

Legacy

Fall 2012

A DAY IN THE LIFE OF NOBLE

*From sunrise to sunset, Noble Foundation
employees work to advance agriculture*





(on the cover) Russ Gentry, agricultural research operations manager, carries feed to cattle on the Noble Foundation's Pasture Demonstration Farm.

(above) Chance Tynes, agricultural research assistant, harvests pecans at the Noble Foundation's Red River Ranch in Love County, Okla. The organization's research on this valuable crop has been ongoing for decades.

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Cover Story

16 A Day in the Life of Noble ...

Every day, more than 400 men and women fill the Noble Foundation's offices, laboratories and fields with activity. In a special behind-the-scenes story, the Legacy staff chronicle a typical Noble Foundation day as employees strive to achieve founder Lloyd Noble's mission of advancing agriculture.

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Legacy

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An extraordinary experience

To our readers,

Last fall, I toured the Noble Foundation’s campus in Ardmore, Okla., for the first time. I arrived in southern Oklahoma to interview for the position of president. I left a believer. When I retired from my last post, the initial game plan was to patiently explore options, looking for an opportunity to have the maximum impact on the agricultural industry. Who knew I’d discover exactly what I had envisioned on my first stop? My campus tour included the same series of locations – laboratories, greenhouse, test plots and, yes, even the underground tunnels that interconnect the campus – that thousands of visitors see each year. Just as for them, the experience was transformative.

The facilities are truly remarkable (a mix of college campus and research institution), but what captivated me most was the passion exhibited by the employees and the fundamental vision they strived to fulfill.

More than 400 people from dozens of countries around the world assemble here every day to combine their unique experiences and expertise toward a common mission established by founder Lloyd Noble. They strive to advance agriculture, foster stewardship of the land and soil, and benefit mankind through an array of educational and grantmaking programs.

I not only witnessed the legacy of one man’s tremendous vision, but I experienced it. I could hear Noble’s words – “The only degree to which we have reached the end of the road of opportunity is the degree to which we have exhausted the imaginative capacity of the human mind.” – still echoing in the organization.

By the end of that tour, I knew my future would be rooted in the red dirt of Oklahoma.

Today, I am president of the Noble Foundation. As I look into the future, I am confident that this organization will play a pivotal role in advancing agriculture regionally, nationally and globally.

Yes, that tour so many months ago was an awe-inspiring experience, one that I want to share with every person I meet. That is why the cover story for this issue of Legacy is so exciting.

In the following pages, we chronicle one day in the life of the Noble Foundation (turn to p. 16 to begin). This behind-the-scenes look at our inner workings will take you to the far reaches of our campus and beyond, offering a glimpse of the many people, the countless activities and the obvious passion that propels us toward our mission.

More than just being a collection of words and photos, this story is a chance to experience the heart of this great organization in some small way.



Someday I hope you all have the opportunity to actually walk our hallways and visit our fields, see our projects firsthand, meet the people who breathe life into our mission, and experience the true impact of the Noble Foundation.

Until then, take my word for it – it’s an extraordinary experience.

It certainly changed my life.

Sincerely,

A handwritten signature in black ink, appearing to read "Bill Buckner".

Bill Buckner
President and Chief Executive Officer

Notables



Ellis joins Noble Foundation’s Agricultural Division

Chad Ellis joined the Noble Foundation as a new pasture and range consultant. Ellis has spent the last 10 years working for the Natural Resource Conservation Service (NRCS) and Grazing Lands Conservation Initiative (GLCI), where he served as regional director for the 15 central states. He was also previously employed as a district conservationist in Texas and state range conservationist in Florida.

Planta dedicates issue to famed Noble researcher

This summer, *Planta*, a scientific journal for metabolic plant biology, was dedicated to Noble Foundation Senior Vice President Rick Dixon, D.Phil., for his numerous contributions to the fields of plant biology and plant metabolism. The issue features 15 research contributions from Dixon’s former postdoctoral associates, students, colleagues and collaborators.



Lindsay rancher earns 2012 Leonard Wyatt award

The Samuel Roberts Noble Foundation presented Kent and Duchess Moore of Lindsay, Okla., with the Leonard Wyatt Memorial Outstanding Cooperator Award this fall. Moore was selected for the award because of his drive to improve his land, close attention to details, and always being willing to try new methods and adopt new technologies.



Saha receives grant for biomass research

Noble Foundation Associate Professor Malay Saha, Ph.D., recently received a \$1.5 million grant from a joint initiative funded by the Department of Energy (DOE) and the Department of Agriculture (USDA). The grant will allow Saha to research the genetic basis of traits associated with biomass yield and composition. Saha hopes that by understanding these key traits he can accelerate the development of superior lines of switchgrass.



Pecan industry gives Rohla highest honor

Noble Foundation Assistant Professor Charles Rohla, Ph.D., received the Herman Hinrichs Citation Award from the Oklahoma Pecan Growers Association (OPGA) this summer. This citation recognizes a professional who has made significant contributions to the Oklahoma pecan industry. Rohla was selected for this award because of his contributions to the pecan industry through research, education and leadership.

How does agriculture affect the average person?



The productivity and efficiency of agriculture in the U.S. provide food security as well as national security. One American farmer feeds 155 people. This abundance has allowed everyone to follow their own career path without having to provide for themselves. I am thankful for the American farmers and ranchers who provide the safest food supply in the world, with the most choices, for the lowest cost.

**Deke Alkire, Ph.D.,
Livestock Consultant**

Agriculture affects the average person every time they put food in their mouth, clothes on their back and fuel in their car. It impacts almost every part of our lives. In fact, it's probably the most important part of our lives, and we don't really even think about it.

**Josh Pittman,
Research Associate**

Agriculture is the foundation of our lives. Agriculture also affects the world's economy and the international situation, because of the international trade of agricultural products. For example, Japan imports more than 60 percent of its foods from other countries. Without soybeans from the U.S., we cannot make tofu, soy sauce or miso soup in Japan.

**Yashiro Ishiga, Ph.D.,
Postdoctoral Fellow**

Agriculture affects the average person daily, whether they live in a city or small town. This may not be as noticeable in a larger city, but everyone is dependent on food for human consumption, feed for animal production and fiber for clothing or housing. In smaller towns, dependence on agriculture is more apparent than in a large city, and the impacts of agriculture are seen at individual life levels.

**Mark Newell, Ph.D.,
Assistant Professor**



Noble celebrates collaboration with Oklahoma Mesonet

During the fall of 2012, Mesonet, Oklahoma's weather network, celebrated a 20-year collaboration with landowners across the state. The Noble Foundation has hosted Mesonet's Ardmore and Burneyville sites on two of its research farms since August 1992. Through two decades, each Mesonet site has collected more than 36 million weather observations. The Burneyville site recorded the highest 24-hour rainfall total – 12.42 inches – of all the Mesonet sites throughout Oklahoma.

Oklahoma Mesonet presented the Noble Foundation with this commemorative anemometer. An anemometer measures wind speed and direction.



A Boy Scout hones his archery skills under the watchful eye of his scoutmaster.

Earning More Than Badges

A legacy of collaboration and participation builds strong ties between the Noble Foundation and the regional Boy Scout organization

by Jessica Willingham

The Noble Foundation and Boy Scouts of America Arbuckle Area Council (BSA-AAC) have been sharing campfires for nearly 50 years. The relationship began with Sam Noble, son of Noble Foundation founder Lloyd Noble. Sam Noble volunteered his time and gave personally to area scouts, whose official campsite, Camp Simpson, is located near Bromide, Okla.

As a result of Noble's continued dedication, 75 acres of rippling water near Camp

Simpson became known as Lake Sam Noble – a living testament to his impact. There, troop leaders still tell stories about the second generation philanthropist.

A favorite tale recalls the time Sam hosted a group of influential oilmen at the lake and asked for donations to the local council. He received plenty of checks. Some, however, he didn't mind handing back with an arched eyebrow, kindly encouraging the donor to add a zero or two. And they did.

"Mr. Noble had a commitment to serve

youth," said Brett Matherly, scout executive for BSA-AAC. "His legacy still lives on through our continued interaction with the Noble Foundation."

Today, Noble employees volunteer time and energy, as well as bring their children to participate. However, the relationship with the BSA-AAC extends much further.

Teaching Badge

The Boy Scouts of America organization provides boys from first grade to seniors ►



Scouts practice their first aid skills. Earning the first aid merit badge is a requirement for achieving Eagle Scout rank.

in high school with programs to develop responsibility, citizenship and character. The organization also offers young men the opportunity to earn merit badges based on acquired knowledge. As more than 20 merit badges are agriculturally related, David Annis, a soils and crops consultant with the Noble Foundation, volunteered to teach a course about soil and water conservation.

“My work with the scouts is directly related to what I do here at Noble,” Annis said. “I use information very similar to what I’d give a farmer or rancher. Instead of a scout applying it to a farm, he learns important life lessons about agriculture and works to earn his merit badge.”

Annis is an Eagle Scout and now serves on the area council Eagle Board, reviewing scouts’ collective accomplishments throughout their scouting advancement. His son is also a scout. He credits his professional success to his time in the organization. “Being a scout teaches you to step up and take charge, developing leadership abilities,” Annis said. “When I began work at Noble, I sat down to write my personal mission statement as a consultant. I immediately went back to Scout Law. It

defines me as a person and my work.”

Consultation Badge

Annis is not alone. Several Noble Foundation employees can be found serving as scout masters, camp volunteers or area council board members. But the bond also includes a working relationship.

Camp Simpson has 12 campsites that host six Boy Scout summer camps with nearly 2,000 campers and staff each year. Through grants, the Noble Foundation helped the camp purchase an additional 1,000 acres – doubling its size – for camping space and resources, allowing room to grow and reach more youth.

The land provides plenty of opportunity for more sites, miles of hiking trails and extensive water sports, but it also requires more management. Several Noble Foundation agricultural consultants assist the BSA-AAC in stewarding their natural resources and achieving safer campgrounds through its consultation program – which is usually focused on agricultural producers, but assists all types of land managers.

The Noble Foundation agricultural consultants have assisted with wildlife habitat, pest control, prescribed burning, and brush, timber and water management. Keeping the camp clean and safe for the 3,200 scouts in the BSA-AAC’s nine-county service area is a challenge, but both organizations have risen to meet it together. “The Noble Foundation has been key in helping us continuously work to utilize Camp Simpson to the best of our ability,” Matherly said.

Mike Porter, a wildlife and fisheries consultant with the Noble Foundation, began consultation work with the Boy Scouts in 1988 and now serves on the executive board of the BSA-AAC. Porter helped plan and conduct the first prescribed burn on Camp Simpson to reduce brush encroachment, such as eastern red-cedar, reduce wildfire risk, improve range health and improve wildlife habitat.

“As consultants, we help people and organizations like the Boy Scouts better understand and steward their resources,” Porter said. “Improving and maintaining land can be a challenge and a lot of work, but we are here to help people accomplish this in the most efficient and economical

manner possible.”

Consultants are not only working to improve landscapes, but also futures. Through volunteer leadership and consultation, many Noble employees are also inspiring young men to pursue careers in agriculture. “I think being in Boy Scouts, and in turn being involved with the Noble Foundation, has opened my son’s eyes to wildlife management as a career choice,” said Teresa Meyers, mother and volunteer with Troop 5. Her son, Ethan, has pursued merit badges in animal science and conservation.

Giving Badge

While the youth enjoy their scouting experiences, many challenges still remain for the BSA-AAC. Camp Simpson is still in need of facility renovations. Damaged facilities have closed down certain activities, and some trails are too thick to be used by campers.

Other regional Boy Scout camps have more amenities and an easier time receiving corporate support. Despite local fundraising throughout the year, it can be difficult for smaller troops and their camps to compete. “Camp Simpson has more potential than any other camp I’ve been to,” said Mark Bruegel, scout master for Troop 5. “It could be the kind of place other troops would drool over.”

The Noble Foundation continues to provide granting support to help the camp maximize its offerings. Since 1969, the Noble Foundation has given \$850,000 to expand acreage and update camp architecture. In addition, they have provided more than \$430,000 to support the council’s various programs. “The Noble Foundation and Boy Scouts of America share the similar values of conservation, stewardship and service,” said Mary Kate Wilson, director of granting. “The board of trustees appreciate those shared values and want to help provide opportunities for area youth while honoring the shared tradition between our Foundation and the Boy Scouts.”

As for the troops, the legacy of interaction, learning and support provides – according to Bruegel – continued possibilities. “Camp Simpson and the local troops have so much potential,” he said. “We are blessed because of the Noble Foundation. They are helping us reach that potential.” ■



A scout learns to cook using a can as a makeshift stove. Scouting teaches a number of valuable skills that prepare boys for life.



Boldly Going ... Again

Rocketing plants into space seeks outcomes for Earth's farmers and future space explorers

by Kim McConnell

The weightlessness of space is beckoning Alison Blancaflor one more time. Blancaflor, Ph.D., principal investigator and professor at The Samuel Roberts Noble Foundation, and his team – Jin Nakashima, Ph.D., Yuhong Tang, Ph.D., and Alan Sparks – are preparing to launch another round of *Arabidopsis* (thale cress) seedlings into outer space. This is the second time in less than three years that the researchers have been awarded a grant to work with NASA. Only this time, instead of launching his experiment into space via the space shuttle Discovery, Blancaflor will see his work taken aboard the International Space Station (ISS) for two weeks, building on research he began with NASA in 2010.

“This is our second round of space flight experiments on plants. One of the major expectations of this experiment is to understand how microgravity – or a lack of gravity – impacts plant development,” said Blancaflor of the work funded by a three-year, \$471,000 grant from NASA.

NASA's reasoning for rocketing plants into space may sound like the plot of a science fiction novel, but actually is a problem in need of a practical solution. “NASA and the space agencies of various countries around the world fund this type of research because they have the ambitious goal of creating advanced life support systems for long-term space colonization during the eventual exploration of deep space,” Blancaflor said. “In these advanced space

habitats, plants would, of course, be an important component. Before they could be effectively utilized, however, we need to understand the biology of how plants develop in space.”

The experiment has implications for enhancing agricultural productivity here on Earth as well. Blancaflor hopes to better understand root development and cell wall structure, building on the findings generated from his laboratory's first experiment in space.

The current experimental journey will again focus on *Arabidopsis*, a model plant commonly used in the science world because much is known about its biology. “There are a lot of experimental protocols for this plant, a lot of work already done where one can make good comparisons

between experiments on Earth and those in the unique environment of space,” Blancaflor said. “Plus, my lab actually works on *Arabidopsis* because basic studies on this plant guide us in making informed decisions affecting agriculturally relevant crops.”

The familiarity with *Arabidopsis* is crucial because Blancaflor already has information from their 2010 experiments on the space shuttle that plant growth in space will spur changes in the expression of genes. That experiment sent more than 1,000 *Arabidopsis* seedlings into space inside hardware called Biological Research in Canisters (BRICs), with the simple goal of observing how the absence of gravity impacted root development and related gene expression. ▶



“We know from those experiments that more than 800 genes changed expression in space,” he said. “Some of the genes that changed controlled the development of the plant cell wall. The cell wall of a plant is important because it allows the plant to grow upright. We also discovered some novel root growth behaviors that typically would be masked or covered by the constant gravitational force on Earth.”

Some of the genes that changed during space flight present targets important for NASA to engineer new plant varieties better adapted to space and thus fulfill its plans for deep space exploration. With regard to more practical benefits, this knowledge has the potential to improve growth in Earth-bound agricultural crops.

“Here on Earth, there’s always gravity,” Blancaflor said. “Sometimes when you use the unique environment that space provides, you start to uncover things that may not have been realized here on Earth. Hopefully, there is a way to use this knowledge to generate plants with better root systems and alter cell walls so a plant can grow better or be used more efficiently for renewable

energy.” While Blancaflor and his team made significant findings during their 2010 space shuttle experiments, their results led to many more questions about the impact of growing plants in space and the related effects on expression of their genes. The 2010 results must also be replicated and validated to be accepted by the scientific community. That’s something they hope to achieve from the ISS experiment.

This time around, *Arabidopsis* will be grown: on a different type of hardware, an Advanced Biological Research System (ABRS) that will allow the team to acquire a more detailed time resolution of root growth in space. To accomplish this, a camera will take pictures of root growth, recording at regular intervals during the two weeks that the seedlings will be aboard the space station. The new methods will offer a chance to analyze gene expression and cell wall changes in the plant, so the researchers have a deeper understanding of the molecular basis of plant development in space.

Although Blancaflor’s seedlings aren’t set to launch until July 2013, preparations

have already started. For almost the entire month of October, the Noble team will travel to the Kennedy Space Center (KSC) in Florida for a science verification test (SVT). In February 2013, they will return to KSC for a payload verification test (PVT). The SVT and PVT are dress rehearsals for the experiments.

“We take the SVT and PVT very seriously,” Blancaflor said. “Without a successful SVT and PVT, there is no flight experiment.” The delivery system for Blancaflor’s seedlings into space will be a new experience. The space shuttles are no longer an option since their retirement this year so transportation to the ISS will come via commercial rockets.

Space Explorations Technology (Space X), a private spacecraft manufacturer based in California, was awarded a contract by NASA to develop next-generation space vehicles to replace the space shuttle. Blancaflor’s research is scheduled for transport aboard the Falcon 9 rocket and Dragon spacecraft on Space X’s third resupply mission to the ISS. That mode of transportation is another unknown for Blancaflor, something else to worry about and to be excited over.

“This is a new era in space research,” he said. “It is exciting to be one of the first groups of researchers to use commercial spacecraft to take experiments to the ISS. And we’re excited about how this research can ultimately lead to agricultural benefits here on Earth. Also because kids and students are often excited by space, we are hopeful that this research could inspire next-generation scientists.” ■

(above) Jin Nakashima, Ph.D., cellular imaging facility manager, uses an ultra-microtome to prepare Arabidopsis samples for microscopic examination. The device uses a glass knife to cut extremely thin slices of plant material.

(opposite) Research Associate Alan Sparks (left) and Professor Alison Blancaflor, Ph.D., examine Arabidopsis seedlings in a controlled environment growth chamber.



Twain Butler

by Jessica Willingham

Like solving a Rubik’s cube click by click, Twain Butler works relentlessly to solve the most frustrating problems in agriculture. Butler, 39, grew up on a diverse farming operation that included beef and dairy cattle.

Butler could have returned to the family business after receiving his bachelor of science at Texas Tech University, but instead he chose to pursue research in a master’s program at Oklahoma State University and, later, his doctorate at Texas A&M University.

In 2004, Butler joined the Noble Foundation as a research agronomist. He spends his days in his laboratory – a series of test plots and fields – where he works on solving the many agronomic problems facing producers. There is just one thing he enjoys more than the challenge of his Rubik’s cube job – finding the ultimate solution. And sometimes a home-brewed beer is nice.

What part of Lloyd Noble’s mission do you most identify with?

Mr. Noble wanted us to positively affect the lives of farmers and ranchers. This fundamental belief is my litmus test when I am setting up my experiments. Everything I do is focused on finding solutions to the problems agricultural producers need to solve. That’s the most important thing.

What’s the most frustrating part of your job?

Weed control is both my specialty and my frustration. I’ve screened hundreds of different herbicides for cool-season perennial grasses, and nothing was able to remove the annual ryegrass without hurting the tall fescue. The same goes for switchgrass; I can’t selectively control crabgrass in switchgrass seedlings. It is so much easier in my yard than in my test plots.

How do you manage to stay focused?

I have to step back, use a common sense approach and go back to basic agronomics to see what else we can do. You can’t guarantee anything in agriculture. It’s risky because there are so many variables - like Mother Nature.

So how does weather impact field research?

My research is trumped by weather all the time (he laughs). I had two years of research in the field in 2011, then we had the drought.

I lost everything and had to start over. Our team has to plan ahead and be patient like real producers. There’s no silver bullet. You just keep going. But when a farmer like my dad gets to use what I’ve discovered to better his operation, it’s a true victory.

If you weren’t doing research, what would you do?

If I wasn’t a research agronomist, I’d be a farmer running a forage-based livestock operation. It’s what I grew up doing. It’s what I enjoy. It’s basically what I do now. Instead of being a farmer, I get to help them. I really do have a dream job.

What experiences have influenced your work?

The opportunity to travel the world has truly impacted my work. I’ve seen so many different types of research, crops and environments. When you see what they’re doing abroad, you learn how to modify that to fit your environment.

What countries have you visited?

I’ve been to Argentina, Ireland, Scotland, England, Australia, New Zealand, Uruguay and Wales.

Tell me about your traveling tradition?

Every country I go to, I always sample a local brew. Brewing used to be a real hobby of mine.

How did you become interested in brewing?

While working for Texas A&M, a group of faculty had brewing competitions. I started teaching myself to brew. I did my own little research project using different yeast strains in the brew and eventually identified the best. Then I did the same procedure with hops and determined which set of hops I liked the most. I varied the ingredients until I eventually got a combination that was my favorite.

That seems like a fitting hobby for an agronomist.

It *was* a good hobby for me. It appealed to my sense of solving problems with a particularly enjoyable outcome. Now my hobby involves helping solve the many logistical needs of raising twin daughters. I have to tell you, that’s harder to solve than my weed problem, but more rewarding than anything I’ve ever done in my life. ■





7:24 a.m.

A DAY IN THE LIFE OF NOBLE ...

From sunrise to sunset (and beyond), the 400 employees of the Noble Foundation strive to fulfill their mission of advancing agriculture

by J. Adam Calaway

The first fall morning arrives in southern Oklahoma like the end of a brilliant magic trick – anticipated, but still pleasantly unexpected.

After the endless parch of a two-year drought has leathered a region's collective soul, the initial embrace of crisp air offers equal measures of hope and rejuvenation. On the eastern horizon, the fingers of morning sunlight reach to grab hold of the new day.

In the next 24 hours, more than 400 Noble Foundation employees – called from around the world by a shared vision – will complete countless tasks that coalesce to fulfill the mission of founder Lloyd Noble. Together, they will assist farmers and ranchers, conduct research, educate, inspire and lead – all in the name of advancing agriculture.

Like the 24,469 days before, today promises to be both routine and unique. Today holds the potential for discovery and reinvention. Today is Wednesday, Oct. 3, 2012, and this is one day in the life of the Noble Foundation.

6:28 a.m. – A symphony of crickets welcomes the rising sun with their uncoordinated chirps like a thousand Cajun musicians sliding spoons on mini-washboards. The crickets may just be waking, but Lori Ratliff and her food service team hit their stride an hour ago, while most of their fellow employees still slept.

Ratliff's day began at 4 a.m. with her usual grocery blitz through the local supercenter. She arrives at the Noble kitchen to find her team – Charlotte Blackwell, Sheryl Millsap, Janice Pierce and Donna Stephenson – already mixing, chopping and grilling to the backbeat of classic rock piped in by a flour-coated radio. These five ladies will serve more than 54,000 meals this year – 250 on this day.

Ratliff details the day's menu, never stopping her constant motion, never taking her eyes off biscuits browning in the oven. "Our folks work extremely hard. We're here to give them the fuel for the day," she says pouring eggs into a sizzling skillet. "A good breakfast equals a good start. It's going to be a great day in Nobleland!" ►



6:48 a.m. – A few paces west of the kitchen’s back door and down the south hall in the Agricultural Division Building, Dillon Payne and Tresa Runyan sit in side-by-side offices, cups of steaming coffee in hand. The pair is already busy working on field maps for area farmers and ranchers who participate in the Noble Foundation’s no-cost consultation program. “Mappers start early around here,” says Payne with a smile.

While agricultural producers usually can detail their total acreage, they rarely know what percentage is covered by trees, water or unusable land. The maps offer an aerial view of a producer’s usable land. “This is invaluable for land managers,” Runyan says. “These maps let them know what they’re actually working with. It’s one of the first steps to helping them develop a full management plan.”

6:58 a.m. – The first impromptu meeting of the day begins as Wildlife and Fisheries Consultant Russell Stevens pokes his head into Payne’s office. Stevens is working on a factsheet for properly preparing firebreaks as part of a prescribed burn, a joint effort with Oklahoma State University. Neither of the men is surprised by the early start time. “Hey, everything that happens in the wildlife discipline happens before dawn,” says Stevens with a chuckle. “This is practically noon for us.”

7:24 a.m. – Sunrise. A few miles west of the main campus is the Noble Foundation’s Pasture Demonstration Farm where Russ Gentry makes his first round of the day. The Noble Foundation operates seven research and demonstration farms across southern Oklahoma, totaling more than 13,000 acres. The farms allow Noble Foundation researchers to test improved forages in real-world settings, while offering regional producers an opportunity to see best management practices in motion. “Not many organizations have a resource like our farms,” Gentry says. “They may look



like everyday operations, but look closer and you’ll see research projects, test plots and cutting-edge technology.”

7:32 a.m. – Jackie Kelley, copy editor for the Communications Department, kicks off her black sandals, laces up a pair of sneakers and adjusts her kerchief. Kelley is about halfway through her radiation treatments, and her daily routine centers on healthy living. Each morning, she arrives early and meets Pat Weaver-Meyers, Ph.D., director of library services, for a few laps around campus. Weaver-Meyers walks because each step brings her friend closer to recovery, each morning spent talking offers another opportunity to support. And she sees the impact on her own life. “Any time you spend with a friend is just as important for you as it is them,” Weaver-Meyers says. “When a friend is going through real life problems, it keeps your problems in a healthy perspective. Our morning walks are good for both of us.” (To read more about Kelley’s journey and the Noble spirit, turn to page 32).

8:42 a.m. – Weihong Dong, wife of Noble Foundation postdoctoral fellow Jiqing Gou, strings a bright yellow hose through the Noble Foundation Community Garden. A small plot of land on the organization’s campus, the garden was established to allow employees an opportunity to grow their own fruits and vegetables. For some international employees, the garden offers a chance to bring a taste of home Stateside. Intermixed with everyday varieties are Chinese cabbage, long beans and winter melon – none of which are readily available in local markets. On this morning, Dong stood watering friends’ vegetables along with her own. “They’re on vacation,” she said. “I’m just helping out. That’s what we do here – help each other out.”

9:02 a.m. – A few hundred yards away in the Noble Foundation’s Research Park, Research Technician Josh Barbour, Research



Assistant Lynne Jacobs and Antana Acharya, a visiting student scientist from Nepal, gather field data by hand. Armed with rulers and clipboards, the trio takes hand measurements of individual switchgrass plants, recording many of the physical characteristics of the plant. The variety trial hopes to identify switchgrass lines that have increased biomass for breeding new lines as a spring grazing option or a potential bioenergy crop. In total Barbour, Jacobs and Acharya will measure 1,440 plants. “Not all science is conducted in a laboratory,” Jacobs says. “Sometimes science requires you to get some dirt under your nails.”

9:55 a.m. – Standing in another field, about 30 miles away is Steve Upson, who is examining John Marshall’s struggling pecan grove, tree-by-tree. Marshall recently purchased the property near Burneyville, Okla., and knew he needed some outside counsel to rejuvenate the lackluster production of the unmanaged grove. Each week, the Noble Foundation’s agricultural consultants conduct dozens of farm visits, where they apply their expertise to troubleshoot problems in all the core agricultural disciplines: economics, horticulture, livestock, pasture and range, soils and crops, and wildlife and fisheries. On this day, Upson begins outlining a management plan that will resolve Marshall’s pecan problems. “Working with the producers is the most rewarding part of my job,” Upson says. “Helping them overcome their current problem and get to a state of success, well, that’s what it’s all about.”

10:22 a.m. – Back on the Noble Foundation’s main campus, tucked away in the cellular imaging facility, Postdoctoral Fellow Julia Dyachok, Ph.D., sits in a dimly lit room, the incandescent computer screen her only light. Attached to a confocal microscope, Dyachok’s computer glows green with what looks like an armored alien appendage. It’s actually the cytoskeleton of a root cell, illuminated by fluorescent proteins so that Dyachok can study cell



division. “Cell division regulates basic life functions,” Dyachok says. “By understanding it, we can discover how plants grow and possibly grow bigger plants for use in agriculture.”

11:17 a.m. – Breeding new varieties of forages inevitably requires two elements – land to plant the new forage on and animals (usually a few cows or sheep) to taste-test it. On the south portion of the Noble Foundation’s 800-acre Ardmore campus are a series of test paddocks. In Paddock No. 21, Dusty Pittman, research associate, maneuvers a John Deere tractor hitched with a fertilizer spreader through narrow fencing, delivers a prescribed amount of fertilizer and whips into the next lot to repeat the process. Soon these paddocks will be home to a lamb grazing trial for a new variety of fescue. “Our focus is building better forages for grazing systems,” Pittman says. “But you have to make sure what you produce is better than what is currently being used.”

12:01 p.m. – Lunch time. Most Noble employees stream into the cafeteria. It’s grilled pork chop day. The line and raucous conversation grow in equal measures. But not all employees eat first; a handful slip back to the Wellness Center to squeeze in a quick workout. For agricultural consultants Eddie Funderburg and Job Springer, a weekly ritual is unfolding. With their pressed shirts thrown onto a side table, the pair square off in ping-pong combat. The sharp plink-pop, plink-pop of their volleying continues until an artful shot careens off the corner of the table for a point. When asked if this counted as a workout, Springer scoffs and says, “I’m sweating, so it has to count.”

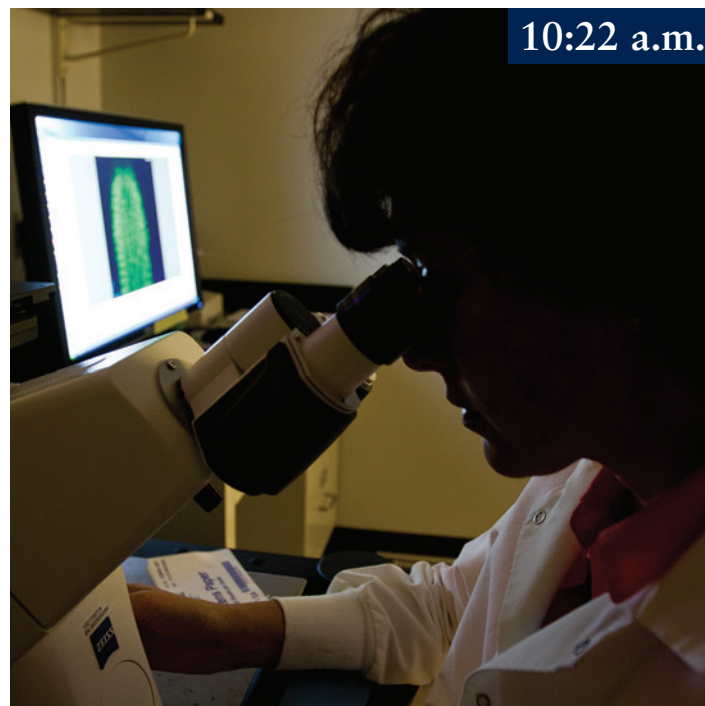
1:27 p.m. – There is no post-lunch lull for Rodney Pierce and Kye Henington, Inventory and Equipment supervisor and technician, respectively, who return from their meal and continue one of their many projects. The pair are part of a maintenance team that repairs ►



and maintains more than 320 pieces of equipment, including today's overhaul of hydraulics on a tractor. They even help out building infrastructure. Pierce welds metal stairs for the south entryway of the Soils/Forages Testing building. "Anything that needs to be fixed, we can fix," Henington says. "That's what we do."

2:13 p.m. – Even at a shout, one can barely sustain a conversation in the sample preparation rooms of the Soils/Forage Receiving Building. Steve and Tyler Vladyka, father and son, work in side-by-side rooms, grinding forage samples in what looks like industrial grade Cuisinarts. Through the course of the year, the Ag Services and Resources group will process more than 20,000 samples, sending some away for testing and conducting in-house tests on everything from crude protein analysis to total digestive nutrients. The results will help agricultural producers pinpoint how much supplement they should add to their nutrition program. "One of the first services the Noble Foundation offered was testing soil samples," says Tabby Campbell, team supervisor. "Today, we continue that great tradition by testing soils and forages for our producers. And we do it on a much, much larger scale."

2:34 p.m. – Different building. Different room. Same volume issue. Resting on the south end of campus is the Utility Services Center, a brick structure with no windows and steel doors that look like they belong on a modern day castle. Rich Brown, USC supervisor, and Phil Goodin, USC technician, wind their way through the building's cavernous expanse, the deafening hum of machinery overwhelming any attempt at conversation. The USC serves as a backup power station for the Noble Foundation, keeping the research in the laboratories and greenhouse secure in case of local power failures. To produce the required output, the USC houses one natural-gas-powered and three diesel generators, as well as two tanks, each containing 15,000 gallons of diesel. Servic-



ing the massive machinery requires diligent attention. On this day, Brown and Goodin check the oil level of the generators. "USC is at the heart of our infrastructure," Brown says. "We pump energy and water to the rest of campus and help keep the research secure."

2:59 p.m. – Beyond the need for distributing backup power, all the water that flows onto the Noble Foundation campus comes through USC and is then disseminated to the rest of campus through underground tunnels. Flowing out of USC, the web of smooth, well-lighted cement tunnels connects most buildings on campus, totaling about 1,200 feet of subterranean walking paths. If USC is the heart, then the tunnels are the arteries, moving water and people between buildings. A quarter-mile walk underground eventually leads from USC to the Noble Foundation greenhouse.

3:06 p.m. – The earthy smell of potting soil lets a visitor know they're getting close to the greenhouse, where Bonnie Farris, greenhouse research technician, peers over a field of emerald green fescue. Farris snaps up one of the cone-shaped containers and begins to artfully shear off the leaves before moving to the next. At about 50,000 square feet, the Noble Foundation greenhouse is one of the largest, single research greenhouses in North America. A 10,000-foot portion is also one of the most technologically advanced greenhouse spaces with automated watering systems, industrial air conditioning and grow lights. Despite all the technology, maintaining a greenhouse in southern Oklahoma is still a labor-rich endeavor – between the "biblical plague" of insects (the aforementioned crickets) to the constant need to trim plants. "We mow an acre of lawn every 10 days," says David McSweeney, greenhouse manager. "But we do it with scissors."

3:36 p.m. – So much of plant science research – whether in the greenhouse, the laboratory or the field – depends on thousands of ►



1:27 p.m.



3:06 p.m.



interconnected tasks that must be meticulously performed through weeks, months and years. Research Associates Xirong Xiao and Tim Hernandez sit several hundred feet apart at opposite ends of interconnected laboratory space, both half enclosed in horizontal flow hoods that provide sterile work areas. They each repeatedly prepare samples as part of the organization's plant transformation process. Simply put, "transformation" is the process of moving genes from one plant species to another. Transformation enables the precise introduction of value-added traits to target plants. "Advanced scientific techniques like transformation will be key to meeting the demands of agriculture in coming generations," Hernandez says.

4:15 p.m. – Senior Research Associate Nikki Charlton, Ph.D., measures freeze-dried leaf tissue of Canada wildrye into small tubes for chemical analysis. Charlton is a member of Principal Investigator Carolyn Young's research laboratory, which examines fungal endophytes – microscopic fungi that form symbiotic relationships within plants. Through Charlton's analysis, the laboratory hopes to better understand and describe the variety of endophytes present in native grasses. "By understanding the diversity of these fungi in natural grass populations, we can learn more about the ecological and possible agronomic benefits they provide," Charlton said. "Breeding endophytes into crops holds the potential to produce stronger, healthier plants."

5:25 p.m. – Most employees begin their nightly migration home. The bustle of the busy day slows, but work is ongoing. Researchers refill their stained coffee mugs, preparing to dig in for a late evening. The Wellness Center springs to life with dozens of employees working out the knots of the day. And the Environmental Services crew – eight men and women – scour and polish the Noble Foundation's 500,000 square feet of research and administration space. "During the last two years, I've hosted thousands of people

4:15 p.m.



on our campus and invariably someone comments on how clean our campus looks or how well the lawns are manicured," says Mary Means, events coordinator. "That's a tribute to the Environmental Services and Landscape teams."

7:25 p.m. – Sunset. The crickets return and the day's second movement begins with another clattering chorus.

10:05 p.m. – Postdoctoral Fellow Kyohei Shibasaki, Ph.D., stands at his laboratory bench, concentrating on the notebooks and instruments before him. Shibasaki is alone with his thoughts, focused not just on his project with *Medicago* (a model plant for legume study), but on his career. Much like a medical student does a residency, postdoctoral fellows work three to four years at an institution to gain experience and conduct research that will serve as the foundation of his or her career. The Noble Foundation has been nationally recognized as being one of the best places to launch young scientists' careers. Shibasaki will finalize his postdoc position in April 2013 and return to Japan. Even with six months to go, he is feeling the pressure. "I have a short window to complete my project, so I spend many nights up here," he says. "But I have enjoyed my time here. It will pay off for my future."

10:22 p.m. – A lone lamp shines in Bill Buckner's office. After being selected as the Noble Foundation's new president and CEO in January 2012, Buckner has burned barrels of midnight oil during his first 10 months in office. He welcomes his unexpected visitor with a bright smile and pushes his glasses on top of his head. As he rubs the bridge of his nose, Buckner leans heavily back in his chair and sets his pen on his notebook to listen to a brief recap of the day's activities. After hearing the tale of "just another day," Buckner straightens, pulls his glasses back down, and says, "Wait until you see what we do tomorrow." ■



Sweeney's Secret

The Noble Foundation granting legacy supports life-changing experiences at one special camp

by Jessica Willingham

On a sunny day in July, it looks like the quintessential summer camp, where kids hide candy bars in hollowed-out bunk beds or meet their long-lost identical twin. The mess hall buzzes with loud chatter and the clanking of silverware. Screen doors creak open and slam shut with the traffic of busy campers. The faint smell of sunscreen floats through the air. Out on the glistening lake floats the giant “blob” – a tractor-trailer-sized balloon that campers use to launch their friends into the water. Camp Sweeney is every kid's carefree, summer haven. Especially kids with diabetes.

Camp Sweeney in Whitesboro, Texas, has hosted campers with diabetes since 1950. The lodge, the heart of the campgrounds, is decorated with collages of photos from every summer of every year, echoing memories and tradition. Camp Sweeney has been recognized as the

premiere diabetes rehabilitation center for children in the world. It's made possible not only by the committed staffers, but by life-sustaining financial sponsors. The Samuel Roberts Noble Foundation has awarded 22 grants and nearly \$300,000 to the camp since 1983. The grant funding has assisted with improvements ranging from cabin renovations and air conditioning units to medical terminals and playground equipment.

“Part of promoting agriculture is promoting healthy lifestyles,” said Mary Kate Wilson, director of granting at the Noble Foundation. “Camp Sweeney makes a life-changing impact on diabetic youth and their families, setting them on a path not only for medical success, but personal success as well. The Noble Foundation trustees enjoy being a part of that through our philanthropic efforts.”

During three sessions each summer, Camp Sweeney hosts 800 campers ranging in age from 5 to 19 years old – all affected directly or indirectly by the disease. Most live with Type 1 diabetes, a condition where the body simply refuses to produce insulin. Other campers are challenged with

Type 2, where a sedentary lifestyle, poor nutrition or genetics have brought on the disease.

While most campers are facing pre-diabetes or the disease itself, some campers are siblings of those affected, dealing with the confusing and frustrating amount of attention their sibling's medical condition demands.

“I appreciate the sense of community this place instills in people,” said Bennett Koontz, an 18-year-old camper and brother of a diabetic. “Camp inspired me to take an active interest in my brother's medical condition.”

“The entire family dynamic is affected when a child is diagnosed with diabetes,” said Billie Hood, business manager for Camp Sweeney for more than 20 years.

Hood explained that, more often than not, children with Type 1 diabetes are the first members in their family to be diagnosed. It's a dramatic interruption.

From infancy, children are on the road to independence: rolling over, walking and talking without permission.

Yet when a child is diagnosed with a disease like diabetes, that relaxed tether ►

A camper takes a leap of faith on Camp Sweeney's challenge course. The camp works to instill independence in diabetic youth.



connecting parent to child snaps back, pulling both tighter than ever before. Insulin and medical supplies must be on hand at all times, from the classroom to the t-ball field. “Lows” and “highs” dictate every day. The treats we all cherish in childhood – ice cream from the truck, a snow cone on a summer afternoon or exchanging candy on Valentine’s Day – are suddenly restricted, at times forbidden. Pump sites, blood sugar tests and diet plans take up the spaces in life where fun, freedom and abandon used to be.

“Fear and caution can rule a diabetic and their family,” Hood explained. “Here, the fear is removed and independence is taught and explored again, teaching kids and parents that the child can have fun, just like any other kid, while still managing their diabetes.”

Unlike any other environment, Camp Sweeney is truly a “diabetic’s world.” Reaction stations (places where campers can conveniently check blood sugar and receive insulin) are dotted all across the campgrounds. Every counselor carries a kit full of supplies in the event a camper experiences a low or high. A dietician and nutritionist strategically design every meal offered. More than 20 cooks individualize each camper’s meal, using a campus-wide electronic system that allows medical staff to track every camper’s test results in real time.

Tests are administered at least five times throughout the day. Even at night,

(top) A young girl checks her blood sugar level at one of the camp’s reaction stations.

(bottom, left) Two boys leap for a Frisbee on the camp’s athletic field. Camp Sweeney shows young diabetics that they can manage their disease while still having fun.

(bottom, right) Traditional summer camp activities such as arts and crafts are part of the Camp Sweeney experience.

Fear and caution can rule a diabetic and their family. Here, the fear is removed and independence is taught and explored again.

– Billie Hood

the diabetic world keeps turning: medical staff work in the dark, quietly testing every camper’s blood sugar three times, careful not to wake them. Further, there are infirmaries in every cabin and a hospital on the grounds.

By providing every medical need, the anxiety of participating in “normal” activities is removed. Campers take three active classes and two passive classes in the morning and afternoon. Active classes include swimming, learning tricks at the skate park, archery, hiking, basketball or – a camp favorite – playing on the paintball course. Passive classes include lower impact physical activities like fishing, riflery, radio broadcasting and publications. Campers also attend medical lectures to learn more about diabetes and how to better manage the challenges it presents in their lives.

“Camp Sweeney helped me be comfortable with diabetes,” said Anna Grace Chandler, a camper for nine years. “Lots of kids don’t want to take shots in public or feel different than their peers, but this camp gave me the extra confidence I needed to take care of my diabetes. Here, you always have what you need and you feel better. You’re exercising, and managing your diet and insulin. It’s the perfect place to be if you’re a kid with diabetes.”

Mentorship is a cornerstone for Camp Sweeney. The ratio of one counselor to every four campers is maintained every

session. Older campers are also charged with mentoring younger ones, affectionately called “junior mints,” guiding them throughout their time at camp. “It’s about giving in the same way you’ve been given,” said Chandler, who is now serving as a first-time counselor.

“The counselors are there to discover a camper’s goal,” Hood said. “For some kids, the goal is to catch a fish for the first time or ask a girl to dance. For others, it’s getting into college. Whatever it is, the counselor is there to help make that happen.” Many go beyond their job requirements. Hood said she knows of counselors who have paid the costly tuition out of their own pockets for younger campers to return to Camp Sweeney.

Without support from institutions like the Noble Foundation, Camp Sweeney would be forced to utilize all funds for campus maintenance, instead of awarding \$750,000 in scholarships to campers who, without the financial help, could not attend. Enabling Camp Sweeney to serve youth and teach youth to serve is possible because of Noble’s granting efforts, Hood said.

The \$2,900 fee can put a strain on already tightened family budgets, and many campers can only afford to experience Camp Sweeney once or twice. “If it weren’t for scholarships and Medicaid, I wouldn’t be here,” one camper said while dribbling a ball between his legs before being called back to the court by a friend.

The smell of hot dogs and hamburgers on the grill wafts through the air as the 62-year-old dinner bell rings out over the camp. Older campers migrate from the flag football fields and challenge course adventures, occasionally stopping to help their “junior mints” off a water slide or down from shiny, new playground equipment. They’re all heading to the cabins for their routine insulin dosage. Soon they’ll be in the lodge, enjoying dinner with new friends and surrounded by memories of campers before them who also came to know the secret of Camp Sweeney – that nothing, not even diabetes, can hold them back. ■

A photograph of Joe Bouton, a middle-aged man with grey hair, smiling and standing with his arms crossed in front of a large, modern building with a red brick facade. The building has a sign that reads "Forage Improvement". There are green trees in the background and foreground.

A True Southern Gentleman

With quick wit and his trademark smile, Joe Bouton discusses how his life's work has helped shape plant breeding worldwide

by Debra Levy Martinelli

Throughout his 35-year career as a scientist and educator, the motivation for Joe Bouton, Ph.D., has been simple – help farmers and ranchers.

“I come from a farm family,” Bouton said, “so I wanted to give farmers and ranchers new varieties of forages that were better than what they used before so they could increase their yield or productivity and improve their bottom line. I always felt I could make an impact in that way.”

By the time he retires from The Samuel Roberts Noble Foundation on Dec. 31, Bouton will have made an enormous impact on the world of plant breeding and agriculture.

An internationally recognized forage breeder and geneticist who helped establish the Noble Foundation's Forage Improvement Division and served as its first director, Bouton has helped countless farmers and ranchers by improving key

traits within such forages as alfalfa and tall fescue. His research programs have helped develop 17 commercial products, all of which were bred to have improved quality and durability. He is best known for releasing Alfagraze alfalfa, MaxQ tall fescue, and Durana and Patriot white clovers.

“Joe Bouton's contribution to the Noble Foundation during the past 15 years is incalculable,” said Bill Buckner, Noble Foundation president and CEO. ►



Bouton examines a field of switchgrass, a plant that came to the forefront of Noble Foundation research during his tenure.



Bouton delivers a guest lecture at the University of California, Davis. Bouton has given hundreds of lectures around the world.

“His vision, leadership and expertise have created one of the world’s most reputable plant breeding groups and have contributed greatly to Noble’s overall excellence.”

Growing a Division

Bouton is a Mississippi native who holds a Bachelor of Science degree from Mississippi State University and master’s and doctoral degrees from the University of Florida. He served as a breeding researcher and professor of crop and soil sciences at the University of Georgia from 1977 to 2004. He became associated with the Noble Foundation in 1997 in an advisory capacity for the newly formed Forage Biotechnology Group, the predecessor to today’s Forage Improvement Division.

In March 2001, Bouton became the Forage Biotechnology Group’s acting head, guiding the group’s work on the development of improved forage grasses and legumes for the Southern Great Plains. When the group attained divisional status three years later, he became its first director (and later one of the organization’s senior vice presidents). The new division found its home in a new 85,000-square-foot, state-of-the-art research facility on the Noble Foundation campus. Under Bouton’s direction, key projects were developed, and more than 60 employees were hired.

“The research received national

recognition, but, most importantly, the new cultivars we began breeding are now starting to reach the marketplace. That’s the true mark of success,” said Bouton, who has been recognized by his peers with numerous honors, including the American Forage and Grassland Distinguished Grasslander Award, the Crop Science Society of America Martin and, Ruth Massengale Lectureship, and, most important to him, being named Progressive Farmer’s Man of the Year in Service to Southeastern Agriculture.

Bouton held the director’s post until mid-2010, when he returned to his forage breeding and genetics projects. “The time had come to hand off the division to a younger person with the energy to take it to the next level,” he said. E. Charles Brummer, Ph.D., became the division’s second director in August 2010.

As Bouton nears his 65th birthday – his targeted retirement date – and having completed most of his research projects, he has begun embracing the next phase of his life. His colleagues across the country and around the world offered unique perspectives on the breeding outcomes from the insightful, generous Southern gentleman with a delightful sense of humor.

International Connections

“Joe understands farmers’ needs. When he released Alfagraze, a variety of alfalfa that

could be either grazed or made into hay [in the mid-1990s], that was a big breakthrough for farmers,” explained Donald Wood, a researcher at the Center for Applied Genetics Technologies in the College of Agricultural and Environmental Sciences at the University of Georgia whom Bouton hired in 1977. “He also has a natural ability to gather scientists from around the globe and lead them in successful forage breeding projects.”

Those projects have included a long-standing collaboration with Grasslanz Technology Ltd. in New Zealand. In the mid-1990s, Bouton traveled to New Zealand to work with John Caradus, CEO of Grasslanz, in starting a white clover breeding program for the United States. The collaboration yielded two cultivars (Durana and Patriot) that are now the benchmarks for white clover cultivars in America.

“Joe is quick to identify new breeding targets that will result in developing cultivars that provide farmers with new options and improved profitability,” Caradus said. “He’s just got that breeder’s eye for knowing which way to go.”

Caradus said Bouton also has led much of the thinking in the United States on the need for safe fungal endophytes to be used in fescue cultivars. Bouton joined forces with Grasslanz to launch the MaxQ endophyte onto the market a decade ago,



Senior Research Associate Brian Motes reviews seed samples with Bouton.



Bouton discusses a research collaboration with a visiting scientist. Bouton collaborations yielded numerous new cultivars.

explained Caradus. Most recently, that ongoing collaboration yielded the Forage Improvement Division’s Texoma MaxQ II, a quality cool-season perennial tall fescue that can eliminate the potential for toxicity in livestock and also survive the blazing summer heat of the United States’ Southern Great Plains.

“I always felt it was important that individual scientists work with each other within the organization, but also create synergy with outside scientists,” Bouton said. “When we work together, we produce better science, develop better technologies and create better varieties.”

A Legacy Realized

Bouton has had the privilege of personally witnessing the impact his varieties have had on agricultural producers. While traveling through Virginia not long after Alfagraze was released, Bouton stopped at a roadside café and saw a farmer wearing a cap with the “Alfagraze” logo emblazoned on the front. “You never know what is going to come out of the mouths of farmers, but I decided to talk to him,” Bouton said. “Pointing to his cap, I asked, ‘Do you like that variety?’ and he said, ‘Oh, yeah, I love it.’ Then I told him who I was. He took me to his farm to see his fields of Alfagraze. Seeing a variety go from the laboratory to success in a farmer’s field is a bit like

watching a child grow up. When you actually produce something tangible and that variety is accepted by farmers and the seed industry, that’s validation of the work.”

Bouton experienced similar praise – not just for his variety development – but for his broad pursuit to bettering agriculture during his leadership at Noble. During the International Symposium on Molecular Breeding of Forage and Turf in Salt Lake City this past June, Bouton learned that the division he had helped establish had become internationally recognized.

“At breakfast one day, I ran into an elderly lady from Mongolia,” he said. “She asked where I worked, and I told her. ‘Ah,’ she said, ‘the Noble Foundation – very, very excellent organization.’ That is the kind of story that makes you realize the Noble Foundation has established a brand that is recognized around the world.”

And that, he says, was his goal as a division director. “I wanted people around the world to hear about the Noble Foundation and its work,” he said. “I wanted people to think, ‘Because you belong to that organization, we know you’re in the upper echelon. We know you do good work.’ I think we have achieved that.”

In his personal research and as director, Bouton said he has accomplished his objectives of serving the Noble Foundation mission and his personal credo of assisting

BOUTON’S FAVORITE STORY

I know it is an obligatory statement, a cliché even, that when men are praised they give credit to their wife and family. But I want to say in the strongest terms possible that the love and support of my wife, Mary Jeanne, was indispensable for me in my career and personal life. That our children, and now grandchildren, are happy and successful is due solely to her influence. However, as anyone who has met Mary Jeanne will attest, she is not one to suffer fools lightly.

For example, we went to her class reunion a couple of years back and began talking about one of her old boyfriends who had become a shoe salesman. In all fairness, he was very successful, but at that point in my career, I was a senior vice president at the Noble Foundation and I felt pretty good about myself so I leaned over to her and said, “Aren’t you glad you married me. I’m an accomplished scientist and a senior vice president.” She just smiled, turned to me and said softly, “Sweetie, if I had married him, he’d be the accomplished scientist and senior vice president.”

agricultural producers. “I can look back on my career and feel I left a positive mark,” said Bouton, smiling. “I helped farmers do more. They feed the world. That’s amazing to an ole boy from the Mississippi Delta.” ■

The Noble Spirit

by J. Adam Calaway

You’d like Jackie Kelley if you met her. She’s unassuming and proper. She’s bright-spirited and jovial. Here at the Noble Foundation, she works in the Communications Department, handling whatever tasks are asked of her (and then some). A self-taught copy editor, she’s the first person who reads everything I write. She makes sure that my participles don’t dangle and my commas are unspliced.

It’s fair to say that Kelley lived a happy routine with work and family, so she wasn’t prepared to hear *that* word, that fear-inducing, mortality-facing word. No one, of course, is ever ready to hear that they have cancer, but her doctor said it. She had it. Game on.

Kelley had two realizations in the weeks following her cancer diagnosis. First, she understood that beating cancer required embracing her internal Rocky Balboa. Her resolve steeled, and she became as tough as a rhino’s callous. Sure there were tears, but she wasn’t just fighting back, she was bare-knuckle brawling. Kelley also quickly realized her family wasn’t the only group in her cheering section.

In the hours after her diagnosis, Kelley returned to work – shell-shocked and afraid – and two coworkers rushed to her side. In the weeks to come, a support team began to amass. They assembled goodie baskets to help preoccupy her during chemotherapy. They took daily walks. They listened and encouraged.

And they did something that transcends “coworker” relationships, something that spoke directly to the spirit of the Noble Foundation.

When Kelley’s hair began to fall out, she decided to avoid the inevitable slow shedding, so she buzzed it off. A few swipes of the clippers and she was bald for the first time since she was a baby. For Kelley, the smooth head served as an external reminder of the internal struggle. It was a battle scar.

Kelley returned to work the next day to find every woman in her building wearing a pink bandana. They were soldiers in her army. They were in her fox hole. “It was so touching,” she said, smiling, but dabbing her eyes. “The love and support just blows me away. I always thought you had two sets of friends – work friends and outside friends. But these ladies are some of my truest friends. I am so thankful for them.”

Kelley’s experience is hardly isolated. Lynne Jacobs, a research assistant, was diagnosed with the same form of cancer and experienced the same universal compassion from her Noble coworkers. The many gifts were greatly appreciated, but Jacobs cherishes the newly formed bonds the most. “I had these intense conversations and laughed harder than I have in years,” Jacobs said. “I got to know fabulous people that I wouldn’t have if I had never been diagnosed. They were here for me in a way you don’t often see at a job.”

And the stories go on and on.



This summer, Chuck Coffey, a pasture and range consultant, was thrown from his horse. The bucking motion was so violent that it sheared his pelvis from the spine, literally dislocating the upper and lower parts of his body. Coffey endured a month in the hospital, two major surgeries and – so far – four months of rehabilitation. (It could be two years before he completely recovers.)

His fellow employees rushed to provide aid. The visits, the gifts and the dinner runs to supplant bland hospital food were all overwhelming acts of kindness, then Coffey returned home to find something that – to this day – makes him fight back tears. A team of Noble employees constructed not only a ramp for his wheelchair, but they packed a gravel landing pad for easy, clean access and built a new deck where he could sit in his wheelchair. “That deck was a life saver,” Coffey said. “Instead of being stuck in the house, I’d sit out on the front porch all day until I couldn’t stand the heat. I don’t know how to put into words how it feels to receive that type of genuine love. That’s real, that’s special. It just shows that this Foundation is more than just a job.”

Kelley agreed.

“This place is more than bricks and buildings,” she said. “There’s something special here. It’s not just our mission or programs, but it’s the people. They come from all over the world, and they share this universal genuineness and compassion. They’re the spirit of this place. They’re the Noble spirit.” ■



(above) A Noble Foundation researcher fertilizes furrows for spring planting in 1948 at the Caddo Ranch. Field trials under real-world growing conditions have been a staple of Noble Foundation agricultural research since the earliest days of the organization.

Address Service Requested

This image of plant stem trichomes was taken by a student visiting the Noble Foundation microscopy suite during an educational workshop. Hundreds of students attend educational events at the Noble Foundation each year. The next issue of Legacy will feature a cover story on the Noble Foundation's new educational endeavor, Noble Academy.

