

Rural Renewal Symposium

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Presentation Abstracts

Contents:

Exploring Role of Values, Attitudes, and Norms on Patch-burn Grazing Adoption Behavior of the Range Landowners: A Case Study from Southern Great Plains	1
Mentoring the Next Generation of Agricultural Entrepreneurs: Rural to Urban Agripreneurship Program.	1
Resistance Training Closes the Fall-Risk Gap Between Rural and Urban Communities.....	2
Rural Redemption: A Model to Help Understand the Perspectives of Rural Americans Related to Vaccine Science	2
The Broadband Serviceable Location Fabric, Rural America, and Agriculture.....	3
Rural Nebraskans' Experiences with the COVID-19 Pandemic and Trust in Health Information Sources ...	3
Hmong-American Economic and Cultural Innovation in Eastern Rural Oklahoma.	4
Capacity Building by Engaging Mayors and Community Leaders of the Oklahoma Historical Black Towns.5	
Increasing College Enrollment for Graduating Rural High School Students	5
Equity and Excellence: Two Models Promoting Rural Renewal Through Gifted Programming.....	6
Exploring Social Acceptance of Hybrid Sweetgum Plantations in the South-central United States	7
Household Water in Rural America	7
Rebuilding Pawnee Agriculture.....	8
Renewable Energy for Sustainable Agriculture and Rural Development.....	8
Through Their Stories: How Rural Americans Live in Complex Systems.....	9
Envisioning an Entrepreneurial Ecosystem for the Sustainable Development of a Native American Community: Pawnee Nation of Oklahoma	9
Transforming Rural Schools into P-20 Learning Organizations.....	10
Rural Housing Crisis: What does the Literature Say?.....	11
Developing Agritourism Support Indicators	12
Community Resilience, Social Capital, and Quality of Life as Predictors of Future Rural Well-Being.....	13
The Economic Value of Placemaking in Rural Oklahoma.....	13
Neuroscience-Epigenetics-Adversity and Resilience (NEAR) an Intervention to Mitigate and Prevent Adverse Childhood Experiences (ACEs) and Improve Well-being in Harmon County: a Biobehavioral Cohort Study.	14
The Effects of Distance Learning on Teachers in a Rural Title 1 Elementary Education Setting.....	15
Building Buy-in: A Qualitative Study Seeking to Understand Stakeholder Perceptions of a University Extension System Through the Lens of External Branding	15

Exploring Role of Values, Attitudes, and Norms on Patch-burn Grazing Adoption Behavior of the Range Landowners: A Case Study from Southern Great Plains

- Saroj Adhikari (saroj.adhikari@okstate.edu), Omkar Joshi, Sam Fuhlendorf

The traditional range management focused on stocking rate maximization has caused woody plant encroachment, land use change, and species diversity loss in rangelands. In recent decades, there is a growing realization for alternative range management that simultaneously promotes biodiversity and agricultural productivity. Our study was focused on exploring the role of landowner values, attitudes, and norms on their behavior to adopt best management practices (BMPs), such as patch-burn grazing, in the southern Great Plains.

Based on cognitive hierarchy theory, our study utilized the structural equation model (SEM) to estimate the influence of values orientations on social norms and attitudes, and finally estimated the influence of social norms and attitudes on behavioral intentions. The required data were collected through a mail survey following the Tailored Design method. The SEM results indicated that the value orientations were significantly related to the attitudes. However, the relationship of value orientation was statistically insignificant to social norms. Further, the results indicated that both social norms and attitudes had a positive and statistically significant relation with ranchers' intentions to conduct the BMPs. Study results underline the need for innovative communication and non-traditional outreach methods to educate rangeland owners on the importance of patch-burning and other best practices.

Mentoring the Next Generation of Agricultural Entrepreneurs: Rural to Urban Agripreneurship Program.

- J. Arati (jarati@langston.edu), T. Bowman, A. Daniels, J. Ringer, T. Payton, N. De Silva.
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This program has been developed out of a funded USDA 1890 Capacity Building Grant. We have worked with undergraduate students to help survey rural traditionally underserved producers. Community leaders and food entrepreneurs are being engaged to identify potential markets for local food production and specialty crop production. Promising value chains are being identified as we partner with local producers and engaging young community member as producers. One specific group that we have initiated with community members and agricultural undergraduate students is the Agripreneurship Growing Gardens Group. This has provided a unique learning experience in the town of Langston where agriculture students are working side by side with community members and town leadership to manage market gardens in vacant lots. In addition, they are learning how to operate the town of Langston Farmers Market. This program provides Langston University agriculture students have hands on experiential learning experiences with appropriate scale equipment, no-till and regenerative agriculture, and sound economic principles for starting and operating a small rural or urban farm. The young growers

and community members are able to see the latest in production models, sustainable agriculture, and meet food buyers. The program will also give Langston University students opportunities to build agribusiness proposals and to pitch these to a network of potential impact investors and lenders. This developing program will enable Langston University to become a leader in Small Farms programming that will benefit Langston University students and affiliated communities through greater opportunity to operate more profitable and sustainable farms.

Resistance Training Closes the Fall-Risk Gap Between Rural and Urban Communities

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Comorbidities affecting physical function and fall risk are greater for those who reside in rural counties (populations <50,000). This is in part due to reduced access to health programming and that rural counties are often older. As Oklahoma, Missouri, and Kansas are comprised of ≥80% rural counties efficacious health programming in rural communities that address fall risk are paramount but presently lacking. Our previous study investigated the degree of benefit from an eight-week resistance training program called Stay Strong, Stay Healthy (SSSH) in older adults based on age (50–89 years) and location (urban vs. rural). 260 participants from Missouri and Kansas completed pre- and post-program dynamic and static tasks and flexibility testing. Paired and independent t-tests and one-way and repeated measures ANOVAs were used to test group improvements. All ages improved performance (all $p \leq .002$) but those in their 50's improved flexibility the most and those in their 60's improved lower body strength more and tandem balance less than those in their 80's. Both rural and urban participants improved in all areas (all $p \leq .002$) to a similar extent, except for the tandem balance task, where those from rural communities improved more than their urban neighbors. The SSSH program was recently picked up in the state of Oklahoma and is now being offered in select counties across the state. Our next steps are to tailor this program for delivery in our 62 rural counties and assess if the efficacy of SSSH is similar to Kansas and Missouri.

Rural Redemption: A Model to Help Understand the Perspectives of Rural Americans Related to Vaccine Science

- Lauri Baker (lauri.m.baker@ufl.edu), Ashley McLeod-Morin, Cheng-Xian Yang, Audrey King, Shelby Thomas, & Kristina Boone

Rural communities are vital to the foundation of American agriculture and are currently disproportionately affected by health and environmental challenges that will require broad scientific solutions. Cooperative Extension professionals and agricultural communicators are

increasingly tasked with communicating about the science surrounding these topics and need effective tools for determining strategic communication tactics to influence personal behaviors. The purpose of this study was to understand the role of community-based social marketing (CBSM) concepts and trust in science on rural Americans' intentions and attitudes toward the COVID-19 vaccine. A hypothesized model was developed that included concepts of CBSM, trust in science, intentions, and attitudes all related to the COVID-19 vaccine. Results showed that CBSM principles had significant explanatory power for predicting intentions to receive the COVID-19 vaccine. CBSM and trust in science were also significant predictors of rural Americans attitudes toward the COVID-19 vaccine. Implications for this study reveal a need for future research and practice related to communicating about science and vaccines to rural Americans while building community-based principles for increasing trust and advancing perceptions of science. Future research should determine the impact of CBSM and trust in science on the end-state behavior of receiving the vaccine. Additionally, Extension professionals and agricultural communicators should prioritize CBSM concepts when developing programming and messages related to health behaviors.

The Broadband Serviceable Location Fabric, Rural America, and Agriculture

- Christina Biedny and Brian Whitacre (brian.whitacre@okstate.edu)

The recently passed Infrastructure Investment and Jobs Act will bring over \$40 billion worth of broadband infrastructure to rural America. Both rural and agricultural areas could benefit from these investments, but only if the areas of high need are properly identified. Accurate maps of underserved / unserved areas will be critical to ensuring that the new funds are effectively targeted.

This presentation walks through a preliminary version of the "broadband serviceable location fabric (BSLF)" for Oklahoma - a thorough georeferenced list of all possible structures (homes, businesses, farmhouses, etc.) where broadband could possibly be installed. This fabric has been presented as a major upgrade from prior broadband maps, which focused on the number of people per census block. We review the BSLF for Oklahoma, and use Tillman and Harmon Counties as examples to estimate the cost of providing universal broadband service. We also discuss potential problems with the BSLF as it is rolled out nationwide.

Rural Nebraskans' Experiences with the COVID-19 Pandemic and Trust in Health Information Sources

- Cheryl Burkhart-Kriesel, Amanda Tupper, Heather Akin (heather.akin@unl.edu), Steven Schulz, Rebecca Vogt, Bradley Lubben, L.J. McElravy, Timothy Meyer

Understanding rural communities' experiences with COVID-19 and whom rural residents trust for health information provides important insights for developing more resilient rural communities. Notably, impacts of the COVID-19 pandemic – economic, health, and otherwise – have likely varied by geography and between rural and metropolitan communities, making it worthy to study how rural residents report being impacted. In addition, rural residents may be more trusting of certain health information sources than others, including doctors, local and state health officials, the CDC, and the WHO, which can affect the uptake of health-related attitudes and behaviors.

In this presentation, we share results from the 2021 Nebraska Rural Poll on rural Nebraskans' experiences with COVID-19 and trust in information sources related to coronavirus. We compare metropolitan (N = 1,305) and rural Nebraskans' (N = 1,568) experiences with COVID-19 in terms of trust in different sources for information on coronavirus. Overall, we find that rural Nebraskans report being less affected – in terms of life generally, mental and physical health, financial health, and socialization – by the coronavirus than metropolitan Nebraskans. However, rural Nebraskans report similar impacts such as quarantining, contracting COVID-19 or being hospitalized from COVID-19 as metropolitan Nebraskans. The data show rural Nebraskans are most trusting of their doctors or other health professionals and local health officials than of state, federal, or global health information sources when it comes to COVID-19. We will discuss how these results can shape communications about health issues and other crises to develop more resilient rural communities.

Hmong-American Economic and Cultural Innovation in Eastern Rural Oklahoma.

- N. Cha, J. Ringer (joshua.ringer@langston.edu), K. Cha. Rose Garden Center, Rose, OK and Langston University School of Agriculture and Applied Sciences, Langston, OK 73063

Hmong-Americans have exemplified resiliency throughout their long history in Asia. It has been no different for the Hmong that have immigrated to the U.S. since 1970. Hmong-American agricultural entrepreneurs have been reaching out to the growing Hmong community in eastern Oklahoma for over ten years. The lead author has many years of experience working with groups of farmers and marketing their products to grocery stores like Reasors Food Store. She has experience working with OSU Horticulture department and Langston University. She learned early in her farming experience how to work with USDA office staff in getting hoopouses and resources from the USDA office. Since 2013 she's helped many Hmong families go to the USDA office and sign up for USDA programs. With many Hmong families moving into eastern Oklahoma she and her community partners have been able to guide the development of Hmong language agriculture programming and group formation. New technologies have been tried and utilized including seasonal hi-tunnel production, efficient fertilizer use, use of modern poultry production, and now mushroom cultivation. This experience has led to sharing with other immigrant groups like the Burmese and Afghan community based organizations that

specifically assist their groups. The economic development through agricultural business allows these stakeholders to develop problem-solving strategies for land access and increasing access to land. Hmong are coming to Oklahoma because land access is cheaper but just like any rural area in the U.S. the land prices are rising and strategies are needed to help these farmers. The emphasis on market development and value chain development helps producers develop financial literacy and business planning skills.

Capacity Building by Engaging Mayors and Community Leaders of the Oklahoma Historical Black Towns.

- J. Davis*, J. Arati (jarati@langston.edu, S. Stevenson, A. Daniels, J. Ringer. Langston University School of Agriculture and Applied Sciences, Langston, OK 73063

The historical Black towns are dotted across rural Oklahoma. The African-American settlers that founded these towns created vibrant communities that allowed for economic opportunities that were not available in the eastern states they had migrated from. Since the 1950's the populations of these rural black towns have diminished as several generations moved to urban centers to pursue greater economic opportunities. Now, many of those who moved to urban centers are returning to the rural black towns to managed inherited properties and reconnecting with family traditions. This outreach effort is component of a project funded by the USDA Office of Partnerships and Public Engagement 2501 Limited Resource Farmers and Ranchers program. Mayors and key leaders from each of the towns attended the Historical Black Towns Mayors Summit at Langston University. This meeting brought together Mayors to discuss common issues and economic opportunities that would improve the resurgence of these towns. Efforts to assist these towns with broadband access was discussed and plans were made to tackle this issue. A survey was completed and the results will be shared. This ongoing project promises to help build social capital within each of these communities in order to take advantage of emerging trends.

Increasing College Enrollment for Graduating Rural High School Students

- Jesse Hurd (jess.hurd@okstate.edu)

Students from rural backgrounds are underrepresented in higher education - increasingly so at each tier of academia. Only 29% of rural Americans aged 18-24 are enrolled in college compared to the national average of 42% for the same age range. One of the largest barriers that rural students face when seeking college enrollment is a lack of self-efficacy and sense of preparedness. This stems from numerous issues including poor perceptions of college at the community level, lack of familial support, lack of college preparation opportunities in their schools, lack of exposure to college environments (often due to distance, poor internet access, etc.), and general apprehension of the entire college admission process.

Studies show that building a positive perception of college and providing rural students with access to people who can directly support them in their aspirations to pursue college degrees are strong factors in increasing their rates of college applications and enrollments. This proposed program will offer students at rural high schools the opportunity to regularly interact with current graduate and upper-division undergraduate students (also with rural backgrounds) in a relaxed, informal environment. The high school students will be encouraged to ask questions, share their fears, and seek help with building their college applications and understanding the college application and admission process. The college students will provide one-on-one coaching to these students at regular intervals throughout the academic year, with the ultimate goal of increasing college applications and enrollments for the students at those participating rural high schools.

Equity and Excellence: Two Models Promoting Rural Renewal Through Gifted Programming

- Rachelle Kuehl, Ph.D. (rkuehl@vt.edu) and Amy Price Azano, Ph.D., Center for Rural Education, Virginia Tech

Dedicating time and resources to place-based gifted education promotes the value of rural living, helps create sustainable rural communities, and cultivates future leaders. In this poster presentation, we will share two grant projects funded by the Jack Kent Cooke Foundation aimed at elevating community investment in talented rural students. The Appalachian Rural Talent Initiative (ARTI) strives to support sustainable gifted programming in rural Appalachian districts. Participating districts learn to use alternative methods for identifying students for gifted services that allow more rural students to benefit from enrichment activities, raising student achievement scores in the process. ARTI provides a place-based language arts curriculum to be used with identified students and offers continuing support for teachers. The Summer Enrichment Experience at Virginia Tech (SEE VT) held its inaugural residential summer camp in 2022 on Virginia Tech's campus. During the week, middle school students had the opportunity to learn, examine, and reflect on what it means to live (and thrive!) in rural communities. In morning sessions, students used the FEW Nexus to explore the connections between Food, Energy, and Water systems and how engineering can help generate solutions to challenges rural communities may experience in making these resources available to all community members. In afternoon sessions, students created pieces of art and writing that represented their personal reflections of place. Field trips and evening activities rounded out the week.

Exploring Social Acceptance of Hybrid Sweetgum Plantations in the South-central United States

- Aspen Lenning (aspen.lenning@okstate.edu)

Plantation-grown hardwood species, such as hybrid sweetgum (*Liquidambar formosana* x *styraciflua*), have the potential to become dedicated feedstock for traditional and non-traditional bio-based enterprises as they grow rapidly and may be planted on lower productivity sites than other traditional feedstocks. This is an especially important industry in the south-central United States because markets already exist. Since most forests and other lands in this region are privately owned, this study focused on exploring landowner perceptions and willingness to grow hybrid sweetgum as a feedstock for bio-based industries. Therefore, we administered a survey instrument to 3,000 landowners representing select counties in Texas, Oklahoma, Louisiana, and Arkansas. The preliminary results suggest that one-fourth (26%) were willing to grow the hybrid sweetgum and another one-fourth (28%) were not willing to grow hybrid sweetgum trees on their property. Interestingly, a considerable percentage of landowners (37%) were uncertain and may need more information on its growth potential and economics. Study results suggest that landowners having timber management objectives were more interested in growing hybrid sweetgum if it was profitable and practically feasible. Further, results of the survey suggest a need for outreach on economic feasibility, management and start-up costs, and tax implications concerning hybrid sweetgum plantations for a more effective assimilation into operations.

Household Water in Rural America

- J. Tom Mueller (tom.mueller@ou.edu)

Rural America has persistently faced issues related to water access and quality. One of the key issues has been access to safe and reliable household water. Although the gap in access to complete plumbing narrowed considerably during the 20th century—there still remains a persistent lack of plumbing in rural areas. Unsurprisingly, conditions remain the worst in the most rural areas of the country. Further, even when access exists, quality remains an issue. Many rural Americans continue to have contaminated drinking water. In my talk, I will provide an overview of my ongoing work on water issues in rural America. Drawing on several recent projects, I will highlight the spatial patterns of water hardship, injustice related to specific forms of water hardship, the relationship between water infrastructure and rural economic development, and the impact of water quality on human health.

Rebuilding Pawnee Agriculture

- K. Murie, D. Echohawk, J. Ringer (joshua.ringer@langston.edu), T. Payton, N. De Silva, Pawnee Nation College, Pawnee Seed Preservation Society, Langston University School of Agriculture and Applied Sciences, Langston, OK 73063

The Pawnee once roamed the plains and farmed in the bottom lands in northern Kansas and southern Nebraska. Since 1874 the Pawnee were forced to rebuild life in their allotted land in northern Oklahoma. Pawnee Nation College and Pawnee Seed Preservation Society have worked together with Langston University and Oklahoma State University to build agricultural programming that will create employment opportunities for Pawnee Nation members. Pawnee Nation College (PNC) and Pawnee Seed Preservation Society (PSPS) are two organizations that have worked with Pawnee Nation members and leaders to build a vision of preserving important cultural aspects and building a resilient food production system centered around traditional Pawnee foods. Working together with Langston University and Oklahoma State University, PNC and PSPS have been researching and implementing traditional growing systems with technology enhancements and training and mentoring Pawnee and other Native American Tribal members in these growing methods. Some of the practices that have been tried focus on preserving soil moisture, weed management, labor use, and pest management practices within the three and four sisters Native American production system. The “sisters” system includes planting a perimeter barrier crop, corn, a legume, and a cucurbit. The assistance from Langston University researchers includes utilizing labor saving devices and the impact on system economic sustainability and soil health impacts. Langston University (LU) and Native American serving institutions will use these stakeholder-based research results to educate and enhance the capacity of tribal and other socially disadvantaged farmers to produce culturally-relevant crops within a systems approach. This effort is creating a core of stakeholder producers who work with PNC, PSPS, and Pawnee Nation to build a resilient Pawnee Agricultural Food System. Langston University efforts have been funded out of the USDA Southern SARE R&E project titled. “Researching & Networking Native American & Socially Disadvantaged Farmers Traditional Market Gardening Production System Resiliency.”

Renewable Energy for Sustainable Agriculture and Rural Development

- Hamidreza Nazaripouya (hanazar@okstate.edu)
Electrical and Computer Engineering Department, Oklahoma State University

Renewable energy and agriculture have the potential to be a winning combination. It not only contributes to energy cost reduction, energy efficiency, and farming productivity increase, but also provides farmers with a long-term source of income. On the power grid side, deployment of local renewable energy addresses the capacity shortage and reliability of electricity supply to rural areas. However, due to the temporal scale differences in crop and renewable energy production, the cost-effective coupling of renewable energy resources and rural agriculture

faces a multi-time scale coupling issue. To this end, prior knowledge of farming energy consumption is an essential step for energy planning, energy-related advancements, and policy development in agriculture. This talk is focused on probabilistic modeling of agricultural loads. It explains how the model incorporates weather data, agricultural practice data, field data and power consumption data, and applies machine learning (ML) techniques to extract stochastic load patterns. The idea is that the incorporation of stochastic characteristics of load into a system design can mitigate risk of multi-time scale coupling and lead to cost effective operation of an agriculture-renewable system.

Through Their Stories: How Rural Americans Live in Complex Systems

- Kristin L. Olofsson (kristin.olofsson@okstate.edu), Assistant Professor, Political Science, Oklahoma State University
- Kayla Gabehart, School of Public Affairs, University of Colorado, Denver
- Allegra Fullerton, School of Public Affairs, University of Colorado, Denver

Rural communities are increasingly vulnerable in many different ways. The decline of rural America is well documented, yet we need more work that captures the lived experiences of people in rural America. Rural communities are complex systems, which creates challenges for developing policy interventions. The research presented here explores the complexity of rural communities with a systems-thinking lens through the stories of rural Americans living in two communities in southwestern Oklahoma, Hollis and Fredrick. More than one-third of the population in Oklahoma lives in rural areas; it is imperative to understand the nature of the problems facing rural Oklahomans. Southwestern Oklahoma communities in particular are experiencing long-term drought, significantly higher unemployment, rapidly decreasing population, and many other disparities. Using 45 semi-structured interviews done in summer 2021, we explore the variety of ways in which community members describe the problems – and solutions – facing rural areas. We gain important insights about how residents themselves conceptualize problems and how those conceptualizations can reveal opportunities for revitalization. The work also develops the concept of “whole community sustainability” as a systems model for tackling community-level problems, both rural and urban.

Envisioning an Entrepreneurial Ecosystem for the Sustainable Development of a Native American Community: Pawnee Nation of Oklahoma

- Alexander Rohan John (rohanjo@okstate.edu), Environmental Science Graduate Program and Craig Watters, School of Entrepreneurship, Oklahoma State University.

The dissertation topic was partly guided by my interest in sustainable community development; which gives importance to social, economic and environmental aspects to transform

underdeveloped rural communities. The newly emergent concept of “entrepreneurial ecosystems” approach aims to create certain conditions within a specified region to attract new entrepreneurs who would eventually start new companies and encourage economic development in the region. Such incubatory conditions are created by bringing in certain specific institutions and businesses to the chosen area to complement existing resources, structures and institutions. I envisioned the best way to do this; is to create an entrepreneurial ecosystem to foster sustainable entrepreneurs and entrepreneurship in the local community. The model SCEED - Sustainable Community Entrepreneurial Ecosystem Development, is a conceptual model I hypothesize as a potential road map for developing underdeveloped communities. This model prioritizes entrepreneurship to meet a community’s basic needs before moving on to entrepreneurial ventures that meet higher-order needs based on Maslow’s needs theory. To explore this, I look at the Pawnee Nation of Oklahoma; a Native American community that is rural and underdeveloped with higher levels of poverty and unemployment than average America. Although sustainable development has been an approach that has been suggested for indigenous communities, an entrepreneurial ecosystems approach at the community scale has not been explored for native communities. This research inquiry uses a qualitative methodology and emergent flexible design to explore and answer research questions. The results present a final model that is hoped will be a catalyst for rural communities to foster entrepreneurship and sustainable development.

Transforming Rural Schools into P-20 Learning Organizations

- Dr. Glen Shinn, TAMU, Global Consulting Solutions
- Dr. Gary Briers, TAMU
- Dr. Kim Alexander, Collegiate Edu-Nation
- Dr. Rachael McClain (rmclain@edu-nation.org), Collegiate Edu-Nation
- Brittany Williams, Collegiate Edu-Nation

Rural America is in a vortex of change that challenges livelihoods and sustainability. Collegiate Edu-Nation (CEN) is a growing network of high-performing rural school districts using their defined strengths to tackle their biggest challenges. The cluster of threats include ABC—agriculture, businesses, and communities. Opportunities to counterbalance threats include ETE—education, technologies, and entrepreneurship. Internal strength is drawn from PVC—people, vision, and collaboration. The paradigm shifts from “schooling” to one interconnecting academic, workforce, and research skills embracing college-ready, work-ready, and life-ready/lifelong learner attributes that prepare young people for jobs and careers that do not yet exist.

CEN starts with a “promising” local public school district—one that is good, perhaps even great, and wants to get better, but it does not stop there: CEN engages whole communities to reinvigorate education, revitalize local economies, and reimagine what’s possible in a fast-

moving future embracing adaptive learning, apprenticeships and internships, leadership skills, and integrated STEM project/problem-based learning. The mindset shifts from scarcity to abundance. The shift is now transforming 19 districts, 48 schools, and 19,000 students.

With the appropriate vision and tools, ALL means ALL. Over the course of the past 17 years, the development paradigm has reverse-engineered success for all students. Beginning in high school is not soon enough—today’s P-20 model begins with early childhood (3-4-5 year-olds) and scaffolds learning using the zone of proximal development (ZPD) through industry-recognized certifications and associate, bachelor’s, master’s, doctoral, and professional degrees (grades 13 through 20!). The sky is not the limit. The model begins with exploratory learning using Montessori-like methods. Learning strategies morph into project/problem-based learning groups. Exploration coalesces into pathways of learning and individual research while connecting the interdependence of subjects, disciplines, and systems. A student research-team recently won the Texas FFA AgriScience Fair animal systems category and will represent Texas in the 2022 National FFA Agriscience Fair. Not a coincidence—this is the second time a CEN-based school has achieved this level of research excellence. Early College High School (ECHS) engages all students in college courses, leading students to completion of associate degrees while completing high school. P-TECH designation allows students to remain in the public school system for two additional years beyond high school, to complete baccalaureate degrees and stacked industry certifications.

The vortex of change continues to challenge rural livelihoods and sustainability. Brock Yates, editor of *Car & Driver* (1966) remarked, “what appears to be happening has already happened.” Bill Daggett (2022) postulates that as we consider the scope of social, economic, and environmental change occurring over the past 75 years, that scope of change will occur during the next 7.5 years. Almost unbelievably—Moore’s Law continues. This global change will be accelerated by metaverse phenomena such as AI, VR, AR, ML, NFTs, and brain-computer interfaces (BCI). There are many competing forces that shape the future of rural America. An interconnected P-20 human experience will play an important positive role in that future.

Rural Housing Crisis: What does the Literature Say?

- Raquel Taylor (rtaylor10@huskers.unl.edu) and Anuradha Choudhary. Agricultural Leadership, Education and Communication, University of Nebraska-Lincoln.

Rural communities across the United States face a myriad of issues. The lack of affordable housing has reached a crisis point in many rural areas as employers cannot hire people who have no place to live. Rural economic vitality is closely tied to housing available within these communities. Housing challenges are not limited to home ownership but also include a lack of rental opportunities. Inadequate homes and the very high proportion of dilapidated or unsafe housing found in rural areas are a concern. Additionally, it is often viewed as essential to a community's quality of life and a reflection of community values. In order to preserve and

facilitate community sustainability, issues related to housing in rural communities must be addressed. Literature was analyzed from peer-reviewed publications to reports and publications outside of peer-reviewed publications. By evaluating multiple types of publications, the researchers broadened the scope of literature to identify themes and barriers related to this issue. This literature review identified key constraints and proposed solutions to the difficulties surrounding the lack of affordable housing in rural areas. Solutions to these challenges are being discussed at the local, county, state, and national levels. Initial analysis revealed the importance of themes in addressing rural housing challenges.

Developing Agritourism Support Indicators

- Stacy Tomas (stacy.tomas@okstate.edu), Associate Professor of Professional Practice, School of Hospitality and Tourism Management, OSU
- Claudia Schmidt, Penn State University, Assistant Professor of Agricultural Economics
- Lisa Chase, University of Vermont, Extension Professor
- Stephan Goetz, NERCRD, Penn State University, Professor

Agritourism is increasingly being considered as a value-added enterprise in the US to help diversify on-farm income. US agritourism sales nearly doubled from 2007 to 2017, from \$567M to \$949M. However, only 28,575 farms reported being engaged in agritourism in 2017. While this was a 22% increase from 2007, they represent less than 1.5% of all farms in the US. While most of the agritourism operators can be found in Texas (5,723 farms), California (1,130 farms) and Colorado (1,056 farms), other states with a high number of agricultural operators have much less operators with agritourism income, such as Missouri (651), Iowa (350) or Wisconsin (630 farms) (US Census, 2017). The goal of our research is to identify factors that support and hinder growth in agritourism activity across states in the US, focusing on the regulatory environment and support organizations engaged in policy, financing, and business incubation to create sustainable agritourism operations. At the state level we compare agritourism statutes and their definitions of what qualifies as an agritourism activity, “right to farm” regulations/zoning, and others, and the local support structure consisting of local tourism organizations, university extension support, state resources and agritourism associations. Together with information from the 2017 census, Agritourism Support Indicators are being developed, which will allow us to compare the business environment for agritourism operators across the US. This presentation will highlight preliminary results of this study and share information gathered specifically for Oklahoma.

Community Resilience, Social Capital, and Quality of Life as Predictors of Future Rural Well-Being

- Amanda Tupper (amanda.tupper@unl.edu), M.S., Rural Prosperity Nebraska Extension Educator, University of Nebraska-Lincoln

Populations of rural areas continue to decline, yet some communities are more vibrant than ever without a clear distinction as to why. While a large portion of past research has studied current community satisfaction or well-being, few have examined future well-being. By combining primary data from a novel dataset of rural Nebraskans with secondary data sources, this study investigates the predictors of rural Nebraskans' sense of future well-being, both at the community and individual levels. The model indicates that resilience may be more important in future well-being than the more familiar social capital. Additionally, certain satisfaction indicators are more important than others. Social capital, resilience, and quality of life are closely related, and it is difficult to extract individual effects of these phenomena. This study finds complex, interrelated factors that contribute both economically and socially to the makeup of rural communities and residents' experiences, and thus to the perceived future well-being of both communities and individuals. This points to a multi-faceted approach to rural community economic development by practitioners and policy makers that supports building resilience as well as providing amenities that satisfy the desires of new and existing residents. It also suggests that the social structure and community offerings may bear more weight in rural community vibrancy than geographic location alone.

The Economic Value of Placemaking in Rural Oklahoma

- Andrew J. Van Leuven (andrew.vanleuven@okstate.edu), Ph.D.

This presentation briefly highlights recent research findings which quantitatively demonstrate the value of downtown revitalization efforts for local economies in rural counties, both in terms of job creation and property values. I will then segue to a wider conversation about placemaking in rural Oklahoma, which does not necessarily need to take place in downtown (or Main Street). Specifically, I will make the connection between placemaking efforts – defined as efforts to improve local business viability and rejuvenate streetscapes by shaping the physical and social character of a community around its cultural or geographic heritage – and growth of rural community capitals. Ultimately, I will try to make the case that communities cannot ignore “sense of place” (the look and feel of the town) when engaging in rural renewal. Place is inextricably linked to economic vitality.

Neuroscience-Epigenetics-Adversity and Resilience (NEAR) an Intervention to Mitigate and Prevent Adverse Childhood Experiences (ACEs) and Improve Well-being in Harmon County: a Biobehavioral Cohort Study.

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Adverse Childhood Experiences (ACEs) include experiencing abuse, violence, or substance use in the home, or having a parent incarcerated. ACEs are associated with long-term changes, which result in poor mental health, substance use disorders, and reduced educational and occupational achievement. More importantly, the prevention of ACEs can have a positive impact on education and employment levels. Thus, providing intervention resources is pivotal to reducing negative life outcomes in Harmon County, OK. Aim: 1) Understand the biobehavioral profile of adversity and resilience in clinical care staff in Harmon county, 2)) Provide training on trauma and resilience science by implementing a 2-session day training in Neuroscience, Epigenetics, ACEs, and Resilience Science (NEAR) curriculum with the health care providers and staff in the Shortgrass Community Healthcare Center in Hollis Ok. Methods: Twenty-four female and male healthcare providers answered a series of 3 surveys a positive and adverse childhood experiences survey (PACES), an adverse childhood experiences and the general anxiety disorder survey. Also, we conducted a pre and post survey for evaluating the efficacy of the NEAR training used. Saliva samples were collected at 2-time points, before the NEAR training and after the 2nd session (30 days apart). Composition of salivary microbiome (SM) was analyzed through 16S rRNA gene-based next generation sequencing. Results: we found out that 29% of our population present an ACEs score equal or more than 4 traits, in addition 64% didn't experience an enriched environment understood as exercise nor social interactions outside their household. From the 19 PACES items score, we found that 26% experience equal or less than 7 protective experiences while growing up, and 47% percent of those experience their parents being divorced or separated. The SM will be sequencing, and we will expect that those with lower ACEs scores but higher PACES scores will have a different microbial composition in compared to higher ACEs and lower PACES.

The Effects of Distance Learning on Teachers in a Rural Title 1 Elementary Education Setting

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- Alesha Baker Ph.D., Northeastern State University
- Michele Shell, Northeastern State University

Following the sudden switch from in-person to distance learning during the COVID-19 Pandemic, much research was conducted about student learning. However, little information is available about the perception of rural teachers during this time. In this qualitative study researchers interviewed three rural elementary Title I school teachers. Through grounded qualitative content analysis, researchers found that there is an intimate link between the rural community's beliefs about education and the way the teachers perceive their roles in distance learning. The teachers of rural communities view learning and teaching as a social activity which is inhibited by the challenges faced during distance learning, despite the support of the community and administration. Teachers felt, overwhelmingly so, that the distance in distance learning inhibited the ability for them to teach, and that true learning happens best in an in-person setting.

Building Buy-in: A Qualitative Study Seeking to Understand Stakeholder Perceptions of a University Extension System Through the Lens of External Branding

- Anissa Zagonel (azagonel@ufl.edu), Lauri M. Baker, & Ricky Telg

A brand is an organization's link to its audiences. When the audience is asked to participate in building a brand culture, they are more likely to hold a favorable attitude of the brand and be loyal to the brand long term. The purpose of this study was to understand the [University] Extension brand's image from the perspective of the brand's stakeholders, specifically focusing on potential future obstacles for the brand. A series of six online focus groups were conducted during the spring/summer of 2021 using Zoom. Two major themes identified during data analysis related to rural audiences: 1) a perception that rural areas and agriculture were not valued in the state and 2) a disconnect existed between the public and agriculture, a common industry in rural areas. Results confirm the complexity of branding an organization like Extension when efforts need to highlight products, such as educational programming and services, while also embodying unseen values and culture that are associated with the brand. Results from this study can be used to improve perceptions of the [University] Extension brand with audiences, like those in rural areas, through increased marketing, communicating organizational focus areas, and continuing to engage stakeholders in the co-creation of branding.