

## **Thriving in the American rural-frontier: how resource availability and isolation shape health outcomes of older adult Wyoming residents living in diverse rurality**

### **TEAM MEMBERS**

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### **OTHER PARTNERS**

Wyoming Survey and Activity Center, Wyoming Center on Aging, Wyoming Department of Health-Division of Aging, Interdisciplinary Network on Rural Population Health and Aging (INRPHA)

### **PROJECT SUMMARY**

We propose a preliminary multilevel assessment of the physical and social environments of older adults living in the rural-frontier and other rural settings in the state of Wyoming. **The objective of our planning grant** is to lay the ground work for future rural-health research grant proposals & projects that better distinguish between frontier, rural, and non-rural communities (e.g., the environmental context), through the development of a contextual dataset at the ZIP code level for the state of Wyoming that includes measures of area-specific sociodemographic features, population density, and density and dispersion of formal resources. The **rationale** is to **move beyond the rural/non-rural dichotomy by focusing on the features and experiences of individuals residing in Wyoming's rural-frontier**. Our proposed contextual dataset will be linked to individual pilot social survey responses of a diverse sample of Wyoming older adults (60+), focusing on the experiences of individuals living in extreme rurality (within ZIP codes with populations of less than 6 persons per square mile). We also propose a stratified-random sampling design, with push-to-web recruitment, and limited paper-surveys (sampling frame = 3000; estimated responses = 750-900) for our pilot survey. This **interdisciplinary** multilevel pilot assessment will help us engage in preliminary identifications of how resource availability and dispersion in frontier communities contribute to physical and/or social isolation of older adults, and downstream health outcomes. Wyoming is an ideal case study for an assessment of healthy aging in frontier contexts, given the diverse rurality in the state. This study would **significantly** improve upon the specificity of contextual rural-health research in the state of Wyoming, and help identify sources of risk or resilience for healthy aging in diverse rurality, with applicability to other rural contexts throughout the US. The pilot survey data and contextual data resource will be important resources that multiple units could utilize to plan and develop future health-related research proposals.

### **SIGNIFICANCE**

According to the National Rural Health Association (NRHA, 2008), the extreme rural characteristics of frontier communities may cause significant barriers to health service access, limit economic opportunities, and foster other conditions that elevate health disparities. Similar to other rural areas in the U.S., the number of older adults and their share of the total population in rural Wyoming are projected to increase (Erickson et al., 2012; Thiede et al., 2016). As a result, there is a growing need for communities to develop physical and social environments that promote good health and improve livability for residents regardless of their age or physical abilities (Bail & Mehrota, 2016). Rural-residing older adults are more likely to express a desire to stay in their community if they perceive the quality of available services as high (Erickson et al., 2012). However, little research has distinguished the experiences of individuals living in frontier communities to individuals living in other rural and non-rural areas. In order to meet the nation's rural-health goals (Centers for Medicare & Medicaid Services [CMS], 2020), there is a need to recognize the unique characteristics of frontier environments (NRHA, 2016). The distribution of Wyoming's relatively small population allows comparison of communities that range in size from urbanized areas to extremely rural or frontier regions. This study will significantly enhance our ability to identify environmental contributions of physical and/or social isolation on downstream physical, mental, and cognitive health of older adult Wyoming residents by distinguishing between non-rural, rural, and frontier environments. In particular, we will test the extent to which social capital may substitute for service infrastructure within frontier and other rural contexts experiencing elevated resource scarcity. Prior research indicates that social support—an important element of bonding social capital—may buffer against adverse health in rural contexts (Bardach et al., 2011; Letvak, 2002), however its role in offsetting limited service infrastructure in frontier contexts warrants additional examination.

## SPECIFIC AIMS

- Develop a contextual dataset at the ZIP code level for the state of Wyoming that includes area sociodemographic features, population density, and density and dispersion of formal resources, to better distinguish between frontier, rural, and non-rural communities.
- Survey a diverse sample of individuals from the state of Wyoming, focusing on the experiences of individuals living in extreme rurality (frontier communities), to identify how resource availability contribute to physical and/or social isolation of older adults and downstream health outcomes.
- Develop a research agenda and plan future grant opportunities, based on our findings

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## INNOVATION

Urban aging research has been able to describe the socioenvironmental contexts of older adults with great precision, down to the micro-implications of living on a given street segment (Clarke et al., 2008; Weiss et al., 2010; Pliakas et al., 2017). Our research is innovative in that we will improve upon the specificity of contextual rural-health research, which is often limited to the county-level (Oregon office of Rural Health [ORH], 2016), and move beyond the rural/non-rural dichotomy by focusing on the features and experiences of individuals residing in Wyoming's rural-frontier. By oversampling from frontier ZIP codes (<6 persons per square mile), and developing a contextual data resource using a combination of county, city, and ZIP code-level information, we would be one of the first pilot studies to systematically consider frontier communities.

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## METHODS & PROCEDURE

### Part 1 Health Assessment Survey

In consultation with Wyoming Survey and Analysis Center (WYSAC), we are proposing to conduct a pilot survey. We will engage in a "push to web" (Tumin et al., 2020), random sample of available mailing addresses of older adults (60+) in the state of Wyoming, **during the spring of 2021**. We will engage in a stratified 50-50 sampling of older adults with known mailing addresses within ZIP codes that represent populations of either less than, or more than, 6 persons per sq. mile. This data will be combined with existing state-wide and county-specific health and service use data from the Department of Health and the Division of Aging in future NIA grant proposals. It will also establish feasibility of accessing respondents living in extremely rurality.

**Part 2: Contextual data resource (at the ZIP code-level).** We will operationalize "environment" using multiple items that assess infrastructure and services that promote accessible participation in a community setting at the ZIP code-level. Individuals will be linked to their self-reported ZIP code of their primary residence. We will build our contextual data resource simultaneously with survey data collection, with an **anticipated completion by the end of summer 2021**. This contextual data resource will have applicability to other research contexts, and to any projects that define environmental characteristics at the Zip code level. and could be used as the basis to develop contextual data resources that moves toward more refined specificity regarding frontier communities in other states, such as Montana, Alaska, Idaho, Texas, and Arizona.

Table 1: Budget Items

Survey Delivery Costs	item cost	units	subtotal
Vendor fee (mailing list)	0.50	3000	1500
Wave 1: Survey invitations (print & postage)	0.75	3000	2250
Wave 2: Follow-up invitations (print & postage)	0.75	2700	2250
Wave 3: Paper-survey (print, postage, & return postage)	3.00	1500	4500
Wave 4: Final reminders (print & postage)	0.75	2000	1500
WYSAC staff fee (survey processing & monitoring)	2000	1	2000
Graduate Student	5000	1	5000
<b>Total</b>			<b>19000</b>

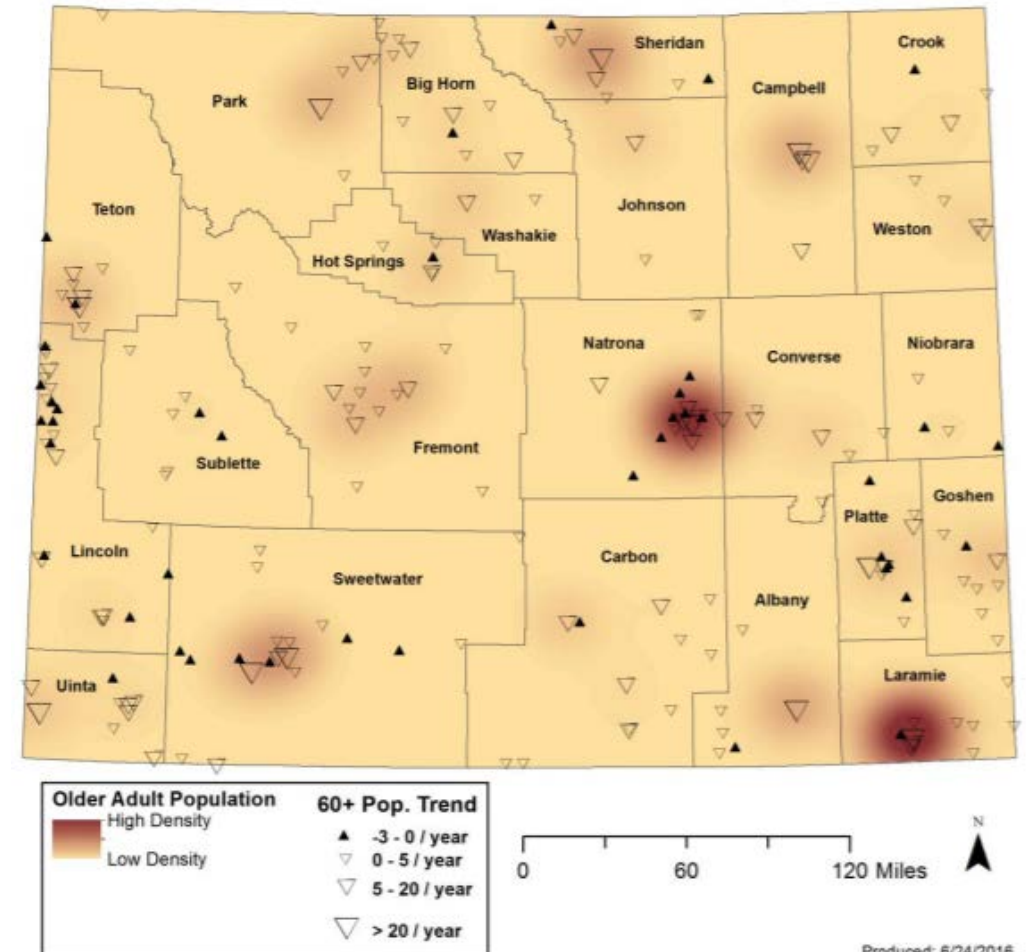
## BUDGET

The budget will be used primarily in the recruiting of pilot study of 3,000 older adults (age 60+) across the state of Wyoming to complete our survey, and to fund a graduate research assistant to help build our contextual data resource. Funds will be spent on access to a vendor mailing list, print and postage for initial survey invitations, follow-up invitations, and a limited round of paper-surveys. We have also budgeted for The Wyoming Survey and Analysis Center (WYSAC) staff to monitor survey responses, coordinate with vendors, and scan and process paper surveys.

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## SPECIFIC AIMS

- Develop a contextual data resource at the ZIP code level for the state of Wyoming that includes area sociodemographic features, population density, and density and dispersion of formal resources, **to better distinguish between frontier, rural, and non-rural communities.**
- Deliver a pilot survey a diverse sample of individuals from the state of Wyoming, **focusing on the experiences of individuals living in frontier areas**, to identify how resource availability contribute to physical and/or social isolation of older adults and downstream health outcomes.
- Lay the ground work for future interdisciplinary rural-health research grant proposals.



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