

Furthering Sustainable Energy

Lauber Martins joins the physics faculty

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Lauber De Souza Martins joined Andrews University's Department of Physics as an assistant professor in January 2016. Specializing in thermodynamics, he is a useful addition to the department since physics and engineering students are required to learn this subject in their classes. He's also a valuable asset due to his specialization in sustainable energy.

Martins' background deals with fuel cells, in which hydrogen and oxygen react generating electricity, producing water—a clean byproduct—and heat.

“The idea is now to research how we can use fuel cells as a backup system for stationary applications, like schools or hospitals,” explains Martins. “This summer we're going around to companies in this area—Berrien Springs, St. Joseph, South Bend—to see what their energy consumption needs are. Once we get all the information about their power needs, we're going to see if we can supply them with fuel cells when their primary source of energy is not available.”

Until Martins' arrival, Andrews did not have a professor focusing on research in this area, making him a valuable addition to the faculty at the University.

“Sustainable energy is one of the hot topics nowadays in research,” says Martins. “As long as people live, they will need energy. It's an important, necessary research field.”

Martins received bachelor's and master's degrees in mechanical engineering at the Federal University of Parana-Brazil in 2003 and 2005, respectively. He also received a PhD in mechanical engineering in 2012 from Florida State University, specializing in thermodynamics. After receiving his doctoral degree, he went on to work at the University of Pretoria in South Africa as a postdoctoral fellow and was later appointed as a senior lecturer during his last two years there. During that time, Martins researched and assisted students in research and design.

“While I was teaching undergrad and grad classes, I had 18 students that I supervised in their research and design projects,” he says. “Additionally, the university would receive visits from external examiners of the industry from all around the country. It was a big deal for the students and for the department, because you’re exposing these students to the community,” Martins explained.

Martins’ interest in thermodynamics began when he was a sophomore in college. That year he had a professor who, when a student turned in an assignment, would grade it in front of the student, hand the assignment back, and tell the student to fix and resubmit it.

“I appreciated the opportunity to do more than just solve problems and find the right answers, as one would if simply studying for a test,” Martins recalls.

One thing Martins enjoys about his role here at Andrews is the variety and number of students he gets to work with.

“I work with students from engineering, mathematics and physics, so I have a big pool of students willing to help in the research,” he says. “I just want to make myself available for any sort of collaboration, and give these students the opportunities they need to go into the field as professionals with valuable experience and skills for the future.”

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