

# STORIES

IN AGRICULTURE AND LIFE SCIENCES VOL.12 NO.2 2018

## GEORGE WASHINGTON CARVER'S LIVING LEGACY

6 Invisible battle

24 Evolution of cultural  
competency

28 Scientific storyteller

## ADMINISTRATION

Joe Colletti, Interim Endowed Dean;  
Interim Director, Agriculture Experiment Station  
Ruth MacDonald, Interim Senior Associate Dean;  
Interim Associate Director, Agriculture Experiment Station  
David Acker, Associate Dean, Academic and Global  
Programs; Raymond and Mary Baker Chair in  
Global Agriculture  
Jay Harmon, Interim Associate Dean, Extension  
and Outreach; Interim Director, Agriculture and  
Natural Resources Extension  
Mark Honeyman ('77 Animal Science, MS '83,  
PhD '89), Associate Dean, Operations  
Theresa Cooper, Assistant Dean, Diversity  
Howard Tyler, Assistant Dean, Student Services  
Hongwei Xin, Assistant Dean, Research

## EDITOR:

Melea Reicks Licht ('00 public service and  
administration in agriculture, '05 MS agricultural  
and life sciences education)

## WRITERS:

Ed Adcock, Ellen Bombella, Jennifer Carrico ('96 animal  
science and journalism and mass communications),  
Deb Gruca, Barb McBreen, Brian Meyer, Melea Reicks  
Licht, Ann. Y. Robinson, Grant Wall

## DESIGN:

PUSH Branding and Design

## EDITORIAL SUPPORT:

Haley Cook, Julie Stewart

## CONTACTS:

To contact the magazine:  
STORIES Editor  
304 Curtiss Hall  
513 Farmhouse Lane  
Ames, IA 50011  
Phone: (515) 294-5616  
E-mail: stories@iastate.edu  
www.stories.cals.iastate.edu

## For prospective students:

Student Services  
20 Curtiss Hall  
513 Farmhouse Lane  
Ames, IA 50011  
Phone: (515) 294-2766  
E-mail: calstudent@iastate.edu  
www.students.cals.iastate.edu

## To make a gift:

Development Office  
310 Curtiss Hall  
513 Farmhouse Lane  
Ames, IA 50011  
Phone: (515) 294-7677  
E-mail: agalumni@iastate.edu  
www.isuf.info/cals



## IOWA STATE UNIVERSITY

College of Agriculture and Life Sciences

Iowa State University does not discriminate on the basis of race, color,  
age, ethnicity, religion, national origin, pregnancy, sexual orientation,  
gender identity, genetic information, sex, marital status, disability, or  
status as a U.S. veteran. Inquiries regarding non-discrimination  
policies may be directed to Office of Equal Opportunity, 3350  
Beardshear Hall, 515 Morrill Road, Ames, Iowa 50011,  
Tel. 515 294-7612, email eooffice@iastate.edu.

## FOREWORD

# GEORGE WASHINGTON CARVER'S LEGACY LIVES ON

Carver was born into slavery. He came to Iowa and began his education at Simpson College studying music and art. He said, "It was at Simpson that I realized that I was a human being."

It was at Iowa State that Carver realized he was a scientist, a teacher and an innovator.

Carver came to Iowa State in 1891 as the college's first African American student. He earned a bachelor's degree in 1894 and a master's in 1896. Because of his excellence in botany and horticulture, he was appointed to the Iowa State faculty, becoming the university's first African American faculty member.

In this issue we celebrate Carver's living legacy. We highlight our faculty, staff and students serving others, mentoring students, conducting innovative research and creating a culture of inclusion.

Who knows? The next Carver could be walking among us right now on Iowa State's campus, perhaps brushing shoulders with the next Henry A. Wallace. How their differences are valued in classrooms and labs, welcomed in study groups and clubs, and serve as strengths for internships and work experiences, will help chart the course for their success and pave the way for the profound impact they will make on society.

Ensuring a safe, welcoming environment is only the first step in how we help our students grow into the best version of themselves. May each student one day say, "It was in the College of Agriculture and Life Sciences that I realized I was a human being. And I realized you were, too."

Theresa Cooper leads this charge in the college. As Iowa State's first college-level assistant dean of diversity, she's made history. She's helping to prepare the way for our students to do the same. Dr. Cooper offers her thoughts on keeping Carver's legacy alive in this issue's Voices essay on page 16.

Throughout this issue you'll meet faculty mentors and student researchers working side-by-side, just as Carver did. One student whose story will always stay with me is Chris Salek (page 6). An active-duty veteran, Chris' commitment to service, tenacious pursuit of an education and knack for research, has left a lasting impact on those who know him.

You'll get a glimpse of Andrew Manu's walk with Carver as the university's George Washington Carver Chair on page 9. I believe his generous, gracious nature and his commitment to education reflects the soul of our college. As Dr. Manu says: May we live to meet an iota of Carver's standards as teachers, as scientists and as humanitarians.



Kind regards from central campus,

Melea Reicks Licht

Image by Christopher Gannon



## ON THE COVER

Iowa State's **George Washington Carver** Chair and professor of agronomy, Andrew Manu walks with student Joe Beary in Carver courtyard this fall. Image by Christopher Gannon.

George Washington Carver. 1999. Christian Petersen (Danish - American, 1885 - 1961). Bronze cast of 1949 plaster sculpture. The bronze casting was commissioned by the University Museums, and is a gift of John and Linda Dasher. In the Christian Petersen Art Collection, Art on Campus Collection, University Museums, Iowa State University. Located in Carver Courtyard.

## CONTENTS

### 2 LETTER FROM THE DEAN

### 3 NEWS FROM CAMPUS

### 4 STUDENTS

- Dawn Henderson, agronomy
- Riley Arthur, agricultural business
- Chris Salek, horticulture

### 9 FACULTY + STAFF

- Kristine Tidgren, Center for Agricultural Law and Taxation
- Stephanie Hansen, animal science
- Tom Brumm, agricultural and biosystems engineering

### 14 CARVER'S LIVING LEGACY

- VOICES: Common ground: The shared language of agriculture by Theresa Cooper, assistant dean of diversity
- George Washington Carver: Pioneer, Scholar, Leader, Teacher, Inventor, Artist
- Andrew Manu, Iowa State University George Washington Carver Chair
- Spirits of service and innovation
- Next-gen scientists: George Washington Carver Interns
- Student researchers advance science
- Growing to give: Iowa Master Gardeners
- Evolution of cultural competency
- Understanding farmers' data needs

### 28 ALUMNI

- Isai Madriz, entomology
- Armitra Jackson-Davis, animal science, and Dedrick Davis, soil science
- Shanen Ebersole, animal science, and Beau Ebersole, agricultural studies

### 34 ALUMNI NEWS

### 35 PARTNERS

- Center for China-US Agricultural Economics and Policy
- Iowa State University Master Conservationists

### 38 GIVING

- Iowa State's Mpirigiti Rural Training Center Opens in Uganda

### 40 ALMANAC



Nearly 125 years ago, George Washington Carver earned his bachelor's degree in agriculture from Iowa State—November 14, 1894. Carver was about 30 years old at that time. No official documents exist on his birthdate; he was born into slavery in Missouri around 1864—the closest we have to knowing his birth year.

You should read a copy of Carver's bachelor's degree thesis, entitled "Plants as Modified by Man." You can find it online in the Parks Library's Special Collections. Its seven pages are rich in language, scientific curiosity and insight.

In the thesis, Carver wrote: "... Dare we not predict that the day is not far distant when man[s] workshop need no longer be chaos, but will be able to use the tools nature has placed before him from a purely scientific basis, free from all conjecture."

That is part of his legacy for us today: Feeling the excitement of discovery and looking forward to new ways to understand nature and using that to benefit society. Which is just what Carver did after his two degrees and his time spent in a faculty position at Iowa State and throughout his long, famed career at Tuskegee University.

Part of Carver's legacy for us is to continue to inspire students from all walks of life to follow his footsteps in agricultural sciences—just as he did with a boy named Henry A. Wallace. What I would not give to go back in time and see these two extraordinary people together, connected by Iowa State. Their ages did not matter. The color of their skin did not matter. What mattered was the common interests they shared in science, the natural world and life itself. Carver took the time and patience to spark something in the young Henry A. Wallace.

These sparks still happen. Every year, our students make important, lifelong connections with faculty and staff who truly care. By our actions large and small—as Carver would say, by the uncommon way we do common things—we can make a world of difference and a real difference in the world.

We are proud to have Carver as a role model. But his legacy can be and should be viewed in a much larger frame—how we live our lives and be accepting of each other. His determination and perseverance against tremendous adversities, including intolerance and prejudice, is a lesson in hope for us all—in our college and every community.

Dare we not predict that the day is not far distant when we all treat each other with respect, purpose and cooperation; engage in honest, respectful dialogue; seek to better the livelihoods for all; and together reject bias and discrimination?

— Joe P. Colletti

Joe Colletti  
Interim Dean of Agriculture and Life Sciences

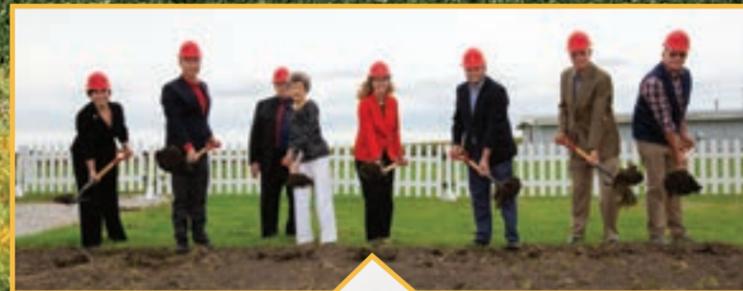
## MAKING IMPACT:

### AGRICULTURAL AND BIOSYSTEMS ENGINEERING

ISU's Department of Agricultural and Biosystems Engineering (ABE) received the Iowa State University Alumni Association's Impact Award during the Honors and Awards Ceremony in October. The award honors individuals, businesses or organizations whose programs or accomplishments brought broad recognition to the university. ABE has received top national rankings from *U.S. News and World Report*. ABE is jointly administered by the College of Agriculture and Life Sciences and the College of Engineering.

## UNLOCKING YOUR INNER ENTREPRENEUR

Sara Wyant ('80 journalism and mass communication), president and founder of Agri-Pulse Communications, Inc., the nation's largest communications firm focused on agricultural and rural policy issues, presented the 2018 William K. Deal Endowed Leadership Lecture on Oct. 2. Wyant's presentation, "Unlocking Your Inner Entrepreneur: How one of the luckiest days of my life was when I got fired from a job I loved," is available online at [www.stories.cals.iastate.edu](http://www.stories.cals.iastate.edu).



## NEW POULTRY FARM TO ADVANCE TEACHING AND RESEARCH

On Aug. 31 the college celebrated a groundbreaking to announce the replacement of Iowa State University's aging poultry science facilities. The new Robert T. Hamilton Poultry Teaching and Research Farm will be a state-of-the-art complex. It was made possible through private funding from Iowa agricultural donors including Arlene Hamilton, the Robert and Arlene Hamilton Charitable Foundation, Iowa Egg Council, Hy-Line International and Hy-Line North America.

## SUCCESS FOR CALS STUDENT TEAMS

- **Agricultural Business Club:** Outstanding Chapter Award, Creative Club Award from the Agricultural and Applied Economics Association
- **North American Colleges and Teachers of Agriculture (NACTA) Judging Team:** overall sweepstakes award
- **Cyclone Power Pullers:** first place appearance, manufacturability, innovation, written design report and maneuverability at the International Quarter-Scale Tractor Student Design Competition
- **The Horticulture Club:** second place, 2018 Mid-America Collegiate Horticultural Society Competition
- **Livestock Judging Team:** second place at Aksarben, the National Barrow Show and the Flint Hills Mid-American Classic
- **Soils Judging Team:** second place group judging, second place overall at American Society of Agronomy Regional Soil Judging Contest
- **National Agri-Marketing Association Club (NAMA):** second place Outstanding Student Chapter, third place John Deere Signature Award



## ROBISON SELECTED AS NEXT DEAN OF AGRICULTURE AND LIFE SCIENCES

Daniel J. Robison from West Virginia University has been named the next endowed dean of Iowa State University's College of Agriculture and Life Sciences, and director of the Iowa Agricultural and Home Economics Experiment Station. Robison, dean of the WVU Davis College of Agriculture, Natural Resources and Design, and director of the West Virginia Agriculture and Forestry Experiment Station, will begin his tenure by March 31, 2019. Robison holds a bachelor's degree in forestry, master's in silviculture and forest influences from the State University of New York—College of Environmental Science and Forestry, Syracuse; and a doctorate in entomology from the University of Wisconsin-Madison. He joined WVU in 2012 after serving as associate dean for research in the North Carolina State University College of Natural Resources. "Everyone—whether you live down the street or halfway around the world—benefits from the work led by the faculty, staff and students of Iowa State's College of Agriculture and Life Sciences," Robison says. "It's a great honor to be selected to lead the college, and I look forward to working with the talented team here to address the local and global challenges of agricultural production, food safety, security and nutrition, natural resources management, and underlying life sciences."

**Dawn Henderson** says her time in the marching band helped her build leadership and communication skills. She also gained confidence through her undergrad experience in agricultural education.

## IN STEP: ADAPTING FOR THE NEXT ADVENTURE

Story by Ed Adcock  
Image by Grant Barton Photography

**D**awn Henderson's student experience has been transformative. From building communications and leadership skills in the marching band, to conducting undergrad research, she's graduating with a varied skillset.

She started her Iowa State adventure in agronomy, but decided to add a minor in agriculture and life sciences education. She sees a lot of misinformation and lack of knowledge about agriculture among the public, and even close acquaintances, and hopes to bridge that gap.

"A lot of my friends joke that I just play in the dirt, but I'm very proud of being an agronomist," she says.

Some of that pride was no doubt passed down from her parents, Eva ('93 agronomy) and Mike Henderson, who earned degrees in agronomy. Her father is an area agronomist with the USDA Natural Resources Conservation Service (NRCS) in northwest Iowa and her mother raises chickens and tends an expansive garden on their acreage near Marcus, Iowa.

After helping her father with presentations about a rainfall simulator, Henderson found she liked teaching and speaking to groups. A position in extension as a field specialist, or with an agricultural literacy program might be good fits.

Her father is a big influence. They send pictures back-and-forth of the weed of the day.

Stinging nettles is her favorite: "They're just endlessly fascinating to me," Henderson says of its numerous adaptations to survive.

Henderson has adapted, too, according to Nancy Grudens-Schuck, professor of agricultural education and studies, who saw a transformation—from tentative to confident—as she supervised Henderson's Science with Practice research project, for the agricultural education and studies 312 course.

The project was follow-up research to Grudens-Schuck's survey study of 1,700 participants of the IOWATER program, in which volunteers conducted water monitoring. She had numerical

data, but lacked interviews that were needed to find out why people joined watershed organizations.

"Dawn was really persistent in learning about interviewing," Grudens-Schuck says. "She pushed herself to make those 'cold calls' to people. She kept people talking, even quiet people like herself. Her interviews got better and better."

Being part of the Iowa State marching band also has allowed her to test her limits.

"I've learned more from marching band than I've learned from any other activity on campus," she says.

The last two years she was one of four guides for the 18-member tenor sax section. As a guide she serves as a point of contact between the director and the band members. The guide captain focuses on the music, while Henderson and the others focus on marching and visuals.

She has added valuable communication skills.

"I've learned more about being a good leader as a guide. I've learned a lot about when to continue to push and when to back off," she says. 📧

**Riley Arthur** (right) is mentored by **Dermot Hayes**, Charles F. Curtiss Distinguished Professor in Agriculture and Life Sciences, as a Dean's Leadership Scholar.

## CARING MENTORSHIP, ROOM TO GROW

Story by Deborah Gruca  
Image by Christopher Gannon

**R**iley Arthur is on the run. The junior majoring in agricultural business and economics is chasing not just a degree, but the full-blown Iowa State experience.

Arthur, an Owatonna, Minnesota, native worked as a commercial merchandising intern this summer with ethanol processor Flint Hills Resources.

The job kept him moving. As Arthur traveled to four of the company's ethanol plants in Iowa and Nebraska and to the company's headquarters in Wichita, Kansas, he learned about marketing distillers grains, a co-product of the ethanol process.

"I had an awesome, outstanding boss and got to interact with customers every day. I don't necessarily want to crop scout for the rest of my life, but I learned so much and it was a great experience."

Arthur continues his fast-paced schedule on campus. This is his second year as a peer mentor for agricultural business freshmen. And he makes time to serve as a CALS Ambassador and an officer in the Agricultural Business Club. As the club's Senior CALS Council Representative, he co-chairs the CALS Week committee and coordinates the Pre-Career Day Mixer.

He is further developing his leadership skills in the Vermeer International Leadership Program.

"It's a year-long program that intensely focuses on leadership, not just from a university perspective, but from an international and cultural perspective. We get to travel to one of their company facilities in the Netherlands during spring break 2019," says Arthur.

Receiving several scholarships has helped Arthur excel. As a freshman, he received the Dean's Leadership Scholarship and participated in the program's weekly class led by then-dean Wendy Wintersteen and associate dean David Acker.

An exciting bonus of the dean's scholarship? A grant allowing Arthur to do research as an undergrad. He's been working with Dermot Hayes, who specializes in ag markets in the United States and China. Hayes is the Pioneer Chair in Agribusiness and a Charles F. Curtiss Distinguished Professor in Agriculture and Life Sciences.

"Riley is a self-starter who does excellent work," says Hayes. "He also manages his time very well. In addition to other work, he initiated a project to

understand how changes in China's ethanol policy would impact world corn markets."

Arthur says Hayes gives him room to grow.

"Dermot doesn't micro-manage what I'm doing. He basically lays out a question he wants me to answer, then it's my job to go figure out how to answer that question," says Arthur. "Early on, he differentiated research from the classroom: in research—unlike in the classroom—the professor doesn't know the answer. So, I must be confident that the results I present to him are accurate."

Arthur must be getting something right. His name appears with Hayes' on an October 2017 Center for Agricultural and Rural Development article on China's E-10 mandate.

After graduation, Arthur plans to work in industry for a few years and then look at pursuing a higher degree. 📧

Art on Campus featuring George Washington Carver: *Do You Know What's Inside This Flower?* George Washington Carver Mentors a Young Henry A. Wallace. 2015. Rose Frantzen (American, b. 1965). Oil on panel. Commissioned by the College of Agriculture and Life Sciences and University Museums with funds generously provided by Jim and Marcia Henderson Borel (class of 1978). In the Art on Campus Collection, University Museums, Iowa State University, Ames, Iowa. Located in Curtiss Hall.

# INVISIBLE BATTLE

Story by Melea Reicks Licht  
Images by Christopher Gannon

*Chris Salek, a senior in horticulture, reflects on his service in Gold Star Hall in the Iowa State Memorial Union. "I knew these guys," he says of the veterans memorialized in the Somalia and Iraq sections of the wall. "I was in their hometowns and saw thousands line the streets to welcome their remains home."*

**"I wasn't done learning yet. I'll never be done learning."**

Some days, boarding a crowded Cy-Ride bus can be too much to bear for Chris Salek. His anxiety can take over, especially if he's already stressed about giving a presentation or is on his way to an important exam.

On other days, like today, he can make his way to his favorite class without issue.

"I love 'woodies'. It's tough, but it's my favorite class," says Salek, a senior in horticulture, about the woody plant cultivars course taught by Jeff Iles, professor and chair of the Department of Horticulture. "There's a lot more to golf courses than just turf, and woody plants and trees play a big role."

An active-duty army veteran, Salek's hidden disability—post-traumatic stress disorder (PTSD)—can make even the simplest tasks, like getting to campus, a major obstacle to earning his degree.

"I think a lot of students take for granted the ability to just get up and go to class. Whether the disability is physical or invisible like mine, a lot of students really struggle," Salek says.

Salek is one of 2,734 military-affiliated students (those that self-identify as veterans, military personnel and family members) at Iowa State. Jathan Chicoine, director of the Iowa State University Veterans Center, says there has been a 33 percent increase in the veteran student population since the creation of the center in 2012.

"When talking about PTSD, there is an idea we call Post-Traumatic Growth. It's the idea that when we process through some of those traumatic

experiences, we gain something, strength," says Chicoine. "Chris, like many veterans, is resilient and brings a remarkable strength to our community. Through his experiences, he enriches all those around him."

#### **Navigating the student experience**

Salek, a native of Muscatine, Iowa, was drawn to military service by the G.I. Bill in 1984. In addition to overcoming the effects of PTSD from his days in combat, Salek faces challenges of being an older, non-traditional student.

"Sometimes it can be odd to work in groups with people so much younger, and reaching back thirty-some years to the last time I took a chemistry class is really stressful," he says. "But, you have to just put yourself out there and ask for help from your younger peers. They can be really helpful, especially with some of the technology I'm not as familiar with."

He says he does his best to pay extra attention in class, gets to know his professors and uses the tutoring services and peer groups offered through the Iowa State University Veteran Center.

The Veteran Center offers academic coaching, funding for tutoring and connects vets to counseling and disability resources on campus. They also host weekly, home-cooked dinners for veterans and their families and offer trainings and meet-and-greet events for faculty and staff.

Veteran services, support by academic advisers and personal attention from professors are just a few of the elements Salek says help him

through the tough semesters.

"We've invested a lot in new retention initiatives in recent years," says Howard Tyler, assistant dean for student services in agriculture and life sciences. "Better training for academic advisers, increasing communications to current students and improving our inside-and outside-the-classroom experiences help students like Chris navigate their unique challenges."

The College of Agriculture and Life Sciences has the highest retention rate on campus—90.4 percent. And, the college keeps the largest percentage of retained students as majors in the college—83 percent.

#### **A drive to learn and achieve**

Salek retired from the Army in 2008 as a master sergeant with expertise in infantry and logistics. He served several active duty deployments including time in Somalia and Iraq among other locations. He earned an agricultural business associate's degree at Muscatine Community College, and transferred to Iowa State in 2014.

"I always knew I wanted a bachelor's degree. I enjoyed my time at MCC and was involved in a lot of things, but I wasn't done learning yet. I'll never be done learning," Salek says.

While at Muscatine Community College, Chris earned first place national honors in the career progress competition at the National Postsecondary Agricultural Student Organization annual conference.

As an undergrad research assistant for Adam Thoms (left), assistant professor of horticulture, Salek (right) collects data comparing cultivars and maintenance practices of turf at the Iowa State Horticulture Research Station.



He met his Iowa State academic adviser Barb Clawson while she was at the community college on a recruiting trip.

“Chris’ work ethic, drive and ambition to succeed has pulled him through the barriers put up by his hidden disability. His honesty and sincerity to graduate makes me work harder as an adviser to find assistance for him,” Clawson says. “Chris gets the highest reviews for his diligence on the job. The world is a better place with Chris in it. He will be a top-notch turf manager in the near future.”

His love of the outdoors is what drew Salek to horticulture and his love of sports led him to consider turf management as a career.

#### Focusing on the details

Salek worked with the Iowa State University Athletic Department turf

management crew for two years, and this spring he joined the undergraduate Sports Turf Managers Association Student Challenge team competing at the association’s national annual conference.

As an undergraduate research assistant for Adam Thoms, assistant professor of horticulture, Salek collects data comparing cultivars and maintenance practices of turf at the Iowa State Horticulture Research Station.

“We have this piece of equipment that’s a modified aerator that simulates the traffic of a 300-pound lineman. And, I measure the speed of a golf ball on simulated greens with a Stimpmeter,” Salek says. “I create traffic reports to see how different varieties of turf perform under different stresses.”

Thoms’ research team contributes data to the National Turfgrass Evaluation Program, which helps turf managers across

the United States make decisions on cultivar selection and how to best manage inputs.

“Chris has been an excellent and dedicated member of our research team. He brings a wealth of real-world experience and life knowledge to our crew. He doesn’t realize it, but often he is giving advice to the students on life challenges they face,” says Thoms. “He also has a great focus on details, which is critical when conducting research.”

Ultimately, Salek plans to graduate and find a position as a golf course superintendent. It will be an important moment for him in completing the bachelor’s he set out to earn when he joined the Army nearly 35 years ago. He may find he turns to his research findings at Iowa State in making turf management decisions at his own course. **S**

As director of the Center for Agricultural Law and Taxation, Kristine Tidgren offers programs for farmers, students, bankers, real estate appraisers, farm managers, tax professionals, lawyers and policymakers.

IOWA STATE  
UNIVERSITY  
Center for Agricultural Law and Taxation



## UNDERSTANDING LAW AND TAXATION

Story by Ed Adcock  
Image by Christopher Gannon

**M**aking sense of law and tax issues related to agriculture is the passion of Kristine Tidgren and her team at the Center for Agricultural Law and Taxation.

She became director of the center earlier this year after joining it as staff attorney in 2013 and serving as assistant director for two years. The Center for Agricultural Law and Taxation (CALT), established by the Iowa Board of Regents in 2006, was created as a primary source of professional educational training in agricultural law and taxation.

“We are here to help both professionals and producers navigate the complexity of the laws,” Tidgren says. “Everything is so complex. We are an objective, independent group that isn’t here to make money or to try to push any particular point of view, we are just here to educate.”

Tidgren and the center’s three staff members conduct seminars, webinars and provide information on its website and newsletter articles. Dozens of webinars are offered and every other

week law and tax highlights are reviewed through online sessions.

CALT also educates about 1,200 tax professionals every year through federal income tax schools.

“When they started 45 years ago, the schools were education for farmers who filed their own tax returns. Over the years things shifted, and now not many farmers file their own tax returns,” she says.

Still, producers are one of the center’s big constituent groups, according to Tidgren, along with bankers, real estate appraisers, farm managers, tax professionals, lawyers and policymakers.

Doug Hensley, president of Hertz Real Estate Services, credits Tidgren’s communication skills for successfully guiding the center.

“Kristine is a gifted speaker, who is very sincere and informed,” he says. “She presents complex topics in a way that makes them understandable to the novice.”

Tidgren, who also serves as an adjunct assistant professor in the agricultural education and studies department, teaches

an upper-level agriculture law course every spring semester to about 145 students.

“We’re not trying to make them legal experts, but we do go into pretty good detail on the key laws that really impact producers,” she says.

Tidgren was in private practice in Carroll, Iowa, before joining CALT.

The Iowa State journalism and psychology alum grew up on a family farm near Logan, Iowa, and earned her law degree from the University of Texas at Austin. She worked in a law firm in Kansas City for a year, before moving back to Iowa working for Lexis-Nexis, the legal research company, as an attorney, writer, editor and researcher.

She says her CALT position is the ideal combination of her passions for legal research and writing and her roots in agriculture. **S**

**STORIES EXTRA:** [www.stories.cals.iastate.edu](http://www.stories.cals.iastate.edu)

Learn more about the educational opportunities available through the college’s Center for Agricultural Law and Taxation online.

# INSPIRED BY CURIOSITY

Story by Ann Y. Robinson  
Image by Christopher Gannon

*CALS grad Stephanie Hansen, associate professor of animal science, encourages her students, including graduate student Erin Deters, to pursue their passions through lifelong learning.*

Be-coming a national expert in ruminant nutrition was not on the radar when Stephanie Hansen arrived at Iowa State as a first-generation college student. She just wanted to learn more about beef cattle.

She started to imagine going to graduate school as her adviser Doug Kenealy ('69 dairy science, '74 PhD animal science), now retired, kept telling her she'd make a good professor.

Hansen ('02 animal science) took that path, and now as an associate professor of animal science at Iowa State she encourages her students to consider a similar future.

"It's a great life for someone who's innately curious. Ask a question and look for the answers. That's what I get to do in research. At least as long as I can find a way to fund it," she says.

Hansen grew up in the town of Sergeant Bluff in northwest Iowa, and spent many hours on her grandparents' farm-to-finish Limousin beef operation nearby. She remembers looking at the

cattle through the picture window one day and saying, "Why don't we do anything with them?" As the oldest grandchild, she had pull: It wasn't long before the family was loading up cattle for the fair to compete for—and often win—trophies. Along the way, she gained some hard knocks from unpredictable cattle that taught her toughness and persistence. From years in 4-H, she also learned about record-keeping and financial management, setting the stage for her grant-writing and communication skills.

After her undergraduate degree, Hansen went on to North Carolina State University for a master's and doctorate. She returned to Iowa State in 2009 as an assistant professor of animal science. Her work focuses on the influence of minerals and vitamins on cattle health, stress levels and meat characteristics, improving feed efficiency and assessing novel feedstuffs.

She is one of the only women in the room at many livestock nutrition meetings, something that's changing fast for the

students she teaches and mentors. "Women are increasing the ranks of animal science students at Iowa State, which is also a trend nationally," says Hansen.

It's early in her career, but Hansen is already gaining notoriety. She's authored nearly 60 peer-reviewed articles, and she has garnered about \$8.5 million in research funding. Last year, the American Society of Animal Science recognized Hansen with both national and Midwest early career achievement awards.

**"It's a great life for someone who's innately curious. Ask a question and look for the answers. That's what I get to do in research."**

## Solving industry's hard questions

Her expertise on the role of minerals in animal nutrition is rare. That brings unique opportunities to work with livestock businesses and consultants to build and apply relevant science.

"I get those fun phone calls from people in the industry who have hard questions," says Hansen. "I really appreciate that they trust me to help solve their problems."

Currently, she's studying sulfur in the diets of beef cattle, with implications for utilizing co-products of ethanol production that tend to be high in sulfur. Another project, funded by a U.S. Department of Agriculture grant, aims to bridge the effects of nutrition and meat quality, with colleague Elisabeth Huff-Loneragan, professor of animal science.

Huff-Loneragan ('91 MS meat science, '95 PhD) is a university-wide leader in recruitment and retention of women and underrepresented minorities. She served as a departmental mentor during Hansen's early days on campus, but this project is the first time the two have worked together.

"Stephanie is very collaborative and appreciates the value of cross-cutting research," says Huff-Loneragan. "She's also quite dedicated to her students. I appreciate the way she guides them, while also giving them freedom to figure things out on their own."

## Teaching livestock nutrition, life lessons

Hansen says participation in Iowa State's Project LEARN (Learning Enhancement Action/Resource Network) has been invaluable. Offered through the College of Agriculture and Life Sciences with support from the USDA, the program aims to nurture effective, student-centered instruction. Hansen is working with seven graduate students and frequently includes undergraduate researchers in her projects. She likes to give the undergrads opportunities to work with graduate students and learn from each other.

Enrollment in her senior-level nutrition class has doubled in the last two years. Livestock nutrition isn't the only thing on the syllabus. Students also develop skills like note-taking and synthesizing concepts.

"As an undergraduate student in Dr. Hansen's advanced nutrition class, it was obvious to me how passionate she was about not only the subject of nutrition but also teaching," says Erin Deters ('15 animal science), who is pursuing a doctorate with Hansen's mentorship. "Dr. Hansen's evident passion for nutrition intensified my interest in the subject and eventually led me to join her lab as a graduate research assistant. She has high expectations and is dedicated to helping students achieve these expectations as well as reach their academic and professional goals."

Hansen says she wants to help her students become better learners—something she considers important at any stage of college or life. Balance is another life lesson Hansen believes in. She values time outdoors, hiking and enjoying her hobby of photography (her Instagram handle is "@mineralnerd"). She's also writing her first book, a science thriller.

"I love what I do," says Hansen, "but, as I tell my students, it's important to take time away from work to recharge. When I'm not thinking about beef cattle, I try to be on a mountain somewhere." **S**



*Hansen convinced her family to show her grandparents' Limousin cattle. She credits 4-H for setting the stage for her talents in research, grant-writing and communication.*

# SERVANT LEADER, ENGAGING MENTOR

Story by Ed Adcock  
Image by Christopher Gannon

**Tom Brumm** (right) says teaching is the best part of his job. He offers courses in biorenewables, fundamentals of industrial technology and agricultural systems technology and offers support to freshman labs. Here he works with students (from left) **Collin Reilly**, **Nick Keech** and **Vanessa Chapman** to monitor air flow in a model grain bin.

**T**om Brumm makes the most of his 20 percent faculty appointment devoted to service to Iowa State.

The associate professor of agricultural and biosystems engineering extends that commitment to service beyond campus reinforcing George Washington Carver's observation: "It is simply service that measures success."

In addition to leadership roles in his department and service to the college and university, he serves as associate director of the Center for Sustainable Rural Livelihoods (CSRL) at Iowa State. In that role, he helps farmers in Uganda keep more of their crops by researching and implementing ways to reduce post-harvest losses.

Steve Mickelson, chair of the Department of Agricultural and Biosystems Engineering, says Brumm excels as a faculty member.

"Dr. Brumm is a servant leader in all he is involved with, both on and off campus. He has made a tremendous impact as chair of the technology curriculum committee by implementing meaningful continuous improvement processes," Mickelson says. "As a teacher, he has integrated active

learning techniques in all the courses he teaches, engaging students in their learning."

## Experimental education

As a scoutmaster for a local Boy Scouts of America troop, Brumm finds opportunities to teach life lessons.

"We put the boys in situations where they get the chance to problem-solve, lead and figure it out on their own," he says. "Talk about experiential education, this is it."

As a scoutmaster and faculty adviser for Alpha Phi Omega—a national co-ed fraternity founded to develop friendship, leadership and service to humanity—Brumm has facilitated a Merit Badge University on Iowa State's campus. Approximately 350 Boy Scouts from troops across central Iowa participated in the 2018 event involving activities to complete merit badges with agriculture and life science connections including animal science, farm mechanics and soil and water conservation.

"My impression is that it was Carver's approach; that experiential approach: 'Well let's try it and see what happens and then talk about it.' In Boy Scouts or teaching,

I use the same approach."

Last fall, Brumm was in charge of two courses: a course in biorenewables, including biomass and biofuels; and a fundamentals course for sophomores in industrial technology and agricultural systems technology.

He is involved in departure and reflection courses related to the Uganda service-learning program through the Global Resource Systems major, as well as traveling to Uganda with the student service learners. He also provides support for freshman lab courses in the department.

"Teaching's the fun part; that's the best part of my job, whether I'm teaching next to a student in a garden in Kamuli (Uganda) or I'm in a classroom here; it's all fun."

The self-described "farm kid" from Osage, Iowa, enrolled at Iowa State in 1975. After earning his bachelor's degree in agricultural engineering in 1979, he came back as a graduate student in 1983 and served as an instructor while working on his doctorate, which he completed in 1990. After working for a seed company for about 10 years, he returned to Iowa State as a faculty member.

## Applying research, improving lives

His research related to grain handling and storage helps subsistence farmers in Uganda reduce their grain losses due to insect infestations.

Brumm says it is his work in Uganda that is the most challenging professionally, but also means the most.

"I've done research in the past and I've improved the efficiency of certain processes, for example, but this the difference of people living well and barely surviving," he says.

From an engineering perspective, his work in Uganda is challenging because the assumptions engineers and professionals often make in the U.S. don't work there—from access to technology, to cultural and sociological aspects.

Ugandan farmers lose as much as a third of their crops to insects, mold and other pests. Poor storage of maize produces aflatoxin that causes illness in those who eat it.

"We could increase the food supply by 20 to 30 percent without special seed or fertilizer or mechanization if we just handle the crop better after it's harvested," Brumm says.

His research has found sealing grain in air-tight containers eventually suffocates weevils in them.

"To get a container hermetically sealed is difficult. You can't just put duct tape over the joints and call that good," he says.

Another project involves disturbing the insects with movement to disrupt their reproduction cycle.

"If we disturb them regularly then they don't reproduce well. We interrupt their egg-laying cycle, and we interrupt mating. How much to disturb and how often are what we have to figure out from scratch."

Brumm also is enlisting students in Uganda to design portable seed cleaners

and crop dryers, and to improve the existing hand-threshing process.

"I am a visiting professor at Makerere University in the agricultural and biosystems engineering department. The farmers and schools we work with in Uganda are growing more amaranth, but it's tedious and inefficient to hand thresh," he says.

A Makerere agricultural engineering student is working with Brumm to build an amaranth thresher for a senior project.

Brumm says he could buy a thresher off the shelf, but that wouldn't serve the goal of education and would deprive the student of valuable experience. George Washington Carver would likely approve. **S**



Image by Jim Heemstra

As associate director of the Center for Sustainable Rural Livelihoods at Iowa State, **Tom Brumm** works alongside Iowa State students like **Elizabeth Garzon**, a senior in global resource systems, and Ugandan farmers to reduce post-harvest losses in the Kamuli district of Uganda.

# COMMON GROUND: THE SHARED LANGUAGE OF AGRICULTURE

By Theresa Cooper, assistant dean for diversity and director, George Washington Carver Summer Research Internship Program



**G**rowing up in rural east Texas, the legacy of George Washington Carver permeated my childhood. I hear and feel the echoes of Carver's life story as a parallel to my own ancestors.

Grandpa Sol, my great-grandfather three times removed, was born into slavery in 1862, two years before Carver was believed to be born. During the height of the Jim Crow South era, in a rural America that saw little value in the contributions of black folks, Grandpa Sol persisted. Over time, he purchased 200 acres of land in east Texas, using it to feed not only his family, but also the families of those who deemed him "less than."

My grandfather benefited from Carver's creation of the Jessup Wagon, a fully equipped traveling experiment station, as its use made its way to Texas via extension agents at Prairie View A&M University. This knowledge was transformative in the lives of many southern black farmers.

Through my maternal grandfather, the ways of Grandpa Sol were passed to us: a sense of pride and respect for the land. My extended family still owns and works the land of my forefathers. All that I am, and all that I will become, is tied to the land.

My connection to the land is what connects me to others in agriculture. My forefathers and foremothers were not able

to attend college or get an education beyond eighth grade. They understood, just as Carver said: "Education is the key to unlock the golden door of freedom." They birthed a generation of extension agents, community developers, farmers and agricultural educators.

I am honored to walk in the legacy of these ancestors and to inspire future generations through my work in the college. As assistant dean of diversity, I lead the college in finding our universal language and using it to build trust and a shared community.

George Washington Carver was all about this. As the first African-American student at Iowa State, it was hard to be a person of color in a very white space. He was always thought of as "less than." How do you carry that weight? How do you find a way to be respected and valued? Where is the common ground? For Carver, it was agriculture.

Agriculture is still part of our shared language in the college. We are all

grounded in our love and passion for agriculture and life sciences. Now, we must build community around this fact. We still have challenges. But we have hope in our sense of community, the shared values of feeding the world and the drive to come together to make the world a better place.

Just as Carver weaved through the fabric of my family, so too has he impacted generations across the globe. Carver's legacy lives on. It's in those students of color who yearn to see their reflection in the agricultural industries, in those who dare to be the "first," in those who challenge conventional norms and in those who show the value and purpose in even the smallest of God's creations. His legacy is in those who dare to dream.

Carver's life and legacy shows us what is possible, what is hopeful and what can be accomplished. It shows us, as Carver said: "When you do the common things in life in an uncommon way, you will command the attention of the world." ■

## PIONEER

Born into slavery in about 1864 in Diamond Grove, Missouri, Carver's pursuit of an education eventually led him to Iowa. In 1888 he moved to Winterset, then to Indianola in 1890 to attend Simpson College.

## SCHOLAR

Carver transferred to Iowa State from Simpson to study horticulture in 1891—the first African-American to enroll. He earned a bachelor's degree in botany in 1894 and became Iowa State's first African-American faculty member. After earning a master's degree in 1896, he joined the faculty at Tuskegee University where he gained an international reputation in research, teaching and outreach.

## LEADER

Involved in many aspects of campus life at Iowa State, Carver was a leader in the YMCA and the debate club. He worked in the dining rooms and as a trainer for the athletic teams. And, he held the highest student rank—captain—in the campus military regiment.

# GEORGE WASHINGTON CARVER

(1894 botany, 1896 M.S. plant breeding)  
(1864 – 1943)



## TEACHER

While studying at Iowa State, Carver mentored the 10-year-old son of a faculty member—Henry A. Wallace. Wallace spent many hours with Carver, learning about plants. Wallace went on to study plant genetics at Iowa State and later became U.S. Secretary of Agriculture, Vice President of the United States and was a leader in the commercial development of hybrid seed corn and Pioneer Hi-Bred International Inc.

## INVENTOR

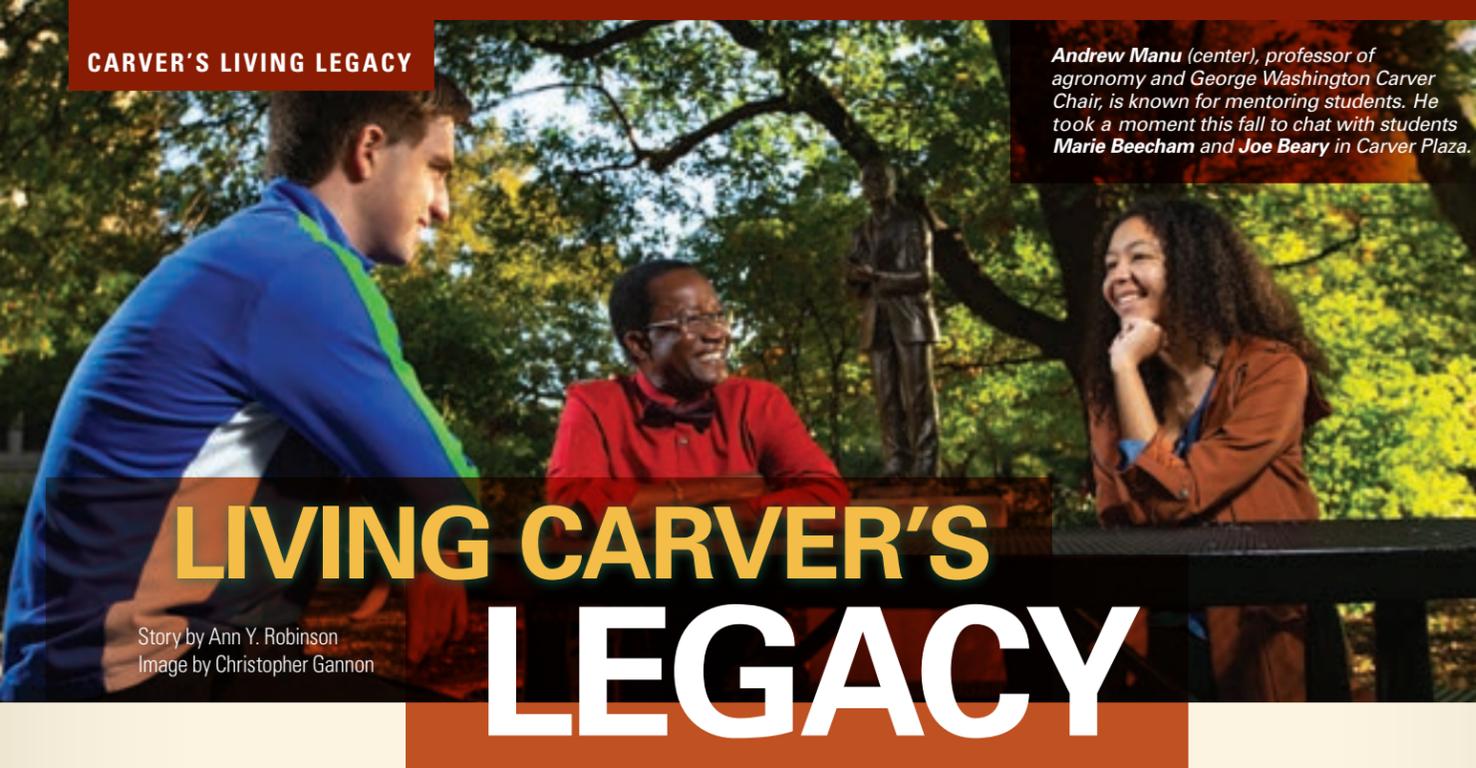
It's often claimed that Carver invented peanut butter. It's not true, but he did discover 325 other uses for peanuts as well as hundreds of uses for other southern crops including 108 uses for sweet potatoes and 75 uses for pecans. His products improved the lives of millions throughout the world, but he never secured patents or tried to make money from his discoveries.

## ARTIST

Carver studied agriculture, but he continued to pursue his interests in the arts. He was a poet, painter, sculptor and often entertained others with his musical performances. Carver found time to crochet, knit and do needlework. He dyed many of his own threads and fibers with natural dyes, recycled found materials into art and created natural pigment house paint for use by low-resource farmers.

**"It is simply service that measures success."**  
— George Washington Carver

Art on Campus featuring George Washington Carver: *George Washington Carver*. 1999. Youssef Asar (Egyptian, 1935-2012). Oil on linen. Funded by the George Washington Carver Artist in Residence Program. In the Art on Campus Collection, University Museums, Iowa State University. Located in the Food Sciences Building.



Andrew Manu (center), professor of agronomy and George Washington Carver Chair, is known for mentoring students. He took a moment this fall to chat with students Marie Beecham and Joe Beary in Carver Plaza.

# LIVING CARVER'S LEGACY

Story by Ann Y. Robinson  
Image by Christopher Gannon

***"No individual has any right to come into the world and go out of it without leaving behind him distinct and legitimate reasons for having passed through it."* – George Washington Carver, 1915**

George Washington Carver's spirit lives on. Teachers like Andrew Manu, professor of agronomy, embody what Carver was about—pursuing engaged learning and making a difference in the lives of others.

Professor Manu ('79 agronomy, '84 PhD), was appointed the first George Washington Carver Chair at Iowa State in 2009. The position recognizes his dedication to students and his leadership in service on and off campus.

"I have been blessed to work for Iowa State," says Manu. "On behalf of my family, and more so my teachers from the rural schools in Ghana, both who have passed on and those who are alive today, I extend my sincerest gratitude to be linked to this genius of a scientist, a humanitarian and above all a great teacher. I hope I live to meet an iota of his level and standards."

The trust to support the position was created by Iowa State agronomy alumnus Raymond Baker, who provided \$1 million, and the state of Iowa, which appropriated \$250,000 in fiscal years 2008 and 2009.

Manu also serves as professor-in-charge of the George Washington Carver Academy at Iowa State. The academy is a four-year scholarship and academic support program for high-achieving multicultural students. Manu encourages and mentors academy scholars—characteristics he has been recognized for with a number of awards, including the Soil Science Education and Extension Award and the Agronomic Residence Teaching Award from the American Society of Agronomy.

Manu gives his students a lot of the credit: "Students here are very motivated. That's really what gets me going."

Among the many hats Manu wears, one is as a researcher. One of his projects is the Low Altitude Remote Sensing Research Initiative, in which he and his student are refining use of unmanned aerial vehicles (UAVs, or drones) for practical applications.

Experience gained is being translated to Africa, where Manu has been leading a student travel course to his home country of Ghana since 2012. With support from the U.S. Agency for International Development through the International

Fertilizer Development Center, they have been developing models from drone data to better forecast end-of-season rice yields from mid-season aerial information.

"If we are able to predict a deficit of rice in the middle of the growing season, that gives the local government more time to import what people are going to need or plan to export to take advantage of a surplus," says Manu.

Research associate Thomas Lawler ('13 agronomy, '16 MS soil science) has worked closely with Manu on the drone program.

"One of the joys of working under Dr. Manu has been the opportunity to travel internationally," Lawler says. "I've seen that people everywhere have the same goals to improve their farms and take care of their environment."

Manu likes to broaden students' horizons, whether it's taking them to Des Moines to participate in World Food Prize activities or to Africa to work with smallholder farmers. He is thankful for Iowa State's support, which has given him such opportunities and allowed him to "nurture brilliant students of all social status, class, position or race."

Sounds like something Carver would say. 

Art on Campus featuring George Washington Carver: *George Washington Carver*. 1999. Christian Petersen (Danish - American, 1885 - 1961). Bronze cast of 1949 plaster sculpture. The bronze casting was commissioned by the University Museums, and is a gift of John and Linda Dasher. In the Christian Petersen Art Collection, Art on Campus Collection, University Museums, Iowa State University. Located in Carver Courtyard.



# SPIRITS OF INNOVATION, SERVICE

Story by Barb McBreen  
Image by Christopher Gannon

Valeria Cano Camacho (left), a senior in agronomy and global resource systems, received the George Washington Carver Spirit of Innovation and Service Award in 2017, Estefany Argueta (center), a senior in animal ecology, won the first award in 2016, and Megan Kemp, a senior in agronomy, is this year's award winner.

George Washington Carver's lifelong pursuit of education earned him national prominence as a scientist, inventor and artist. The George Washington Carver Spirit of Innovation and Service Award honors undergraduate students pursuing Carver's quest.

The award is sponsored by the Carver Birthplace Association, a cooperating association of the George Washington Carver National Monument. Honorees must be first-generation college students who are academic achievers pursuing a scientific degree, involved in research and engaged in the arts and humanities.

Iowa State University President Wendy Wintersteen ('88 PhD entomology) worked to create the award during her tenure as dean of the College of Agriculture and Life Sciences at Iowa State. She collaborated with Walter Hill, dean of the College of Agriculture, Environment and Nutrition Sciences at Tuskegee University and director of the George Washington Carver Agricultural Experiment Station and director of the 1890 Research and Extension Programs; and Luther S. Williams, Board of Trustees chair of the Carver Birthplace Association.

"The award is restricted to students of the institutions at which Dr. Carver was a

student: Simpson College and Iowa State University, and a long serving faculty member, Tuskegee University. In addition, such awards have been conferred on students of several other institutions affiliated, as land-grant colleges or universities, with Tuskegee University," says Williams, a member of the board of directors for the Carver Birthplace Association.

The award honors undergraduate students who show evidence of the traits embodied by Carver, including creativity, courage and dedication. The award is a way to recognize, inspire and motivate students.

The first George Washington Carver Spirit of Innovation and Service Award was presented in 2016. It has since been presented to three students at Iowa State. This year's award winner is Megan Kemp, a senior in agronomy and global resource systems.

"Words cannot describe the range of emotions I feel when I think of how people believe I am aligned with Dr. Carver. It reaffirms my passion for agriculture and service within the global community," Kemp says. "This award encourages me to continue to forge my path as a young, multicultural woman in agriculture with Dr. Carver's legacy as a guiding light."

"I see George Washington Carver as an inspiration and as a student of color I can relate to his experience. This award means a lot to me," says Valeria Cano Camacho, a senior in agronomy and global resource systems, who received the award in 2017.

Estefany Argueta, a senior in animal ecology, was among the inaugural award recipients and is the first Iowa Stater to receive the honor. The award inspired her to find a quote from Carver that has laid the foundation for her future endeavors: "When you do the common things in an uncommon way, you'll command the attention of the world."

Argueta says doing common things in an uncommon way is as simple as getting to know her professors better, volunteering to serve others and always making the most of every opportunity.

"Hopefully I will start commanding the attention of the world," she says. 

Art on Campus featuring George Washington Carver: *ISU Horticulture...looking back, looking ahead...cultivating knowledge now*. 2011. Sticks, with principal artist, Sarah Grant (American, b. 1953). Burned and painted wood panels and bench. Commissioned by University Museums. Iowa Art in State Buildings Project for Horticulture Hall. In the Art on Campus Collection, University Museums, Iowa State University. Located in Horticulture Hall.

# NEXT-GEN SCIENTISTS

Image by Christopher Gannon

George Washington Carver interns **Jealae Jackson**, left, and **Alescia King**, graduate students from Alabama A&M University, investigate ways to prevent the growth of salmonella as part of their research in the food science department at Iowa State.

Story by Melea Reicks Licht  
Image by Christopher Gannon

The George Washington Carver Summer Research Internship program in the College of Agriculture and Life Sciences at Iowa State provides an opportunity for the next generation of Carvers to develop their inner scientist.

The program brings high school students and undergraduates from across the U.S. to conduct research under the guidance of Iowa State experts. The high school program lasts six weeks and the undergraduate program lasts eight weeks. Interns grow personally and professionally through lab and field research, educational seminars, tours and professional development workshops.

Many of the Carver interns come from historically black land-grant universities, tribal colleges and Hispanic-serving institutions. The program is administered by the college's Office of Diversity and Inclusion Programs by the Assistant Dean of Diversity Theresa Cooper.

"The program works to bridge the gap between students of color and access to

technology, information and opportunities in STEM (science, technology, engineering and math)," says Cooper. "It helps champion the value of graduate education and prepare and recruit the best and brightest to pursue advanced degrees at Iowa State."

For Ellen Brazelton ('15 MS genetics) the internship provided more than a summer experience. Brazelton, a regulatory specialist at Sensient Food Color in St. Louis, Missouri, says she was introduced to a caring community that encouraged her to pursue a graduate degree at Iowa State. The Tuskegee graduate researched soybean pathogens and conducted DNA extraction and gene mapping as part of her Carver internship in 2013.

"We were thrust into the project head-first, and it wasn't long before we were nearly self-sufficient. The impact was tremendous—just to know that something we were doing as interns could potentially change how the crop

is cultivated and save billions of dollars a year in soybean crops," she says.

Alescia King is a graduate student from Alabama Agricultural and Mechanical University, who will complete her master's degree in food science this May. A 2018 Carver intern, King spent her summer investigating how commercially available rinse products may control the growth of salmonella on eggshells. She says she enjoyed getting to know other students throughout the summer.

"It was so neat to get to experience the other interns' cultures. We got to hear stories from different people in different situations and it was really eye-opening," King says.

King plans to attend Iowa State to work on a doctorate degree and has her sights set on an industry career.

"I want to do some form of food safety education, but I don't want to just be in a classroom," King says. "I want to be able to have the freedom to do my own projects but also be a part of the industry."



CALS grads (front row left to right) **Takiyah Sirmons**, **Derrick Coble**, **Brittini Brown** and **Keith King** made up the alumni ProTeam offering mentorship at this summer's George Washington Carver Internship retreat.

Images by Melea Reicks Licht



**Keith King**, agronomy claims specialist at Nationwide Insurance, shared his experiences with George Washington Carver interns. King says he participates in the program to help fulfill Carver's vision of lifelong learning.

**"Giving back by participating in knowledge exchange through the George Washington Carver Internship Program, I can fulfill Dr. Carver's vision."**

The college has hosted a summer research internship program for high school and undergraduate minority students for 25 years. The program became known as the George Washington Carver Internship program in 1998. Since the start of the program, faculty have mentored more than 450 interns.

"My whole research group looks forward to having interns join us each summer; they bring so much enthusiasm," says Sue Lamont, research mentor, C.F. Curtiss Distinguished Professor of Animal Science and equity adviser for the College of Agriculture and Life Sciences. "Each intern conducts a specific study that contributes to my lab's long-term goals to improve global food security and animal health. I really enjoy when former interns tell me they've been accepted to graduate school or veterinary school to further their career goals, and that their experience in the Carver internship helped them to get there."

In addition to hosting interns in her lab, Lamont co-organizes the interns'

weekend professional development retreat.

Several College of Agriculture and Life Sciences alumni are active supporters of the program, returning to campus to serve as mentors at the retreat. Keith King ('11 PhD genetics, agronomy), agronomy claims specialist at Nationwide Insurance, says he sees his service to the program as a way to give back.

"While a student at Langston University, a historically black university, I was afforded the privilege to attend many conferences as an undergraduate to present research. However, I was rarely afforded the privilege to have access to professionals in this type of setting. My experiences allowed me to earn a doctorate in genetics from Iowa State. I believe I can share my experiences with the next crop of student leaders and hopefully inspire the next Carver," says King. "Carver was a lifelong learner and teacher. Giving back by participating in knowledge exchange through the George Washington Carver Internship Program, I can fulfill Dr. Carver's vision."

In 2018, the alumni team serving as mentors to the Carver interns during their professional development retreat were: Takiyah Sirmons ('08 food science and human nutrition) food scientist in the Space Food Systems Laboratory at the Johnson Space Center; Derrick Coble ('13 PhD genetics), assistant professor of animal science at Florida Agricultural and Mechanical University; Brittini Brown ('09 MS industrial technology), director for assessment, research and strategic priorities at the University of Maryland, Baltimore County; and Keith King ('11 PhD genetics, agronomy), agronomy claims specialist at Nationwide Insurance. **S**

**STORIES EXTRA:** [www.stories.cals.iastate.edu](http://www.stories.cals.iastate.edu)

Find more details about the George Washington Carver internship program, a video including CALS grad Ellen Tisdale during her time as an intern and intern features online.

# FINDING ANSWERS

## STUDENT RESEARCHERS ADVANCE SCIENCE

Story by Ann Y. Robinson  
Images by Christopher Gannon

**S**tudents in the College of Agriculture and Life Sciences are working with faculty to solve diverse, real-world problems. From assessing the effectiveness of stormwater buffers to testing grocery produce for harmful pathogens, young researchers are actively advancing research programs and receiving quality mentorship along the way.

### Safety of the “10-second rule”

Every year, one in six Americans get sick from something they ate. Angela Shaw, a microbiologist, associate professor in food science and human nutrition and extension food safety specialist, works with students to reduce pathogens in our food supply.

In a recent research project, Shaw ('03 animal science, '06 MS meat science) and graduate students she works with did some detective work to study implications of the “10-second drop rule” at the supermarket. Doctoral student Ana Monge-Brenes spent six months traveling around Iowa and the United States observing the way staff and customers behave in retail stores that sell food.

Despite rules to the contrary, the team saw produce being put back in display cases after spending seconds or even hours on the floor. Not a pleasant finding. But then, the question was, “How much difference does that make? How likely are people to get sick as a result?”

To find out, they tested leafy greens, apples, peaches and other produce in the retail display space lab in Iowa State's Food Science building. The food was put in a variety of scenarios and exposed to harmful bacteria.

“What we learned was good news for consumers,” says Monge-Brenes. “The risk of produce picking up bad germs was very low. Even so, the project proves the wisdom of common advice, to wash your non-packaged produce when it comes home from the supermarket.”

In another recent project, Shaw and her students worked with Ajay Nair, associate professor of horticulture, to study the pathogen *Listeria*, linked to food-borne illnesses across the U.S. and a related recall of melons in 2012. Shaw's team conducted field research analyzing the influence of

past land use, different cropping practices and factors such as soil attributes, irrigation and use of cover crops.

In the field and in the lab, food science and horticulture undergraduate and graduate students took samples and looked at where bacteria showed up, how long pathogens were able to survive and under what conditions. One of the main risk factors they found was the history of the site, for example, if it had been previously used for waste disposal or livestock.

“The bad thing is that we discovered *Listeria* can survive for a long time in the soil, even through the temperature extremes of an Iowa winter,” says Shaw. “On the positive side, we found that increasing soil health could reduce the numbers of the harmful bacteria. Just improving the soil to increase good soil microbes was able to mitigate the likelihood of contamination.”

“Time and again, our research shows if you tweak little things, you can significantly decrease the chance that people will get sick and the likelihood of a recall,” says Shaw.

Graduate research assistants **Manreet Bhullar** (right) and **Bridget Perry** (center) are working with extension food safety specialist **Angela Shaw** to safe-guard produce like these apples at the ISU Horticulture Farm, which Shaw gives an A-plus for on-farm safety.

### Capturing the rain

Are urban storm-water management practices adequate to protect life and property in the face of today's weather? That timely question is a focus for Jan Thompson, Morrill Professor in the Department of Natural Resource Ecology and Management ('84 MS agronomy, '91 PhD forestry), and her students.

Thompson is measuring the ability of urban conservation best management practices like riparian buffers, prairie plantings and rain gardens to capture and filter runoff to slow storm flows and improve water quality. Her team collects water, soil samples and other data at field sites along College Creek near campus and other locations in central Iowa they have tracked over time.

“A lot of urban stormwater management infrastructure is based on historical rainfall data,” says Thompson. “We're finding that many practice design standards just can't handle the type of

extreme rainfall events that we know are becoming more common.”

The research documents the need to scale up the size of practices, like building rain gardens and other bioretention cells with larger surfaces to capture and infiltrate water and prevent much of it from flowing into storm sewers. Another recommendation from the research is to improve soil quality. This particularly applies to reconstructed prairie areas, which can be part of a number of urban storm-water practices.

Camille Karnatz ('17 MS environmental science) worked with Thompson on the project as a graduate student.

“We were surprised to find that reconstructed prairies, even after several years, often don't infiltrate water as well as we expected they would,” says Karnatz, an environmental consultant in Minneapolis, Minnesota.

Thompson says prior land use in urban areas has generally degraded

and compacted soils. Increases in porosity can take years to develop as the prairie matures. Improving soils during reconstruction, for example, with compost, can significantly increase infiltration to ensure practices start working sooner.

Two years ago, after one of Thompson's classes was in the field looking at storm-water best management practices, Ames was hit with one of the season's severe rain storms.

“We were out there in the downpour that night,” says Corey McKinney ('17 forestry) a natural resources specialist with the Iowa Soybean Association who was taking Thompson's class at the time. “It was exciting to see how the installations we were studying performed, how they really drew the water in.”

Streets that had good storm-water management practices were clearly soaking up a lot of the rainfall. Others that didn't were flowing like rivers, says Thompson. 

**Hannah Hampton**, a senior in forestry, collects a water sample from College Creek in Ames. She works with professor Jan Thompson measuring the ability of conservation practices to manage stormwater and improve water quality.

# GROWING TO GIVE

Iowa Master Gardener volunteers are living George Washington Carver's legacy of service. Jasper County volunteers are among a group that tends a 50-by-50-foot garden providing fresh produce to area food pantries.

Story by Grant Wall  
Images by John Krzton-Presson and Ron Fey

## It started with a simple question.

John Krzton-Presson noticed a garden used by the culinary arts program at Des Moines Area Community College in Newton wasn't being maintained when students were on break. The horticulture and local foods coordinator with Iowa State University Extension and Outreach, wondered, "would ISU Extension and Outreach Master Gardeners be able to look after it while students were away?"

That question formed the foundation for a partnership that now includes not only Iowa Master Gardeners and the Des Moines Area Community College, but also the

Salvation Army and other groups working to fight food insecurity in central Iowa.

A year after first posing the question, Krzton-Presson and Master Gardener volunteers in Jasper County tend to a 50-by-50-foot garden where potatoes, tomatoes, bell peppers, winter squash, beets and carrots are grown. The produce collected from the garden is donated to food pantries in the area, providing fresh, nutritious vegetables to neighbors in need.

"A new way to approach issues of hunger and food insecurity isn't that people are lacking calories, but to take

a look at the type of food they are getting," Krzton-Presson says. "Much of the food available at food pantries are items that can sit on shelves for an extended period of time. We are trying to help offer a healthier option."

Food pantry clients are responding. "On days when fresh produce is available, we have a waiting line. People are here at 7 a.m.," says Kelly Zach, social service case manager with the Salvation Army in Newton. "They know the fresh fruits and vegetables are the first things to go and they want to be first in line."

To ensure as many people as possible receive the fresh produce, workers at the Salvation Army divide produce into individual servings before the doors open. They are then made available to the 103 families who receive the fresh bread and produce available twice a week.

"Our clients talk to us constantly about how much healthier their meals are," Zach says.

The partnership also has been positive for Jasper County's Master Gardeners.

"We encourage our Master Gardeners to drop the produce off themselves," Krzton-Presson says. "They get some face-to-face time with the workers at the food pantry and see how excited people are when they pull up with boxes of fresh produce. They get to see that the clients at the food pantry are everyday people, neighbors who just need a little extra help. It gives them a lot of satisfaction knowing their work is directly helping people in their community."

Krzton-Presson was able to increase the amount of produce delivered to the Salvation Army through one of the Growing Together mini grants funded

by the United States Department of Agriculture SNAP-Education program. In 2018, more than \$90,000 helped fund 26 initiatives across Iowa to combat issues of food insecurity, allowing Master Gardener volunteers to improve and increase their production of fruits and vegetables in both donation and demonstration gardens. Grant money is spent to purchase vegetable seeds and fruit trees for donation gardens, as well as to purchase hand-washing stations to make sure produce is being picked fresh with food safety in mind.

Over the last two years Master Gardener volunteers have donated over 145,000 pounds of fresh produce to local food pantries across the state.

"Master Gardeners have been supporting their communities with volunteer projects for the past 40 years," says Susan DeBleck, Master Gardener coordinator with ISU Extension and Outreach. "One in eight Iowans are food insecure and these donations of fresh fruits and vegetables provide families with more healthy choices."

These grants have allowed Master Gardener volunteer programs to flourish.

Volunteers in Buena Vista County work to provide produce for local food pantries, and they have begun partnering with a local senior apartment to grow fresh vegetables on-site. A pair of raised beds were constructed with residents tending to the plants throughout the growing season.

"The residents of the apartments are thrilled because they love to garden," says Stacie Hewett, program coordinator with ISU Extension and Outreach in Buena Vista County. "Our Master Gardeners are so giving, they enjoy being able to share their knowledge of gardening with anyone they can."

The two raised beds have produced over 300 pounds of fresh vegetables in the first year, and Master Gardeners are already looking for ways to expand their level of production. The search is on for a community garden location in Storm Lake.

Master Gardener volunteers in Buena Vista County also reached out to Latino community members to better understand the types of vegetables they are familiar with and enjoy. 



Over the last two years Iowa State University Extension and Outreach Master Gardener volunteers have donated over 145,000 pounds of fresh produce to local food pantries across the state.



John Krzton-Presson (second from left) horticulture and local foods coordinator with ISU Extension and Outreach, and volunteers Susan Townsend (left), Peggy Fey and Carolyn Burk (right) drop off fresh produce to the Salvation Army weekly. Clients line up before the pantry opens on days when fresh produce is available.



Participants in the 2018 George Washington Carver Summer Internship Program hailed from colleges and universities across the U.S. including Puerto Rico. This 25th class of interns conducted research and attended professional and personal development workshops led by **Theresa Cooper** (front, center) assistant dean of diversity.



In 2010 **Aurelio Curbelo** ('02 agriculture and life sciences education, '06 MS, '13 Ph.D. education), left, served as the college's minority liaison officer. He joined **Brian Castro** ('14 nutritional sciences, global resource systems) in leading the March of the Flags during Latino Heritage Month. Castro served as president of the Iowa State chapter of Minorities in Agriculture and Natural Resources and Related Sciences.

# EVOLUTION OF CULTURAL COMPETENCY

Story by Melea Reicks Licht  
Image by Christopher Gannon

The first diversity and multicultural program in the College of Agriculture and Life Sciences was created in 1993.

“At that time, the percentage of minority students in the college was around 3 percent, and it was low around campus and low among our peers,” says Mary de Baca, manager of the college’s diversity programs from 1996 to 2010. “Graduation rates were lower for minority students, and the campus climate was not always favorable for them. Iowa State was not attracting minority students from Iowa high schools,

and they were not aware of the scope of courses of study in agriculture. Agriculture industries were increasingly seeking minority employees, but minorities had little access to the private sector.”

The college took action. Under the leadership of then Dean David Topel, an approach emerged consisting of a Minority Programs Office, Diversity Programs and a minority liaison officer.

The Minority Programs Office focused on undergraduates. Charanne Parks served as its first director and minority liaison

officer. The Minority Programs Office worked in tandem with Diversity Programs which focused on serving graduate students and was led by Gerald Klonglan ('58 rural sociology, MS '62, PhD '63), professor emeritus of sociology and former associate dean for national programs and research, and de Baca.

CALS was the first on campus to support a minority liaison officer to connect undergraduates with university minority affairs programs. Every college at Iowa State later added similar staff positions.

These efforts helped staff connect students with graduate assistantships and build up the Iowa State chapter of Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS). The college revived its faculty diversity committee, first created in 1963, to better engage faculty. The college established partnerships with the nation’s minority-serving institutions such as the 1890 (historically black colleges), 1994 (tribal colleges) and Hispanic-serving land-grant institutions.

### The Carver connection

Hosting the national MANNRS conference in 1998 was a milestone for the college. More than 800 students from around the country attended the conference and career fair in Des Moines, and the college hosted a pre-conference George Washington Carver Day on campus. In 2004, the college and its partners—Pioneer Hi-Bred International Inc., Deere & Co. and Cargill Inc.—repeated as host of the national MANRRS conference in Des Moines, attracting more than 600 participants.

College faculty had begun hosting Tuskegee University students for informal research internships in 1993, arranged by

the Minority Programs Office. The internships proved so successful that the effort was formalized into an annual program and opened to other minority-serving schools. Following the 1998 national MANNRS conference, the college’s summer internship program for minority students was renamed the George Washington Carver Summer Research Internship Program (read more on page 18).

The college’s minority liaison officer Nina Grant, who served from 1998 to 2007, and several graduate assistants were among the staff who helped fuel the program’s momentum. The college secured several federal grants to support its diversity efforts, and a partnership with American Indian Tribal Colleges was supported by the Kellogg Foundation. Partnerships grew with the Chicago Agricultural Charter School and university diversity programs like Science Bound.

de Baca and Klonglan worked with Sande McNabb, professor of plant pathology and forestry, and minority programs staff to gain university acknowledgement of George Washington Carver as Iowa State’s first black student and faculty member. They worked to raise

his profile as a celebrated member of the Iowa State community and with partners nationwide. “Carver’s legacy is as important today as ever. Science is important. Applied science is equally important,” says Klonglan. “And science must be used to benefit all members of society.”

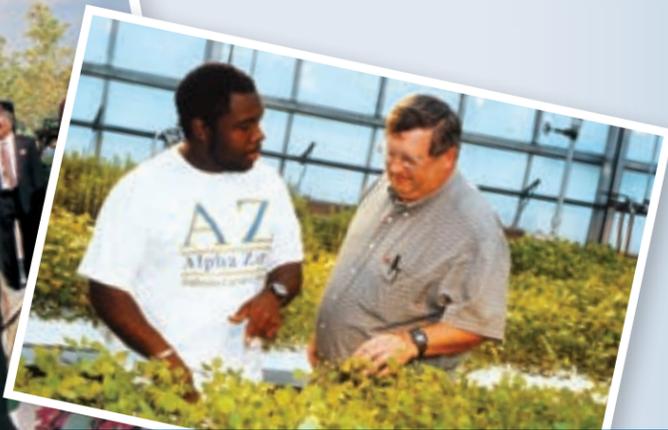
### A culture of inclusion

The Minority Programs Office and Diversity Programs were combined into the Office of Diversity and Inclusion Programs, which is now coordinated by Theresa Cooper, assistant dean of diversity and director of the George Washington Carver Summer Research Internship Program, who joined the college in 2013. Cooper is the first assistant dean of diversity at the college level at Iowa State, and the college is the only one to have both an assistant dean for diversity and a minority liaison officer.

“My work is bigger than diversity and inclusion. It’s framed around cultural competency,” says Cooper. “It speaks to cultural awareness, increased knowledge and sensitivity to others. It guides the college in finding an equitable, empathic space. We weave cultural competency into



**Charles Stewart** ('00 agricultural biochemistry), left, spoke at the dedication of the George Washington Carver Center in Beltsville, Maryland on Oct. 6, 1999. Stewart was the national president for Minorities in Agriculture Natural Resources and Related Sciences. Other Iowa Staters at the event included **Nicole Gale** ('02 Ph.D. agricultural and life sciences education), second from left, **Robert King** ('01 food science) and the college's minority liaison officer **Nina Grant**.



**Thomas Easley** ('02 forestry), left, decided to pursue a master's in forestry after completing the college's George Washington Carver Summer Research Internship Program. Easley is pictured with his faculty mentor **Rick Hall**, professor of forestry.

*"It is exciting to see people come into the sense of cultural competency."*

the programs we offer, our hiring practices and the recruitment and retention of our students, faculty and staff."

Elizabeth Martinez-Podolsky joined the college as a minority liaison officer in 2015. Together she and Cooper support all CALS students in developing cultural competency and building a culture of respect and inclusion. CALS students are introduced to Martinez-Podolsky at orientation and introductory courses. She helps students understand the importance of diversity and inclusion as they pursue their degrees and careers. Students with veteran status or who self-identify as multicultural receive additional communications and programs from her office.

In the fall of 2016, the College of Agriculture and Life Sciences held listening sessions to get feedback and hear

the stories of minority students. As a result of these initial listening sessions, the college established a student-led group to address cultural competency in 2017. The Leaders Enhancing Agriculture, Diversity, Inclusion and Trust (LEAD IT) Collective works to build strong leaders and community partners who value diversity, multiculturalism and inclusion and recognize the importance of developing intercultural competency. The LEAD IT Collective engages audiences on topics such as bias, privilege, inclusivity and other multicultural issues.

"Far too often we become consumed by the politics of the world and the negative influences that shape our communities. Thankfully I am part of a leadership group designed to facilitate the reshaping of such realities," says Eboni Adderley, a senior in

animal science and member of LEAD IT. "Not only do I get to be a change agent for others, but I experience exponential personal growth which I know will strengthen the rest of my life journey."

As of fall 2018, the college's multicultural enrollment stood at 10 percent.

"I see the change in the college," says Cooper. "It is exciting to see people come into the sense of cultural competency. It is a process on a scale. We move forward, and sometimes we take a step back. But it is amazing when we see a light come on. It is a slow fire burning, but when it finally gets going, it is so exciting." **S**



# FROM ALABAMA TO IOWA: UNDERSTANDING FARMERS' DATA NEEDS

Story by Barb McBreen

Accessing data to improve decision making for any business is essential, but it's especially critical for farmers. From smart phones, to GPS driven tractors, to accessing the latest market or weather reports—data has become crucial to success.

"Big data are an essential part of agriculture today," says Joe Colletti, interim endowed dean of the College of Agriculture and Life Sciences. "Our continuing goal is to help farmers get access to the data they need and help make small- and medium-sized farm and food enterprises more sustainable."

To work towards that goal Iowa State and Tuskegee University collaborated to hold workshops at both campuses in February 2018 sponsored by the USDA National Institute of Food and Agriculture under the Food Agriculture Cyberinformatics and Tools program. Before the workshops were held researchers collaborated to develop surveys to gather information about the data needs of producers in Alabama and Iowa.

The survey indicated farmers in both states use data in their operations, but had problems accessing or finding information, says Alejandro Plastina, an Iowa State assistant professor of economics who led Iowa State's team.

"There was this mismatch about data they didn't think was available and data that was available," Plastina says. "One participant talked about not having a reference price for heirloom tomatoes and the USDA makes average prices available online, although probably not at the desired local disaggregation level."

Robert Zabawa, a research professor with Agricultural and Research Economics at Tuskegee University, says Alabama farms are small compared to Iowa farms in both sales and acres.

"We did the same survey and the answers were flipped for what Alabama farmers required and what Iowa farmers needed," Zabawa says. "Having access to information about government programs was a high priority for Alabama farmers, but weather data was a high priority for Iowa farmers."

Most of the Alabama farmers surveyed were African American and focused on small-scale livestock and vegetable production, but interested in how data could improve their operation, says Zabawa.

The message Paul Hunter, a farmer near Decorah, Iowa, took to the meeting was access to data. He says data applications are geared for larger farmers, which makes sense.

"If you're going to charge \$5,000 for your data service you don't expect farmers with 40 acres to be your biggest customer base," Hunter says.

Researchers at Iowa State and Tuskegee University will continue to address factors limiting data access for small- to medium-sized farmers. Both workshops were held as part of the National Science Foundation big data initiative announced in November 2015. The initiative is organized into four regional hubs throughout the United States. Iowa State University is a co-leader of the Midwest Big Data Hub grant, which includes 11 states and five universities. **S**



**R. Isai Madriz**, an entomology graduate, shows off his discovery of a Torrent midge larvae (*Blephariceridae*) in a remote glacial stream in the Southern end of the Northern Patagonia Ice Field.

Image by Anand Varma

# SCIENTIFIC STORYTELLER

Story by Ellen Bombela

Eating bugs, hiking and collecting insects for days on end around the northern Patagonia ice field were common occurrences for R. Isai Madriz during his time as a Fulbright-National Geographic Digital Storytelling Fellow.

Madriz ('17 PhD entomology) explored the Aysén region of Chile for rare insects vanishing due to deglaciation.

"The problem with the area I study is that it is very inaccessible. The idea for me is to go and document the primitive lineages I am focused on," Madriz says. "As the glaciers start melting, the species start thriving because there is a lot of water for them. But, as the glaciers start disappearing, it could have a damaging effect on them."

His experiences inspired him to create a board game to share his knowledge with students around the world.

## The adventure

Madriz's fellowship from September 2017 to June 2018 included preparation, excursions and developing the board game.

The night before an excursion, Madriz would pack not knowing if he'd be away for a few hours or a few days. The length of each trip depended on when he found the desired specimens. He'd pack a raft, paddles, a helmet, tree tent, microscope, solar panels and food. He'd also pack some necessary tools for attracting insects—a cloth sheet and a black light. Then he'd set out on foot, bike or raft.

Many nights he would set up camp under a tree tent and use his microscope to examine insects that fell prey to his trap. His excursions lasted anywhere from two days to two weeks. Once he found the insects he wanted and traveled back to his home studio, he would photograph the bugs for hours and days at a time.

Madriz documented his findings on his National Geographic blog.

"My goal is to compile more stories and make them available in a PDF or a book," Madriz says.

## Hidden diversity

To share his experiences and educate youth around the world, Madriz created a board game: Hidden Diversity Patagonia. Similar to the way he explored Chile, players move around the game board to collect insects, tools and invasive species. To advance, players answer questions about insect biodiversity and climate change. The board was designed by Madriz using satellite images of the northern Patagonia ice field. Madriz listened to feedback and customized the game's illustrations and text according to the education level of the students.



Image by R. Isai Madriz

**Madriz's** adventure as a Fulbright-National Geographic Digital Storytelling Fellow took him to the Northern Patagonia Ice Field. His work identifying aquatic insects vanishing due to deglaciation contributes to better understanding of the impacts of climate change.

"I'm developing the game so there can be a better understanding of the facts I am trying to communicate, and also will engage kids into something fun," Madriz says.

Hidden Diversity Patagonia is being used by educators in countries all around the world including Chile, Mexico, Canada, Portugal and classrooms at Iowa State.

## The greater good

Madriz is pleased the game is connecting him back to Iowa State.

"I like that I am able to give back to Iowa State because it really helped shape me

into the scientist I am today," Madriz says. "Peers I met there challenged me and gave me the flexibility to think the way I do."

Madriz is looking for funding partners to continue his research following his fellowship. He plans to stay in Chile and hopes to one day be able to offer Iowa State students the opportunity to join his research program.

"I am the only one in my field doing this research full time in the Aysén region. It would be a disservice to stop my research now," he says. ■

**STORIES EXTRA:** [www.stories.cals.iastate.edu](http://www.stories.cals.iastate.edu)

See more of R. Isai Madriz's adventure in the Aysén region of Chile as a Fulbright-National Geographic Digital Storytelling Fellow online.

Alabama A&M University faculty and CALS grads **Armitra Jackson-Davis** and **Dedrick Davis** shared pancakes at VEISHEA and discovered a shared love of science.

# THE DRS. DAVIS

Story by Melea Reicks Licht  
Images by Justin Vaughner, Alabama A&M University

## Armitra Jackson-Davis and Dedrick Davis found each other in their pursuit of science at Iowa State University. Together they found their calling in higher education.

Both are now faculty at Alabama Agricultural and Mechanical University. Armitra ('06 MS meat science, '10 PhD animal science) and Dedrick ('05 MS soil science, '12 PhD soil science and environmental science) work together as co-advisers for the university's Minorities in Agriculture Natural Resources and Related Sciences (MANRRS) chapter.

The Drs. Davis have helped the chapter grow from three to approximately 20 active members and rise to compete on a national level.

"We spend a lot of time outside of business hours talking MANRRS and how we can move the students forward. This year, two of our students placed in the top three in national research competitions at the graduate and undergraduate level," says Armitra.

Their students give back to their community by fostering a partnership with the local Boys and Girls Club. For this year's activity, MANRRS members will mentor high school and middle school students, helping them with science projects.

Govind Sharma, emeritus professor of plant science at Alabama A&M, says Dedrick and Armitra are valued for their unique strengths and admired by their students.

"Dedrick and Armitra had a lot of opportunities all over the country but they returned to their roots. They have wonderful personalities and are exceptional professionally," says Sharma. "They are the backbone of MANRRS and each are stars in their departments. Dedrick's work keeps plowing new frontiers of soil science. Armitra's plate is full from teaching, but she makes time to share her research through outreach to the food industry and consumers especially regarding the new Food Safety and Modernization Act."

Armitra, an assistant professor of food microbiology, teaches, conducts research and advises graduate students.

"Consumers are becoming more interested in ingredients that are naturally derived so we're studying the use of natural antimicrobials," she says. "One

project focuses on safety of unpasteurized juice products. Consumers want these types of products, but there are challenges that need to be overcome."

Besides his teaching responsibilities, Dedrick, an assistant professor of soil physics, conducts research, including the impact of biochar—charcoal produced from biomass used for agricultural purposes—on heat and water movement in soil.

One of his students is studying agro-forestry alley cropping. "The intent is to give limited-resource farmers in Alabama two means of income on the same area of land," he says. "We track the soil physical properties and processes of sweet gum trees and switchgrass and compare those to row-crop agriculture."

Dedrick credits Iowa State for helping him learn how to mentor students.

"The soil science program put me around leaders who were also good individuals, period. I could be walking down the hallway and Ali Tabatabai would pull me into his office and give me some words of wisdom. Dr. (Bob) Horton didn't just have me do research, he also helped me develop personally and professionally. I watched Rick Cruise and how he built a great rapport with students," Dedrick says.

"And Dr. (Andrew) Manu is responsible for me being a soil scientist. From the time I took his course at Alabama A&M (where Manu worked previously) he made soils seem like the coolest thing ever. I picked up on his way with students and his energy."

Both Armitra and Dedrick were encouraged by fellow Cyclones to pursue graduate degrees at Iowa State.

"Dr. Manu and several other professors at Alabama A&M always told us how good ISU was for soil science," Dedrick says. "You always hear about George Washington Carver and how he was associated with Tuskegee. But, when I found out that Carver studied at Iowa State, it got my curiosity going. As I progressed as an undergrad, Iowa State became my top choice for grad school in soil science," says Dedrick.

He contacted Nina Grant, minority liaison officer in the College of Agriculture and Life Sciences at the time. She connected him with Thelma Harding and the Iowa State University Graduate Minority Assistance Program.

Armitra remembers Harding recruiting at her undergraduate alma mater, the University of Arkansas, Pine Bluff.

"If you know Thelma, she's high energy and bubbly. She convinced my twin sister

and I to come visit ISU," Armitra says. "We both really enjoyed our visit, enrolled and finished master's and Ph.D. degrees. My two other sisters went on to graduate from Iowa State, too."

She says she had great experiences working in animal science professor Jim Dickson's lab and with Joe Sebranek, University Professor, Distinguished Professor of Animal Science and Morrison Endowed Chair in Meat Science. Aubrey Mendonca, associate professor of food science and human nutrition, was and still is an important mentor to her.

Pancakes helped to bring Armitra and Dedrick together. They first got to know each other over breakfast during a VEISHEA celebration.

"We had the same demands of grad school, enjoyed talking about science and enjoyed that we could actually talk about intellectual stuff. Each of us could contribute to the conversation," Armitra says.

They chose to get married on New Year's Day to avoid any additional missed days of lab work.

For Armitra and Dedrick, Iowa State was dramatically different demographically from their undergraduate alma maters.

"We went from historically black

colleges and universities to a primarily white institution. It was different but it worked out just fine," says Armitra.

They say the ISU Black Graduate Student Association helped them make the transition to Iowa State, as did supportive faculty and staff like Grant, Harding, Mary de Baca in the College of Agriculture and Life Sciences Diversity Programs, and their major professors.

"MANRRS also provided support for me. I could see other people who looked like me and sit among people I knew in the college," says Dedrick. "But I also put myself out there in the department and the college. I learned if I was open to experiencing new things and people, it actually helped make my transition easier."

That's advice they frequently give to their students. They encourage students to participate in the College of Agriculture and Life Sciences' George Washington Carver Summer Research Internship program at Iowa State.

"We always use our story as an example of not being afraid to venture out even if it's in a place you've never been before," Armitra says. "You never know what's waiting on the other side of the door, professionally and personally." ■



**Armitra Jackson-Davis** (second from right) and **Dedrick Davis** (right) share a laugh with Minorities in Agriculture Natural Resources and Related Sciences (MANRRS) students. The two serve as co-advisers for A&M's chapter of the national organization.

CALS grads **Beau and Shanen Ebersole**, of Kellerton, Iowa, have built their Maine-Anjou cattle herd and ranching operation by being open to new practices like serving as an off-range pasture facility for wild horses and running custom cows on their land.



# DIVERSIFYING TO ACHIEVE THE DREAM

Story and images by Jennifer Carrico ('96 animal science and journalism and mass communications)

**S**hanen and Beau Ebersole have walked down many paths to get to their Kellerton, Iowa, ranch where they raise kids, cattle and horses. Not one of them has been direct.

Shanen ('98 animal science) and Beau ('98 ag studies) met at Iowa State. They both have worked at different cattle operations and in different jobs, but their dream has always been to have their own operation and raise their family on a cattle ranch.

Their secret to building their own ranch? Creativity and open-mindedness says Shanen.

The Ebersoles raise Maine-Anjou cattle, which they love for their mothering instincts, docility and the quality meat they produce. While they've been involved in the Maine-Anjou business for most of their marriage, they've been able to grow

their own herd while taking care of other people's cattle.

Cows owned by other farmers have helped them use the grass on their ranch and on rented acres. This part of their business started by taking care of small groups of cows and grew to as many as 700 cows at one time. This year they are caring for 400 custom cows.

"Custom cows are generally delivered with calves at side in May and we have them on grass here because their owners don't have summer pastures. They take them back home in November and turn them out on cornstalk fields for the winter and calve them out and they come back to our grass in the spring," Shanen says.

With ample pastures available, they are able to keep each owner's cow grouped and no commingling occurs.

Running custom cows has allowed revenue to help build their own herd to 150 head of Maine-Anjou, Maine-Angus, Angus and crossbred cows. Careful planning at breeding time has helped them keep registered cows in the full-blood Maine-Anjou, purebred Maine-Anjou, Maine-Angus and Angus herd books.

About 20 to 30 replacement heifers are kept each year and other calves are marketed as breeding bulls, show heifers and fed out as beef.

About 11 years ago, the Ebersoles took on a new venture and began selling beef from the animals on their ranch.

"It started as a way to make a farm payment, and built into a lot more. We've met some great people and have wonderful customers," Shanen says.

**"All farmers and ranchers have become better at telling their stories and most people understand that we care about how our animals are raised."**



**Shanen Ebersole** sells beef to a customer at the Des Moines Farmers Market. Ebersoles started the beef business 11 years ago to add income to their ranching operation. She says telling the story of their ranch is an important part of customer relations.

Their beef has been sold at the Des Moines Farmers Market for eight years, and also is available through the Iowa Food Co-op and by direct sales. All the beef sold by Ebersoles is born and raised at their ranch. They do not use hormones, growth supplements or antibiotics.

"It's really surprising how much consumers want to know about the beef they are buying for their families," Shanen says. "All farmers and ranchers have become better at telling their stories and most people understand that we care about how our animals are raised. They want to make the best decisions for their family, just as we do for our family and our animals. Producers may feed their animals a little differently or have different management techniques, but it is important we stick together to help feed consumers no matter the variations in our operations."

A good nutrition and mineral program helps the Ebersoles maximize grass in their operation, which includes a detailed year-round rotation.

Two years ago, their operation's path diverted again with the addition of a herd of wild horses.

"It really was an in-depth process that started by hearing an ad on the radio about caring for wild horses from out West," Shanen says. "We completed a 50-page application that included what types of soil and grasses we had, as well as fencing and water availability. We had to line out an extensive management plan as to how we could make part of our ranch into an area as close to native as possible for these wild horses."

Becoming an off-range pasture facility for the Wild Horse and Burrow Program through the Bureau of Land Management (BLM) has allowed more diversity on the Ebersole ranch. The area used for the horses was once used in their custom cow rotation. This land had to have an environmental analysis done by the BLM to ensure the land would be a good home for these 350 mares.

"We have regular site visits by the BLM and APHIS (Animal and Plant Health Inspection Service) veterinarians to see how the mares and the land are thriving," says Shanen. "We are two years into the 10-year contract. It has been a learning curve for us, as horses definitely graze differently than cattle."

Providing a natural environment for the horses and returning land to the native prairies of old has been satisfying for the Ebersoles. Caring for the animals and the land is important as their children talk about returning to the operation someday.

The couple's three children, Adelyda, 18; Jolene, 15; and Wyatt, 10; help on the ranch every day. Caring for the cattle and horses on the ranch keep the kids busy, as well as their school activities and showing cattle.

"When I headed off to Iowa State after high school, I sure wouldn't have guessed this is where I would be now," says Shanen. "We love our livestock and are glad we have had the opportunity to do what we love." ■

## HENDERSON RECEIVES LIFETIME ACHIEVEMENT AWARD

**Lynn Henderson** ('74 ag journalism), owner of Henderson Communications, was presented the Lifetime Achievement Award from the American Agricultural Editors Association by **Betsy Freese** ('84 ag journalism) during the Agricultural Media Summit in August. Henderson Communications' principle products include *Agri Marketing Magazine* and related digital products.



## WINTERSTEEN INSTALLED

AS 16TH PRESIDENT OF IOWA STATE UNIVERSITY, HONORED BY STATE AND INTERNATIONAL ORGANIZATIONS

**Wendy Wintersteen** ('88 PhD entomology) was installed as the 16th president of Iowa State University in September. In August, she was named to the World Food Prize Council of Advisors and selected as a 2018 Women of Influence honoree by *The Des Moines Business Record*. For a video recap of Wintersteen's installation visit stories.cals.iastate.edu.



## KINZENBAW RECEIVES HONORARY DEGREE

**Jon Kinzenbaw**, CEO and chairman of the board for Kinze Manufacturing, Inc., received an honorary Doctor of Science degree from Iowa State University at the spring commencement ceremony. Through his work at Kinze Manufacturing, Kinzenbaw brought innovative technologies and mechanization to production agriculture while continuing to farm. Faculty members in agricultural and biosystems engineering nominated Kinzenbaw for the honorary degree.



## CALS ALUMNI, FRIENDS HONORED BY COLLEGE, ALUMNI ASSOCIATION

CALS graduates and friends were honored by Iowa State University for service to the college and agricultural and life sciences industries during Homecoming events in October. Awardees are pictured with Interim Endowed **Dean Joe Colletti** (front left), Director of Alumni Relations **Melea Reicks Licht** (front right), and Chair of the Department of Agricultural and Biosystems Engineering (which received the ISU Alumni Association Impact Award) **Steve Mickelson** (back second from right).

### CALS Awards

- Floyd Andre Award, **James R. Christensen**, ('82 farm operation) (back right), co-owner Christensen Feedlot and Royal Beef
- George Washington Carver Distinguished Service Award, **Dawn Mellion-Patin** ('95 PhD ag and life sciences education) (front center), vice chancellor for extension and outreach at Southern University Agricultural Research and Extension Center
- Henry A. Wallace Award, **Max F. Rothschild** (back second from left), Iowa State University Charles F. Curtiss Distinguished Professor in Agriculture and Life Sciences and the M.E. Ensminger Endowed Chair in International Animal Agriculture
- Outstanding Young Professional Award, **Jen Sorenson** ('01 animal science, journalism and mass communication) (front second from left), communications director, Iowa Select Farms

### Alumni Association Awards

- Alumni Medal, **Roger C. Underwood** ('80 ag business) (front second from right), businessman
- Alumni Merit Award, **Brian Darrow** ('79 animal science, '83 DVM) (back left), owner, Anamosa Veterinary Clinic

## CALS ALUMNI EARN GLOBAL, NATIONAL HONORS

- Kelly Norris** ('08 horticulture, '11 MS), director of horticulture and education, Greater Des Moines Botanical Garden, American Horticultural Society Emerging Horticultural Professional Award
- Kevin Ross** ('03 ag studies), farmer near Minden, elected vice-president, National Corn Growers Association's Corn Board
- Jennifer Zumbach** ('01 animal science), farmer near Manchester, Iowa; American Jersey Cattle Association Young Farmer Award

**Minghao Li** (left), an Iowa State postdoc, **Chuqiao Peng**, a visiting Ph.D. student from Renmin University of China, and **Wendong Zhang** (right), ISU extension economist, review China's end-of-year corn stock estimates. This type of data was inaccessible to Iowa State researchers before the Center for China-US Agricultural Economics and Policy was created last year.



## COLLABORATING ON CHINA'S ECONOMY

Story by Grant Wall  
Image by Christopher Gannon

**A** new center at Iowa State University is working to advance knowledge of China's trade policy and agricultural markets.

The Center for China-US Agricultural Economics and Policy was created in April 2017 by the Center for Agricultural and Rural Development at Iowa State. The center has forged a partnership with the Chinese Academy of Agricultural Sciences and Iowa State experts to get access to information about Chinese agriculture and to clear the path for Chinese students to study economics in the United States.

"Until this partnership started, we didn't have access to good data that existed in China," says Dermot Hayes, Charles F. Curtiss Distinguished Professor in Agriculture and Life Sciences and former interim director of the center. "Their public data for years has had quality problems, but now we have access to better data and to people who understand the agricultural industry in China."

John Crespi, professor of economics and interim director of the center, Hayes, Wendong Zhang, assistant professor and

extension economist, Minghao Li, postdoctoral researcher, and Yongji Ji, assistant scientist, are Iowa State staff of the center. Currently, they are hosting three visiting scholars from China: Yue Hu, Wenting Wang and Chuqiao Peng.

The partnership is already starting to pay dividends.

The center conducts research and outreach in the areas of trade, agricultural markets and policy. It publishes academic journal articles as well as policy briefs on key Chinese agricultural markets and issues geared toward both U.S. and Chinese policymakers, industry stakeholders and media.

"China is so big that the things they do domestically, let alone who they decide to buy from internationally, have strong implications for what producers in the U.S. are able to sell," says Zhang. "Those are things we care about very much."

The partnership also is beneficial to Chinese scholars by providing them a place to come and work. The center hosts researchers and doctoral students who conduct research of their own.

"Typically, these students would come to the U.S. and study our agricultural economy, but now they are able to come over and study Chinese agriculture," Hayes says. "They are able to help analyze the data and provide better context, which has helped us learn a tremendous amount."

Knowledge of the inner workings of the Chinese economy can help U.S. farmers and economists spot emerging markets or other trade opportunities.

"China has produced 97 percent of the pork they consume internally, meaning they only import 3 percent from Europe or the U.S.," says Zhang. "But there has been an outbreak of African swine flu in the country, so imagine if their imports now increase from 3 to 5 percent? That is a very large market for producers in the U.S. This is interesting to us because China is no longer a developing country that needs technology and infrastructure as it was 20-30 years ago. They are now a country whose domestic decisions have real consequences internationally." ■

Local conservation professionals share their expertise with Master Conservationist Program participants through in-field discussions and demonstrations on geology, forests, prairies, wetlands and conservation strategies.

**“The way to address the natural resource challenges we face is to inform an army of people who can go out on their land and improve conditions.”**

# BECOMING A MASTER CONSERVATIONIST

Story by Grant Wall  
Images by Adam Janke

Taking Iowa State University resources and personalizing them for a specific area of the state can be a challenge. Researchers in Ames have knowledge and experience dealing with big-picture issues, while local conservationists are plugged into opportunities and challenges in their home area.

The Master Conservationist Program at Iowa State aims to bridge that gap.

Participants from all over the state learn from Iowa State faculty and extension specialists through an online, standardized curriculum using state and national materials. Local conservation professionals lead paired in-person sessions building on that information about wildlife, natural resources and conservation and tailoring the material to where participants live.

“Local connections are fundamental to the experience in the Master Conservationist Program,” says Adam Janke, assistant professor and extension wildlife specialist at Iowa State. “It allows a clearer image of how conservation challenges can be addressed at the local level.”

The program has been offered in various forms for more than 20 years. Its recently redesigned format allows participants to watch a video on their own from Iowa State experts on topics including prairies, forests, aquatic environments and watershed conservation. Participants then come together under the leadership of local conservationists to discuss the material and spend time in the field, seeing examples of those topics in their own backyard.

“Personalizing sessions allows us to discuss what’s most important to those taking the class,” says Hannah Howard, community coordinator for The Nature Conservancy. Howard is the leader of a Master Conservationist class held in Muscatine and Louisa Counties in partnership with local Iowa State University Extension and Outreach county offices. “It’s one thing to hear statistics or generalities, but being able to handle and experience those types of things provides an experience not available in a classroom or with just online materials.”

Local leadership also provides a practical benefit of connecting users with nearby resources.

“A lot of people take this class because they just moved to an acreage or inherited the family farm and are looking to improve their land,” Howard says. “This class connects them with the resources they need.”

Approximately 60 Iowans have taken the course in two counties in its reformatted pilot phase, with many counties expressing interest in hosting the program in 2019.

“Natural resources underlie everything we do in Iowa,” Janke says. “Everyone needs clean, healthy water, a huge proportion of our economy depends on healthy soils and our quality of life is enriched by the beauty of our natural areas. The way to address the natural resource challenges we face is to inform an army of people who can go out on their land and improve conditions.”



**STORIES EXTRA:** [www.stories.cals.iastate.edu](http://www.stories.cals.iastate.edu)

Visit STORIES website to find links to the Master Conservationist Program and other educational opportunities provided by Iowa State University Extension and Outreach in your local area.

# DEEP ROOTS

## IOWA STATE'S MPIRIGITI RURAL TRAINING CENTER OPENS IN UGANDA

Story by Brian Meyer  
Images by Brian Meyer and Brian Nonnecke

*The Mpirigiti Rural Training Center, named for this revered local tree, is the latest milestone in Iowa State's Center for Sustainable Rural Livelihoods 14-year-old history. Gideon Nadiope is national director of the Iowa State University-Uganda Program helping rural Ugandans improve farming practices, nutrition, sanitation and income-generating opportunities.*

### THE 25-FOOT-TALL TREE WAS DESTINED FOR THE AXE.

The tree was impeding construction of a new facility for the College of Agriculture and Life Sciences' Center for Sustainable Rural Livelihoods (CSRL) in the Kamuli District of Uganda. It was growing too close to the spot where student housing would be built.

Local staff of the Iowa State University-Uganda Program, who work every day to carry out the center's programs in the Kamuli District, lobbied to save the tree. Known in the local Lusoga language as "mpirigiti," the native tree is highly prized for its healing and medicinal properties.

Guided by faculty and staff, a small but mighty group of service-learning students from Iowa State and Makerere University of Uganda and local staff dug out the tree. Together they lifted and carried it to a safer location on site where it was replanted.

Would the stressful transplant take? Odds for survival were unfavorable. But

hopeful signs emerged: new shoots and leaves began to grow. The decision was made to name the new facility after the tree—Mpirigiti Rural Training Center.

"By naming the training center for this beloved tree, we show respect for the local culture and language and our local staff," says David Acker, associate dean for academic and global programs in the College of Agriculture and Life Sciences, who oversaw the training center's planning and development.

"The story of the transplanted tree is a parable about respecting life, giving people a second chance and applying science to solve complex problems," says Acker. "When Ugandans see and hear the name of the training center, it will convey the concepts of health and well-being—both high priorities for the work of the Center for Sustainable Rural Livelihoods."

The training center is the latest milestone in CSRL's 14-year-old history. The center has impacted thousands of lives through programs made possible by private philanthropy—programs that help rural Ugandans gain skills in better farming practices, proper nutrition and sanitation and income-generating and entrepreneurial opportunities. It is a model for international university agricultural education programs and for inspiring students to address global hunger and poverty.

Last March, the Mpirigiti Rural Training Center opened with a ceremony featuring William Wilberforce Gabula Nadiope IV, the king of Busoga, a region that includes Kamuli. In July, the facility was officially dedicated with leaders and students from Iowa State and Makerere University and several donors.

"The Mpirigiti Rural Training Center epitomizes what can happen when donor support and Iowa State's land-grant mission unite through a passionate, compassionate

**"Our dream to have all service-learners living together in one location is now a reality,"**

vision for change and progress," said Iowa State University President Wendy Wintersteen at the dedication.

Nearly 100 donors made the \$2.7 million facility possible, as well as support from Iowa State's Senior Vice President and Provost's Office. The center serves as an educational and training focal point for farmers, teachers, community leaders and students. It is helping the Center for Sustainable Rural Livelihoods expand food and agricultural programs that serve local families, and provide more service-learning opportunities for Iowa State and African students.

The 22,000-square-foot training center sits on 13 acres that includes a main headquarters for the 20 Iowa State University-Uganda Program field staff. There also is a library, meeting spaces and a kitchen and dining area. There is a 48-bed student dormitory, rooms for visiting faculty and guests and demonstration areas for livestock and crop production, gardens and orchards, grain handling and agroforestry. A soccer field is a popular place open to community members and a basketball court is now under construction.

"The center is an important resource to our programs, Kamuli, the Busoga region and Uganda," says Moureen Mbeiza, agronomy and land-use officer with the Iowa State University-Uganda Program. "This is the first place of its kind that will serve as a training area for our staff, students, community farmers and district and ministry officials. With this beautiful center, together we can achieve great things."

Since 2006, more than 250 Iowa State and Makerere students have participated in service-learning at Kamuli. Over the years, students lived separately and in 11 scattered locations.

"Our dream to have all service-learners living together in one location is now a reality," says Gail Nonnecke, associate director for education programs for the Center for Sustainable Rural Livelihoods. "This is a place for our students to learn, grow and develop. We have immense pride in our world-class programs in which students prepare to be future leaders and responsible citizens of the global community."

Cody West ('18 biology), a service learner last summer says, "We have seen our impact to change mindsets and alter thinking. We have used this opportunity as service learners to empower young



*The new 22,000-square-foot training center sits on 13 acres. It brings together staff, students, community farmers and district and ministry officials. Nearly 100 donors made the \$2.7 million facility possible, as well as support from Iowa State's Senior Vice President and Provost's Office.*

pupils to realize their potential and the opportunities that will be afforded to them through continued education and agriculture. We have shown them the value of investing in themselves."

At the dedication, Gideon Nadiope, the national director of the Iowa State University-Uganda Program, led a round of applause for the mpirigiti tree and its many uses that make it special to Ugandans—medicine, forage, dyes, firewood, protein-rich leaves for livestock, environmental benefits and much more.

"We pray that we make our projects as useful as this tree," said Nadiope.

The transplanted tree now has company. A young mpirigiti was planted near the main building to honor Acker's tireless efforts and dedication in bringing the training center to completion. **S**

*Since 2006, more than 250 Iowa State and Makerere students have participated in service-learning at Kamuli. Over the years, students lived in 11 different locations – the new facility brings all service-learners together in one location.*



## BY THE NUMBERS

## WE ARE CALS

- **4,400** undergraduates and **690** graduate students
- **3rd** largest undergraduate student body among agricultural colleges in the United States
- **52%** women
- **10%** multicultural students (**54%** increase over the past 5 years)
- **69%** Iowa students
- International students from **57** countries (**104** undergrads, **159** grad students)

## \$3.4 MILLION IN SCHOLARSHIPS

Offered to students annually through the college and its departments

## DOWN ON THE FARM

**15,000** people visit Iowa State's Research and Demonstration Farms every year

## CYCLONE STATE

- More than **24,000** of our **46,000** alumni live in Iowa
- **65%** of new graduates begin their careers in Iowa following graduation

## NATIONAL AND GLOBAL EXCELLENCE

- **Fred Janzen**, professor, ecology, evolution and organismal biology; American Society of Ichthyologists and Herpetologists, Lifetime Award for Meritorious Teaching in Herpetology
- **Anna Johnson**, professor, animal science, American Society of Animal Science, Animal Industry Service Award and Fellow
- **Brian Meyer**, director of college relations, Association of Communications Excellence in Agriculture, Natural Resources and Life and Human Sciences, Professional Award

## 99% RECORD HIGH CAREER PLACEMENT

(grads placed within 6 months of graduation)

- **97%** or higher for 20 consecutive years
- **277** Record number of employers at 2018 Fall CALS Career Day

## 195,966 IOWANS SERVED

Annually through Iowa State University Extension and Outreach Agriculture and Natural Resources educational events and field days

## SCIENCE STATION

- **177** scientists in **15** departments and **25** centers, institutes and initiatives conduct land-grant mission-oriented research as part of the Agricultural and Home Economics Experiment Station
- **\$400 MILLION** in sponsored research funding brought in over the past eight years

## FUELED BY ALUMNI AND FRIENDS

- **\$35 MILLION** from alumni and friends supported the college in 2018
- Annual fundraising surpassed **\$30 MILLION** each of the past 3 years

- **Bradley Miller** ('00 environmental science, '06 MS water resources and soil science), assistant professor, agronomy, International Union of Soil Sciences Dan Yaalon Young Scientist Medal
- **Ken Stalder** ('85 farm operation, '87 animal science, '95 PhD), professor, animal science, American Society of Animal Science, Animal Industry Service Award and Fellow
- **Hongwei Xin**, Charles F. Curtiss Distinguished Professor of Agricultural and Biosystems Engineering, American Society of Agricultural and Biological Engineers, Cyrus Hall McCormick-Jerome Case Gold Medal

IN OUR NEXT ISSUE

STORIES  
IN AGRICULTURE AND LIFE SCIENCESPROFILES IN  
TEAMWORK

Meet the **DEAN'S TEAM** in the next issue of STORIES. You'll get to know our new **ENDOWED DEAN DANIEL ROBISON**, his leadership style and his plans for the college. Profiles of our **ASSOCIATE AND ASSISTANT DEANS** will highlight their **COLLABORATIVE** efforts directing academic and global programs, research and the experiment station, extension and outreach, operations, student services, diversity and graduate programs. Together their **LEADERSHIP** propels the college to its place among the **WORLD'S LEADING INSTITUTIONS OF AGRICULTURE.**

Join us for the

COLLEGE OF AGRICULTURE  
AND LIFE SCIENCES DAY  
AT HILTON!

## CYCLONE WOMEN'S BASKETBALL GAME AND RECEPTION

- Complimentary pre-game reception and program (2:30-5 p.m.)
- Discounted women's basketball game tickets vs. West Virginia (6 p.m.)
- On-court recognition of the 2019 CALS Emerging Iowa Leader awardee (Congrats to 2018 winner Jacob Hunter)
- Registration available in January 2019



Watch STORIES Online for registration details. Not receiving your monthly e-news from the college in STORIES Online? E-mail [stories@iastate.edu](mailto:stories@iastate.edu) to subscribe.

078-3996

CALS Communications  
304 Curtiss Hall  
513 Farmhouse Lane  
Ames, Iowa 50011



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

## BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 675 AMES, IOWA

POSTAGE WILL BE PAID BY ADDRESSEE

IOWA STATE UNIVERSITY

MAIL CENTER  
184 GENERAL SERVICES BUILDING  
AMES IA 50010-9901



# IOWA STATE UNIVERSITY

College of Agriculture and Life Sciences

CALS Communications

304 Curtiss Hall

513 Farmhouse Lane

Ames, Iowa 50011



## WANT TO LEARN MORE OF GEORGE WASHINGTON CARVER'S STORY?

Visit **STORIES** website for links to more details about Carver's life and legacy, including biographies, memories, art and even a few recipes like this one credited to Carver.



## PEANUT BRITTLE

(NUMBER ONE)

3 cups granulated sugar

1 scant cup boiling water

1 cup roasted peanuts

1/4 teaspoon soda

Melt all together over a slow fire; cook gently without stirring until a little hardens when dropped in cold water; add the nuts; turn the mixture in well buttered pans and cut while hot. Stirring will cause the syrup to sugar.

*(How to Grow the Peanut and 101 Ways of Preparing it for Human Consumption. Tuskegee University. Carver, Bulletin No. 31, June 1925.)*

## WE WANT TO HEAR FROM YOU!

NAME

DEGREE INFORMATION

NEW?  ADDRESS

E-MAIL ADDRESS

### PLEASE SEND ME MORE INFORMATION ON:

Undergraduate Programs  Graduate Programs  Distance Education

Please Specify

Investing in the College

Please e-mail us at [stories@iastate.edu](mailto:stories@iastate.edu) to share feedback and your current e-mail or mail address. Or complete and return this card. By sharing your e-mail address you will be signed up to receive our monthly e-mail update, *STORIES Online*.

IOWA STATE UNIVERSITY  
College of Agriculture and Life Sciences