

# Community–Academic Partnerships Through Photovoice: The Profiles in Wyoming Resilience Research Project

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## Abstract

This article speaks to the challenge of public land-grant universities addressing public need through community–academic partnerships and presents a case study to explain and illustrate these challenges. Included in this approach is the acknowledgment that as universities strive to bring the community perspective to their knowledge production, strong barriers remain. To address these challenges, we discuss our Profiles in Wyoming Resilience Research Project, a research study that employs photovoice, a methodology well suited to inclusive participatory research, to amplify the voice of community members on matters of local concern. We offer insights gained through this work-in-progress, addressing opportunities and barriers to education, employment, and community resilience in Wyoming, as we reflect on early-stage assessments and pivot to the project’s next steps. This article offers insight into the steps needed to develop more accessible methods for collaboration with the goal to build knowledge coproduction capacity through community–academic partnerships.

*Keywords: photovoice, community–academic partnership, participatory action research, community resilience, community engagement*



**T**wenty-five years ago, community-engaged scholarship advocates such as Boyer (1990) and Gelmon et al. (1998), among others, argued that public universities should be engaged in work that addresses the public need. This community engagement approach informs the work of several prominent academic organizations, including the Association of Public and Land-Grant Universities’ (APLU) Commission on Economic and Community Engagement, the Carnegie Foundation for the Advancement of Teaching and its elective classification for community engagement (2020), and Campus Compact’s Civic Action Plans (Torres, 2000); furthermore, it figures increasingly in federal grant opportunities emphasizing broader impacts. This widespread interest in community engagement reflects the conviction that the work of public institutions should develop through partnerships with communities to put their knowledge and skills to

work to address today’s most critical problems (APLU, n.d.; E Boyer, 1996; Campus Compact, n.d.; Carnegie Foundation, n.d., 2020; Kellogg Commission, 1999; Saltmarsh et al., 2009; Torres, 2000). Included in this approach is the acknowledgment that as universities strive to bring the community perspective to their knowledge production, strong barriers remain to including the community voice (see, for example, Janke et al., 2022; Strier & Schechter, 2016).

These circumstances lead us to ask two important questions. First, why does community engagement, and thus community-based partnerships, still seem to be an afterthought and on the fringe of mainstream academic activity? Also, how can researchers incorporate the community voice in their community-engaged partnership work?

Our research acknowledges that much progress has been made in community partnership work, but that institutional as well as

practical challenges remain for those who pursue this kind of community work and scholarship. From an institutional perspective, universities often categorize community engagement and partnership work as service, while dismissing related research as “unserious.” Boyer (1990) recognized the problematic nature of this juxtaposition when he noted that this perspective emphasizes that service means “doing good” rather than doing serious scholarship. Community-engaged work is time consuming and based on labor-intensive relationship building. It must be perceived as relevant by the identified community and can be more challenging to assess and evaluate, all while also appealing to traditional academic audiences with expectations for rigorous and impactful research outcomes (Glassick et al., 1997; Simpson, 2000).

In this article, we present a case study of the development and implementation of the first two phases of our Profiles in Wyoming Resilience Research Project (the Profiles Project), a photovoice project whose focus on community-based participatory research provides a unique mechanism to amplify underrepresented voices. The Wallop Civic Engagement Program, the project’s primary sponsor, has developed reciprocal partnerships with stakeholders in government, civil society, education, and more. Thus, the project commenced with the intention of cultivating reciprocal partnerships among the communities we serve (with mixed results across different phases of the project, as described below). This project represents a commitment to the generation, exchange, and application of mutually beneficial and socially useful knowledge and practices developed through active partnerships between the academy and the community. Thus, by design, this project is a commitment to programs rooted in scholarship and evidence-based practices, addressing larger societal issues (as identified by the communities we serve) as well as projects that link campus teaching, learning, and research to community needs (Dunifon et al., 2004; Reason & Bradbury, 2008; Torres, 2000).

The Profiles Project adopted this lens by focusing on public challenges identified by state government, namely barriers and opportunities to success in education, employment, and community resilience in comparison to our neighboring states. The project employs photovoice—a qualitative research methodology designed to capture

people’s perspectives of their lives through photography and narrative to gather underrepresented community voices through pictures and narratives they provide. This article seeks to reflect the evolving roadmap of the process for completion of the first four phases of this photovoice project, including its twists and turns, responses to challenges and opportunities and impacts, which should contribute to the dialogue on qualitative community-academic partnership work (Bloomgarden, 2017).

The article begins by defining the role of partnership research in the context of the University’s land-grant mission. This is followed by a discussion of the community-academic partnership research approach and best practices in community engagement, which we see as largely compatible with our institution’s land-grant roots. Following that, we present the photovoice case study reflecting the four phases of the project, noting the successes and challenges of case design, development and redevelopment, and findings and lessons learned as we attempt to bridge the gap between the needs of academic research, practitioners, and the public, which are often highly differentiated.

### **Defining the Role of the Wyoming Land-Grant University in Partnership Research**

Wyoming is the least populated of the 50 states, at 581,381 people as of July 2022 (United States Census Bureau, n.d.). Wyoming is thus one of only two remaining “Frontier” states—those with a population density of fewer than six people per square mile (University of Wyoming, 2023a, p. 4). The rurality of the state, combined with the northern latitude mountainous climate with vast open spaces between communities, contributes to a culture of self-reliance that manifests itself in many areas of life. The state’s boom and bust cycles, tied to extractive industries such as mining and oil and gas production, create a volatile economic pattern, but one that has also contributed to the perception that advanced educational achievement is simply not necessary to secure a high-paying career. This dynamic is reflected in the fact that Wyoming boasts the second highest high school graduation rate in the nation (94%) yet is 43rd among the states for bachelor’s degree attainment (27% of people over the age of 25; University of Wyoming, 2023a, p. 4).

As Wyoming's only four-year public university and a land-grant institution, the University of Wyoming (UW) is uniquely positioned to serve the state. Building from previous strategic plans, one of the central objectives in UW's *Strategic Plan 2023+* includes "to engage with and serve the state of Wyoming" (University of Wyoming, 2023b). In April 2023, UW completed its application to the Carnegie Foundation to be designated as a Carnegie community-engaged campus with the goal to evaluate its work and to address questions on best practices, as well as when, how, and why to foster community-engaged work across the institution (University of Wyoming, 2023b). In January 2024, the University received recognition as one of the country's 368 institutions designated with the Carnegie Elective Classification for Community Engagement.

Specifically, the Carnegie Foundation (2020) definition for community engagement emphasizes "collaboration" between higher education institutions and their larger communities in a context of partnership and reciprocity valuing the mutual exchange of knowledge and resources. For its part, the APLU (n.d.) defines the economic development and community engagement missions similarly, emphasizing that public research universities are engaged in their communities, tackling societal challenges, to develop collaborative efforts focusing on imagining and then realizing a shared vision for healthier and more engaged citizens, thriving economies, and other outcomes that lead to a better tomorrow. The engaged campus recognizes that its knowledge creation cannot be separated from the public purpose and aspirations of the community itself.

Building from UW's land-grant mission, the Wallop Civic Engagement Program evolved in the context of this institutional prioritization on community engagement and from the start adopted the Carnegie definition of "community engagement" for our outreach, engagement, and research projects. It also has evolved in the context of the growing tradition of community partner research.

### **Community Partner Research and Work of the Community-Engaged Campus**

#### *Situating the Community Partner Research*

In this journal in 2022, Janke et al. completed a comprehensive scoping review of community-academic partnerships to

define the criteria for community engagement grounded in the Carnegie Foundation's definition of community engagement. Their review provides a data set that maps the partnership literature that helps to situate this study and others of its kind. They conclude that scholarship on community partner research reinforces the importance of including the community voice, but also that more work needs to be done on various aspects of these partnerships. Janke et al. (2022) differentiated between community engagement partnerships and community-placed or community-focused organizations to demonstrate the broad scope of community-based research that has been done. From this review, we can see that those who engage in community-based research projects build their work from reciprocal partnerships. For example, work by Davis et al. (2006) and Howard et al. (2010) discussed how partnerships facilitate direct interaction with targeted audiences and thus access to the field. Dentato et al. (2010) and Lo and Bayer (2003), among others, discussed how community partners from a wide variety of fields help with important research goals such as data collection, hypothesis testing, and theory development. Janke et al. recommended using a single term for this work, "community-academic partnership" (CAP), to unite multiple research disciplines and to provide an agreed-upon conceptual definition of this collaborative process (pp. 5–6).

Even as institutions of higher education show an ongoing interest in building long-lasting partnerships with the communities they serve, scholars continue to identify persistent challenges to this type of work. Building on Gelmon et al.'s (1998) call for more robust research on community engagement partnerships, two decades later Bloomgarden (2017) still described the partnership literature as "woefully thin" (p. 21) and focused on the context of partnerships as they relate to student learning and other academic priorities. He called for the "development of robust scholarship focused on the where, how, when, and why that community engagement partnerships contribute to or detract from community priorities" (cited in Janke et al., 2022, p. 6). Until the partnership itself, and specifically the community voice, receives the attention it deserves as the context within which this vein of work is possible, we will get only a peek at partnerships rather than having a robust description or discussion of their structure as well as how they serve community-identified needs.

By integrating the best practices of community engagement and practical steps of the partnership work, we can begin to address the challenges that Janke et al. (2022), among others, discussed, which include the growing commitment to include community stakeholders as partners in research (to provide firsthand knowledge and insight to develop these collaborative processes), facilitate interpersonal factors (e.g., building trust and respect among partners), and address hindering operational factors such as the significant time commitment such partnerships require. Pellecchia et al. (2018) noted these community-academic partnerships are critical for implementing and sustaining evidence-based practices in community settings as well as providing guidance about how to develop, support, and nurture community partnerships (see also Strier & Schechter, 2016). These dynamics are important to the evaluation of the effectiveness of collaborative partner involvement.

Our case study attempts a modest response to Bloomgarden's (2017) call, by unabashedly self-assessing our attempts at community engagement and community participatory research. The first step in this effort is to explain how community engagement practice serves as an integral step to partnership research.

### ***Integrating Community Engagement Practices Into Partnership Research***

On the community engagement side of the coin, the International Association for Public Participation (IAP2; n.d.) Spectrum of Public Participation provides "best practice" guidance for its practitioners that also provides a roadmap for the scholarship on partnerships as well. The five-point spectrum describes general modes of public participation in democratic decision making on a continuum of increasing community influence. The public's role in public participation processes ranges from (1) informing on one side of the spectrum, followed by (2) consulting and (3) involving, to (4) collaborating with and (5) empowering community partners as more intensive modes of public participation. This five-point spectrum can be adapted to assist with determining the level of influence of community partners in campus work, including research, teaching, and service missions, depending on the community or stakeholder's role in the engagement. Ultimately, the goal is to have community partners as codevelopers of projects.

The lesson to draw from the IAP2 best practices for engagement is that engagement professionals

require professional agility and intellectual flexibility to adapt to the specific (and often specialist) nature of varying projects and recognize that community and stakeholder roles will also alter depending on the required level of engagement. (International Association for Public Participation Australasia, 2016, as cited in International Association for Public Participation, n.d.)

A fundamental underpinning of the IAP2 spectrum is to define what scholars mean by "community voice" as an aspect of practice and scholarship.

The IAP2 spectrum seeks to ensure genuine community partner participation by adding a "promise to the public" for each type of participation. There is a normative quality to this work for scholars such as Beaulieu et al. (2018), who defined engaged scholarship as working in "ways that will build mutually beneficial and reciprocal bridges between university activity and civil society" ("Engaged Scholarship Schema," para. 1). For Judith Ramaley (2019), and this article, it is a call to address more specifically what we mean by the plethora of ways we can bring forth "community voice" and specifically how we can bring forth underrepresented, marginalized, and disenfranchised voices through our scholarship (see Strier & Schechter, 2016).

Therefore, we used an a priori protocol, informed by key concepts in community engagement and CAP work, which was updated iteratively as the project progressed. By returning to the IAP2 five-point spectrum, discussed above, we recognize that scholars can orient their projects through basic questions about their program and research goals, objectives, and outcomes that are relevant for all types of participatory research. This approach helps to define "the community" as well as best practices in program and participatory research. At the University of Wyoming, one contributor to this project authored a toolkit for community-engaged work for the UW Office of Engagement and Outreach with the IAP2 steps in mind. Toolkit steps included clarifying research objectives, linking these objectives to purpose of the audience to be served,



involving community partners in all stages of the planning process, and building an evaluation and assessment plan from the start. The case study on the Profiles in Wyoming Resilience Research Project outlined in the next section is motivated by democratic deliberation often lacking marginalized voices. Photovoice offers an opportunity to address that shortcoming by amplifying those voices through partnerships between researchers and the community. Yet, as Pellecchia et al. (2018) and Strier and Schechter (2016) have observed, the complexity of coproduced academic research, which includes identifying, implementing, and sustaining evidence-based practices in community–academic partnerships, makes this practice difficult. Advancing the science of CAP calls for learning from others how to develop, support, nurture, and maintain community partnerships—a challenge keenly felt by our project, as described in detail below. The implementation strategies referenced above identified as most relevant to CAP’s focus are identifying barriers and facilitators to implementation, as well as providing mechanisms for feedback and auditing the process.

## Profiles in Wyoming Resilience Research Project

### Project Overview

In keeping with a community–academic partnership approach, the Profiles in Wyoming Resilience Research Project attempted to gather underrepresented community perspectives from a broad range of citizen and stakeholder voices through pictures and narratives they provide, which can be used to develop profiles of our communities, share their stories, and better inform state and local programming (Strier & Schechter, 2016). We have sought to understand better how Wyomingites perceive barriers and opportunities (Wang & Burris, 1997) to success in academic achievement (Means et al., 2019), employment (Power et al., 2014), and community resilience (Ozanne et al., 2013). Yet, as described below, the best laid plans do succumb to practicalities, from time to time. We found the IAP2 lesson to be true—we needed professional agility and flexibility to adapt to changing circumstances as the project evolved.

By capturing Wyomingites’ experiences, in their own voices, we hoped to add rich

context to macrolevel and microlevel economic and behavioral data (Downey & Anyaegbunam, 2010) that inform Wyoming state and local government policy, support Wyoming Innovation Partnership (WIP) goals and the Wyoming Strategy to Survive, Drive, and Thrive (Office of Governor Mark Gordon, n.d.). Specifically, our project speaks to the WIP objectives of developing a “resilient workforce and economy” through “increasing collaborations between state entities and ultimately local partners” (Wyoming Innovation Partnership, n.d.). Pursuant to the “Drive” phase of the governor’s initiative, we examine three “problem areas impacting Wyoming’s resilience and vitality and impeding Wyoming’s growth in the future” (Office of Governor Mark Gordon, n.d., para. 3): education, employment, and community resilience. By “education,” we mean a person’s journey as a student that begins prekindergarten but stretches on through high school and perhaps beyond. By “employment,” we mean those opportunities people have to gain paid work. By “community resilience,” we mean that quality that allows our communities to not only survive hard times but also to drive forward and thrive in good times.

Thus, a key objective of the project is to encourage community dialogue. By focusing on subject matter areas already identified by Governor Mark Gordon and other state policymakers as critical to the future vitality of Wyoming, with this project we seek to bring in the community voice to this research and thus aim to contribute to efforts to identify solutions to the state’s pressing problems—“big ideas with long-term impacts” (Office of Governor Mark Gordon, n.d., para. 4). Recognizing that many residents feel disconnected from the policy process, we employ photovoice as a means of amplifying marginalized voices, who seek to be heard.

Photovoice is a participatory research methodology that empowers participants to engage in meaningful dialogue about their community through photography and rich description (Kramer et al., 2013). Since its development in the 1990s by Wang and Burris (1997), photovoice has been successfully utilized to explore an array of issues, including those surrounding life in rural communities (Downey & Anyaegbunam, 2010), homelessness (Peterson et al., 2012), access to health care (Catalani et al., 2012), access to education (Means et al., 2019), and

the travails of life in a “boom-and-bust” economy (Mayan et al., 2011). With this rich research record in mind, the methodology is uniquely well suited to investigate life in the nation’s least populated state, which faces those very challenges, among others.

Project aims were twofold: (1) traditional research aimed at addressing key research questions and (2) gathering and sharing data to empower Wyoming communities to help each other, using geographic information systems (GIS) technology to provide dynamic access to qualitative data, on a persistent platform, in a format useful to constituents, statewide policymakers, Wyoming communities, businesses, and researchers, while identifying ways to work collaboratively to overcome adversity. Pursuant to those goals, the authors partnered with the Wyoming Geographic Information Science Center (WyGISC) to develop an integrated cyberinfrastructure to facilitate data capture, storage, sharing, and visualization. WyGISC developed an ASP.NET C# web API, which provides an interface to the backend SQL server relational database using the Umbraco content management system. The API endpoints support reading, writing, and validating user-uploaded information from multiple user interfaces. An interactive, web-based map application was built using ESRI Experience Builder (EEB) platform in which we have embedded the customized map into our Umbraco website (<https://surveys.wygisc.org/profiles-in-wyoming-resilience>). At first blush, this element might seem an extraneous addition to an admittedly complex project. However, expanding community participatory research beyond the typical small-*n* confines of qualitative research requires leveraging both available technologies and GIS technology that is pervasive in contemporary society. This element also made our initial results readily available to our partners, participants, and the public.

Institutional Review Board (IRB) approval was secured, pursuant to institutional expectations, to assure safe and ethical interactions between the research team and community partners. IRB approved a protocol whereby participants would submit electronic image files with descriptions of the same, pursuant to prompts related to our projects’ three related topics: education, employment, and community resilience. The protocol also described the use of community forums to gather feedback on

emergent themes, consistent with best practices in the photovoice method and pursuant to the community engagement research goal of including the “community voice.”

### **Evolution of the Profiles Project: Design, Implementation, and Initial Findings**

The project developed in four stages, as the research plan evolved in light of unexpected challenges: (1) October–December 2021: developed objectives, identified partners for communicating the project, and identified participant solicitation strategy; (2) January–March 15, 2022: strategic communication of project and solicitation of participants utilizing partner organizations contacts, including biweekly webinars; (3) March 15–June 15, 2022: revised solicitation strategy with direct presentations utilizing partners, classes, and Qualtrics contract; and (4) July 2022–February 2023: identified key themes and conducted community forums. Across these stages, we utilized an evaluation protocol, which allowed the project to adjust to challenges and take advantage of new opportunities to bring community voices more centrally to the project.

#### ***Phase 1—Developing the Participant Solicitation Strategy***

In conceptualizing natural partners for this type of work, some organizations were more obvious than others. Statewide goals identified by both the governor and legislature were natural starting points, as we identified subjects of inquiry. Although some urgent needs were readily apparent during the pandemic, other long-term needs presented persistent challenges to the state (Office of Governor Mark Gordon, n.d.). Similar insight was derived from the Wyoming Business Council (2021), specifically in the context of the state’s business environment and the potential economic diversification from extractive industries, which have constituted much of Wyoming’s economic activity historically, to other opportunities such as tourism. Based on these works, and consistent with the governor’s priorities, our team settled on three foci for the Profiles Project: education, employment, and community resilience. Within these contexts, we would explore perceptions of both opportunities for success and barriers preventing it.

With our three topics in mind, the research team set about identifying and reaching out

to potential participants through more than four dozen stakeholder organizations across the state. For example, contact was made with groups such as the Wyoming Business Council (WBC) and Wyoming Economic Development Association (WEDA), local governmental entities, civil society, and civic organizations such as Wyoming Community Foundation and Rotary International, among others, that each serve established constituencies whose interests aligned with one or more of our topics. UW offices in the Wyoming Business Network and UW Extension, which has offices in every Wyoming county and the Wind River Indian Reservation, played an integral role in identifying potential participants. Our research team also identified other stakeholder organizations active in the state, whose endeavors intersected with at least one of our research topics, and yet were not already identified by any of the lists above. Examples here included local economic development organizations and state-level arts and humanities councils.

Outreach to these organizations progressed through preexisting relationships between the organizations and codirectors of the project. This outreach was aimed at taking advantage of preexisting relationships and developing the new partnerships needed to identify both community need, within the scope of our project, and likely participants who would be willing to share their insight into community issues surrounding education, employment, and community resilience. As described below, some partnerships revealed themselves to be more fruitful than others, precipitating the evolution of the project.

### *Phase 2—Soliciting Participants Through Partnerships and Direct Webinars*

Our initial approach to recruit project participants across the state was a two-pronged strategy. First, marketing that invited direct participation was distributed through government, civil society, and civic organization partners throughout Wyoming, who agreed to distribute fliers and similar materials to their membership via their normal communication channels (social media posts, email, face-to-face meeting announcement, etc.). We took these actions on a weekly and then biweekly basis (across the first 10-week solicitation phase). In addition, the project directors held webinar-style recruitment meetings via Zoom. Webinars were designed to introduce the

project, its objectives, the photovoice methodology, basic photography, and ethical standards as well as instructions on how to share images with the research team. Over the first 3 months of 2022, 16 webinars were conducted with 11 total participants. In that time frame, nine pictures with descriptions were submitted to the project. Considering disappointing participation rates, the research team determined a change of recruitment strategy was needed.

### *Phase 3—Implementing Improved Solicitation Methods to Overcome Early Barriers*

Later in spring 2022, our research team scheduled, through partner organizations, face-to-face recruitment presentations across the state. Presentations were scheduled during those organizations' regular meetings to capitalize on the existing cultural norms of the groups. These presentations (both in-person and via Zoom) were more successful in recruiting participants than the Zoom-based webinars of Phase 2. Presentations were widely distributed across the state geographically and in terms of audience, including local government meetings, university/community college classes, student organizations, and offices (American Heritage Center, Staff Senate, etc.), as well as state-level entities such as Workforce Services, the small business development organizations, and the Wyoming Business Alliance. Altogether, the research team conducted roughly 30 recruitment presentations.

Means of participation was another factor in Phase 2's low participation rates, however. Feedback from prospective participants in Phase 2 who ultimately declined to participate after interactions with the research team revealed that many found the subject matter compelling and were inclined to participate but were dissuaded by the method of participation the research team requested (photos and descriptions shared via the photography social media platform Flickr). To overcome this problem, a survey instrument was created via the Qualtrics survey engine, although this choice was not without its own shortcomings. Although a powerful tool to distribute and collect both quantitative and qualitative surveys, Qualtrics has limited functionality for the submission and evaluation of data files—including images. Nevertheless, the use of Qualtrics over Flickr, and more than two dozen invited presentations via Zoom and in person across April–June 2023 and an added research incentive,

did result in an increased participation rate, with 159 total submissions collected across Wyoming by June 2022.

Still disappointed with the participation rate to date, the research team contacted Qualtrics Research Services (QRS) to ascertain the cost of paying the service to recruit participants for the project. Their response noted that Wyoming's population was so small that it would be impossible to empanel the desired number of participants, if the sampling frame was restricted to the state's population. Our team was not dissuaded by this reply, as the quote-per-participant was within the project's budget. At this point the project grew much larger than originally anticipated. QRS could not acquire the target number of participants from Wyoming alone; however, expanding the selection criteria to Wyoming—and its surrounding states (Colorado, Utah, Idaho, Montana, South Dakota, and Nebraska)—was financially feasible, as it provided a new opportunity to compare results in Wyoming across neighboring states. QRS took 3 months to collect the targeted 645 participants (69 from Wyoming), who shared 1,157 total images relevant to the project. Although beyond the original scope of the project, the inclusion of the multistate data afforded the opportunity to gather more Wyoming responses and to tease out response trends unique to Wyoming from those that were common in surrounding states.

#### ***Phase 4—Identifying Key Themes and Conducting Community Forums***

As the research team analyzed results, it identified several emerging themes in the submissions. At the most macro level, submissions reflected the perception that opportunities were far more common than barriers across all three topics of the study. In the context of education, access to online education was commonly identified as an educational opportunity. Figure A1 (see Appendix for all figures) is indicative of this theme, with the submitted image depicting a laptop computer being utilized to access the videoconferencing platform Zoom from the comfort of a sofa. The contributor offered this description to accompany the image:

My home, showing my computer and access to Zoom classes that helped me earn my Master's in Social Work from the University of Wyoming while continuing to work and participate in my community

while achieving my academic goal and a better job in my community. It was an incredible opportunity!

Inclement weather was a commonly cited barrier to education, as many submissions reflected the negative impact of Wyoming's wintry weather on school-related activities. Figure A2 offers a typical instance; its image depicts children standing next to parked vehicles as snow falls, with a school facility barely visible in the background, through the falling snow. The caption reads:

Picture of the student drop-off lane at Anderson Elementary school in Cheyenne, WY. Shows barriers to participation, either by finding ways to school during weather events, along with available transportation.

A hopeful note was struck by many contributors, as they noted educational opportunities in skills-based education—specifically in fields such as robotics and other applied technology fields. Figure A3, depicting a group of students working collaboratively on a robotics project, epitomizes this theme among submissions. This was the description offered with the image:

This is a picture of Powell High School's first all-girls robotic team. It depicts both opportunity since robotics is a huge/growing area for 21st century students and barrier as the program is not funded the way sports programs are. Students have to raise/pay money for the team to travel and compete. That means low-income students are essentially barred.

The remaining theme identified among education-related submissions dealt with infrastructure. Many participants noted that quality facilities and physical infrastructure investment created opportunities for student success. Here, Figure A4 captures the sentiment as it shows college students participating in a class-related activity outside a building on campus. Its description reads:

Laramie WY. Student assistance in directing technical lab. Opportunity – personal and professional growth

Participants who chose to share images and descriptions on the topic of employment frequently discussed the job market and



the necessity of multiple jobs per employee to make ends meet. Figure A5 focuses on the storefront of a pizza restaurant, whose window has been repurposed as an advertisement—for employment. The participant offered this description, along with the image:

This picture was taken in Torrington. Dominos just like lots of other businesses are looking for help. This is both good and bad I think. There is a chance for a job for someone who needs one, but also this can be a struggle because we are low on help in a lot of places. A lot of businesses struggle with not having enough help and that sometimes leads to being shut down, which is definitely a barrier for our community.

Figure A6 strikes a similar tone. Its image of two uniform hats from two food service jobs, with accompanying description of pandemic-related barriers to employment, was indicative of the sentiment expressed by many participants. Its caption reads:

This picture is of two employee hats from two different jobs I have had in the past couple years. It depicts barriers as I was forced to quit due to Covid but ironically due to the same restrictions I was never able to return the uniforms.

Another theme among submissions reflected the common refrain that opportunities for employment frequently described the downtown area of their community as the locus for economic activity. The image of a small rural community's downtown area captured in Figure A7 is reflective of this broader theme. The image was captioned thus:

This is downtown Dubois, WY. These little stores are the backbone of the community and that is really all there is. It's a huge barrier but it's a way of life for this community.

The strong job demand in the skilled trades, as reflected in Figure A8, was another common theme among employment-related submissions. The image depicts the (blurred) faces of two house painters, and was accompanied by this description:

This picture was taken in Cheyenne Wyoming. In this picture I had surprised a co-worker of mine while painting houses in the summertime. This picture highlights the opportunity of labor jobs in communities. Not a lot of people realize there are good paying and sustainable jobs in the construction field. When I talk to people my age who are looking for work they often search in food or retail areas but seldom in trade work. Not only does trade work provide good pay, but it also teaches skills and techniques that can be applied elsewhere and taught to others.

In the context of community resilience, participants commonly referenced hardships imposed by the COVID-19 pandemic (barriers to resilience), such as the difficulty many businesses experienced in maintaining a customer base through the public health crisis. Figure A9 is indicative of these submissions, revealing a storefront in a downtown setting, which the participant captioned:

This picture is of Sweet Melissa's in downtown Laramie. This displays opportunities offered in the downtown area for small businesses to thrive. After the pandemic, it was difficult to maintain a strong customer following so small businesses like this display the resilience of Laramie.

Whether referring to summertime activities such as enjoying time at the lake or describing winter activities such as skiing or snowshoeing, many described how their time in nature was an opportunity for community resilience, demonstrating the importance of intangibles in perceptions of resilience. See Figure A10 depicting a vibrant sunset above an open road that stretches between fields and houses to the horizon, with its accompanying description:

This was taken in a community on the outskirts of Laramie where my girlfriend's family lives. It was taken during the trip we went to go see them for the first time in 3 years due to the pandemic. I think it shows that we can see the beauty in the world even when we are facing the hardships of potentially

not being able to see our families, or any other hardships we might be facing on any given day.

The repurposing of existing community infrastructure to meet contemporary needs (opportunity for resilience) was another frequent theme among community resilience submissions. Participants repeatedly offered images and descriptions such as Figure A11, which shows a former railroad facility that has been repurposed as a meeting facility for the community. The participant described the image like this:

This picture was taken at the railroad complex in Evanston. This picture displays rusted wheels from trains and in the back you can see part of the former Union Pacific roundhouse. This image depicts opportunity to community resilience. Evanston has been through many different booms and busts including a railroad boom and bust.

The final theme among community resilience submissions spoke to the diversification of the economy as a driver of community resilience. Figure A12 captures a pair of wind turbines backlit by the setting sun and is captioned:

Wind energy is an opportunity for community resilience by making jobs and diversifying our economy.

As themes were identified, plans were implemented to share information with the public and to seek additional community involvement. A Wyoming DataHub grant funded by the Wyoming Innovation Partnership (n.d.) allowed the codirectors to contract with the WyGISC, previously described, to map results to an interactive map application so that all results would be publicly available (<https://surveys.wygisc.org/profiles-in-wyoming-resilience>).

In keeping with the photovoice method, community forums were subsequently held in nine Wyoming cities, in addition to a forum conducted at the annual meeting of WEDA. Forum locales were chosen with the objective of achieving diverse contributions in the context of geography, economics, rurality, and population. In fall 2022, forums were held in Riverton, Cody, Sheridan, and Torrington, with additional forums conducted in spring 2023 in Evanston, Lyman,

Rock Springs, Rawlins, and Saratoga. Some forums were well attended, and others were simply not. Maximum attendance was nearly 20 (Sheridan), yet two had zero attendees (Lyman and Rawlins).

In these forums, attendees were presented with information about the Profiles Project and were asked to reflect on and respond to themes and examples of pictures and associated narratives from the previous round of submissions. Participants were offered two related questions: Do you see these dynamics in your community? If so or if not, what do you see here? Many forum participants agreed that infrastructure investment provides greater opportunities for education in the state, but a notable number discounted the notion that winter weather presented a barrier, observing that winter is part of life here. Forum participants also digressed from themes identified by the research team, in the context of community resilience, especially participants in Cody and Torrington. There, forum participants observed that local economies (predominantly tourism and agriculture, respectively) were largely insulated from the economic impact of the pandemic.

### Implications of the Early-Stage Assessment

Considering both the themes identified among the initial round of image/description submissions and the commentary offered by community forum participants across the state, a few notable early-stage implications are worthy of discussion. This project proceeded in conjunction with other statewide stakeholder efforts to address similar questions of education, employment, and community resilience. Project leaders have shared preliminary results with Wyoming economic development authorities, and these discussions have been intermittent but remain ongoing; however, the major result has been the recognition that this project served as the necessary pilot to make the next steps of a truly coproduced research project feasible. Through this process, we learned that barriers to participation were significantly reduced when participants could “see” what photovoice is and can do. The creation of the publicly available interactive map has been integral to show potential stakeholders both what photovoice can do and how the results may be used.

Our project was originally conceptual-

ized as focusing on adults' perceptions of opportunities and barriers to education, employment, and community resilience. Consequently, all planning focused on recruiting adult participants. Despite our multifaceted efforts, participation in the project remained a significant challenge throughout its implementation. In these results, however, we see a huge new opportunity to more tightly focus the next phase of the project on youth perspectives. In our submissions, a significant number of image/description contributions and a noticeable amount of community forum commentary centered on youth dynamics. From discussions of educational opportunities, such as skills-based training, to submissions describing the need for diversification of the economy, an unexpectedly high number of contributions were focused on youth. These were generally hopeful in nature but were nevertheless more youth-centric than the research team anticipated. However, in accord with the parameters of the project's IRB-approved protocol, youth voices were systematically excluded from this participatory research.

The evolution of our participant-recruitment strategy confirms the value of partnerships with key stakeholders for obtaining participant responses. Although recruitment is possible via webinars, in-person appeals, and even third-party recruitment, the contribution quality was notably better from those participants recruited in collaboration with partnering organizations. This dynamic held true through the community forum phase of the project as well, with partnering organizations working to recruit more of their members to participate in forums, to share their feedback and contribute to the overall dialogue of the project, which has the benefit of increasing the input of the community voice into the project.

### Next Steps

Building upon the project's early-stage assessments, for the project's next phase, we intend to build upon our preexisting partnership with secondary education classroom teachers in the Wallop Program, as a means of amplifying youth voices. Although this focus would require significantly more safeguards than working with adult populations, our initial assessment of image/description submissions and community forum commentary reveals that pivoting to include youth participants would best meet

the project's overarching objective of amplifying marginalized voices. Further, this focus allows us to seek participation from an underrepresented population that is seldom surveyed. To those ends, our next steps now include securing partnerships with K-12 classroom teachers, gaining their administrators' approval of the partnership, then seeking IRB approval of the protocol. Given the work of the Wallop Civic Engagement Program with K-12 teachers, partnerships are in now place to make this phase of the project possible.

Although the Qualtrics survey engine proved adaptable enough to solicit image file uploads and accompanying text-based descriptions, the platform was an inelegant solution, adopted when participants balked at the unfamiliarity of a dedicated photo-sharing application (Flickr). To address these myriad shortcomings, a grant from the College of Arts and Sciences allowed us to commission the development of a smartphone application, functional on both iOS and Android operating systems, that will allow app users to capture images, describe them, and send their submissions directly to the project's database used to populate the interactive web-based map application. This technological innovation will allow faster processing of participant submissions, which will in turn further develop the collaborative nature of the project. We see the integration of the smartphone app as being especially timely, given the project's pivot to a youth-focused phase.

### Lessons Learned: A Photovoice Approach to Amplifying the Community Voices in Community–Academic Partner Research

One key takeaway from the project must focus on the changing nature of what we mean by partners and the partnerships in this project. Building on preexisting relationships with stakeholders and partner organizations to solicit participation was an important first step but proved inadequate. The revisions discussed across Phases 2–4 demonstrate the essential nature of such partnerships to implement the scope of this project, but particularly the need for flexibility in strategy and sensitivity to the difficulty in implementing such qualitative community engagement projects. Community–academic partnership models and evidence-based approaches, consistent with the land-grant model, mean the com-

mitment to transparency of project design as well as recognition of the need to adjust strategies. Although we describe four phases here, this article discusses only the steps that made the true codeveloped project possible. Our procedure is in alignment with the community-academic partnership approach and IAP2 best practices to make sure the research has the involvement of community stakeholders from design, through implementation, to evaluation. UW's commitment to the land-grant mission, when viewed through the lens of reciprocal community-academic partnerships, as described in the Carnegie (2020) model and Kellogg Commission (1999) report, reflects its commitment to such an iterative project as central to addressing community needs.

This study essentially served as a 2-year pilot to now set up the next phase of the project. Without the steps above, we would not have developed the technical and re-

lational expertise to make the next phase possible: partnering with K-12 education to access underrepresented youth voices.

Reflecting on this project, we must return to our starting point—how to bridge the gap between traditional scholarly expectations and the call for universities to be responsive to the public need. The answer is in the careful design of projects that allow for traditional academic output (e.g., research following the IRB process with articles in mind) and fulfilling the commitment to perform and share research addressing community needs (e.g., community forums and making the data available to the public and stakeholders).



### About the Authors

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Appendix. Sample Photos

Figure A1

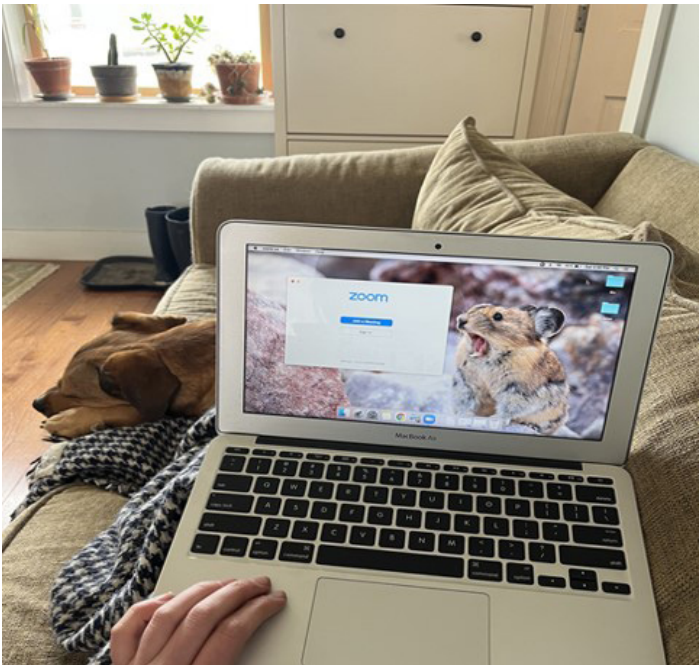


Figure A2





**Figure A3****Figure A4**

Figure A5



Figure A6



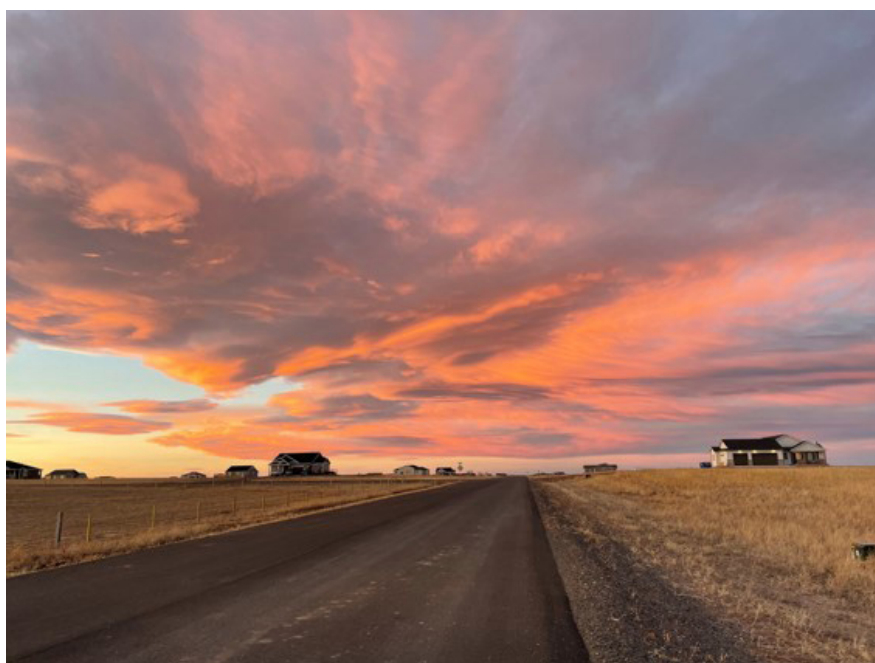
**Figure A7****Figure A8**



**Figure A9**



**Figure A10**





**Figure A11****Figure A12**