

MAKING AN IMPACT

AIAA Thompson Scholarship Winner Finds the Right Audience in Aerospace

By Michele McDonald

For **Destiny Fawley**, her love of science began with a 7th grade science fair project after all the easy projects were taken, leaving her with electromagnetic radiation.

AIAA's David and Catherine Thompson Space Technology Scholarship winner dived deep and her presentation was so detailed that the teacher asked her to dial it back. Fawley simply hadn't found the right audience yet.

Today, the aerospace engineering junior at the University of Illinois at Urbana-Champaign certainly has found people who share her passion for the detailed and complex. She's focused on fluid flow and aerodynamics, specifically as they relate to space.

"I like aerospace because I like challenging problems," she said. "There's so much about this planet we don't know and we're just learning about other exoplanets."

Fawley met commercial space pioneer and AIAA Honorary Fellow David Thompson, who had invited her to attend the AIAA SPACE Forum in Orlando, Fla. Thompson is the retired president and CEO of Orbital ATK, now Northrop Grumman Innovation Systems. He co-founded one of Orbital ATK's predecessors, Orbital Sciences Corporation, in 1982.

As well as meeting scholarship recipient Fawley, Thompson was at the forum to kick off the inaugural David W. Thompson Lecture in Space Commerce Award. GPS pioneer Charlie Trimble was the first speaker in the new lecture series.

Thompson has actively championed



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Thompson said

creating scholarships and lectures, among other philanthropic activities, to help build the aerospace community.

"My wife and I don't come from wealthy families," Thompson said. "We know how demanding these fields are. We want to help students focus on their studies and research."

Thompson, who served as AIAA president from 2009 to 2010, encourages all former AIAA presidents to fund a scholarship.

"The scholarship really helps me take full advantage of all the opportunities at the University of Illinois Urbana-Champaign," Fawley said. "There's so much I want to do and want to learn. This scholarship helps me do that—I can focus my time."

Thompson and Fawley swapped stories about how they joined AIAA. For Thompson, it was 46 years ago as an MIT student, but he had previously written to AIAA for information about rockets when he was in the ninth grade. Fawley became involved with AIAA during her freshman year at the University of Illinois and

quickly signed up with a 3D-printing UAV project. It was her first introduction to aerodynamics—and she was hooked.

"Earning the scholarship is an early sign that you're going to do great things with your career," Thompson said. "AIAA can help during the early stages of your career, so don't drift away. Stick with it."

Fawley plans to focus on space when she graduates and is working on Heat-shield for Extreme Entry Environment Technology (HEEET) material for atmospheric reentry. She's interned at the NASA Jet Propulsion Laboratory and NASA Ames Research Center.

"I am currently creating a method to count layers of weave in the cross section of HEEET material pre- and post-arcjet test," she said. "I used a template of one layer to get a correlation map across the entire image of how well that area matches, then used a series of filters to get the exact number of layers. The goal is to get a quantitative measurement of swelling by comparing the average height of layers before and after the arcjet."

Thompson understands the pull of space. "Space-based science is a big enterprise and it's been an exciting field for me for a long time," he said.

Earth and planetary science also hold great opportunities, Thompson told Fawley, noting his company recently launched a satellite to measure Greenland's icecaps. "To see where a hurricane is going to hit wasn't possible 50 years ago," he said.

And it's supporting these future possibilities that prompted the Thompsons to invest in students.

"To meet young people like Destiny—their determination and passion—leaves me encouraged about the future of our industry," Thompson said. "It's not an easy field. It's challenging but it's very rewarding as well."

And to Fawley, he added: "I'll follow your career with great interest."