I saw the most results from were under the hot lamp. Some of those bags lost up to 14 grams of weight in two weeks," he stated. Medina selected his project because he is interested in the environment.

About the Learners to Leaders program

Through the nonprofit Smithfield-Luter Foundation, Smithfield Foods' Learners to Leaders program provides learning opportunities to students who may not otherwise have the chance to attend college due to academic, economic, geographic or social challenges. Participants include first-generation college-bound students, as well as low-income and minority students.

About 60 to 75 eligible eighth through 12th grade students from the Denison Community School District will be participating in the Learners to Leaders/Science Bound program from 2007 to 2012. The program's focus is to equip students during their high school years to successfully

pursue science- and math-related college degrees. Smithfield Foods is underwriting the estimated \$296,000 cost of the program.

"The students who took part in the Science Fair clearly demonstrated that our Learners to Leaders program is working, and we're confident that over the long term this partnership will help Denison's young people fulfill their potential and in turn, strengthen our communities," said C. Larry Pope, president and chief executive officer at Smithfield Foods.

Randy Dalinghaus, general manager for Farmland Foods in Denison, thanked Iowa State's Science Bound program "for providing all of the necessary resources to ensure the Science Fair's success. Everybody did a marvelous job."

Connie Hargrave, Science Bound program director at Iowa State University, pointed out, "The alliance between Science Bound and Learners to Leaders is an excellent example of the kind of productive partnerships involving businesses, universities and public schools needed to attract, prepare and enable students to excel in technical fields."