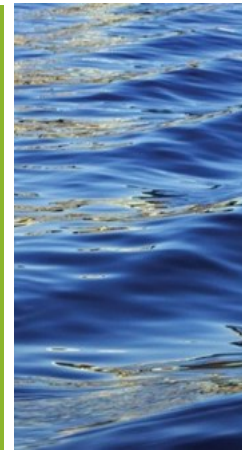




OKLAHOMA EPSCoR UPDATE

Promoting Innovative Research



OK NSF Established Program to Stimulate Competitive Research | November 2022

OK Opinion Leader Advisory Network Participates in S³OK Annual Academy

The Socially Sustainable Solutions for Water, Carbon, and Infrastructure Resilience in Oklahoma (S³OK) project holds an Annual Academy, which is a half day meeting that serves as an opportunity to bring together the Opinion Leader Advisory Network (OLAN) and Extended Peer Science Advisory Network (EPSAN) for face-to-face engagement. OLAN members are recruited from a wide network of policy professionals, state, local and tribal officials, the private sector, and nonprofit and advocacy groups. OLAN members are invited to join the project using a snowball recruitment process and based on various factors including their substantive expertise, sector represented, diversity of representation, and willingness, ability, and interest to collaborate with academic researchers. The initial recruits were drawn from a combination of publicly available information and records and the professional networks of science focus team members and project leadership. There are currently 56 OLAN members, and an additional wave of recruitment to OLAN will occur in Fall/Winter 2022 to continue to balance the membership with the project's focus areas and goals.

"The Social Dynamics (SD) team of the S³OK project spearheads the Academy, utilizing feedback from the annual OLAN surveys and information gathered during S³OK research retreats and events, and with input from S³OK focus area leads and project leadership. As the lead for OLAN activities, I manage the team responsible for planning the Academies," Nina Carlson (OLAN lead) said.

The S³OK Annual Academy provides a time for the EPSAN to share research updates with the OLAN, hold in-depth discussions, and engage in data collection activities and collect feedback that furthers S³OK project goals. Conversely, OLAN members provide project guidance, facilitate cross-stakeholder understanding of wicked problems, and enhance engagement and collaboration between academic and non-academic stakeholders. Annual S³OK Academies also contribute to the overall S³OK project by using a combination of scientific, stakeholder, and civic engagement strategies to iterate towards the most promising and socially sustainable solutions to wicked problems in Oklahoma. The structure of the Annual Academy reflects the overall S³OK project, intending to be engaging and iterative, with each year's meeting building off the previous meeting, creating cross-sector engagement and embedding practitioner and stakeholder perspectives with academic expertise as an ongoing part of the research process.

"The participation and feedback from the OLAN are vital inputs into this project. Having researchers and practitioners work collaboratively to iterate towards mutually identified potential solution sets for wicked problems in Oklahoma will improve the ultimate outcomes of this project. We hope that these collaborations will create such a positive experience for all those involved that Oklahoma would have new pathways for research and policymaking in the future, well beyond the duration of this 5-year award," Carlson said.

In Year 1, the Academy utilized a facilitated discussion approach to focus on further defining and mapping wicked problem areas and causes for these problems. Building off the Year 1 Academy, the Year 2 Academy used a Group Model Building (GMB) process to refine and further elaborate on the network of S³OK wicked problems.

"The SD team chose to utilize the GMB approach for Year 2 Academy data collection as it is a participatory, deliberative process that directly engages community members, recognizes the complex nature of problems, and harnesses that complexity as an advantage in crafting interventions or solutions," Carlson said.

During the Year 2 Academy, the OLAN and EPSAN members with early or ongoing collaborations had an opportunity to highlight their experiences during panel discussions in the plenary sessions, which were designed to illustrate the excellent work produced from the collaborations and encourage further collaborations between researchers and practitioners. During three concurrent breakout sessions, OLAN and EPSAN members were engaged in GMB exercises, which resulted in detailed "mental models" of three aspects of our science focus areas. The detailed mental models provided additional understanding and visualization of the diverse ways that OLAN members understand and define problem areas as well as highlighted important components for prospective solutions. The mental models (Fig. 1) also provide an excellent visualization of the complexity of the 'ecosystem' for each of these wicked problem areas.

During the analysis of Year 2 Academy data, the SD team developed a method for gaining a more robust understanding of what issues proved most salient throughout GMB discussions. The analysis, which weighted both number of mentions as well as discrete individuals

discussing a topic, found that each discussion group identified several key connections and topics within their respective problem domains of Water Re-Use, Grid and Infrastructure Challenges, and Eastern Red Cedar Encroachment. Within-group, key connections for the Water Re-Use group included the connection between water quality and availability, the connection between water treatment and re-use, and the connection between recreation/tourism and recycling and re-use of produced water. The Grid and Infrastructure group identified key topics of revenue, regulation, educating the public, and public health while the Eastern Red Cedar group identified key topics of land management challenges, prescribed burning, and soil health.

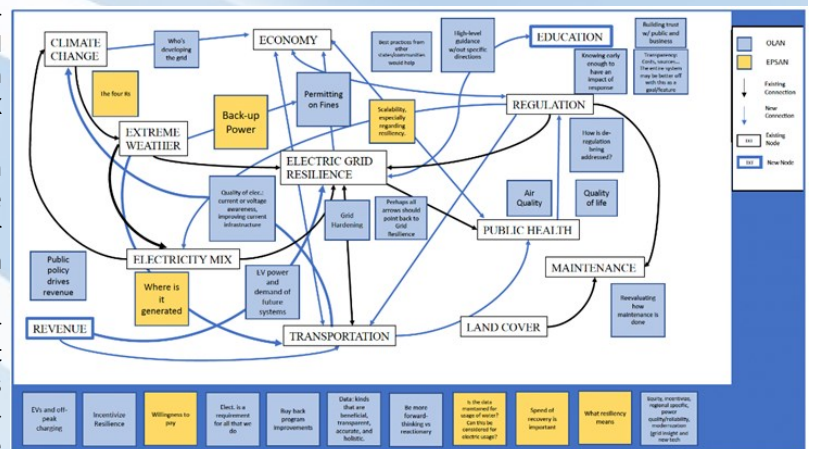


Figure 1. Detailed mental model of grid and infrastructure challenges developed through the Group Model Building exercise at the Year 2 Academy.

The updated models and results allow the researchers to not only begin to focus on Year 3 work to best reflect the key topics and connections within focus areas, but also to identify cross cutting components that are common across focus areas. Key cross-cutting aspects identified across groups as high priority considerations or components when designing sustainable solutions included regulations and regulatory structure, public awareness and education, and solutions that include tribal engagement and multi-stakeholder collaboration.

Final plans for the next Academy are still underway. For Year 3 Academy, the team will shift the focus away from individual problem domains to a focus on the intersections between wicked problems, begin working in designing possible overlapping solution sets that cross focus areas, and obtain additional OLAN feedback on the feasibility of initial solution set designs.

Funding for this project was provided by the National Science Foundation under Grant No. OIA-1946093 through OK NSF EPSCoR.

