PennState College of Engineering | ARCHITECTURAL ENGINEERING

THE PENNSYLVANIA STATE UNIVERSITY

ENGINEERING FOR CHANGE IMPACT RESEARCH – SUMMER 2022

INTERVIEW PROTOCOL

Hello my name is Lorine Ouma / Valerie Eve. I am a research fellow with Engineering for Change for the summer 2022 cohort. I'm currently based in Pennsylvania. I am grateful that you are available to discuss your experiences with working in the field of Climate change resilience particularly flooding for housing in Pennsylvania / Florida.

Research Aim

The research aims to explore how digital technologies can be used to empower community members, in flood and extreme heat-prone areas in Florida and Pennsylvania to co-create affordable, sustainable, and resilient housing solutions through co-created toolkits and co-learning platforms.

The Areas of Focus

- Housing affordability
- Sustainable materials
- Vulnerable housing design measures
- Climate change responsive design strategies
- Toolkits for resilient design solutions

The Specific objectives of this research

1. To Identify the current housing needs for communities exposed to flooding and extreme heat in Florida and Pennsylvania
2. To Identify and disseminate information on the most commonly used materials, technologies and engineering design strategies adapted for flooding and extreme heat resilience in Florida and Pennsylvania
3. To identify existing toolkits for disseminating information on housing risks and potential improvement for communities in vulnerable areas of Florida and Pennsylvania
4. To determine the existing gaps in the dissemination of knowledge on existing engineering solutions that can be used to enhance housing resilience, address affordability gap, and help meet existing environmental sustainability goals
5. To create digital toolkit and a co-learning platform that can be used by community members to access information on the suitable options for materials, technologies and strategies for resilient housing in Florida and Pennsylvania

The insights you share with us will be analyzed by the research team and synthesized into a set of recommendations for affordable, sustainable, and resilient housing solutions and a toolkit.

Would you prefer we cite your contributions anonymously or may we cite your name and affiliation? Also, is it okay if I record this conversation? I don't want to miss out on any of the important details.

Interview Questions

Section A: Introduction

1. a) Do you work in an area of specialization that is closely related to climate change resilient low-income housing? Yes/ No.
2. b) In a few words, please describe your area of work.
3. Which geographical locations have you done this work in?

Section B: Design recommendation for affordable, sustainable, and resilient housing solutions in flood prone areas of Florida/Pennsylvania

4. In your opinion, how do the existing affordable housing gaps in Florida/ Pennsylvania compare with the situation in the rest of the US?
5. What are some of the affordable or low-cost housing needs that exist in the Florida and/or Pennsylvania area?
6. What design solutions are available to the local community members in your area to help minimize the impacts of flood damage and heat discomfort in their houses?
7. In your opinion, which building envelope materials and technologies work best with respect to withstanding the impacts of climate change related extreme weather events such flooding and extreme heat?
8. What has been the major challenge in ensuring that communities can access and implement existing solutions to mitigate the impacts of flooding and extreme heat on their housing?

Section C: Gaps in engineering design strategies

9. a) Do you think that the existing engineering design strategies can be used in a cost effective manner to enhance the resilience of low income housing? Yes/ No
   b) If your response to a is "No", please explain further.

   c) What could be done to address these outstanding issues?

Section D: Existing toolkits for dissemination of solutions

10. What are some of the available toolkits that the community members can use to access information and knowledge about existing solutions you mentioned earlier?
11. Kindly share a brief description of the toolkit(s) that you are familiar with
12. a) Do you think the existing toolkits work well with respect to providing easily accessible information? Yes/ No
    b) If your response to a is "No", please explain further.

c) What could be done to address these outstanding issues?