

Making Waves Across Generations: Brian Barcelo, ME '65

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He's never had the pigments formally checked, but it's safe to say that Brian Barcelo's (Engineering 1965) blood runs olive and blue. Son of a large native New Orleans family, Barcelo's father, brothers, and uncles all attended Tulane, his aunts worked on staff at the university, and his wife Gail, too, was a Newcomb grad.

And now, fifty-three years after he graduated, Barcelo continues to propagate the next generation of the Green Wave.

Though nowadays he lives in New Jersey, not long ago Barcelo returned to New Orleans with longtime family friends whose granddaughter was looking to learn more about Tulane. As he describes it, Barcelo had the honor of showing them around campus, pointing out the buildings he used to work in and participating in time-honored traditions like throwing beads at the bead tree.

"College is one of the greatest times in our lives," Barcelo said. "Despite the struggles of academics and coursework, you make friends for life, and coming back only made me miss it more."

Of course, Tulane University in the early 1960s was a much different place, one belonging more to Binx Bolling of Walker Percy's *The Moviegoer* than to the net-savvy, tech-literate students of 2018. The facilities in the School of Engineering were excellent, he says, but primitive compared to today.

"We had to take a class on slide rules," Barcelo recalls with a laugh. "And classes on mechanical drawing, sketching the old-fashioned way—by hand. As if that weren't enough, our computers were the size of whole rooms!"

But these experiences offered expert training for which this longtime engineer remains grateful. Barcelo's senior research project, conducted alongside one of the deans in the School - John Martinez, investigated the effects of whiplash in car accidents, and helped to develop the concept of the automobile headrest as a safety feature. "I still like to take a little bit of credit for that," he says, smiling.

After graduating from Tulane, Barcelo moved west to Caltech for his Ph.D., accepting a NASA-funded fellowship in aeronautics to study the properties of shockwaves traveling through a mixture of noble gases. Deploying a shock tube with an electron beam as the sensor, Barcelo discovered how to determine the viscosity of different gases at high temperature from the changes in the shock wave structure. It was a heady time, he says, with the space race going at full steam, a race the United States would eventually win in 1969.

It was here that Barcelo's life forked, with the decision not to continue research at the Jet Propulsion Laboratory nearby but instead to accept a job offer with Western Electric. For those not born during the space race (or even during the Cold War), Western Electric was one of the great innovators in telecommunications technology of the twentieth century, and for decades was the primary manufacturer for hardware for AT&T. In the early 1970s, Barcelo's work on electron beam technology impressed the brass at Western, who offered him a job at their Engineering Research Center in New Jersey.

"I had a choice," Barcelo says, looking back on that decision. "To stay in pure science, or to branch out. To expose myself to new parts of my field."

Once he and his wife had settled in New Jersey—happily, he says, closer to her family—Barcelo would spend the next 36 years in telecommunications research, manufacturing, and marketing. From his bench in the lab, he witnessed both the arrival of fiber-optics in the 1970s as well as wireless networks in the 1980s, two major revolutions in telecoms whose impacts will never be fully charted.

By the time he retired in 2007, Barcelo was traveling to countries as far as Japan, India, and New Zealand to sell network infrastructure, even while still finding the time to serve on the Board of Advisors at the newly-formed School of Science and Engineering at Tulane. In his view, continuing to serve his alma mater was a privilege: it gave him great satisfaction to offer insights gained from his years in industry, in order to improve the workings of the School and the lives of its students

and faculty.

As noted above, however, even though he has stepped down from this role, even in retirement Barcelo continues to propagate waves at the university. His young family friend, after her experiences on campus in November—sailing with the sailing club, meeting with students and professors, and staying overnight in the dorms—has now moved Tulane to the top of her list of colleges. Even as a high school junior, she's already thinking about how to prepare her application. What impressed her the most was the professors' willingness to help and spend time with us and their pride in the University.

But wherever she ends up, Barcelo is quick to share his experiences with all students at his alma mater. "Pick a field you like," he says. "Life is too short to work on things you don't love to do. Open yourself up, and don't stay narrowly focused—that's what these years are for, trying new things."

"And cripes," he adds. "Enjoy it!"

Benjamin Morris is a writer in New Orleans.