

Community Partner Profile: Stacey Fritz, Project Manager, Cold Climate Housing Research Center, Fairbanks, Alaska.

Stacey Fritz has a PhD in Cultural Anthropology from the University of Alaska Fairbanks, and her doctoral thesis traced the legacies of the DEW Line in the western Arctic. She worked in public land management in the Arctic for 10 years, and is now at the National Renewable Energy Lab's Cold Climate Housing Research Center (CCHRC) in Fairbanks where she works on projects related to housing insecurity and codesigning culturally and environmentally appropriate housing.

How are you involved in issues related to housing and homelessness?

I'm involved with several CCHRC projects. Soon after starting here, I was contacted by design anthropologists in the Lower 48 who were interested in studying cold climate builders and how they codevelop housing designs with communities. I have been working closely with them to study housing, housing insecurity, the impacts of COVID-19 on building, and perspectives on modular buildings in Alaska. We also received a grant to do an interdisciplinary post-occupancy survey, so we will look at the demonstration homes that CCHRC has built in remote communities, do a building investigation and interview occupants to get their input on the social and economic aspects of living in that house – the good, the bad, the maintenance, costs, etc. An initial vision is to produce a catalogue of CCHRC demonstration homes with input from everyone about what worked and what could have been better, a housing decision matrix, and performance metrics for future housing projects.

A lot of the work we do these days focuses on houses that are vulnerable to erosion, flooding, and permafrost thaw. There are approximately 42 Alaskan communities that could be facing relocation at some point, it is a huge infrastructure issue. There is already one relocation effort underway. Homes have to work really well in extreme climates, they have to be really adaptable, ideally you could move them.

What are some of the challenges for housing in Alaska?

The main issues are overcrowding and a lack of housing stock. It's a [housing crisis](#). Sometimes 16 people or more are living in a tiny house. Environmentally and culturally inappropriate housing, too. Most houses were designed in the Lower 48 and imported, [they're not designed for the climate](#), and they're also not designed for the way of life that people here have. There is rarely enough room for storage of gear or for processing fish and game. A lot of things about the layout of the houses are culturally inappropriate. There are hundreds of people in scores of villages who have no plumbing. It's a serious public health issue.

What are some strengths and opportunities in Alaska?

There is amazing cultural resilience and ability to adapt. Some other good signs are that the Indigenous populations have been increasing and people are usually still able to hunt and fish on their traditional land. There is also a lot of diversity, it's a huge state. There is a strong network of native communities, and there are powerful native corporations. Alaska's land settlement act, ANCSA, established Alaska Native corporations for each village and for each region - these corporations own the land and often develop it for the benefit of their members.

There are also provisions in the land settlement act that require those corporations to share profits with the other regional corporations, so there are resource sharing mechanisms built in.

Are there projects happening in Alaska related to housing that excite you?

We have a project called [Adaptable](#), because the building system itself is extremely adaptable. We set ourselves strict circular economy constraints for developing the most ideal house for an Arctic community. It has to be extremely energy efficient; it has to be flexible; you have to be able to move it and add on when you need to or shrink down if you don't need so much space. We want it to flat pack. The logistics of getting building materials and houses out to communities is a problem, and if you ship a complete home to a community, you're depriving that community of a source of employment through homebuilding.

The Adaptable project is a standardized kit of parts, and the idea is that you would not need specialized labour to assemble it. It's a standardized frame that highly insulated panels attach to. We are also trying to design for disassembly, which is an architectural method where everything must be able to come apart and be reused so that maintenance and repair is not destructive and disruptive to the occupant. A section of your house can be removed and replaced, instead of having to move out of your house and have a crew come in and tear down a wall and repair it. The self-build option gives people agency in the process and, even though it's a standardized kit of parts, people will be able to customize it.

Another issue is that you can have all the materials and a whole crew, and you can build a whole house, and the most complicated and expensive parts are the plumbing, electrical, and mechanical systems. You need special parts, and you need specialists to go out to a remote community, which adds thousands of dollars and extra time on to a project. So, the other project we're working on takes a [shipping container](#) and builds in the entire kitchen and bathroom with all the mechanical, electrical, and plumbing. That unit will be shipped out to the community, the community will have built the floor that we've codesigned with them, and the shipping container will be attached to the floor and the prebuilt walls will be tipped up around it. You get all your mechanical, electrical, and plumbing done off site, but it still gives the community opportunities for construction.

What would you like to see form the AHIN Partnership?

We are very interested in successful self-build projects and log home kits. We also want to design a methodology for interdisciplinary post-occupancy surveys and have a systematized way of getting information on peoples' lived experiences in houses to develop performance metrics for future projects. So, if the AHIN network has information or examples of good post-occupancy surveys, that would be helpful. We want to do a lessons learned on CCHRC housing, but I would love to know about some lessons learned projects in Canada.