

Daniel Boone students share research with area legislators

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By Donna Rovins
News Editor

Daniel Boone High School's eleventh grade advanced placement physics students were the teachers for two area legislators May 31. The students presented research on alternative energy sources, including natural gas and biofuels, including algae.

State Sen. Judith Schwank and State Rep. David Maloney listened as the students presented their information, and then the legislators answered several questions from the students.

Daniel Boone physics teacher Shannon Helzer said the work initially began as a project in the academic physics class. "There was so much interest from the students that we expanded it, asking the AP students to continue the research. It grew into what we're seeing today," he said.

Helzer said 42 eleventh grade students were a part of the day. "We tried to include as many students in the day as possible. If students weren't chosen to present, then they might have been escorts for our guests or demonstrators in the labs. This whole day, was all the students' idea," he said.

Students provided music to open the program and were on hand to record the event in photos and video.

In addition to Sen. Schwank and Rep. Maloney, Pennsylvania Governor Tom Corbett and President Barack Obama were invited.

"We were all surprised that we received a phone call from one of the president's secretaries, expressing regrets that the president couldn't attend, but congratulating the students on their work. We didn't think he would be able to come, but to get a call from the White House was unexpected," Helzer said.

Two groups of students, selected by teachers and peers from the 29 AP physics students presented information during the program. That wasn't all there was to the day, however. Before the formal presentations began, invited guests were taken through the physics lab, where they met students and



Tyler Walsh and Bobby Hastings demonstrate acceleration and velocity. In the background is David Canlas, who acted as a student escort for invited guests.

observed various experiments being demonstrated - including electrical circuits, magnetic devices, graphs of motion and projectile motion.

During the presentation on natural gas, the students; Hunter Foster, Jes Geyer, Austin Herrig and Chip Scheick discussed the impacts of this alternative energy source including the prevalence of natural gas, its economic development impacts, the ease of mining, how it could reduce the country's dependence on foreign oil and that overall it burns more cleanly than other fossil fuels.

The students also explained that power plants may offer the most promise for natural gas.

They also discussed the problems that can arise from the underground slurry left behind from the mining process, specifically the environmental impacts of possible contamination to rivers and streams.

"We just don't know what is going into the water, and the companies are not required to disclose the chemicals they use," said Geyer.

And while the group found that overall natural gas would reduce the country's dependence on foreign oil, the supply of natural gas is not infinite. They called natural gas a transition fuel - not a long term solution.

On the biofuels side, the group; Edward Kim, Aaron Snyder, Chris Frampton and Jacob Reck said this area is one of the most promising sources of alternative energy currently available.

Plants that produce lipid oil, which can be used for non-food sources include corn, soybeans and palm oil. But according to the student research, in order to meet the country's needs, farming of those crops would need to increase by 200 percent.

The group explained there are economic, as well as social impacts to increasing the use of biofuels from plant oils, including decreased reliance on foreign oil, the possibility of new jobs, dependence on food imports and price increases.

But the group's research shows another option in the form of vertigro - vertically grown and farmed algae. Photosynthetic algae requires little to survive, is easy to grow and can be harvested both mechanically and chemically, resulting in removal of up to 99 percent of the oil.

The group said their research found that while current biofuel sources yield 20-30 gallons of oil per acre, algae could produce 100 gallons of oil per acre, because algae can double in size within 24 hours.

"We found that huge amounts of oil and energy could be obtained from algae, and we were shocked at how efficient it is - more so than ethanol," Snyder said.

Helzer said the inspiration for the project was Rex Cox, owner of Just Right Automotive Center near Foglesville, who has been presenting information about alternative energy sources to the high school students for the past four years.

"I think they did a fantastic job with the research. They took on some energies that are viable and controversial and they showed both sides," said Cox, "They are passionate and they want to make a difference."

When Sen. Schwank and Rep. Maloney left Daniel Boone High School, they took with them not just knowledge, but a message from the students as well.

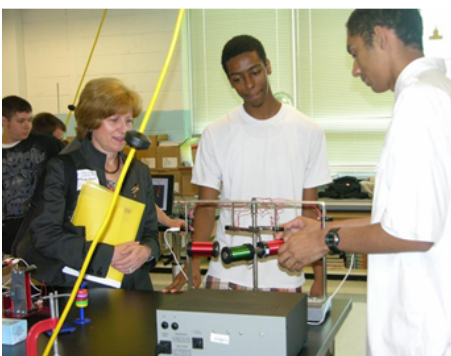
"In the same way we, the class of 2012 are reminded of our responsibilities in a democratic society, we wish to remind our distinguished guests of their responsibilities to us. You are our advocates in Harrisburg," said Kyler Gauger, one of the day's moderators.

"Given our concerns about our future, and the fact we will all soon be registered voters, the Daniel Boone High School class of 2012 asks you to remember us in Harrisburg," said moderator Jackie Nguyen. "Remember the junior class music ensemble that played the national anthem and the Boy Scouts who posted the colors. Remember the behind the scenes students who built the very podiums Gylar and I now stand behind. Remember your escorts who tended to you. Remember the AP students who presented to you. Remember all of us."

Sen. Schwank said it was an outstanding program. "I'm impressed not only with the students' knowledge of their topics, but of the political process as well. It's encouraging to hear them say 'we care about the environment.' It gives me new energy to make sure I do the right thing."

Rep. Maloney said he wanted to thank the students for their effort. "Knowing that we're anticipating their knowledge and experience and data gathering and all their enthusiasm for the future, because we're looking for them to be the engineers and the minds and the work force behind some of the natural resources we're attempting to make the best use of," he said.

Helzer said the 2010-2011 school year was the first for the eleventh grade physics class, or physics B, which is algebra based, and the second year for the twelfth grade physics C, which is calculus based.



News photos by Donna Rovins: Daniel Boone physics students Aubry Harris, center, and Jeremy Zacharias, right, demonstrate magnetics for state Sen. Judith Schwank.



State Rep. David Maloney gets a demonstration from Aubry Harris, right. Also pictured is Connor Kurtz, who acted as a student escorts for invited guests and (far left) David Canlas, also a student escort.



The natural gas presentation team talk to guests and the entire eleventh grade Daniel Boone High School class. Pictured are standing left to right Chip Scheick, Hunter Foster, Austin Herrig and Jes Geyer.





Sen. Schwank talks with students
Lauren Demberger, right, Allison
Pantone, center and Erynn Tuerck, left.