

Breeding Excellence — From the Classroom to the Greenhouse

FOR ADAM MOSELEY — THE 2012 GPN/NEXUS INTERN OF THE YEAR — THE POSSIBILITIES FOR A BUDDING HORTICULTURE CAREER ARE ENDLESS.

By Raissa Rocha

Adam Moseley has a busy year ahead of him. The University of Florida student is set to graduate in the spring with a bachelor's degree in environmental horticulture, specializing in horticultural operations. Afterward he will continue on to a number of different options, from entering the job market to pursuing graduate school, preferably at his soon-to-be alma mater. Regardless of what path he eventually takes, the 2012 *GPN*/Nexus Intern of the Year knows the possibilities for his budding horticulture career are endless.

A Natural Curiosity

Like many before him, Moseley took a broad interest in horticulture early on thanks to his family. "I started off basically with an interest in

horticulture from my parents. My dad's an avid golfer, and so we'd spend a lot of time on the golf course when I was younger," he says.

Moseley recalls always enjoying looking at the well-manicured plants around him when hanging around with his father on the golf course. When he was 10 years old, Moseley began working for a friend of the family. "I was doing landscaping every Sunday," shares Adam.

The job was Moseley's first real foray into the world of horticulture. The family friend had a xeriscape-style lawn with plants native to his home state of Florida, and Moseley learned more about the more "grilling" side of plants — the maintenance.

His curiosity would only expand even more by the time he was 16 years old, when he took an interest in bonsai, the Japanese art form of cultivating miniature trees. While working as a

painter for a residential and commercial painting company from age 15 to 21, he realized his ambitions. "I didn't really want to do [painting]. That really wasn't what my drive was. I really wanted to work with plants," Adam says.

Taking Steps

Moseley's college career began at Indian River State College in southern Florida, where he decided to test the ropes and took a horticulture class. "That was something that really sort of put me into the mindset that this is really interesting," he shares.

After moving to Gainesville, Fla., Moseley continued studying for his associate's degree in botany at Santa Fe College. In August 2007, he began working with Dr. Rosanna Freyre, a research scientist in ornamental plant breeding with the University of Florida's Environmental



Horticulture Department.

For Moseley, it was a chance to finally be around plants and manage greenhouses. "Every week I'm coming home with different plants, and we're breeding and cross-pollinating. It just really got me into it," he said of his work with Freyre, which still continues today.

"Adam has always been eager to learn and has developed a strong interest in plant breeding," Freyre shares. "Over these years I have given him more responsibilities and he has handled his own research projects. I have not treated him as a student but as a research assistant. It has been great to see him develop as a young professional."

In spring 2010, Moseley enrolled at the university to complete his bachelor's degree, where he took Introduction to Plant Molecular Biology, taught by professor David Clark.

"Adam worked very hard to obtain an A in this very demanding course, and did so with no background or previous training in this subject," wrote Clark in his letter of recommendation for Moseley. "He was very inquisitive and was a leader of his peers, and was by far the best student in class for understanding the connection between basic science and a potential application in conventional breeding and genetics."

Breeding Experience

During his time in Clark's class, Moseley learned of the internship program at Garden Genetics, a commercial plant breeding company located on a 20-acre farm in Centre County, Pa. The relatively new business focuses on creating new ornamental and agronomical plants that can be contracted to growers around the United States. Hosted by general manager Mike Uchneat and executive director Rick Grazzini, the internship program is geared toward students interested in plant breeding, and provides an opportunity to work in the growing, maintaining and marketing of ornamental and agronomical crops.

Moseley had doubts at first. "Initially, I wasn't keen on doing [an] internship," he says. At that point he was already used to working in Florida and wasn't yet open to the idea of going somewhere else, especially somewhere as far as Pennsylvania. But with scholarships available for students who embark on internships located more than 100 miles away from their school, Moseley considered the possibility.

"I really got sort of influenced by Dave Clark to look into it. I sent my resume up there, and I think we all got on the same page on what we wanted to do," Moseley shares.

Clark, who had attended graduate school with Uchneat and Grazzini at Penn State, was eager to introduce Moseley to his colleagues. "I am very interested in their company being successful, and would never send them a marginal student for an intern," he says.

After interviewing with Uchneat and Grazzini and accepting their offer, Moseley was set to spend his summer of 2011 up north in Pennsylvania with Garden Genetics. During the first month, he worked with head grower Mike Owen, and with the other staff and greenhouse employees, to familiarize himself with the facility and its procedures. Initial tasks included propagation by tip cutting, seed germination and tissue culture, as well as trimming, repotting and organizing stock, and breeding plants.

Later on, he met with Uchneat to initiate his own self-directed breeding projects, which were to be

the main focus of the summer. "I'd always worked under somebody, so that was something new," he says of the independent projects. "Really picking the plants was always done by my boss, and I thought that would be an interesting part of [the internship] if I got a chance to do something like that."

He did. While under the supervision of Uchneat and Grazzini, Moseley was able to work independently on breeding projects that sought to obtain optimal plants for market. This included working on self-pollination of angelonia breeding lines and cross-pollination of dianthus. Previous crosses hadn't yielded many progeny, and Moseley



During his internship at Garden Genetics in Centre County, Pa., Adam Moseley was exposed to the many different facets of the plant breeding company — including his own self-directed breeding projects.



MORE ABOUT THE GPN/NEXUS SCHOLARSHIP

As the job market becomes increasingly more competitive, emerging students in horticulture continue to pursue enriching internships in order to be a step ahead of the field. For 13 years, GPN and Nexus Corporation have been partnering to reward those students who prove to be exceptional not just in the classroom but also at the workplace.

"Each year [president] Mike [Porter] and I are amazed at the talent that each nominee exhibits," remarks Cheryl Longtin, CEO of Nexus Corporation. "It becomes increasingly more difficult to choose the winner. Each of the interns who have been awarded this scholarship is so talented and praiseworthy. They will have a positive impact on our industry and deserve to be recognized."

Longtin points to Adam Moseley as another example of an intern who took full advantage of his unique experience. "Adam's essay showed that he saw the value of doing an internship, of learning volumes at Garden Genetics, and was developing his plan to maximize the experience," she says. "It was not just a 'summer job.'"

The GPN/Nexus Intern Scholarship not only highlights a student's growing career but also the internship program that helps to nurture it. Aside from being a valuable teaching tool, internship programs allow companies a chance to see the future of their industry.

"Internships are so important, and we applaud all of the companies who go out of their way to share their knowledge and expose college students to the challenges they face every day," adds Longtin.

worked on different pollination techniques for both two breeds, managing to achieve quality results. "These projects offered a great critical thinking exercise and the ability to improve upon and present results in a professional setting," Moseley wrote in his essay.

During the second part of the internship he was assigned the task of creating new interspecific hybrids of the popular ornamental flowering shrub zinnia. "Being provided the opportunity to set up a breeding project from start to finish, including ploidy determination, plant selection, crossing block setup, emasculation, pollination, early harvest and embryo rescue... was an incredible experience," wrote Moseley.

But it wasn't always easy. "Some of the biggest challenges at the internship were really staying organized when it comes down to doing independent breeding projects," he said, noting that during the internship he learned how to stay organized and be always on top of his data and research.

At Garden Genetics, Moseley developed a color-coding system with a descriptive matrix spreadsheet for all crosses performed in his zinnia assignment. He took note of all the aspects of his project, such as crossing, media preparation and harvest, so the work could be continued even after the conclusion of his internship.

Uchneat says Moseley was a genuinely easy person to work with during his time at Garden

Genetics. "He was mature, thoughtful. He always asked appropriate questions but not too many questions. He asked the questions he needed to ask to get his work done and was able to stay on task with it," he says.

In the end, the internship experience taught Moseley how to improve himself most of all. "You gain a lot of confidence in yourself by having those accomplishments being done," he said. "To just sort of get a better understanding of what it is I'm able to accomplish, it's a confidence-building experience."

The Road Ahead

Moseley has one semester left at the University of Florida. Although he could have finished earlier, his curiosity in horticulture kept him wanting to take more interesting classes. In addition to his specialization in horticultural operations, Moseley is working toward a minor in plant molecular biology. The study, he says, helps him understand plants on a more scientific basis and focuses more on the research aspect of the industry.

His advisor has noted Moseley's natural interest in a diverse range of subjects. "He is not afraid to jump into a subject area over his head," Clark said. "He is naturally curious and creative, and loves plants. He likes to grow plants just as much as he likes to explore for them — he knows the importance of having good basic skills in finding out what a plant can really do."

At the moment Moseley is looking into several options for after graduation. In addition to searching for employment, he is considering graduate school to get a better foot in the door for the breeding industry. While he is looking to branch out and apply to schools out west in California, Moseley says he would love to stay at UF and receive his master's degree there as well.

He is also considering the option of pursuing more internships to further his training, including one located overseas in the Netherlands. "It would be really cool to get an international outlook on the industry," he said.

Whichever path he chooses, the 2012 GPN/Nexus Intern of the Year is sure to have the knowledge, drive and motivation to succeed in his future horticulture career.

"I see Adam as being a success in anything he wants to do," predicted Clark. "I think he will one day be an excellent plant breeder. I hope he finds an intellectually stimulating situation where he looks forward to going to work each day — if that happens, and it definitely can, we will see him produce some very exciting new plants one day." ■

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