



Zeynep Celik-Butler:

OPENING PATHWAYS TO PROGRESS FOR WOMEN IN ENGINEERING

Most professors who become endowed chairholders ascend to that status after long and visible careers in their disciplines, but at age 30, Zeynep Celik-Butler already has achieved that distinction. It is based not only on progress but on potential.

Last spring she became the first woman to hold a chair in the School of Engineering and Applied Science. She is one of two J. Lindsay Embrey Trustee Professors, an honor that recognizes outstanding junior-level faculty whose achievements promise advancement to senior status.

Celik-Butler teaches undergraduate and graduate courses in electrical engineering, has written 12 journal and conference papers, and is a regular recipient of research grants for her work with solid-state devices.

Competing in a predominantly male field, Celik-Butler serves as a role model at a time when engineering schools are seeking larger enrollments of women students. "You don't have to make special conditions for women to succeed," she says, revealing a slight accent. "They will succeed if you don't put roadblocks in front of them."

"We at SEAS liked Zeynep because of her excellent background in solid-state electronics," says Someshwar Gupta, acting dean of SMU's School of Engineering and Applied Science in 1989-90. "At the time we were recruiting her, we were taking steps to strengthen our solid-state electronics program. She was perfect for the position."

Celik-Butler's research focuses on the properties of solid-state devices, includ-

ing transistors and integrated circuits such as those found in computers, television sets and remote control boxes.

In addition to teaching two classes this spring, Celik-Butler is working on several projects funded by research grants. Texas Instruments is funding a project to increase the sensitivity of infrared detection devices by minimizing their noise. Another grant received from TI and the Texas Higher Education Coordinating Board supports her work in prolonging the life of integrated circuits by studying the reliability aspects of metalization in circuit layers.

Celik-Butler also is conducting research in superconductivity through a grant from the National Science Foundation. Her findings may have an impact on biomedical applications such as brain tissue scanning and signal detection at high frequencies. In addition, she regularly publishes articles about her research on noise in semiconductor devices. For the first time, she and her husband, Donald Butler, another SEAS faculty member, are working together on a project, researching superconductor millimeter wave detectors and mixers. "We work well together," Donald Butler says. "We have a good relationship because the lines of communication are open."

That openness extends to Celik-Butler's role as a teacher, too. She says she welcomes regular feedback and encourages graduate students to call if difficulties arise with their projects, even if it means interrupting her private life at home.

Early in her own schooling, Celik-Butler, the only child of a Turkish doctor and nurse, became fascinated with science. She
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eagerly took as many math and science classes as she could, along with many other girls interested in the same subjects, she says.

In Turkey, just as in the United States, the pressure to achieve can prove overwhelming for young people. The push to obtain a college degree, and the fact that Turkey has few universities, drives some students to commit suicide, Celik-Butler says.

Qualifying for college admission, however, was no problem for Celik-Butler. She ranked in the top three percent on the admissions test for prospective students in Turkey. At 17, she entered Bogazici University in Istanbul and chose to study electrical engineering and physics, instead of following her parents into the medical profession. She later decided to major in electrical engineering, she says, because of the research opportunities available.

After graduating in 1982 ranked third in her class, Celik-Butler enrolled in graduate school at the University of Rochester in New York. Although she intended to return to Turkey after receiving a Master's degree, her graduate advisor had other ideas. Under his guidance, she earned fellowships from IBM and Kodak that enticed her to stay at Rochester. "He knew how to keep me," she says.

At Rochester she met and married Donald Butler, another bright electrical engineering graduate student. Soon after their wedding in 1987, both engineers were recruited to teach at SMU.

In Turkey, engineering is a fairly common profession for women, Celik-Butler says. The scarcity of women engineers in the United States can be an advantage for female job seekers, but it also can present problems,

she says. "People do not expect as much from a woman engineer as from a male engineer. When you accomplish the same amount of things as your male counterparts, they will cheer you more. It is almost as if you are not supposed to do that well."

Throughout the late 1980s, SMU and some other universities experienced an increase in the number of women and minorities majoring in engineering. But national enrollment figures show the overall number of engineering students to be declining. Celik-Butler traces the problem to education in the secondary grades, where "there is not enough emphasis put on science," she says.

Another problem is the way such courses are taught, she says. "You cannot teach science and engineering in high school the same way it is taught in college. You do not have to teach gravity on the chalkboard; you can devise experiments with it to make it fun."

Celik-Butler says she hopes to persuade more students to pursue engineering and the sciences as a career. One way SMU can pique a young person's curiosity, she says, is to offer tours of campus engineering facilities. "Many of the students who are interested in electrical engineering have an electronics shop in their garage, and they like to see similar things here. When you put them into a lab where there's a lot of electronic equipment and instruments, you'll usually get them hooked right there."

A shortage of American engineers will cause greater dependence on foreign scientists for research in this country, she says. Many U.S. engineering graduates do not want to spend additional time obtaining the

higher degrees required to conduct research in academia; they would rather pursue the monetary rewards of the workplace, she says.

The Embrey Professorship is one way that SMU is attempting to promote the study of engineering — by rewarding outstanding faculty who will in turn inspire good students. For Celik-Butler, receiving the Embrey Professorship holds special significance. Not only is the award evidence that she is making progress toward her professional goals, but it also shows that faculty colleagues recognize her potential. Between teaching classes, conducting research projects, and spending time with her husband and two-year-old daughter, Melissa, Celik-Butler's schedule will be full. But at 30, she has time on her side.

— Tracy Lorraine Brown

PATTERSON NAMED SPECIAL ASSISTANT FOR RETENTION

Cynthia Patterson, who has served as SMU's associate director of athletics for compliance and academic affairs since 1988, has been named special assistant to President A. Kenneth Pye to work with student retention.

In the Department of Athletics, Patterson was responsible for institutional compliance with NCAA rules and academic support programs for student-athletes. She also served as assistant director of the Learning Enhancement Center (LEC), which provides academic counseling and tutoring for students, and taught as an adjunct professor in SMU's Department of History. In her new position, she will continue to teach and to work with the LEC.

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