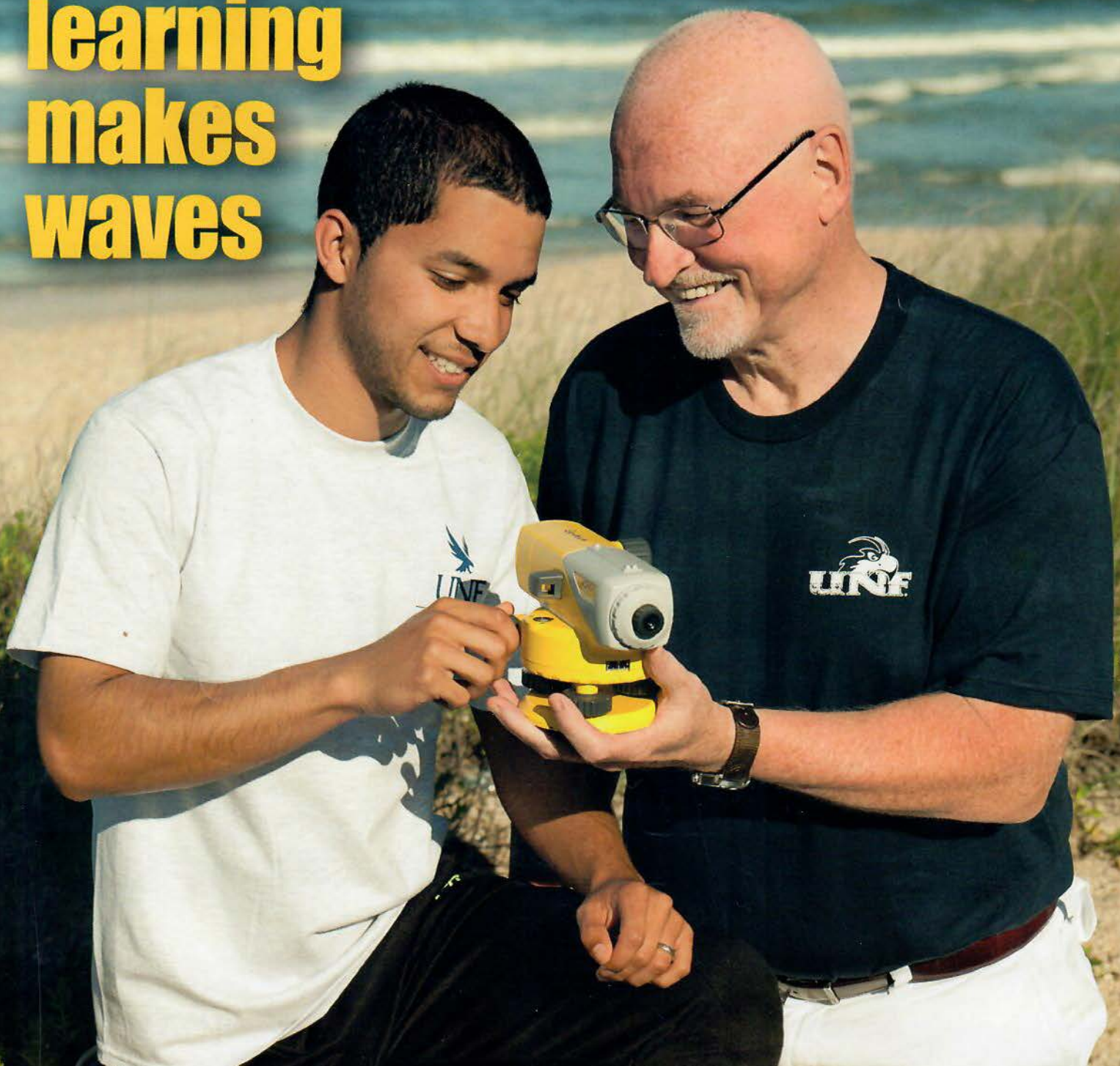


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**Hands-on  
learning  
makes  
waves**





BY CATHY COLE  
PHOTOS BY JENNIFER GRISSOM

# Resio charts new course for UNF in coastal engineering

**D**orukhan Ardag never thought that when he came from Istanbul, Turkey to study coastal engineering at the University of North Florida that he would actually be working side-by-side with one of the greatest minds in the field, doing research and — literally — getting his feet wet while learning from someone who has been there, done that.

"I have always been interested in the seas and sailing — anything related to the ocean, really, so this program seemed like a great fit for me," he said. "I really didn't know what I wanted to study after I was done with my undergraduate degree, so I asked my professors in Turkey what they might suggest as a good option for me. After taking their advice and doing some research on my own, I discovered the coastal engineering program at UNF and got in touch with Dr. [Don] Resio. After I took all the necessary tests, he offered me a position, and here I am."

Don Resio works with his students to measure waves at Ponte Vedra Beach.



Ardag soon discovered that Resio is not an average graduate school professor. He is kind of a rock star — in a beachy sort of way.

He doesn't have class in a classroom, per se. He doesn't assign students hours of readings and expect it neatly written out again weeks later in papers and on tests. He doesn't even really trust students who get all As. Resio would much rather have a student come to class with an original idea or an incomplete but innovative thought than a perfect proposal with an idea that someone has already presented a time or two.

Resio wants his students to thrill at learning, at discovering and at finding new solutions to old problems. He wants them to become educated, yes, but by doing and thinking for themselves, not because they are following a traditional and outdated model of research and regurgitation. And he is fine if they want to challenge him and his ideas, as well.

"I am all about having my students and colleagues taking a look at work from all angles and seeing if my theories and ideas are correct," Resio said while walking with a group of his students at the Guana Tolomato Matanzas National Estuarine Research Reserve near Ponte Vedra Beach. "If they are not, I want to know about it. Just like I will let them know if I see something in their work that is not quite right. We all are working together to solve problems."

Resio, who joined UNF in 2011 to head up the Taylor Engineering Research Institute, is a renowned engineering and oceanography researcher with an impressive background. He is a former research scientist for the U.S. Army Corps of Engineers Waterway Experiment Center and is a current representative to the United Nations Joint Commission on Oceanography and Marine Meteorology, as well as co-chair of the steering committee for the United Nations Coastal Inundation and Flooding

Demonstration Project. Prior to joining UNF, he served as the senior technologist for coastal and hydraulics research within the U.S. Army Corps of Engineers. Before that, he served as a professor and head of the Physical Oceanography Group at Florida Institute of Technology.

His work as the co-leader of the post-Katrina interagency forensics study and leader of the Risk Analysis Team for the South Louisiana Hurricane Protection Project helped to develop a new technical approach for hurricane assessment that is now being used along all U.S. coastlines and is being extended by the Nuclear Regulatory Agency for new licensing guidelines at all coastal sites. His work with the Homeland Security Advanced Research Project Agency allowed him to lead a team of researchers in the development of innovative methods for the rapid repair of levee breaches to help with flood mitigation in many areas of the U.S. It's being







considered for full-scale deployment in Florida's own Lake Okeechobee.

Resio is quick to shrug all that off. He cares much more about what he is doing today than what he did yesterday. He would prefer to teach the next generation than rest on his laurels and look at his "me" wall. He would much rather gather up his students and take them out to the coast or out on a boat and have them actually problem-solve where the sand and sea meet.

"The future belongs to the students," Resio said, pausing for a moment to work with a student near the shoreline. "It is my job to help them learn the skills they need as critical thinkers to be able to solve the problems of tomorrow. I would much rather have a group of creative students who have the intellectual capacity to analyze data for themselves than those who lack the imagination and just give me back what I

have been telling them or what they have been taught by others. I want them to think more and study less."

"I am getting a great education," said Luis Montoya, a second-year student in the coastal engineering graduate program. "Dr. Resio is really very well known in the coastal engineering field, and he is transmitting his knowledge to us every day in and out of the classroom. Every day, I

see him and talk to him, and he is working with me to help me learn something new and different."

Montoya, who came to UNF from Miami because he had a cousin in the area, graduated with a bachelor's degree in civil engineering in 2012. He decided to stay for the coastal engineering program mainly because of its name — he likes the beach and the water and wanted to make a difference with his studies. He now knows that after one full year of graduate school, he wants to go on for his doctorate.

"I like the research," he said. "I like the teaching. Graduate school was very different for me — there was a lot more reading and a lot more I had to become familiar with very quickly, but I have found my calling. The coastal field is something that really matters to me."

Just like it matters to Resio. With more than 30 years of experience in performing and directing engineering and oceanographic research, Resio's scientific contributions and creative problem solving of challenges facing the military and the nation have gained him unparalleled international status. His models of wind waves and statistical methods are standards of the profession and have been used to design hundreds of coastal projects from the new hurricane protection system in New Orleans to small harbors in Alaska.

He has earned numerous awards, including the American Society of Civil Engineers' Coasts, Oceans, Ports and Rivers Institutes 2013 International Coastal Engineering Award, Engineering Research and Development Center



Above: Students Hunter Bredesen and Dorukhan Ardag waiting for diver's signal. Left: Professors William Dally and Don Resio talk with students while under way. Below: Students Luis Montoya and Dorukhan Ardag prepare to do field research.





Researcher of the Year, Army Corps of Engineers Researcher of the Year and the SILVER De Fleury Medal from the Army Engineer Association. He earned all his degrees from the University of Virginia, including his doctorate in environmental science: fluid processes — meteorology and oceanography, a master's degree in environmental science: fluid processes and a bachelor's degree in physical geology.

Resio was hired to head the Taylor Engineering Research Institute at UNF as a result of a 2012 New Florida Initiative Scholars Boost Grant from the Florida Legislature. All 11 state universities applied and were selected for different projects that amplify and accelerate existing programs or create new academic benchmarks.

The Taylor Engineer Research Institute promotes collaboration among engineers and students in coastal and water resource engineering and draws upon the College's environmental computer modeling research. The Institute was created through a \$1 million gift from Taylor Engineering Inc. that the state increased to \$1.5 million. The Institute is critical in a state where 77 percent of the population lives in coastal counties.

"My goal when I decided to make the endowment for the Taylor Engineering Research Institute through my company was that we needed increased research activity at UNF, and we needed a really visionary academic to lead it," said Bruce Taylor, president of Taylor Engineering Inc. and chair of the UNF Board of Trustees. "Don Resio is that. He's a ball of energy and a great teacher. But the main reason why he was such a good hire was that he's a gifted

researcher with a globally respected reputation. He's at the top of his field, and that kind of reputation has been key in establishing the Institute as something truly dynamic and interesting for students and researchers."

Ardag said that Taylor has gotten that and more from Resio.

"It was hard for me to leave my home and come here to study," he said. "But unlike in Turkey, if you try to do something here and show that you are really interested in learning, people will help you. Dr. Resio knows that I really want to learn as much as I can about every aspect and facet of coastal engineering, so whenever I ask for help, he is right there to answer my questions or help me research. He is an amazing professor. He is always pushing me to do more. He is one of the greatest figures in coastal engineering, but he still gets excited about teaching it. I have him for a class for one hour and 45 minutes, and I think he loves every second of it."

Resio has encouraged both Ardag and Montoya to continue on in their studies and pursue their doctoral degrees, as both have a proclivity for research and teaching and a natural curiosity for the field.

"You can study engineering and you can learn about the coastal field, but if you can't make it better, what is the point?" Resio said.

Ardag agreed.

"I get so excited whenever Dr. Resio gives me some research or articles to read that enlighten me. I would be thrilled if

I could, one day, improve some area or make a difference in some way to coastal engineering like Dr. Resio has. I know I have it in me — I believe I can do it."

Resio knows he can.

"Every one of my students is good," he said. "Some of them could really break the mold. They are certainly capable of thinking outside of the box. It is exciting when you sense that they understand the world of possibility that they have before them."

And watching him work with his students on a boat or at the Reserve, it is obvious that he respects them. The feeling is mutual. There is an easy give and take between them that doesn't always exist between professor and student. He listens to what they have to say and takes the time to understand the points they are making. In turn, they listen carefully when he speaks and are intent on his every word. A five-minute walk from the parking lot to the shoreline becomes an impromptu lesson that no one wants to miss — even the interlopers who are just along for the evening are riveted by the discussion about waves and weather and the easy banter between the group.

Resio may be one of the foremost coastal engineering experts in the world, but to this group of talented students he is so much more — he is their personal guide into a new and uncharted world that they are just discovering. He is helping them to realize their academic and professional dreams — while managing to have a little bit of fun along the way.

Below: Students and professors come back from a day of research.

Right: Resio stands with some of his graduate students.

