



2019

ANNUAL
REPORT

THE ROAD TO
RENEWAL



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THE ROAD TO RENEWAL

Farmers and ranchers across the U.S. are increasingly adopting regenerative agriculture principles and employing management practices that improve the quality of the land.

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Producers who build a custom-fit plan based on principles that build soil health will find themselves headed in the right direction.

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IT'S NOT ABOUT A DESTINATION

Success is not about reaching a final end point but about constantly learning, reaching goals and moving toward continual improvement.

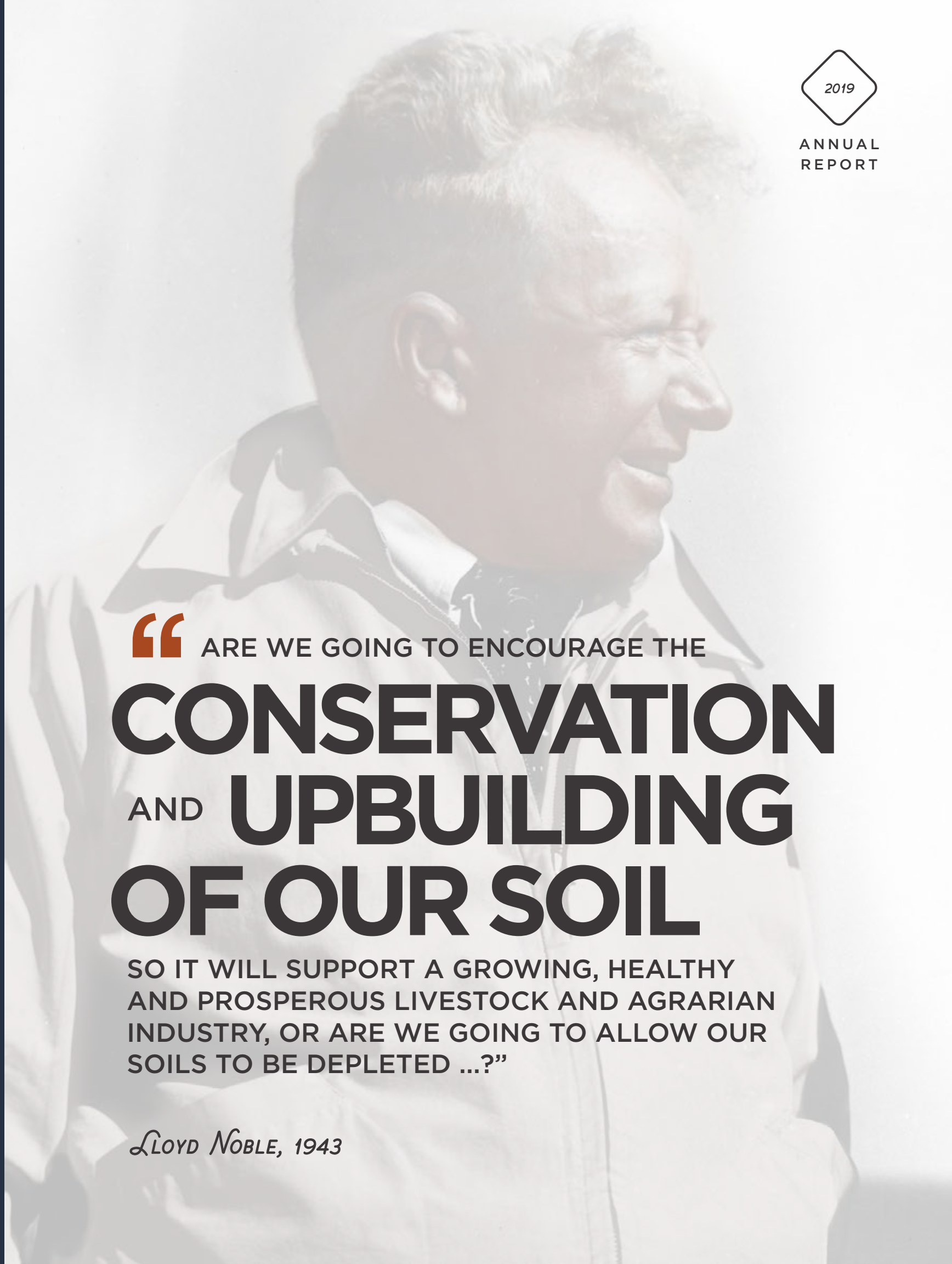
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“ ARE WE GOING TO ENCOURAGE THE
CONSERVATION
 AND **UPBUILDING**
OF OUR SOIL

SO IT WILL SUPPORT A GROWING, HEALTHY AND PROSPEROUS LIVESTOCK AND AGRARIAN INDUSTRY, OR ARE WE GOING TO ALLOW OUR SOILS TO BE DEPLETED ...?”

LLOYD NOBLE, 1943





Rangelands naturally evolved with grazing by large animals, including bison and elk. Today, domesticated grazing animals convert grasses, legumes and forbs — which humans cannot digest — into nutrient-dense foods that fuel people.

THE ROAD TO **RENEWAL**

The road through life is marked with opportunities to learn and to contribute to the betterment of others. There are struggles and choices. There are opportunities to be bold and moments to be seized.

The journey of every farmer and rancher aims to nourish the nations in this generation and those to come. To do that, more and more are realizing the need to improve, not merely sustain, the land by rebuilding soil health through a process known as regenerative agriculture. >>

WHAT IS REGENERATIVE AGRICULTURE?

Regenerative agriculture surpasses sustainability. It addresses the reality that much of the nation's land, air and water is degraded or polluted, and it takes a long view that considers what we can do to actually improve the quality of those resources. It seeks to nurture the land's natural abilities, to restore degraded soils using practices based on ecological principles — thinking of soil, plant, animal and water as part of one interconnected system that serves as the foundation for society.

For farmers and ranchers, regenerative agriculture ultimately builds soil organic matter and resiliency of the land, making it more drought tolerant and disease resistant. It also results in cleaner air and water, enhances wildlife habitat, and captures carbon to combat climate variability — for the benefit of all society. Finally, these principles help keep ranches profitable through decreased use of chemical inputs and increased yields. However, embarking on the regenerative journey is no easy task.

Regenerative agriculture is the process of restoring degraded soils using practices based on ecological principles.

Regenerative agriculture promotes:

- Building soil organic matter and biodiversity.
- Healthier and more productive soil that is drought- and flood-resilient.
- Decreased use of chemical inputs and subsequent pollution.
- Cleaner air and water.
- Enhanced wildlife habitat.
- Capturing carbon in the soil to combat climate variability.

The path is filled with ups and downs. It is best traveled with friends and guides familiar with the potholes and promising detours. Still, much of the journey is not fully mapped. Causal pathways between management practices and land regeneration need science-based evaluations. Technologies require testing. Research then must transform into practical solutions followed by education that empowers farmers and ranchers to make decisions with confidence.

For the past 74 years, Noble Research Institute has guided farmers and ranchers as they steward our nation's grazing lands and provide food and fiber for families — their own and those beyond the farm gate.

This annual report is a glimpse into their journey of sacrifice, one that is supported by Noble through research, education and consultation. It is a peek into the long road to renewal.

Grazing lands provide habitat for wildlife and for domesticated animals that provide protein, fiber, medicine and other important products. These lands also store water and carbon in the soil.



We're passionate about what we do. We don't consider it work. We just consider ourselves fortunate and blessed. But this is greater than that. We want to make sure we leave the land better than we found it."

—GARY PRICE, 77 Ranch, Texas

665

million acres of pasture and rangeland cover the U.S.

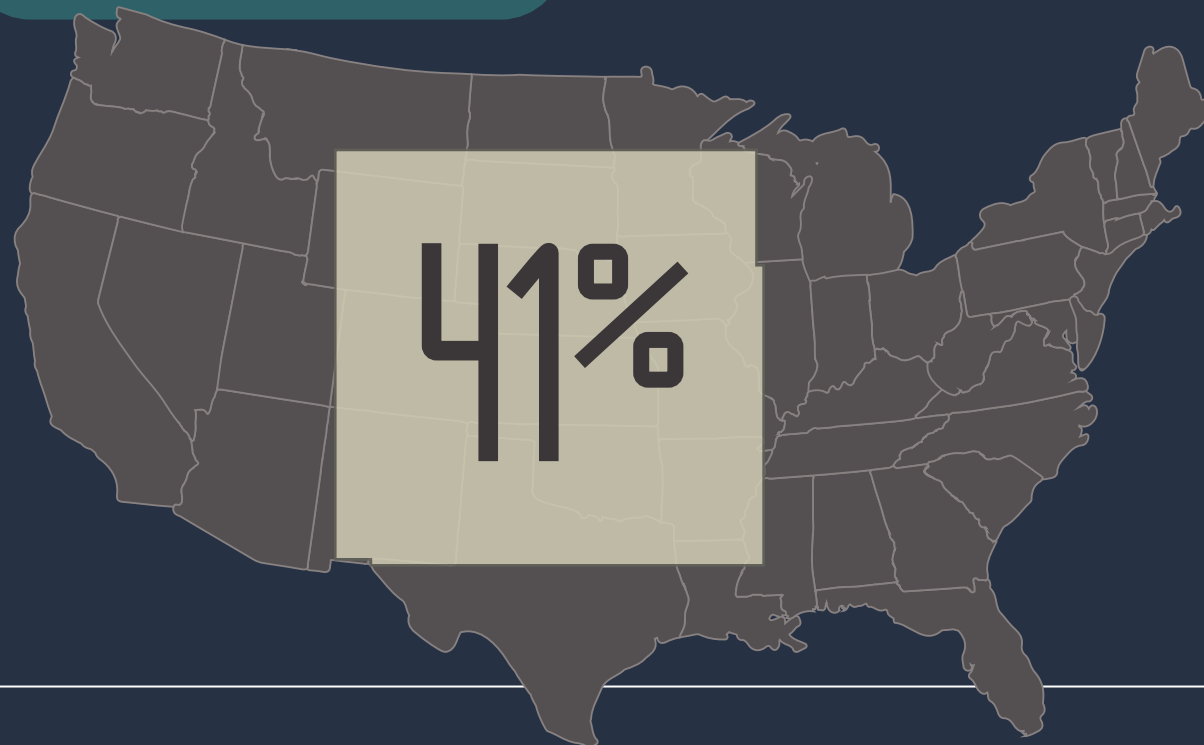


Cattle spend the majority of their lives on grazing lands and play a key role in nutrient recycling through manure distribution, stimulating plant growth and working the soil.

85%

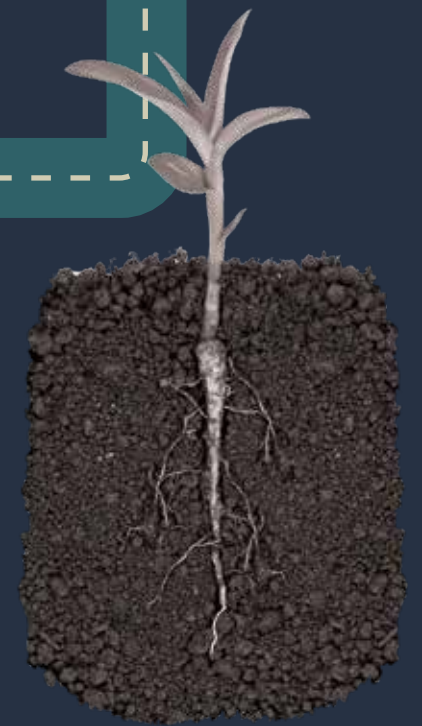
of grazing lands in the U.S. are unsuitable for producing human food crops.

Grazing lands make up 41% of U.S. land usage, making it the single largest use in the nation — more than row crops, cities and timberland.



WHY GRAZING LANDS?

Most soil health initiatives are focused on row-crop acreages, which fails to address the hundreds of millions of acres of degrading grazing lands. Managed grazing animals — including cattle, horses, bison, sheep, goats and others — benefit the health of these lands. Noble Research Institute is focused on filling this gap by promoting land stewardship in grazing animal production with producer profitability.



The biological plant-soil-microbe interactions of grazing operate in concert to store atmospheric carbon in the soil, which benefits production and mitigates climate variability.



Increasing soil organic matter in pastures and rangelands helps to reduce atmospheric carbon dioxide. By creating carbon sinks — natural reservoirs that hold carbon — ranchers can reduce the greenhouse gas effect and slow the warming of the atmosphere.

A FORK IN THE **ROAD**

Roads rarely remain straight and smooth forever. Traffic beats wear into the pavement. Rains wash gravel away. Dead ends leave us backtracking, and crossroads beg timely decisions. In agriculture, some practices feel tried and true — until they don't. Plateaued yields, failing forage stands and economic uncertainty compound the already challenging task of making ends meet during times of drought, floods, diseases and pests.

But where there are roadblocks, there exists an opportunity to seek out a new path. To turn at the fork in the road rather than continue on the same exhausted course and to embrace a new adventure that offers hope for a brighter future. >>

A 1% increase in soil organic matter
can help the soil hold about

20,000

gallons of additional water per acre.



A FORK IN THE ROAD

ROADBLOCKS IN AGRICULTURE

LAND PRODUCTIVITY AND REGENERATION IN THE FACE OF CLIMATE VARIABILITY

INCREASING SOIL ORGANIC MATTER minimizes soil erosion, holds more water to sustain through periods of drought, enables productive plant growth, positively impacts water quality, and sequesters atmospheric carbon.

90%

of crop losses in the U.S. are due to extreme weather, according to USDA estimates.



“

With the changing climate, I need some insurance that I'll be able to produce a crop. The best insurance you can have is organic matter. It's the key to keeping moisture in the ground, which is one of our biggest challenges.”

—BRUCE REYNOLDS, Davis, Oklahoma

ROADBLOCKS IN AGRICULTURE

PROFITABILITY AND DEBT

\$415
BILLION
in national farm
debt in 2019
(a record high)

Highest bankruptcy rates (up 20%) since 2011, according to an American Farm Bureau Federation analysis of U.S. court records.

DECLINING POPULATION OF AGRICULTURAL PRODUCERS

Farmers and ranchers
make up less than
2% of the U.S.
population.

AVERAGE AGE

57.5

(More than a third are age 65 or older.)

**Only 8% of producers
are younger than 35.**

Beginning producers face
financial barriers when
trying to enter the industry.

“

In 2006, the fuel prices got so high and labor was getting scarce. We decided we were going to have to do something different. We couldn't afford to keep going the way we were going. My goal is to cut expenses, especially fertilizer and chemical expenses. It's time to plan for managing weeds and pests in a different way.”

—RUSS JACKSON, Mountain View, Oklahoma



Land stewardship and positive economics for the agricultural producer are not mutually exclusive. Land can be regenerated, animals properly managed and positive economics achieved so that the producer is able to continue the operation and leave a legacy.



Noble has been working with ranchers, such as the Howard family (pictured here is Steve watching sons, Kade and Rance, on horseback), for generations. Consultants and researchers come alongside today's agricultural producers to help them make sound business and management decisions with confidence.

FINDING A GUIDE

Preparing to turn off the familiar road and onto one unknown can bring many questions: "How do I get started? What happens if ...?" But when someone who knows the way walks alongside you on the path, ready to signal the next turn or to offer wisdom for avoiding trouble, the journey becomes less uncertain.

Since 1945, thousands of farmers and ranchers have sought the guidance of Noble Research Institute as they managed grazing animals, primarily beef cattle, and stewarded their pastures and native rangelands. Noble focuses on delivering solutions to meet the needs of producers as they improve the land and long-term profitability of their operations. >>

THE APPROACH

BUILDING RELATIONSHIPS

Noble comes alongside producers with consultation aimed at helping them achieve their production goals while applying strategies to regenerate the land.

2,116

farmers and ranchers, including **229 NEW PRODUCERS**, are active in the consultation program.

“

There's always a more productive, more profitable, more beneficial way to manage our natural resources. Noble Research Institute has been like a friend that we can run questions or ideas by as we're trying to make the most positive impacts out here.”

—YATES ADCOCK, Middle Creek Ranch, Oklahoma



Jimmy Emmons (left), who rebuilds the soil while managing cattle near Leedey, Oklahoma, consults with Hugh Aljoe, director of producer relations at Noble Research Institute.





Vidhya Raman, Ph.D., Noble Research Institute postdoctoral fellow, prepares plants as part of research to improve crop productivity and disease resilience.

THE APPROACH

PRACTICAL RESEARCH

The questions ranchers ask and the challenges they face serve as the starting point for research, which spans from the laboratory to the ranch. Researchers seek new innovations to help mitigate risk, conserve natural resources, improve grazing animal production and regenerate the land. They:

Develop new forage varieties that **efficiently use nutrients** from the soil and optimize their use within the plant.



Breed and release new, **better-quality grazing plants** that can be grown across the nation.



Research ways to **build soil organic matter** via grazing animal management, use of forages and the reduction of costly inputs.



Design and deliver **holistic management practices** that further the productive interaction of a ranch's soil, plants, water, animals and economics.



Test technology to **measure soil carbon** content and other aspects of soil health.

THE APPROACH

EDUCATION FOR ALL

Noble consultants, researchers and educators have built a competency-based educational program that conveys practical skills. Empowering producers with science-based information, real-world knowledge and applicable expertise enables them to make confident decisions and mitigate risk in their unique operations.

1,165

people attended 34 educational workshops, field days and seminars.

The top-attended courses were:

- Developing Replacement Heifers
- Using Prescribed Fire to Benefit Wildlife and Livestock
- Pruning Pecan Trees for Improved Production
- Managing Soil Nutrients for Pastures and Hayfields
- How Plants and Animals Respond to Grazing

“

Every farm is like a puzzle. You’ve got to find out what works best for you, so go to seminars and workshops. Noble offers some great ones and helps organize other farm tours. ... I like the events that have multiple speakers best. That way you get different perspectives. Most importantly, never stop learning.”

—SHANE O’DANIEL, Weatherford, Oklahoma



274

people saw land stewardship principles in action during 10 tours of Noble’s research ranches.





Change is inevitable in life and on the ranch. Noble offers research-based counsel to ranchers, like Brent Kuehny (pictured here), as they navigate change so that they can achieve their production goals while applying strategies to enhance the land. These strategies are applied as part of a plan that is constantly monitored and adapted as needed.

CHARTING THE COURSE

With a guide at their side, travelers are able to plan their best route before they set out. They can evaluate where they want to go and how to get there. They can mark places to avoid and the routes that lead to the best outcomes. Then, once the journey has begun, they must build in moments along the way to stop, recalibrate and refuel for the next part of the road.

Charting a course is essential for the producer on the road to renewal. Regenerative agriculture begins with improving soil health then extends to making informed choices regarding animals, water, plants and economics. There is no one-size-fits-all approach for management. Application is based on principles not prescriptions. It also needs to be flexible enough to adapt when the unpredictable — like drought or other natural calamity — inevitably occurs. >>

1

COVER THE SOIL

Using dedicated plants for grazing, cover crops and crop residue minimizes bare ground and builds soil organic matter. Plant cover further protects the soil from erosion and serves as a barrier between the sun and raw soil, preventing escalated soil temperatures that can destroy microbial life.



3

INCREASE PLANT DIVERSITY

Increasing plant diversity creates an enabling environment and catalyst for a diverse underground community. In nature, grasses, legumes and forbs are found working together in a native, diverse rangeland setting. The complex interactions of roots and other living organisms within the soil defines the soil's water holding capacity, affects carbon sequestration and enables nutrient availability for plants.

2

MINIMIZE SOIL DISTURBANCE

Mechanical soil disturbance, such as tillage, alters structure of the soil and limits biological activity. Grazing, fire, and application of fertilizer and other chemicals are also disturbances. "Minimize" does not mean eliminate. However, it is important to optimize the need, timing, frequency and duration of these activities.

4

KEEP LIVING ROOTS IN THE GROUND ALL YEAR

A living root in the ground year-round is required to keep the soil biology processes working. Soil microbes use active carbon first, which comes from living roots. These roots provide food for beneficial microbes and spark beneficial relationships between these microbes and the plant.



5

INTEGRATE LIVESTOCK PROPERLY

The Great Plains evolved under the presence of grazing animals, which is why livestock are a necessity for healthy soils and ecosystems. Soil and plant health is improved by proper grazing, which recycles nutrients, reduces plant selectivity and increases plant diversity.



Mapping out how to renew the land begins with following five soil health principles. Principles inform practices, which are put into motion with the help of innovative tools and training.



Jeff Goodwin, Noble Research Institute senior pasture and range consultant, shows healthy soil from Susan Bergen's southern Oklahoma ranch. Bergen participates in a Noble research study and project that is enabling producers to gain a better understanding of how their grazing management improves soil health over time.



CHARTING THE COURSE

INNOVATIVE TOOLS AND TRAINING

Producers who begin their journeys can find helpful tools and training, offered by Noble, along the way.

SOIL TESTING

The old adage is true: "You can't manage what you don't measure." Soil tests enable a producer to find out what nutrients, and how much, are needed to make a healthy crop grow. In 2019, Noble processed

2492

soil samples for farmers and ranchers as well as for educational purposes. In addition, **2,127 forage samples were tested.**



IMPROVED PLANT VARIETIES

Small grain, grass and legume breeding continued to provide farmers and ranchers with forage crops that improve productivity or provide traits such as drought tolerance, increased nutritional value or disease resistance. Since 1956, Noble has released

25

forage varieties, including bermudagrass, crabgrass, oat, rye, switchgrass, tall fescue, triticale, wheat and white clover cultivars.



This is important information for us to have. We are seeing the benefits of managing with the land's long-term health in mind, but it's important for us to be able to support what we're doing with hard data."

—SUSAN BERGEN, Sulphur, Oklahoma



INNOVATIVE TOOLS AND TRAINING

COVER CROPS



A national collaboration through the Foundation for Food and Agriculture Research continued in 2019. The project identifies and breeds small grains, legumes and brassicas as cover crops to improve soil health.

SKILL BUILDING



Producers gained the latest research-based information and advice on how to apply best practices on their operations during 34 educational seminars and hands-on workshops and demonstrations.



Intentional producers usually face fewer surprises because they have a goal in mind. Beef cattle producers can start the process of developing their ranch management plan to meet their goals and prepare for any unexpected detours in the road ahead. Learn more and access a free video training series at www.noble.org/create-a-ranch-management-plan.



You're going to step out there and do something different. Maybe it will work, or maybe it won't. Not many people are willing to do that. But, Noble Research Institute has done the footwork for us, so it should be an easy step."

—WILLIAM AND KARNE PAYNE, Destiny Ranch, Oklahoma



Noble Learning seeks to provide young minds with opportunities to learn about agriculture by connecting students and teachers with Noble's researchers and agricultural experts.

CHARTING THE COURSE

INNOVATIVE TOOLS AND TRAINING

Education extends to the next generation of producers and consumers, who will help make decisions affecting agriculture.

FOR THE FUTURE

Youth experience agriculture and the science behind it through interactive lab-based lessons, visits with scientists in laboratories and agricultural experts on ranches at Noble Research Institute, and team-based competitions such as Junior Botball and Oklahoma Envirothon.

13,190

TOTAL
engagements
with students
and teachers
in 2019



6,411
engagements with
students and teachers
through the Science
Exploration Trunk
Program, which sends
lesson plans and the
materials to complete
them at no cost to
teachers.

25
middle school, high school
and undergraduate school
groups visited Noble
Research Institute

CLASSROOM VISITS
70
(by Noble Research
Institute educators)



The regenerative journey works toward continual progress rather than a final destination. Ranch management plans are regularly adjusted and updated to reflect new circumstances and goals.

IT'S NOT ABOUT A DESTINATION

Most journeys are more about the lessons learned along the road than the end point. They're about deciding on a direction and sticking with it even when the path looks rocky. The road to renewal, too, is not about a final destination. It's about learning from both the successes and the failures met along the way. It's a continual process of seeking out knowledge and being open to experiencing something new — something that promises reward, even with the risk that must be balanced. And in mitigating that risk, there is joy in finding other pilgrims facing similar challenges. >>

IT'S NOT ABOUT A DESTINATION

DIRECTION OVER PERFECTION

The journey will look different for everyone. But the producer who embraces regenerative agriculture and sets out on the road with a plan will find lasting benefits for both themselves and their community.

Many farmers and ranchers are already finding success. Modest gains in soil organic matter have yielded more productive soils and reduced the need for fertilizers. This, in turn,

Regenerative agriculture is a journey, not a destination. It's about moving in the right direction, not perfection. Noble is working to help producers find research-based answers to the questions they face when improving the land. Learn more at www.noble.org/direction-over-perfection.

reduces nutrient runoff, translates into greater water quantity and quality, and increases carbon sequestration, while improving profitability for the producer.

These bold explorers are the land's greatest allies. Their efforts represent an investment in the food and water supplies of the future, and Noble will always support these land stewards as they walk the road to renewal.

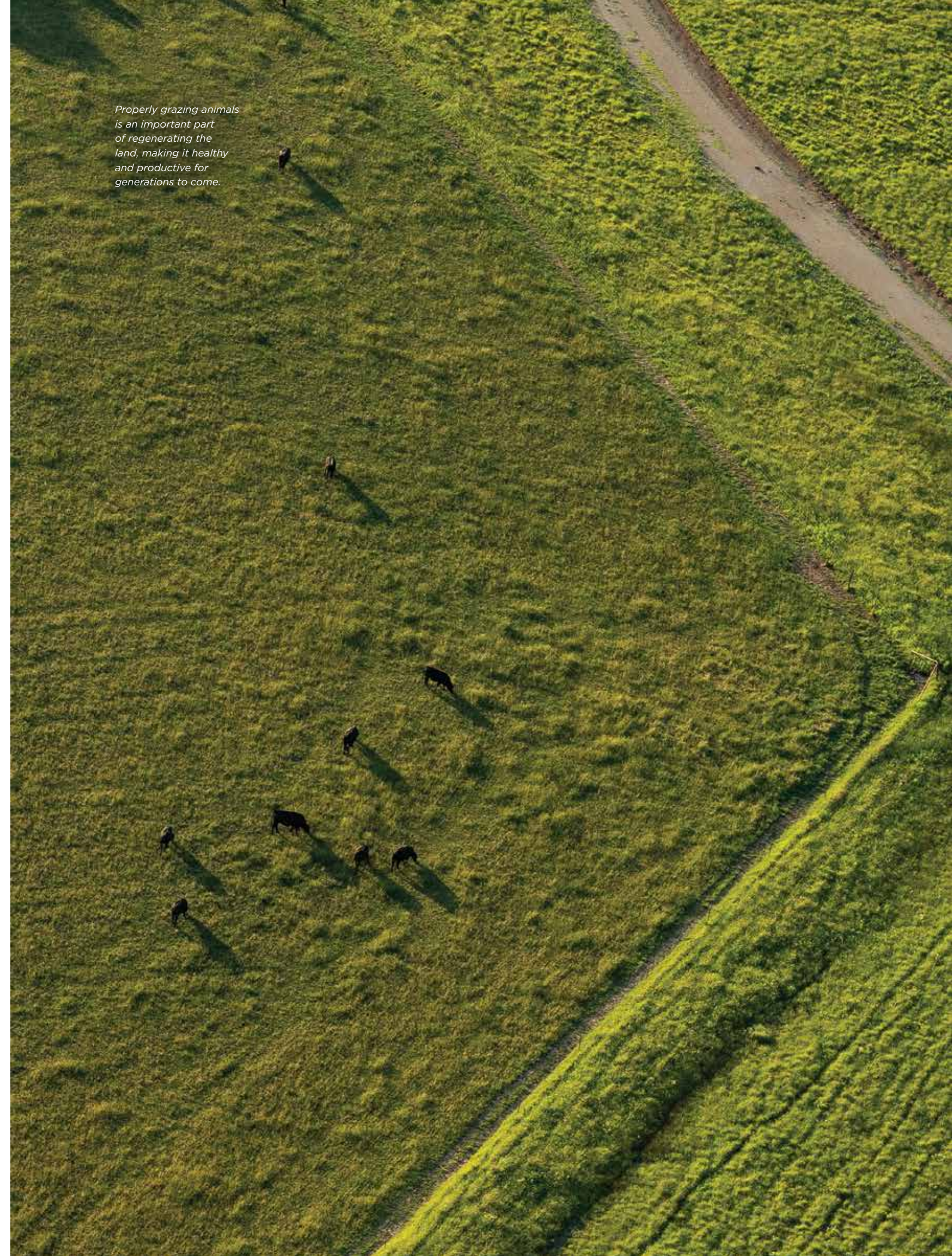


“

I look at our ranch as a national park in a way. Just 1 square inch of soil is like a Times Square of fungi and bacteria, and think about the relationship the cows have with the land. They naturally fertilize. They allow for wildlife habitat. They allow for the land to go untilled. And they feed us. I want to do the best I can to raise healthy animals and to spend the rest of my days teaching my son about this place and to be able to hand it off to him someday.”

—MEREDITH ELLIS, G Bar C Ranch, Texas

Properly grazing animals is an important part of regenerating the land, making it healthy and productive for generations to come.



2019 FINANCIAL REPORT

STATEMENTS OF FINANCIAL POSITION

ASSETS	As of Dec. 31, 2019	As of Dec. 31, 2018
Cash	\$2,400,877	\$6,452,299
Accounts receivable and other assets	4,442,091	2,412,675
Prepaid expenses	1,766,181	1,040,329
Marketable securities, at fair value		
U.S. government securities	13,240,409	21,043,680
Corporate securities	26,048,641	35,831,133
Mutual and commingled funds	8,596,143	8,144,994
Total marketable securities	47,855,193	65,019,807
Property and equipment, net of accumulated depreciation	94,799,567	97,275,245
TOTAL ASSETS	\$151,293,909	\$172,200,355
LIABILITIES		
Accounts payable and accrued expenses	\$4,195,175	\$3,934,759
Notes payable	990,000	1,100,000
Liability for pension and post-retirement medical benefits	4,177,272	11,265,223
TOTAL LIABILITIES	9,362,447	16,299,982
NET ASSETS		
Net assets without donor restrictions	141,931,462	155,900,373
TOTAL NET ASSETS	141,931,462	155,900,373
TOTAL LIABILITIES AND NET ASSETS	\$151,293,909	\$172,200,355

2019 FINANCIAL REPORT

STATEMENTS OF ACTIVITIES AND CHANGE IN NET ASSETS

NET ASSETS WITHOUT DONOR RESTRICTIONS	Year Ended 2019	Year Ended 2018
Revenues, gains and losses:		
Interest and dividends	\$293,547	\$354,159
Net realized gain on investments, net of investment expenses	1,484,222	80,865
Net unrealized gain/(loss) on investments	2,613,133	(86,907)
Grant and contribution revenue	26,455,000	201,000
Other miscellaneous program income	7,368,502	6,349,483
TOTAL REVENUES, GAINS AND LOSSES	38,214,404	6,898,600
Program service expenses:		
Research	54,563,482	47,211,738
Consultation and education	12,847,798	11,191,306
Total program service expenses	67,411,280	58,403,044
Support service expenses:		
Fundraising	176,781	—
Operational support	5,702,596	3,815,107
Total support service expenses	5,879,377	3,815,107
Provision for federal and state taxes	(8,290)	(117,066)
TOTAL EXPENSES	73,282,367	62,101,085
EXPENSES IN EXCESS OF REVENUES, GAINS AND LOSSES	(35,067,963)	(55,202,485)
Gain on involuntary conversion	11,072,235	34,292,781
Pension and postretirement medical related changes other than net periodic costs	10,026,817	9,523,712
CHANGE IN NET ASSETS	(13,968,911)	(11,385,992)
NET ASSETS, BEGINNING OF YEAR	155,900,373	167,286,365
NET ASSETS, END OF YEAR	\$141,931,462	\$155,900,373

INSTITUTIONAL GOVERNANCE

Role of the Member/Manager

The Samuel Roberts Noble Foundation serves as the sole member/manager of Noble Research Institute, LLC, an Oklahoma, nonprofit single-member limited liability company.

The Samuel Roberts Noble Foundation provides the leadership for Noble Research Institute to carry out its charitable purposes, act as a good steward of its resources, and conduct and support its activities in accordance with the vision of founder Lloyd Noble. The Samuel Roberts Noble Foundation further directs management to formalize and implement Noble Research Institute's strategic plan.

The Samuel Roberts Noble Foundation, as the member/manager of Noble Research Institute, and the employees of Noble Research Institute acknowledge and agree that the following principles apply to our association with and the activities we conduct on behalf of Noble Research Institute:

1. Noble Research Institute exists because of the vision and generosity of our founder, Lloyd Noble.
2. We are stewards of the resources and the vision of Lloyd Noble.
3. Our conduct will be fair and honest, and our activities will adhere to the purposes for which Noble Research Institute was established.

Corporate Documents

The organization's current articles of organization and operating agreement can be found at noble.org/about/governance.

Annual Internal Revenue Service Informational Return

Noble Research Institute, LLC annually files a 990-PF informational return with the Internal Revenue Service. Noble Research Institute's current 990-PF may be downloaded at noble.org/about/governance. Historical returns for Noble Research Institute are available at guidestar.org.



INSTITUTIONAL DONOR LIST

GREATER THAN \$5,000

The Samuel Roberts Noble Foundation

Kirkpatrick Foundation

Georgia Pecan Nursery

LESS THAN \$5,000

Alexis Carter-Black

Brent Keck

Oklahoma FFA Foundation

Orscheln Farm & Home

LEADERSHIP TEAM

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President and
Chief Executive Officer

Elizabeth Aldridge
Corporate Secretary and Executive
Assistant to the President

Hugh Aljoe
Director of Producer Relations

J. Adam Calaway
Director of Communications
and Public Relations

Charlie Canny
Director of Facilities

Melanie Davis
Director of Enterprise Systems
and Informatics

Gayle Donica
Director of Human Resources

Jeff Moen
General Counsel and Director of
Government Affairs

Michael Udvardi, Ph.D.
Chief Scientific Officer

A. Jill Wallace
Vice President and
Chief Financial Officer

GOVERNING BODY — THE SAMUEL ROBERTS NOBLE FOUNDATION

The governing body acts and carries out its duties and responsibilities through its board of directors:

D. Randolph Brown, Jr., M.D.
Oklahoma City, Oklahoma

Vivian Noble DuBose
Atlanta, Georgia

Cody Noble
Ardmore, Oklahoma

Patrick Rooney*
Tulsa, Oklahoma

Susan Brown, Chair
Dallas, Texas

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