Overcoming the Rural Data Deficit to Improve Quality of Life and Community Services in Smart & Connected Small Communities

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Many small and rural communities are shrinking due to macroeconomic changes beyond their control and this trend is unlikely to be reversed in most places.

This project proposes to develop *educational resources* and *data-driven tools* to help these communities to **shrink smart**, which is the process of adapting to population loss while also protecting quality of life and community services.

INTELLECTUAL MERIT:

- New user-friendly ***methods for local data collection, analysis, and visualization*** that empower leaders and residents in small communities to use data as a *community resource*
- Community Information Ecosystem that ***addresses the rural data deficit*** by increasing data utilization and tracking progress of shrink-smart approach using new tools
- Develop and test ***educational resources*** with rural mentor/mentee communities and the Iowa League of Cities (*community partner*)
- ***Statistical analysis and machine learning techniques*** to combine new data collected by community members with existing public data
- ***Application domains***: community planning, data sciences, local governance, decision sciences, and rural social sciences

ACTIVITIES TO DATE:

- Set up GitHub with ***public data sets*** for team use (access for other researchers in the future)
- ***Statistical modeling*** using existing longitudinal data from the Iowa Small Town Poll (1994, 2004, 2014)
- Weekly meetings of ***curriculum development*** team to discuss content, stakeholders, delivery models including online design, and learning objectives with participation of Iowa League of Cities staff
- ***Visits to 4 small and shrinking Iowa communities*** (Bancroft, Elma, Everly, Sac City) who will join a "community of communities" mentor/mentee program to help co-design curriculum and data-driven tools
- Grad/undergrad students from *underrepresented groups* joined team
- Student-designed ***website*** and initial interactive dashboard tools

NEXT STEPS:

- Visit ***3 more communities*** identified as potential members of mentor/mentee group ***by June 2021***
- ***Travel*** to community events and for qualitative data collection as COVID vaccines become more available
- Develop ***profiles of participating communities*** using data analysis, ethnographic and historical methods, and spatial mapping with 2 REU students and 1 Ph.D. student
- ***Disseminate early results*** at conferences, workshops, and online through the website and social media

BROADER IMPACTS:

- Bring attention to ***understudied research topics*** related to rural communities and quality of life
- Respond to significant demand for ***alternative approaches*** to the problems of rural community decline ***that do not emphasize growth***
- Transformative potential of ***data-enabled decision making*** in places where the rural data deficit has negatively impacted resiliency
- Engage ***new community partners and underrepresented students*** in NSF research projects

RURAL SHRINK SMART

2021 S&CC Principal Investigators' Meeting
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