The changing face
of 
Agriculture
Education

by Ken Doyle

She’s never driven a tractor, milked a cow, or tilled a field. But that lack of farming experience hasn’t stood in the way of Jarai Carter’s relentless determination to make the most of her education. Carter, a James Scholar Program honors student in the University of Illinois Department of Crop Sciences, admits it hasn’t always been easy.

Her first semester proved to be an eye-opener. “I knew some basic information about agriculture,” says the ASA, CSSA, and SSSA student member, “but I really didn’t know much at all, unlike many of these students who knew the ins and outs of it.” However, Carter leveled the playing field once she started taking research classes that fit her concentration in plant biotechnology. The research program played to her strengths and interests in the laboratory, with an emphasis on molecular biology. Carter gained hands-on experience with techniques such as DNA isolation, cloning, and polymerase chain reaction (PCR)—all essential tools in research and commercial laboratories across the world.

Carter credits her success at University of Illinois to a comprehensive program that exposed her to all aspects of research. She says, “I had to write a proposal, do the research, write a report, create a poster, and finally present the poster at the University of Illinois’s Undergraduate Research Symposium.” Her research project focused on recombinant protein expression as part of a genetic mapping experiment in corn, and the experience sparked Carter’s interest in an agriculture research career. She plans to pursue her interest by attending graduate school in a field within crop sciences and agriculture.

Carter is one of a growing number of nontraditional students—those without a farming or agriculture background—who have enrolled in agriculture and agronomy programs nationwide, even as overall enrollment has declined. A study conducted at the University of Nebraska–Lincoln found a decrease of more than 30% in the number of students receiving bachelor’s degrees in agronomy and crop science from 1984–1985 to 2002–2003. This trend has been confirmed in many agriculture-related programs at colleges and universities throughout the U.S.

Although this decline in enrollment is attributed to multiple factors, the changing demographic of the student population is widely regarded as playing a significant role. According to ASA member Amy Asmus, past chair of the Certified Crop Adviser (CCA) National Board and International Council, there are fewer family farms today than in decades past. This translates into fewer students entering agronomy and related fields with strong farming experience. As a result, many universities are changing their tactics to attract—and retain—nontraditional students in agriculture degree programs.

At Iowa State University (ISU), the agronomy student population largely consisted of men from rural or farm backgrounds from the early 1970s through 2006. Based on the results of its study, the university began a mar-
Marketing campaign in 2006 to reach out to nontraditional students. By early 2010, the agronomy program at ISU had recorded a 91% increase in enrollment, largely due to the effects of the new marketing campaign.

Attracting more students to agriculture-related programs remains a key objective for many colleges and universities today. A study at Kansas State University (KSU) identified factors that influenced urban students to enroll in KSU’s College of Agriculture. The study showed that having a family member who worked in an agriculture-related field was the most important factor in influencing students’ choice of major. It also identified a variety of secondary factors, including career opportunities and hands-on learning experience, that influenced KSU students when choosing to enroll in an agriculture-related program. Interestingly, only 11% of the agriculture students in the KSU study reported having traditional farm or ranch experience.

Reaching Out

How are universities reaching out to nontraditional students? In many cases, they are developing programs specifically tailored to the needs of this segment of the student population. Such programs aim to make agriculture-related topics more attractive and change their image among prospective students. Many of these marketing efforts rely on developing more sophisticated recruiting materials, including direct mail, websites, and multimedia presentations. In addition, universities are focusing on communicating their message through channels where they’re most likely to be heard by a younger audience—especially social media.

“There is really nothing you can’t do or say when it comes to social media,” Carter says, adding that University of Illinois is heavily involved in social media. The Department of Crop Sciences has its own Facebook page, and Carter has managed another Facebook page for the department’s Field and Furrow Club.

She emphasizes that it’s important to present the diversity of opportunities available to agriculture students and to make it fun. “You don’t go into an agriculture major just to learn how to manage a farm. There are so many opportunities for people of all backgrounds—computer scientists, press managers, researchers, teachers, and lawyers.” She admits that her generation “has a very short attention span,” so content creators should make every second of their presentation count. According to Carter, “A video about statistics of farms will not get me excited to enter agriculture. A video about how I can study abroad and
learn about soybean farms in Brazil is much more interesting!”

A social media presence is an ongoing effort that requires dedicated resources, a commitment of time, and a steady stream of new information. In addition, it’s not enough to build a presence and wait for an audience; you have to reach out to them. “I told everyone I knew about [our Facebook page] and invited them to like the page,” Carter says, “including students at our local community college who were going to transfer to the University of Illinois.” Carter developed her interest in social media while researching a student essay that compared the social media practices of Monsanto and Syngenta, two of the world’s largest agribusiness companies. She has a particular interest in vlogs (video blogs), although she says that making good videos is a lot more work than most viewers realize.

Real-World Learning

Once a university has successfully recruited a nontraditional student into an agriculture-related program, it’s important to develop and maintain an ongoing support system. Nontraditional students can be overwhelmed by how much they don’t know when it comes to traditional agricultural methods. That’s why programs that attract these students place an emphasis on hands-on learning techniques.

At Purdue University, the College of Agriculture’s Full Circle Agriculture at Purdue (FCAP), a student-run organization, launched a student farm program at the end of 2010. FCAP is also working with faculty to develop a new undergraduate degree program, to be launched this fall, that is geared toward sustainable food and farming systems.

“The overall objectives are to introduce small farm/sustainable agriculture into the curriculum at Purdue and present opportunities for hands-on learning,” says Steve Hallett, Associate Professor in the College of Agriculture at Purdue. “Much of the management of the farm is done by students, although we just hired a farm manager to solidify things as the new degree program gets under way.” Students can participate in three ways: as members of FCAP, through small-farm experience classes, and as paid summer interns. Hallett notes that most of the students in the program come from nontraditional backgrounds, although Purdue hopes to attract those from rural and farming families as well.

On the farm, students learn a variety of skills—“whatever is needed,” says Hallett. “They’ve built hoop houses, a cold room, and chicken tractors. They’ve designed crop rotations, planting schedules, and [worked on] land prep, planting, harvesting.” Produce from the farm will be sold to local restaurants and through West Lafayette’s community supported agriculture outlets. The farm will also supply campus dining facilities and Purdue’s restaurant and hotel management program.

Hallett underscores the importance of the students developing leadership skills in addition to skills in the field. Students should be able to understand all the aspects of running a small farm and, above all, how to make it profitable—not an easy goal to achieve. “This year’s focus will be economics,” he says. “We want the farm to be as close to self supporting as possible. That’s not just a sensible approach in current times, but it’s also an educational one.”

Other universities are beginning to see the value of similar programs. The University of Illinois champions its Field and Furrow Club, a chapter of the Students of Agronomy, Soils, and Environmental Sciences (SASES), an undergraduate program of ASA, CSSA, and SSSA. Carter found the program especially helpful in jump-starting her education through various activities organized by the club—“listening to ag professionals speak, playing trivia games, and doing volunteer work such as cleaning up the Morrow Plots (a national historic landmark).” She credits the program’s early success to the strength of its faculty, who are always available to help out, answer questions, and introduce students to additional opportunities for broadening the scope of their education.

Iowa State University (ISU) is using a somewhat different approach, in a program at the college of agriculture called “Into the Field.” The program leverages industry-academic partnerships and was jointly developed by ASA and CSSA Fellow Kendall Lamkey, Chair of the Agronomy Department at ISU, and Asmus Farm Supply, Inc., an agribusiness jointly owned by Amy Asmus and her husband, Harlan Asmus.

Into the Field has far-reaching goals, ultimately designed to change the way future agronomists are educated. In the short term, the program hopes to create meaningful internships for students by developing partnerships between ISU and agriculture-related businesses.

Asmus says that both parties reap the benefits of these partnerships. She explains that the concept gets industry volunteers involved in the teaching of future agronomists and gives them the opportunity to develop strong mentoring relationships with the students. “These relationships are important for ongoing success, for not only
the students, but also the close-knit environment that is the ag industry.” At the same time, Into the Field gives students the chance to compare techniques and methods learned in the classroom with real-world applications.

From her own experience, Asmus says that companies can benefit significantly from participating in the program. Besides the short-term boost the companies derive from internships that provide part-time labor, companies can develop relationships that may lead to future employees. In addition, she says, the program provides “a way to bring fresh ideas and knowledge into your current workforce through student interaction [and]... to financially support a large number of students outside of traditional scholarship programs that help only a few students.”

Helping Hands

Scholarships remain a viable way to attract students who may not otherwise be able to afford all the opportunities that agriculture programs can offer. Carter has been fortunate to be the recipient of two scholarships, from the Champaign County Farm Bureau and the Illinois Soybean Association. She says that the scholarships have opened the door to networking opportunities with industry professionals and enabled her to attend the Illinois Soybean Summit in 2012—a rich learning experience that would not have been available to her otherwise.

Besides hands-on training and financial assistance, many nontraditional students cite the benefits they derive from one-on-one interaction with agriculture professionals. Certified Crop Advisers (CCAs)—“the cream of the crop,” according to Asmus—are instrumental in developing these relationships with students. CCAs develop specialized knowledge in an agriculture-related field, pass local and national exams, and are required to sign an ethics statement that affirms their commitment to upholding high standards of conduct. CCAs also dedicate themselves to lifelong learning through a requirement to obtain at least 40 hours of continuing education credits every two years.

“A person with] this type of dedication to the ag industry and education,” Asmus says, “is exactly who we want interacting [with] and mentoring students.” Asmus, who is a CCA herself, also hopes that the mentoring students receive from CCAs will inspire them, in turn, to become the next generation of CCAs—paying it forward.

A recent program called the Greenfield Scholars is likewise designed to provide networking and mentorship opportunities for undergraduate students (in either two- or four-year degree programs) who choose to enter the agronomy workforce directly after
school. Students who qualify for the program must pursue certification as a CCA or Certified Professional Agronomist (CPAg). The program was developed under the auspices of the Golden Opportunity Scholars Institute, a joint effort of the ASA, CSSA, and SSSA.

The program is launching this year, and several of its components are under way, including finalizing the student and mentor application and review process. Luther Smith, Director of Certification Programs for ASA and SSSA, says that the program hopes to step up fundraising activities outside the Societies.

The mentoring that Greenfield Scholars receive “will help them learn the practical aspects of being a CCA/agronomist and working in the private sector,” Smith says. Other benefits include early access to internships as well as part-time and full-time jobs.

In addition to mentoring, students will receive financial support through scholarships. “Their expenses will be covered to attend the Annual Meeting and potentially the CCA local board meeting from their home state,” Smith says. He expects the support for each student to total approximately $2,500. The first five students selected for the program will able to attend the Societies’ 2014 Annual Meeting in Long Beach, CA.

**Future Harvests**

Clearly, students entering agriculture degree programs today have more opportunities than previous generations, with help available both financially and in mentoring opportunities. More work needs to be done, however, to address the changing demographics of this student population.

According to Carter, programs will change in the future “only if people take the time to help them change. After seeing three new freshman classes arrive in agriculture majors, the population in number seemed to increase somewhat, but the diversity was lacking.” Carter notes that traditional farming students still comprise a dominant majority in these programs, and she welcomes initiatives to recruit more nontraditional students, so that all students can benefit from new ideas and a fresh perspective.

Asmus envisions the role of CCAs expanding even further in the future, through partnerships with K-12 schools that will bring knowledge of the agriculture industry and its importance in providing safe and abundant food production to children of all ages. She says, “We need to instill the tools for the future success of our industry into those who are our future.”

For colleges and universities to reach those future generations, they will need to constantly evaluate and refine their marketing and communications tactics. As Carter noted earlier, it’s not that universities aren’t using social media; it’s just that they haven’t tapped into all the opportunities it can provide. In the rush to get a new Facebook page or YouTube channel launched, it can sometimes be a daunting task to build sustainable relationships. Carter says, “You don’t want a one-hit-wonder—you want an audience.”

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