

# SECRETS ARE *Out*

Lesbian,  
gay,  
bisexual, and  
transgender  
engineers  
are  
no  
longer  
willing  
to  
hide  
their  
true  
selves.

+ By Jaimie N. Schock  
+ Photo by Scott Soderberg





# L

ittle intimidates Lynn Conway, professor emerita of electrical engineering and computer science at the University of Michigan, Ann Arbor. At 73, the former motocross racer still enjoys white-water canoeing with her husband, Charlie. Yet for decades she hid a very personal detail from colleagues. If they found out, she feared, “my career would have been over—absolutely over.” Only after retiring did Conway reveal her transgender past—a physical transition from male to female completed a lifetime ago in 1968.

When engineering educators talk about promoting diversity, chances are transgender individuals like Conway don’t figure prominently in their policies. Nor do too many think immediately of gays and lesbians when discussing underrepresented minorities. Yet diversity has multiple dimensions, as schools and industry are finding out. Successful campaigns to end the U.S. military’s “Don’t Ask, Don’t Tell” policy and legalize same-sex marriage in six states and the District of Columbia have ushered in a new era of awareness. In turn, lesbian, gay, bisexual, and transgender (LGBT) engineers are emerging from the shadows to confront the stigmas historically attached to their identities. Due in large part to their own efforts, they are gaining wider acceptance academically, socially, and professionally.

Conway’s longtime secrecy was born of necessity, she believes. Hired as a man by IBM in the mid-’60s, she contributed to important advances in computer performance until she informed the company about her intended transition. Transgender identity was little understood at the time, even by many experts, and she says IBM quietly fired her. Knocked off the corporate ladder and struggling financially, she started over from scratch with her new name and stunning female persona as a programmer for small firms. In time, her career in engineering resumed its upward trajectory, and she went on to successes in industry, as a Pentagon researcher, and in academe.

In 1989, Conway was elected to the National Academy of Engineering and in 2009 was recognized by IEEE as a computer pioneer. Yet her early work at the dawn of the computer revolution might have stayed hidden were it not for Clemson University computer engineer and historian Mark Smotherman, who turned to colleagues for help in researching IBM breakthroughs of the 1960s. Conway’s responses to his inquiries led her to reveal her long-ago transition — and enter a new role of transgender advocacy. (IBM declined to comment about Conway.)

For electrical engineer Tim Wilson, keeping his identity as a gay man secret was not his own choice. Hired by a Tennessee university, he says he was told by his department head not to reveal any aspects of his personal life, a restriction not imposed on heterosexual colleagues. Similar treatment has been recounted by other gays and lesbians seeking careers in a profession still seen as relatively conservative and heavily white and male.

In a rare scholarly examination of lesbians, gays, and bisexuals in engineering, University of California-San Diego doctoral students Erin Cech and Tom Waidzunas studied the experiences of 17 students at a large public research university. For many, engineering school is “a hostile place,” they found, one where “both pervasive prejudicial cultural norms and perceptions of competence particular to the engineering profession can limit these students’ opportunities to suc-

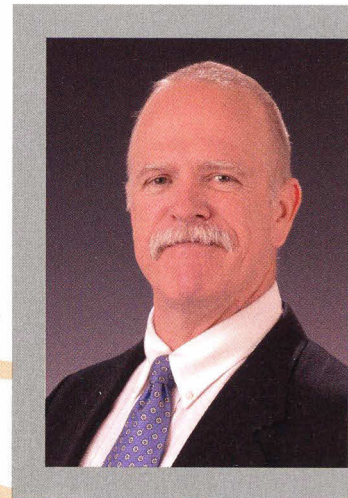
ceed, relative to their heterosexual peers.” One respondent described losing an internship after coming out to others in the office, though that wasn’t the stated reason for letting him go. A gay man related: “[Classmates are] fine with you being gay, but they don’t want you to talk about having a boyfriend. ... And the fact that they talk about their girlfriends in the lab I find kind of hypocritical.” One student who felt forced to remain closeted experienced “agony, the stress of constantly trying to portray a certain image of myself and hiding who I really am.”

Perceptions of engineering as a technical, “masculine” field put pressure on gay men to prove their competence, while lesbian women were at times perceived as suited to the profession by virtue of appearing “more guy-ish.” Students in the study ranked biological and chemical engineering departments as the most tolerant, electrical and computer engineering and computer science as showing average tolerance, and mechanical, aerospace, civil, and structural fields as the least tolerant. “There is power in the presumption of straightness,” Waidzunas and Cech write, “power of having the ‘right’ sexual orientation, power to make others ‘invisible’ and power to dictate what rights other people have.”

One sign of growing acceptance is the support the 2008 study received from the engineering college, including its associate dean. The students felt, however, that having visible and “out” faculty members and industry professionals to look up to as role models would greatly help them.

Tim Wilson would be one such model. Now a department chair at Embry-Riddle Aeronautical University, where he found a better atmosphere than at his previous post in Tennessee, he personally brokered a policy change that allowed same-sex couples to receive full partner benefits. While many universities and colleges now provide similar benefits, some public universities are prevented from doing so by state laws, and in certain states employers can still fire people based on sexual orientation or gender identity.

Christine Stanley, vice president and associate provost for diversity at Texas A&M University, home to one of the nation’s biggest engineering colleges, says her school would offer same-sex partner benefits were it not for Texas’s insurance code, which expressly forbids them. Despite this limitation, Texas A&M has an LGBT Resource Center, and offers an LGBT endowment for scholarships, programming, and more through the Texas A&M Foundation.



## A TAPESTRY OF IDENTITIES

Stereotypes and misconceptions haunt LGBT individuals, something Donna Riley, an associate professor of engineering at Smith Col-



lege, sought to clear up in a 2008 article. She explained that put simply, gender identity is about who a person is and sexual orientation concerns the people to whom a person is attracted. Sexual orientations with which people identify include lesbian or gay (homosexual), bisexual, and heterosexual, although some people do not identify with any of these terms. "Transgender" includes anyone who experiences or expresses a gender different from that associated with his or her body; people may identify with either gender, neither, or both. Transsexuality involves changing from the gender of one's birth to the opposite, both medically and in appearance.

Two groups are working on trying to improve the acceptance and working conditions of LGBT individuals in STEM (science, technology, engineering, and math) education. The National Organization for Gay and Lesbian Scientists and Technical Professionals (NOGLSTP), led by Caltech researcher and lab manager Rochelle Diamond, seeks to provide "education, advocacy, professional development, networking, and peer support" for students, faculty, researchers, and others. One of NOGLSTP's main initiatives is the Out to Innovate national summit, first held in 2010 at the University of Southern California. The second meeting is set for Ohio State University, Oct. 13 and 14, 2012. It's slated to feature workshops on leadership and mentoring, a career fair, poster sessions, networking, speakers, and an achievement awards dinner.

made a concerted effort to reach out to transgender students, and is seeking transgender members for its national board.

Student membership in NOGLSTP, a \$5 annual fee, gives them instant access to MentorNet, an all-online not-for-profit service that pairs engineering professors and industry professionals with students who have similar interests. "Many students don't want to come out to their adviser," says Diamond, so MentorNet lets them share life and professional experiences with an LGBT professor.

At the 2011 ASEE Annual Conference in Vancouver, NOGLSTP participated in the Diversity Booth, sponsored by DuPont and arranged with help from the ASEE Diversity Committee. The booth aims to communicate awareness about the "value and importance of diversity in engineering and to encourage dialogue," says committee member-at-large Sarah Rajala, dean of engineering at Mississippi State University and a recent president of ASEE.

Since its first meeting at the 2010 Annual Conference, the Diversity Committee has updated ASEE's diversity definition and statement to include sexual orientation and gender expression. While no specific initiatives directed toward LGBT students and faculty are currently underway, "I can promise it will become an issue taken up by the Diversity Committee in the future," says Committee Chair Bevelee Watford, associate dean for academic affairs at Virginia Tech's College of Engineering.

Besides DuPont, other engineering-focused companies have played an important role in equal treatment. "Industry has led the way with domestic partner benefits," says Diamond. The Human Rights Campaign, a Washington-based advocacy group, maintains a Corporate Equality Index, which gauges nondiscrimination policies, diversity training, inclusive benefits, and advertising messages. Companies that gained HRC's 100 percent rating include Agilent Technologies, Air Products & Chemicals, Apple, Boeing, BP America, Chevron, Chrysler Group, Cisco Systems, Dell, Dow Chemical, DuPont, Ford, General Motors, Google, Hewlett-Packard, IBM, Intel, Lockheed Martin, Microsoft, Motorola, Northrop Grumman, Raytheon, Shell, Texas Instruments, Toyota, Volkswagen, Xerox, and Yahoo!.

When it comes down to it, "accommodating diversity means accommodating new ideas," says Lynn Conway.

IBM, where her career got temporarily derailed in the '60s, has clearly heard the message. It not only has a 100 percent HRC rating but also now reaches out for potential hires among LGBT students.

*Jaimie N. Schock is ASEE's editorial assistant.*



**LEFT:** Prof. Tim Wilson, Embry-Riddle Aeronautical University. **ABOVE:** Officers of the UC-Berkeley chapter of Out in STEM (oSTEM) from left to right: Paul Zarate, Mahana Barbadillo, Christopher Anderson, Jeffrey Yunes, Noel Pacheco, Jamie Cair, Casey Lawler.

Past awards went to both Riley and Conway.

The Ohio meeting may include Out in STEM (oSTEM), a smaller organization directed toward LGBT and "allied" straight students with the aim of educating and fostering leadership, according to its president, Eric Patridge, a postdoctoral chemist at Yale. The group has

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[http://www.prism-magazine.org/oct11/feature\\_03.cfm](http://www.prism-magazine.org/oct11/feature_03.cfm)

**ASEE:**

American Society for Engineering Education

<http://www.asee.org>

**NOGLSTP:**

National Organization of Gay and Lesbian Scientists and Technical Professionals

<http://www.noglstp.org>

**oSTEM:**

*Out* in Science, Technology, Engineering, and Mathematics

<http://www.ostem.org>