Welcome to the Department of Horticultural Science's New Alumni and Friends Newsletter!

Chengyan Yue Named McKnight Land-Grant Professor

It started like any other day. Assistant Professor Chengyan Yue woke up early, got out of bed and went to check her e-mail first thing. When she opened her messages, though, she discovered something special: Yue had received the 2011-2013 McKnight Land-Grant Professorship.

The Professorship is an award given each year to help advance the careers of outstanding junior faculty at the University of Minnesota. Yue was one of only five junior faculty members across the entire University to earn the award.

“I saw the email and was like oh! It surprised me because they said we wouldn’t hear until January,” she remembers. “I was excited and very honored to be recognized for what I’m doing and for my colleagues’ appreciation of my work – it was very encouraging.”

Yue is the first member of the Department to receive the Professorship, which provides a two-year appointment that includes a research grant each year, summer support and a research leave in the second year.

For Yue, her exemplary studies started with a casual interest in flowers. “I like flowers; my family grows a lot of different things like flowers, grapes and houseplants just for hobbies,” she says.

But it was during the later years of earning a Ph.D. in economics that Yue discovered her interest in horticulture. She proceeded to complete her thesis about horticultural products and soon after was hired by the University of Minnesota as the first Bachman Chair in Horticultural Marketing. She holds a joint appointment in the Departments of Horticultural Science and Applied Economics.

“I like horticultural commodities because there are so many species in this area,” she says. “They are more diverse in terms of attributes, market channel and supply chain. In addition, the markets are highly segmented so there are a lot of potential research topics. Not many people have worked on this field in the past, so there is a lot of opportunity – there are a lot of questions to be answered.”

Yue’s role is to find those answers. In one project, she is investigating how future generations will respond to flowers – will they respond to the market the same as baby boomers, or will they appreciate and consume products in a different way? Conclusions she finds will influence the direction industries go and the areas they focus on in order to reach their future customers.

“When you grow things, you want to sell them,” she explains. “My work is to find out what attributes consumers are looking for and bring understanding to the growers, wholesalers and retailers about how to succeed in the marketplace.”

Since beginning her position, Yue has published 10 research papers and has many more submitted. Those around her note her relentless drive and passion for her work.

“Chengyan’s research focus, her high degree of research creativity and productivity, and her outstanding teaching abilities in the classroom and as a mentor of graduate students make her ideally suited for the McKnight Land-Grant Professorship,” Department Head Emily Hoover says. “We’re thrilled for her and her new opportunity.”

Though Yue doesn’t have definite plans for the next two years, she says she looks forward to traveling around the world to visit countries that are advanced in horticultural marketing. “I look forward to the opportunity to work with colleagues, to gain an international perspective of the field and to develop long-term relationships to then lay out plans for future research,” she says.
From the Department Head...

Welcome! Dreaming of green – when white surrounds us – garden planning is in full swing. As we get ready for the upcoming season, we are launching this bi-annual newsletter as another vehicle to keep you updated on what is happening within the department. I realize many of you subscribe to the weekly Twig Bender (if you don’t, sign up at http://z.umn.edu/twibender) and maybe have become a fan on Facebook (http://z.umn.edu/umhortfb). What we hope to do with this communication is highlight people and events of interest to the horticulture community.

As a way of introduction, I came to the department in 1978 to work on my Master’s degree with Dr. Mark Brenner. I stayed to complete my Ph.D. in 1982, after which I was hired as a faculty member. I became the Department Head in January 2009.

I have to admit that I thought I knew the department, but becoming Head has really made me appreciate the breadth of talent that surrounds me in our 22 faculty members, talented staff and exceptional students. For instance, plant breeding programs within the department are currently breeding or selecting 54 species to survive and grow in our landscapes and please our palates. Additionally, research programs are working to understand and enhance environmental quality, delve deep into the genome of the plant kingdom, and study sustainable practices of horticultural crops.

As you have surely read, many state-supported institutions across the country are facing substantive budget challenges. In response to these budget cuts, we have continued to be entrepreneurial by identifying partners to continue high impact programs, successfully competing for more then $3 million in grants last year and increasing enrollment in courses by 72 percent in the past two years. We have grown important educational programs, such as the Master’s in Professional Studies of Horticulture, and at the end of March we will award thousands of dollars in scholarship money to well-deserving students as a result of support from our horticulture community.

There is great need, but there is also great opportunity. Thank you for your interest and support of horticulture! We are excited about our future, and hope you can join us for our annual Kermit Olson scholarship ceremony and lecture on March 30.

Dr. Emily Hoover, Professor & Head, Horticultural Science

Learning Landscape to Change Alderman

The Department-home in Alderman Hall may be getting an uplift. Recently the Department commissioned landscape designer Marjie Pitz (of Martin & Pitz Associates Inc.) to develop a number of different designs for front, sides and back of Alderman. Each design showcases the Department’s research and cultivar releases for members of the University and the public to learn about and enjoy. Pitz also worked to create a sustainable landscape that would increase the efficacy of water drainage around the building.

The idea, Department Head Emily Hoover explains, is to connect the external and internal culture of horticulture and provide a positive space for research, education and development.

“We started looking into this because we would love for our building to better reflect the horticulture discipline and demonstrate the work of our department,” Hoover says. “We also hope to develop our landscape into an interactive classroom, of—

Quick News:

Associate Professor Brian Horgan was given the 2010 MGCSA President’s Award by the Minnesota Golf Course Superintendent Association of America.

Members of Turf Club attended the GCSAA Education Conference and the Golf Industry Show in early February. Find photos on our Facebook page!


The Cornercopia Student Organic Farm is up and running for the season, and the students are blogging up a storm! Find recent entries: http://cornercopiafarm.blogspot.com/.

Meagan O’Brien, an undergraduate horticulture student, was named the University of Minnesota Outstanding Undergraduate Horticulture Student for 2010-2011. Meagan has maintained an excellent academic record and was recently elected vice president of Hort Club. Meagan has a passion for urban horticulture with a specific interest in the production of healthy foods for urban populations.
Staff Spotlight: Roger Meissner, Manager of Plant Growth Facilities

Before he began working in the Department of Horticultural Science, Roger Meissner didn’t know the St. Paul Campus existed. He didn’t know what horticulture meant. In fact, he had never heard the word before.

“Our neighbor was a greenhouse manager for horticulture and told my parents to tell me to apply for an assistant gardener opening,” Meissner recalls. “But I didn’t even know what the work really entailed.”

Meissner’s infectious smile and encouraging words make them feel welcome and at home.”

Thirty-five years later, Meissner is one of the most recognized faces of the Department as the manager of the Plant Growth Facility. Those who know him – that is, almost every one in the department – know one thing makes him tick: people. Students, staff and faculty alike say Meissner’s infectious smile and encouraging words make them feel welcome and at home in the department. He says working with them makes each day better than the last.

“Every day is different – I don’t think I’ve been bored a day in my life here,” he says. “The people are so friendly, and I’ve always felt accepted and at home.”

Excellence.

Meissner began work under the title “assistant gardener” and spent much of his time completing plant-related duties, such as watering plants seven days a week, providing pesticide application, operating tractors and preparing fields for projects. The campus quickly felt like home. “I promised them I would stay for five years,” he says. “And I did.”

Then he took off. Late one August, Meissner asked for a week’s vacation, packed up a suitcase full of t-shirts, didn’t tell anyone where he was going and drove to Salt Lake City to visit two former graduate students. While there, he was unexpectedly asked to interview for a greenhouse position at the company the former students worked. Meissner headed back to Minnesota with a job offer and a decision to make.

When he returned to work the next week, there was a letter on his desk from Professors Harold Wilkins and Richard Widmer. In the letter, unaware of where he had just been, the professors expressed their appreciation for Meissner and asked him to stay to continue with greenhouse management.

“That’s when I decided I would stay here,” he says. “I didn’t have a degree, yet those two men had such confidence in me and what I was capable of. I decided right then that I would stay at the University of Minnesota.”

Meissner was born in St. Paul and graduated from Irondale High School in 1974. He decided to take a year off, found himself working in a machine shop, decided he didn’t like it and quit. Soon after a neighbor who managed the greenhouses for the Department asked Meissner to come to campus to interview for a position. He was hired within a couple of weeks.

Faculty Impact Horticulture Discipline Around the World

Faculty, staff and students travel all over the world to further world’s understanding of horticulture. From 2009-2010, Professor Sue Galatowitsch spent her sabbatical in the Australia and New Zealand, collaborating with other professionals on restoration sites to understand how they handle their revegetation practices, how they can improve them and how they are planning to cope with global warming.

Galatowitsch worked specifically on mined land rehabilitation sites; that is, sites where the mine ore is exhausted and the reclamation of plant and animal species is beginning. Her project included learning how to optimize plant sources for revegetation despite climate uncertainties.

“Since we don’t know how warm and dry it’s going to get, how can you pick plant sources that will be well suited for today’s conditions, as well as tomorrow’s climate?” she asks. “I was interested in exploring different site selection choices and how you would actually hedge against future uncertainty.”

One of the team’s key findings was that simple geographic information and general climate information shouldn’t determine those plant sources.

“Your definitely get a global perspective in your research and teaching speciality,” Galatowitsch says. “You get to imagine a broader group of people benefiting from the findings and gain a network of people to learn from and work with. I’ve really enjoyed taking these new cases into the classroom to describe what’s going on in the world based on first-hand experience. I hope it can inspire students to think about places all over the world they can learn and work.”

Find photos at www.tc.umn.edu/~galat002/auss

Undergraduate students in Plant Propagation.
Master Gardener Program Offers Young Gophers Summer Adventures

This summer the UMN Extension Master Gardeners, housed in the Department of Horticultural Science in Alderman Hall, will be teaching youth gardening classes in the Display and Trial Garden. This will be the second summer that the Master Gardener Program has paired up with the Department of Rec Sports to host “Gopher Adventures,” a weekly garden class for nine- and ten-year-olds attending the annual Youth Programs summer camp. Each week the Master Gardeners will cover a gardening topic, ranging from soil to vegetables to perennials. The Master Gardeners’ role is to create the curriculum and to teach the youth new gardening skills in their very own plot of land in the west end of the garden. They hope to inspire a love of all things horticulture in a new generation of gardeners.

A Master Gardener guides participants through the Display and Trial Garden, located behind Alderman Hall.

New Undergrad Curriculum

As a freshman, Laura Kosowski was undecided in her studies. But after a summer program on organic farms in Italy, she knew she wanted to know more about plants, nature and the relationship between humans and their food systems. Kosowski transferred into the Horticulture major and began focusing her studies on organic vegetable and fruit production, therapeutic landscapes, herbal medicine and sustainability.

“Although my interests were close to the Department’s “organic horticulture” track, they were broader than that,” she says. “[So] the extra room for individual direction has been great for me.”

Starting in 2008, the Department revamped its program to enable students to choose more classes and investigate potential interests and eventual careers. “It gives students more of a voice,” says Assistant Professor Eric Watkins, one of the Department’s undergraduate advisors.

While students still take a rigorous set of required horticulture classes, they now begin their studies by developing a course plan, writing an essay about their career goals and describing how their chosen classes will accomplish those goals.

“This really helps them to think through what they want to do in the future and how their classes will transfer into a career,” Watkins says. “Plus they take a more diverse set of classes, which enables students to expand their breadth while maintaining depth in horticulture.”

Alumni Spotlight: Hort Grads Create Urban Oasis in Minneapolis

Walk into Tangletown Gardens and customers immediately experience an oasis of winding garden paths, sweet smelling plants and wind chimes humming soft sounds above the trickle of running water.

It’s hard to visualize what used to be there: a Pure Oil gas station. Forty years of dirt and grime had covered the steel siding, and chains hung from trees where the previous owner had tied up his Rottweilers.

“But we saw the potential,” says Scott Endres, co-owner and U of M Horticulture alum (’94). “We saw it as a creative re-use of an old space and decided to take it on.”

Endres and co-owner Dean Engelmann (’95) grew up as “farm boys” and learned basic gardening from their mothers and grandmothers. Though neither started out their college education in the Department of Horticulture, they soon discovered areas of horticulture that captured their interest. Both transferred into the major and both were advised by Dr. Bert Swanson. Ironically, the two never had a class together — Endres was one year ahead, and somehow their courses never lined up. But their friendship grew through other campus involvement, such as Hort Club and jobs in the Department.

Endres says when he started the Horticulture program, he thought he would be working in production. But his path shifted after taking an elective in floral design with Dr. Neil Anderson.

“It opened this whole new world to me — a creative side that I hadn’t unleashed,” he says. “I loved the process of learning and executing the elements of design. It began with plants but then I could take it to anything I did. I still reflect on those things now.”

After graduation, Endres and Engelmann worked different jobs but soon felt it was time to move into ownership roles. The team began brainstorming and searching for a company home.

They closed on the Tangeltown building sale in December 2002. In a few months, the two had completely rebuilt the facility to become what Scott now calls their “little slice of heaven.”

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“After graduation, Endres and Engelmann worked different jobs but soon felt it was time to move into ownership roles,” Watkins says. “They closed on the Tangeltown building sale in December 2002. In a few months, the two had completely rebuilt the facility to become what Scott now calls their “little slice of heaven.”

“The rebuild was a really rewarding experience,” Endres says. “And the building became a vision for what we wanted to do.”

Since then, Tangletown has grown to include more than 10 greenhouses, 30 employees and serves customers all over the country. Almost all the plants and produce found in the store are grown and delivered directly from their facilities on Engelmann’s family’s farm. The center also started a 12-week summer CSA program with their own sustainably-grown produce.

Endres and Engelmann even plan to open a restaurant across the street this summer.

Endres attributes their education in the Department to laying a firm foundation from which they could learn and grow.

“Our time at the U was a great starting point to get us to the point they are at today,” Endres says. “Now we have experience in teaching, research, plant production, design and garden management, and we truly love what we do.”
Metabolomics Propels Department to Cutting-Edge Discovery

Members of the Department know there’s a reason “science” is included in the name. Especially Adrian Hegeman, a biochemist and horticulturalist wrapped into one assistant professor. Hegeman joined the Department four years ago to lead research efforts in metabolomics. In January 2010, he and Professor Jerry Cohen received a $1.9 million grant funded by the National Science Foundation (NSF) for metabolomics methodology development. The grant is designed to develop and bring new approaches to the field of metabolomics that will increase the quantity and quality of metabolite observations. Hegeman says housing such efforts in a horticulture department is unique.

“In terms of other horticulture departments, I doubt there is anything quite like this pairing elsewhere,” he says.

At its root, metabolomics is about trying to measure complete sets of chemicals, or metabolites, within an organism or biological system. It springs from the field of genomics. Genes form the blueprint for how that organism behaves, grows, develops and lives. Each gene encodes a protein that has a function. Many actually encode enzymes – the proteins that can catalyze reactions.

“The metabolites, then, are the things that are reacting,” Hegeman explains. “It’s where the action is. While genes can tell you what’s possible for an organism, measuring metabolites can reveal what’s currently happening.”

Enter the mass spectrometers. The Department is now home to seven of these machines, which are used to measure many different chemicals – in this case, mostly from plants – simultaneously.

“They allow you to see a snapshot of the chemicals in a plant at any particular point in time, as well as measure the masses of those chemicals,” Hegeman says.

How does that fit into horticulture? Hegeman says many studies in the field of plant breeding or understanding plant disease resistance require long periods of time between when a cross is made and actually knowing the results. In grape breeding, for example, it might take 4-5 years to determine whether the new variety has desirable traits in wine production.

With metabolomics, however, it’s possible to learn about the connections between the metabolites, assess which are associated with desirable traits for wine production, and then make selections via genetic testing as soon as the cross is completed. As a result, time, energy and resources are saved.

While humans and animals contain an estimated 3,000 metabolites, individual plant species tend to be in the tens of thousands. Why? Since plants can’t respond to their environment by moving or changing behavior, they respond to condition through their metabolism.

A host of metabolic pathways develop as a result, allowing plants to fight off disease, protect them from too much sunlight, or even manipulate the behavior of animals. These actions then connect directly to horticulture.

“These are the same issues we are interested in as horticulturalists because they contribute to properties that make a plant species desirable – fragrance, flavor, color and more,” Hegeman says. “Knowing how these different types of chemicals are produced and under what conditions you can alter the response of plants to produce new chemicals is very important for horticultural systems.”

Hegeman says the field’s highly collaborative nature has resulted in many projects with a wide array of goals. Current projects include characterizing the amount of resveratrol (an important antioxidant in red wine) in cold climate grape cultivars, and examining fungal resistance in perennial ryegrass by comparing the metabolites of two populations. Hegeman estimates the lab currently has at least six working collaborations – and there are more to come.

“It’s exciting to think about what discoveries this type of research can result in and the direct impact it can make on the world,” Hegeman says.

New Master’s Program Opens Doors for Careers in Horticulture

The black, retro chair with rounded arms in Professor Tom Michaels’ office is more than simply a seating space – it’s a place where new futures are realized. Michaels says around three students sit in the chair each week to tell him their stories and ask what opportunities are available in horticulture.

“Usually they are people who have had a long interest in plants and it keeps nagging them,” he says. “Then they reach a point where it’s time to pursue that interest.”

And they can. The Department now partners with the College of Continuing Education (CCE) to offer the Master’s of Professional Studies in Horticulture program. The degree is geared toward horticulture professionals, career-changers and horticulture entrepreneurs. The curriculum offers a comprehensive science background along with flexible course tracks for students to mold to their career interests.

Since it began, the program’s student enrollment numbers have been on the rise, with 27 new students in the past year and 10 students projected to graduate this spring.

MPS student Rick Triviski worked in advertising for 15 years before deciding it was time for a change. He began with Plant Propagation and soon found himself drawn to take more.

“It sparked an interest, and I didn’t allow myself to stop,” he says. “I moved along the path, taking plant pathology, and then I took my first turf class with Dr. Watkins.”

Triviski says the idea of working outside the traditional office setting, as well as a long-time interest in lawn care and golf, influenced his decision to study turfgrass science.

With the help of connections from the program, Triviski secured an internship to work at North Oaks Golf Club this summer. The experience will cover all the duties required to manage a golf course, from personnel to budgeting to pesticide application.

Triviski says he thinks the rigor of the program combined with its flexibility will enable him to succeed in whatever path he paves for the future.

“You don’t just learn the what – you learn the why and the how,” he says. “I think it’s the cutting-edge education of a four-year university coupled with the fact that you can tailor-make it for whatever career you want to pursue. Cutting-edge, but cutting to the chase – that’s essentially what it comes down to.”
Excellence.

By the Numbers...

7 mass spectrometers located in Department labs
33 horticulture graduate students housed in Alderman
8 pounds of butter in the fridge for Friday popcorn hours
54 plant species the Department is currently selecting or breeding
75,000 square feet of greenhouse space on the St. Paul campus

Kermit Olson 2011 Lecture: March 30!

Each year the Department puts thousands of dollars toward promoting the education of the next generation of plant professionals. We couldn’t do this without the generous support of our alumni and friends within the horticulture community. Thank you for your generosity and the legacy you have created.

Now, please join us to celebrate! We would be honored for you to help us recognize our students and hear from our featured speaker, U of M Entomologist Dr. Marla Spivak.

Kermit Olson 2011 Scholarship Award Presentation and Lecture
Featuring: Dr. Marla Spivak
“Socialized Medicine in Bee Colonies”

4:00PM, Continuing Education and Conference Center
1890 Buford Avenue
St. Paul, MN 55108

To help us plan, please RSVP at http://z.umn.edu/kermitolson
The event is free and open to the public. Hope to see you there!