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Closing the Girl Gap in Science

By KAREN ANN CULLOTTA

GIVE me an “S”! Give me a “T”! Give me an “E”! Give me an “M”! Yaaaaay STEM!

O.K., that’s not exactly what was said last summer at a cheerleading camp on the Southern Illinois University Carbondale campus. But that was the hoped-for spirit as dozens of kinesthetically gifted girls in ponytails savored their first taste of college life — three days at Southern Illinois perfecting their pyramids and pikes, sipping Starbucks in the student center, staying up late texting friends at home and across the room.

If all goes according to the university’s new recruitment plan, hosting camps for middle and high school cheerleaders serves a higher purpose: to help shrink a longtime gender disparity at Southern, a leafy campus of more than 20,000 students about five hours south of Chicago.

At most colleges and universities, women outnumber men — at 57 percent nationally. But Southern finds itself among a smattering of campuses with a few too many good men: women make up just 44 percent of undergraduates. And over all, only about 30 percent of Southern’s students in STEM fields — science, technology, engineering and math — are women.

Flanking the cheer camp director at an evening pep rally last summer, two university recruiters tossed out beach balls and pumped up Justin Bieber’s “Baby,” whipping an already raucous crowd into a frenzy of gleeful shrieking. They passed out raffle prizes to the girls who had diligently completed “Saluki V.I.P.” information cards. Within 24 hours, the office of admissions had created for each an individualized Web page so recruiters could keep in touch, encouraging the girls to visit Carbondale and, ultimately, apply for admission.

“The idea is that any pre-college-age group of girls who are visiting the university should be in touch with our recruitment staff, not in a heavy-handed way, but as an opportunity to get the message out that coming to S.I.U. can transform their lives,” says Rita Cheng, the university’s new chancellor and first woman in the post.

While the gender disparity dates back more than two decades — in 1991, women represented just 41 percent of the student body — officials have also been alert to a drop in overall enrollment of roughly 5 percent over the past few years. One of Ms. Cheng’s first tasks was to roll out a recruitment overhaul in summer 2010 aimed at all-girl high schools and camps. This semester, almost half of incoming freshmen are women.

Still, men dominate, especially in some of the university’s most well-regarded programs — just 10 of 171 students in aviation management, for example, are women. This is happening as a growing chorus of educators and officials at the Department of Education make pointed efforts to steer young women to STEM majors.

"These P.R. efforts at universities may get a few girls from the cheer camp to apply, but the real trick is to get them interested way before then," suggests Patricia Albjerg Graham, a professor of the history of American education at Harvard. "We need to change the culture for little girls who are growing up now, and start expecting them to not only 'get' math and science, but to do well, take more A.P. classes, and join the math and science club."

The Massachusetts Institute of Technology, which is lopsidedly male (37 percent of all students are women), dispatches female students to schools to share their enthusiasm for STEM and hosts a math contest for young girls that awards \$25,000 to the winner.

"The real issue is women are falling out of STEM fields all along the pipeline, starting in middle school and high school," says Stuart Schmill, dean of admissions. "To increase gender balance, it's all a matter of getting the right story out about science and engineering to young women, that it's not about sitting at a desk doing math all day."

At M.I.T., he says, "we don't have to go beating the bushes" to attract women applicants. Indeed, for undergraduate programs this fall, 5,466 women applied, of which 16 percent were admitted. But more than twice the pool, 12,443, was male. Only 7 percent were admitted. Mr. Schmill is firm that there is no admissions advantage in gender.

"The applicant pool for women is more self-selecting," he says. "The women who are interested are very passionately interested."

While Southern Illinois University, too, insists it pays no heed to gender in admissions, at Carnegie Mellon "there is no question that we do consider gender in fields like computer science and engineering, where women are critically underrepresented," says Michael A. Steidel, director of admissions. For example, there is no shortage at Carnegie Mellon of wonky men who delight in writing computer code in their spare time, but only 18 percent of freshman applications to the computer science program for this fall came from women.

Women@SCS supports academic, social and professional opportunities for women in computer science at the university. Carol Frieze, director of the group, says the percentage of female majors there peaked in 2000 at 39 percent. "But of course, the dot-com bubble burst, and applications dropped for both men and women," she says. By 2007, the number of female majors had fallen to just 20 percent. But with word out that computer science is weathering the ailing economy, interest is climbing, Ms. Frieze says. This year women represent 32 percent of incoming computer science majors, and a quarter of undergraduates in the field.

Texas A & M, which began accepting women in the 1960s, is now 47 percent female. While some parity carries into the fields of biology, chemistry and math, the number of women drops significantly in engineering, which is 80 percent male.

To keep its statistics even, Texas A & M officials reach out to girls as young as sixth grade with gender-specific programs like "Expanding Your Horizons," one-day workshops held on campus to immerse middle schoolers in hands-on science experiments. In one physics lesson, for example, teams create devices that will slow the velocity of a falling egg and cushion it from breakage when dropped from the balcony of the science building.

"It would be great if the girls decide they want to go to Texas A & M someday, but most of all, we hope they are getting the bigger picture that going to college isn't scary and terrifying, and they start to think, 'I can do that,' " says Nancy Magnussen, director of the university's Educational Outreach and Women's Programs. Recruiters here also seek out promising girls at cheerleading, softball and basketball camps held on campus, says Karan L. Watson, executive vice president and provost at Texas A & M.

Undergraduate "big sisters" keep tabs on student interests. When the collegiate chaperones encountered a group of girls who were unable to pry themselves from watching a collection of "C.S.I." DVDs, recruiters tracked down a woman forensic science professor to drop by to deliver an impromptu lecture in the dining center. And for a group of visiting girls addicted to "Buffy the Vampire Slayer," a sociology professor was dispatched to a pizza party to chat about her ethnographic research on fandom.

Officials at Texas A & M, like those at Southern Illinois, acknowledge that they frequently find themselves assuring parents of prospective students that their daughters will be safe on campuses made infamous for partying and incidents that have spun out of control. For years, tens of thousands of revelers fueled by alcohol would party in the streets of downtown Carbondale on Halloween Devil's Night, which was banned by the city in the late 1990s. Similarly, after the Aggie bonfire claimed the lives of 12 students at Texas A & M in 1999, the autumn tradition celebrating the school's football team was abolished.

"We are a fairly conservative school, but we have had our raucous moments, and there are parents who question what kind of influences their daughters will find on campus," Ms. Watson says.

At the Southern Illinois cheer camp, the recruiter Tedgie Hennel had greeted the girls' parents upon arrival, helping them lug pillows, suitcases and bags of junk food up to the dorm rooms in Neely Hall.

"Parents who were in college during the 1970s and 1980s will ask me, 'Is Southern still a big party school?' And when I tell them, 'No, it's really not,' some of them laugh and say, 'You can't fool me,'" Ms. Hennel says. "So I ask them, 'Who did you hear that from, our current students or other parents?' And then I invite them to come back down for a visit with their daughter."

At the camp, Ms. Hennel's unflagging school pride was put to the test. Not a single girl showed up for her specially scheduled one-hour afternoon tour of the campus. And alas, college was not on their radar, especially when there were free water bottles and T-shirts. "I really liked the Chinese food in the dining center," one girl said about what impressed her at Southern. Said another: "It seems fun and exciting, but it's the first college I've visited."

But a few months later, Ms. Hennel's efforts appeared to be paying off, or at least held a glimmer of hope. All three of the seniors who attended the cheer camp from nearby Du Quoin, a hardscrabble town of 6,100, applied and have already received letters of acceptance. Still, the young women are veering toward nursing and physical therapy, fields usually dominated by women.

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