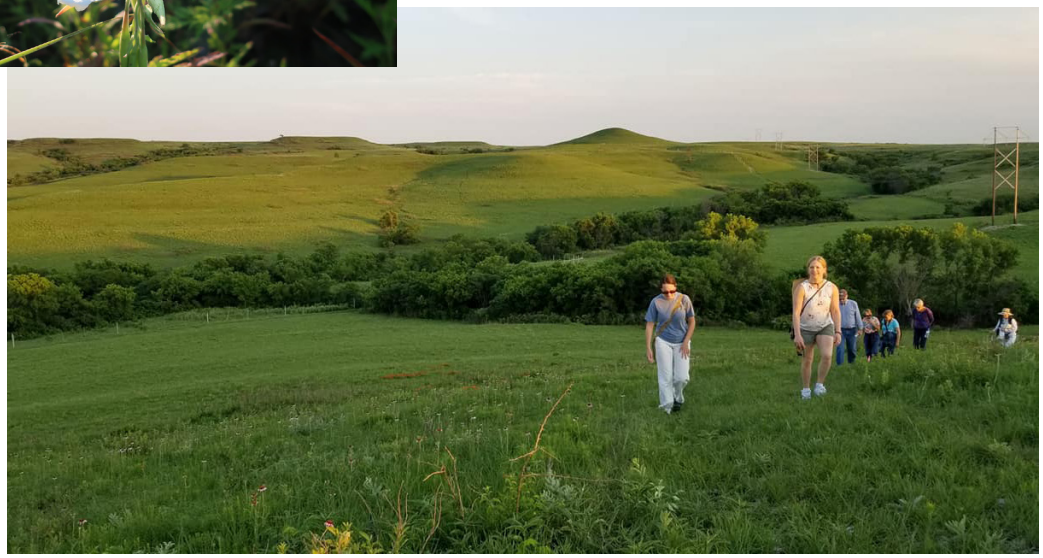
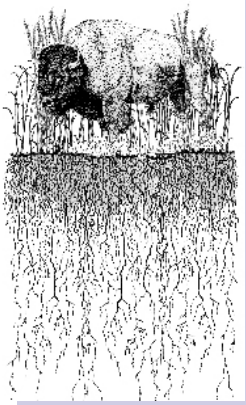
Bison & Bluestem

Sunday, June 5, 2022

## FOKP Wildflower Walk

(more information below)





Research Education Conservation

friends of KONZA prairie

Spring 2022

**JUNE 5th FOKP Wildflower Walk**

Join us Sunday, June 5th, at 6:30 pm at the stone barn of the Konza prairie headquarters. Groups of 10 people will be paired with a guide to hike the 1.5 mile Butterfly Hill trail (easy hike) located in the headquarters area. You will find up to 50 different blooming wildflowers during this peak time of the spring bloom.
Cost = $10/person or free for FOKP members.
No reservations necessary, just come out! Proceeds benefit the Friends of Konza Prairie, which works to support the educational program and general operations of Konza Prairie.

**Call for photos for the 2023 Konza Calendar!**

Whose photos will be in the next calendar? It is time to choose the photos you would like to submit to the calendar committee for the 2023 calendar. Choose up to five of your very best, high-resolution photos that you have taken while on the Konza Prairie Biological Station.
Submission criteria include the following:
1. Include landscapes, flora, fauna, or activities at Konza (research, environmental education, etc.). We hope to receive images taken at different seasons on Konza, and we are particularly interested in unique and original subjects.
2. Images must be in LANDSCAPE format. The printed calendar will contain photos printed approximately 10 inches horizontal by 7 1/2 inches vertical.
3. The deadline for submitting your photos is June 21, 2022.
Email your photos to koellik@sbcglobal.net

# KPBS Director's Report
## John Blair

Dear Friends of Konza Prairie,

As you read this, spring should be well underway. The Flint Hills will be awakening with blooming redbuds along limestone breaks and stream channels and the emergence of spring wildflowers amid the vibrant green of grass-covered hills. Upland sandpipers will be returning from their wintering grounds in South America and a new cohort of bison calves will be exploring the Konza Prairie landscape. And, the Konza Prairie staff will be preparing for the annual influx of scientists and students that come here to study this important and endangered ecosystem. On average, we host about 150 scientists and graduate students per year from dozens of institutions around the country and the world. Some researchers have been coming back to Konza for decades, while for others this will be their first visit. Some will be here for several months and others for only a day. What draws scientists and students from around the world to this place? The long-term experiments on fire and grazing certainly play a role, as does the availability of 40+ years of data on everything from stream water chemistry to insect and bird populations. But another very important factor is the dedication of the KPBS staff to supporting the work of scientists seeking to understand and conserve this amazing ecosystem. The KPBS staff is responsible for maintaining the buildings, roads, fences, experimental fire and grazing treatments, and other infrastructure vital to the success of the station. They coordinate lodging and use of lab and field research space, help to orient new researchers to the station, and assist visiting researchers when needed. In short, they make Konza a well-run and welcoming place to do good science.

JIM LARKINS

I want to take this opportunity to recognize one of our long-time staff members – Jim Larkins – who is retiring at the end of June. Jim has been a part of the Konza Prairie family for 27 years! Jim was hired as a student hourly worker in spring of 1995 while completing a degree in Mechanical Engineering. Following his graduation later that year, he transitioned to a full-time employee of the station where he has served in many capacities, from Shop Foreman to Project Manager. In addition to overseeing the station's facilities and equipment and assisting with prescribed burning and bison herd management, Jim generously helped numerous scientists and graduate students by providing advice and assistance, building or repairing equipment, installing new infrastructure in the field, and occasionally pulling a stuck vehicle out of the mud! Jim and his family (Shelly and Claire) were a 24-hour presence at the station and the point-of-contact for many researchers staying on site. They will be missed! When you see Jim, please join me in thanking him for his many contributions to Konza over the years and wishing him and his family all the best.

As always, I thank you for your support as members of the Friends of Konza Prairie. Please feel free to contact me (jblair@ksu.edu; 785-532-7065) with any questions or concerns about Konza or to find out more about how you can contribute to our long-term goals.

Dr. John Blair
University Distinguished Professor
Edwin G. Brychta Professor of Biology

# From the Stone House
## Director of Education - Jill Haukos

The Magic of Prairie Soil

There is no doubt that a prairie vista can be breathtaking. Whether in May, when the cool-season grasses compose a vivid green melody over the hills, or in September, when the warm-season grasses lift their seed heads to the sky in golden waves. Both are awe-inspiring and worthy of superlatives.

But what we see of the prairie is not the heart, nor the soul, of the ecosystem. To find out where those very essential pieces of the prairie are found, we must look deeper…literally. We must look at the soil.

Approximately 80% of the plants that grow in a prairie are perennials, plants that come back every year, emerging from underground storage structures. Some of these storage structures are modified stems such as rhizomes and tubers. Others are modified leaves, such as corms and bulbs. Regardless of the evolution of their modification, the result is the same. Underground structures are designed to store food (usually in the form of starch) to support the survival of the plant during times of dormancy.

Plant dormancy can be induced by water stress or temperature stress. Water stress occurs during times of drought and plants respond by sending their nutrients and food underground to wait it out. Temperature stress occurs during the winter and plants, responding to the decrease in amount of sunlight in the autumn, send the good stuff underground and wait until spring for conditions to improve.

Another subterranean denizen is the roots – the plant structures responsible for the absorption of water and dissolved nutrients from the soil. Attached to many of these roots are fungal fibers – mycorrhizae – that glean water from the plant but also serve as functional root extensions (much like hair extensions) to increase the surface area of soil that the plant can mine for nutrients. The fungal fibers can absorb relatively immobile nutrients like phosphorus, and deliver it to the plant. Pretty handy!

Exuding from the mycorrhizal fibers is glue – "glomalin" – that effectively sticks soil to the fungus/root cluster, forming sod. We know that early homesteaders both praised and cursed this tendency. Cut sod was useful to serve as bricks in the formation of sod shanties, but also cursed because the thick, dense sod was so very difficult to cut.

Prairie soils are chock-full of carbon from stored starch and cellulose-based root fibers – it is sequestered/stored in the soil. If the soil is plowed, that carbon will be released into an atmosphere that is already overloaded with carbon. Keeping untilled prairies intact is an important part in limiting carbon release into the atmosphere. Restoring prairies is an important way to remove CO2 from the atmosphere and put it back into the soil.

The heart and soul of a prairie is its soil – understanding it is loving it.

# Katy Silber
Graduate Student

**Where are you from?**
I am from Rockville, Maryland, which is a city right outside of Washington, DC.

**What inspired you to enter this field of study?**
I always loved animals growing up, and I thought I wanted to be a veterinarian. When I finished college and got a job at a veterinary clinic, I realized that career path was not for me! I craved spending time outdoors, exploring my curiosities, and investigating how we can save imperiled wildlife.

**Was there someone in your life who shared your love of nature?**
Both of my parents appreciate spending time in nature, so they understood when I went on long walks outside or spent hours looking at tadpoles in the creek in our backyard as a kid.

**Which K-State faculty member are you working with?**
I am in Dr. Alice Boyle's lab. She is an Associate Professor in the Division of Biology who studies bird dispersal and migration in grasslands and the tropics.

**What is your research topic at Konza and how does it fit into the broader science picture?**
I study grassland bird population ecology. This means I'm interested in why bird populations change over time and how they are influenced by their environment. I am especially interested in the interactions between weather and land management, and how these ultimately impact bird populations. My study species are grasshopper sparrows, eastern meadowlarks, and dickcissels, but I spend a lot of my time also measuring vegetation composition and sampling insects. My research contributes to a better understanding of how our actions impact declining bird populations, and how we can support bird populations under future climate regimes!

**What is your favorite thing about Konza?**
I love that Konza has something different to offer everyday. I have worked out there for years, but every time I visit Konza, I am always surprised by the species I see, the plants that seem to change every week, and the overall vibrancy of the landscape.

**What is your least favorite thing about Konza?**
Ticks! There are some areas on Konza where you will walk through tall grass and emerge with over 30 ticks!

**What would be your dream job?**
I would love to continue working on grassland bird research. There is a lot of work to be done creating solutions that work for landowners, researchers, and declining populations, and I would love to help facilitate that.

**What do you like to do when you're not in class or doing your research?**
I like to take walks, read novels and creative nonfiction, and go birding!

# Nico Anguiano

Graduate Student

**Where are you from?**

I grew up in Los Angeles, California, within the communities of East LA, Boyle Heights, and El Sereno.

**What inspired you to enter this field of study?**

This is a very tough question to answer. First off there has been a core group of friends and mentors that have really had a positive impact on my life. If not for their guidance, friendship and support I would not be here. Much of my family and ancestral lineage has been tied to the land. I come from a family of ranchers, farmers, and landscape managers. So, I grew up with this idea that soils, plants, and animals were intimately tied together. They have a natural reciprocity. Of course, those exact words were not what I was told but the idea was certainly passed on and as of now that's how I've interpreted it. I became fascinated with this idea of "reciprocity" because in all honesty I wanted to explore this in the natural world. So, in terms of inspiration, I am inspired by the soil, La terra, because it connects all natural terrestrial systems together. And in the same way my family, friends and mentors have supported me, La terra supports us all. And in the same way La terra can be resilient, we can be resilient because in all aspects a strong community is many times stronger than the individual.

**Was there someone in your life who shared your love of nature?**

Many have played a significant role in developing my relationship with nature. I'd say it continues to grow and evolve like any healthy relationship. Those that introduced me to nature apart from my mother who brought me into this world are my dad, my Tatas (grandfathers) and my Nanas (grandmothers), honestly my whole family really. I remember being a toddler and going on hikes with my mom and dad as well as being with my grandparents and walking with them in their gardens while they taught me which plants were good for tea and their many uses. I'd say my relationship with nature began with them and continues in part, because of them.

**Which K-State faculty member are you working with?**

Dr. Lydia Zeglin, who has been instrumental in my development as a young researcher, person, and professional.

**What is your research topic at Konza and how does it fit into the broader science picture?**

I am researching the topic of how bison and cattle affect the spatial distribution of microbes that regulate the nitrogen(N) cycle. The nitrogen cycle is a global soil microbial-driven cycle that is responsible for N cycling. Nitrogen is an essential nutrient that contributes largely to soil fertility, plant growth, forage quality and is recycled by grazing animals through their excretions, egestions and eventually themselves after their passing. We know that bison grazed-prairie has a higher diversity of microbes then ungrazed prairie from work done in the Zeglin lab by Jaide Hawkins. My research builds on this work and aims to investigate if there are differences in how grazers (cattle and bison) impact microbes that regulate nitrogen cycling and how grazers impact nitrogen cycling on tallgrass prairie. It is possible that both cattle and bison impact the nitrogen cycle differently. This research seeks to fill some knowledge gaps in how grazers affect overall rangeland soil health and forage quality.

**What is your favorite thing about Konza?**

The bison! I love watching them. Learning from them is certainly inspiring. Their toughness and care for the landscape is something to behold and respect. I've been reading Dale F. Lott's book on bison, and I've been engrossed in understanding their history and their future within tallgrass prairie. I am also interested in how bison lead to soil formation and development of soil organic matter and forage quality.

**What is your least favorite thing about Konza?**

It would have to be the ticks. They are interesting creatures but I don't enjoy them feeding on me!

**What would be your dream job?**

Honestly, I would like to continue working with bison and large grazing animals. A dream position for me entails being a Rangeland Soil Ecologist while having the best of both worlds, one foot in the cutting-edge research and one foot in the application of methods to manage landscapes. I firmly believe that the skills I'm learning out at Konza and KSU are applicable to studying other large herbivores and how they impact the nitrogen cycle and soil microbes on grassland ecosystems. I've enjoyed many aspects of being a researcher that have contributed to my personal and professional growth. I realize I have much more to learn, though I firmly believe I can develop into a research and boots on the ground role that benefits not only the landscape but the human communities that depend on the land as well. Lastly, the dream job would have to include the ability for me to also pass on the knowledge I've gained to other young researchers in the field.

**What do you like to do when you're not in class or doing your research?**

Currently I am cultivating a select few hobbies, mainly because having too many hobbies results in a lot of unfinished projects! Mine are gardening and music cultivation. Last summer I got a good tomato harvest, some good chiles and summer squash. I'm planning on planting those again and probably growing some medicinal plants for teas so that I can dry them for later use. Additionally, to me, music cultivation means looking for a lot of music that sounds good and researching their influences. Recently I've been on a Mississippi blues and Ranchera kick. Rancheras are a form of blues, and folk music from Mexico speaking to the way of life on ranches, milpas (farms that cultivate corn, beans and squash), love and loss.

# Docents

## Quality Docents of the Year 2021

Back row (L to R): Ken Stafford, Sue Ann Wright, Jeff Petersen, ML Stahl, Mike Jones, Jim Copeland, Buz Bruzina, Jim Koelliker, Chod Hedinger, Dick Oberst
Seated (L to R): Dave Hodgson, Retta Kramer, Jeanette Bosch, Susan Kamphaus, Jacque Staats

## Docent of the Year 2021

**Dick Oberst**
with Retta Kramer and Jill Haukos

## Docent Trainee of the Year 2020

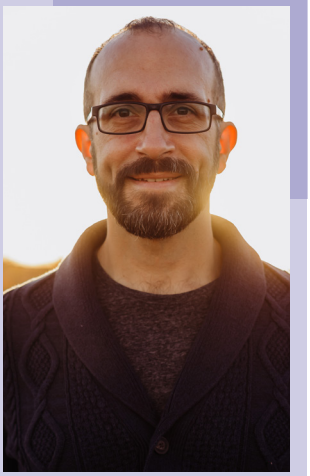
**Terry Olson**
with Jill Haukos

## Konza Prairie Teacher of the Year 2021

**Greg Kalivoda**
with Retta Kramer and Jill Haukos

## Master Docents 2021 - Dick Oberst, Jacque Staats, Retta Kramer, Buz Bruzina with Jill Haukos

## FOKP President
## Brian McCornack



Spring is here, and it reminds me that hope and new life (and warmer weather!) exists, even in our natural systems. Organisms from plants to animals have patiently waited for the environment to change so new life can begin. At K-State, we are in the homestretch for the spring semester and the smell of burning prairies and new life is in the air! Teaching in this pandemic has been a challenge for many reasons. For me, these past couple of years have been a careful balancing act of mental and physical health while creating classroom and work experiences that are safe and engaging; I'm sure many of you can relate. As we continue to emerge out of this pandemic, I find that I'm relearning how to reconnect with students and people in general. I value the lessons learned in all of this, but more importantly, I value the role that science education plays in our lives as citizens and scientists. Unfortunately, the pandemic is only one of our major challenges at the moment, and there are bigger, more complicated challenges ahead of us, like our changing climate. And my thoughts go back to the Konza Prairie and the lessons we have yet to learn from this tremendously connected and valued resource.

We can learn a lot from our past as we plan for the future, and Konza Prairie is one of the world's best examples of how we do that. Konza Prairie Biological Station (KPBS) has datasets that are decades old! The rich stories and evidence that flows from the work that Drs. John Blair and Jesse Nippert lead are fundamental to how we build more resilient and environmentally conscious food production systems of the future. This is where natural systems meet managed systems, understanding that both have the same underlying "rules of engagement" but with vastly different operational goals. How do we keep these data streams viable for the next generation of policy makers? How do we educate the public about the need for these resources and the roles they play in our lives? Through education, of course! It comes from seeing things with your own eyes, feeling things with your own hands and smelling the change in seasons when the prairie is burned to foster new growth. And when it comes to connecting people with the Konza Prairie, Jill Haukos and her team of docents are the best in the business!

Keeping these resources viable for future generations also comes from advocates of the prairie, friends like you, and we all have a role to play. The FOKP Board and I want to partner with you to spread the word in terms of the value that KPBS and KEEP have in our local communities and global partners. This is where we need your help and sharing your stories and your connection to the prairie is the best way to get the word out. Each one, reach one! Share the prairie with your neighbors, help them see value in protecting and preserving these precious tallgrass ecosystems. It can be as simple as an email or phone call or a cup of coffee with people in your personal networks, from your church to the grocery store. Small, collective stories can lead to large meaningful change, and we hope you help us tell the story of Konza Prairie. Please feel free to share the membership link (https://www.givecampus.com/campaigns/17471/donations/new) or additional resources about FOKP (https://keep.konza.k-state.edu/fokp/) with friends or strangers.

### The KPBS Staff:

**Director** John Blair, Ph.D.
**Assistant Director** Eva Horne, Ph.D.
**Administrative Asst.** Barb Van Slyke
**Director of Education** Jill Haukos
**KPBS Project Manager** Jim Larkins
**KPBS Burn Coordinator** Patrick O'Neal
**Environmental Educator** Jill Haukos

The Friends of Konza Prairie (FOKP) promote the interests of Konza Prairie Biological Station as they pertain to its mission of Research, Education and Conservation. Membership in FOKP is open to all individuals, groups and businesses that share an interest in the common goal of supporting the Konza Prairie Biological Station.

For FOKP membership and general information, call 785-587-0441, or visit the Konza Environmental Education Program (KEEP) website at: http://keep.konza.ksu.edu Also, see the back of this issue for a membership form.

### The FOKP Executive Board:

**President** Brian McCornack
**Vice President**
**Secretary** Retta Kramer
**Treasurer** Noah Busch

**The FOKP board members:**

| | |
|---|---|
| Susan Adams | (3-yr term expiring Dec. 2024) |
| Noah Busch | (re-election 3 years Dec. 2020) |
| Jim Koelliker | (3-yr term expiring Dec. 2022) |
| Retta Kramer | (3-yr term expiring Dec. 2023) |
| Tawnie Larson | (3-yr term expiring Dec. 2024) |
| Brian McCornack | (3-yr term expiring Dec. 2023) |
| Marcia Rozell | (3-yr term expiring Dec. 2022) |
| Jeff Watson | (3-yr term expiring Dec. 2022) |
| Jerrod Westfahl | (3-yr term expiring Dec. 2023) |
| Kelly Yarbrough | (re-election 3 years Dec. 2020) |

**Ex-officio and Honorary members**
The Nature Conservancy- Rob Manes
KPBS Director- John Blair
Director of Education- Jill Haukos
KSU Foundation- Trevor Jueneman
Historian- Joe Gelroth
Honorary Board Members- Stormy Kennedy and Valerie Wright

Friends of Konza Prairie
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Division of Biology,
116 Ackert Hall
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#308

MISSION

Konza Prairie Biological Station (KPBS) is a native tallgrass prairie preserve owned by The Nature Conservancy and Kansas State University and operated as a research station by the Division of Biology. The Friends of Konza Prairie (FOKP) promotes the interests of KPBS as they pertain to its mission of research, education and conservation.

Bison & Bluestem is published by the Friends of Konza Prairie

# New and Renewing FOKP Members

Thank you all for your support of the Friends of Konza Prairie! Members who have newly joined or renewed their membership since the last issue of the Bison & Bluestem include:

**Student**
Tucker Newsome

**Little Bluestem—Individual**
Martha Blackman
Buz Bruzina
Jason & Tina Cade
Larry Campbell
Mark & Terry Healy
Deirdre Hoff
Beverly Holdren
Jan Johnson
Livvy Jones
Roger Kinderknecht
Stephen N. Paige
Dwight Platt
Cynthia Rhodes & Brian Martin
Rhonda Sweeney

**Little Bluestem—Family**
Karen Barker
Will Boyer & Darla Allen Boyer
Mike & Dru Clarke
Kitra Cooper
James & Christine Curtis
Terry & Paula Harbert
Dave & Jill Haukos
Carol Kennedy
Bruce & Brigitte Kidder
Tom & Andrea Krauss
Margo Kren
Bill & Heather Lansdowne
Charles & Ann Pearce
Barbara Peck
Dr. Diane & Mr. Gail Post
Paul Post & Kay Kelly
Marcia & Tim Rozell
Don & Judi Schultz
Jeff & Patti Watson

**Big Bluestem**
George Belin
Kary Bloom
Tom & Jody Boeding
Jan Butin
David A. Clements
Jane & Randall Cobb
Bob & Jan Davis
Jerry Dees & Deborah Murray
Dan & Latane Donelin
Hank & Eileen Ernst
Bill & Ann Feyerharm
Marguerite & Neal Fleming
Patrick & Susan Gormely
Gary & Carolyn Haden
Chod & Sari Hedinger
Dave Hodgson
Tom Hulbert & Nancy Scheer
Marie Jensen-Thomas & Steve Thomas
Rick Knorp & Nancy Withee Knorp
Palmer & Marti Meek
Joe Mocnik
David & Sandy Procter
David & Judy Regehr
Bob & Elaine Shannon
Christen Skaer & Luke Carter
David Wheaton
Larry & Ruth Williams

**Flint Hills**
Lyle & Chris Butler
Preston & Diana Chapel
Walter Dodds & Dolly Gudder
Joan & Joe Haefele
Haines Family LLC
Dustin & Hallie Hatfield
Michael & Linda Jones
Megan Kennelly & Kris Silver
John & Retta Kramer
Karen & John McCulloh
Jan & Gerad Middendorf
Rod Noble
Max & Kay Russell
Alan & Joan Smith
Valerie Wright

**Prairie Chicken**
Alice Boyle
Mary Cottom
Charlie & Pat Grimwood
Clay Harvey & Patty McGivern
Steve Hulbert Family
Mark Hulbert & Merideth Tomlinson
John & Ingelin Leslie
David & Jennifer Saab
Jerrod & Amy Westfahl

**Bison**
Shelly & Darren Gunderson
Holly Serk & Thomas Einck