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Newsroom

Georgia Southern University

Mechanical Engineering Students Win EPA Award

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Georgia Southern University mechanical engineering students have been recognized by the Environmental Protection Agency (EPA) for their development of innovative technologies to reduce exhaust produced by diesel engines. By using alcohol and biofuel to power the engine, emissions are lower. Not only does this reduce pollution, the combination could also lower dependence on imported oil.

The team was invited to present its project during the 9th annual EPA National P3 (People, Prosperity and the Planet) Student Design Competition for Sustainability held last month on the National Mall in Washington, D.C. Georgia Southern beat more than a 100 universities including some top-tier research institutions to tie Johns Hopkins University for first place.

"To be recognized at this level is very rewarding for us," said Valentin Soloiu, Ph.D., professor of mechanical engineering and the Allen E. Paulson Chair of Renewable Energy. "We are very pleased to be on the national stage. Our students did a great job in explaining the novel technologies and defending them to the judges."

The Georgia Southern P3 project"Low Temperature Combustion with Reduced PM and NOx Emissions, Achieved by n-Butanol in-Port Injected in an Omnivorous Diesel Engine" won the prestigious American Institute of Chemical Engineers/Youth Council on Sustainable Science and Technology award. It recognized interdisciplinary collaboration using novel innovative technologies. The students used a $15,000 grant from the EPA won in the first stage of the competition to further develop their automotive technology prototype. "Our program is set up to give students hands-on experience through the design, building and research phases," said Dr. Soloiu. "These technologies can change lives."

The students spent three years in the Renewable Energy and Engines Lab working to improve the design of Low Temperature Combustion (LTC) diesel engines which already reduce nitrogen oxide and soot emissions by more than 50 percent. The Georgia Southern students have their engine running on n-Butanol and cottonseed oil which are biofuels produced from sustainable sources. This engine not only produces less pollution but also creates jobs for farmers being able to use biofuels produced from the waste of cottonseed, peanuts and poultry fat processes.

"In major urban areas where there is a lot of pollution, we want to reduce the emissions caused by traffic jams and idling engines," explained team member Marvin Duggan who just graduated, and already has an engine combustion and emissions engineering job in Detroit. "Georgia Southern provides excellent opportunities to get real world experience. The experience in Washington was very encouraging and it was rewarding to see our work being recognized by the EPA."

Also in April, three Georgia Southern students and members of the Renewable Energy and Engines Laboratory, under Dr. Soloiu's supervision, won awards for their peer-reviewed papers presented during the Society of Automotive Engineers World Congress in Detroit. Learn more about the mechanical engineering program in the Allen E. Paulson College of Engineering and Information Technology by visitinghttp://ceit.georgiasouthern.edu/mechanical-engineering/ and http://ceit.georgiasouthern.edu/engine/ for more information on the Renewable Energy and Engines Laboratory.

Georgia Southern University, a Carnegie Doctoral/Research University founded in 1906, offers more than 120 degree programs serving more than 20,500 students. Through eight colleges, the University offers bachelor's, master's and doctoral degree programs built on more than a century of academic achievement. Georgia Southern is recognized for its student-centered approach to education. Visit: *www.georgiasouthern.edu*.

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