Reducing the Vulnerability of Disadvantaged Communities to the Impacts of Cascading Hazards under a Changing Climate
Award # 1951636
Farshid Vahedifard, Mississippi State University
Award Type: PG, FY2020
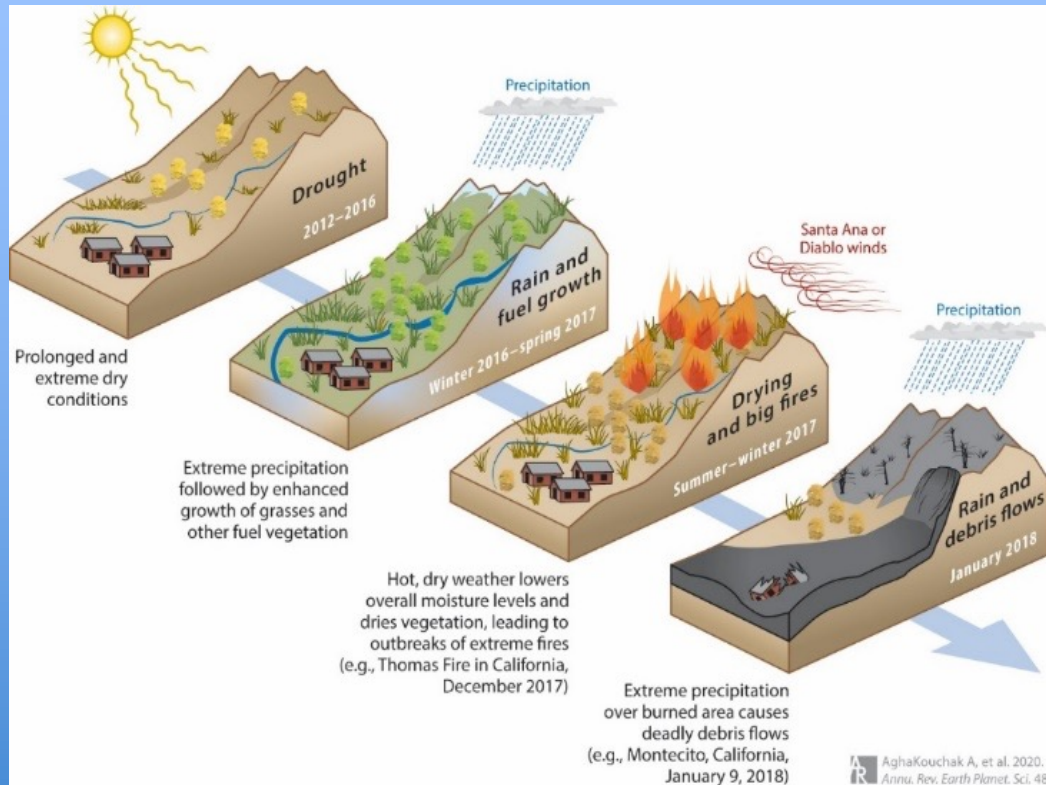
Principal Research Investigators (Name, Institution)

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- *Tirtha Banerjee; University of California, Irvine; Senior Personnel*
- *Diego Thompson; Mississippi State University; Senior Personnel*

Community Partners (Name, Institution)

- *Kathy Lester; Office of Specialized Services; Sacramento Police Department*
- *Daniel Bowers; Emergency Management; City of Sacramento*
- *Dale Carnathan; Emergency Services; Lake County Sheriff's Office*
- *Brian Martin; Sheriff, Lake County*

Suggested length: 15(s)

Project Overview

Visual Schematic

Project Vision

- Hone research gaps, questions, and hypotheses related to the risk posed to disadvantaged communities by cascading hazards under a changing climate

- Nurture new integrative and interdisciplinary research collaborations and research capacity-building activities

Suggested length: 30(s)

Project Overview

Use-Inspired Research

Target Problem: Vulnerability of disadvantaged communities to the impacts of wildfire-related cascading hazards under a changing climate

Test Site: Lake County, CA

Community Partners:
Sacramento Police Department
Lake County Sheriff's Office
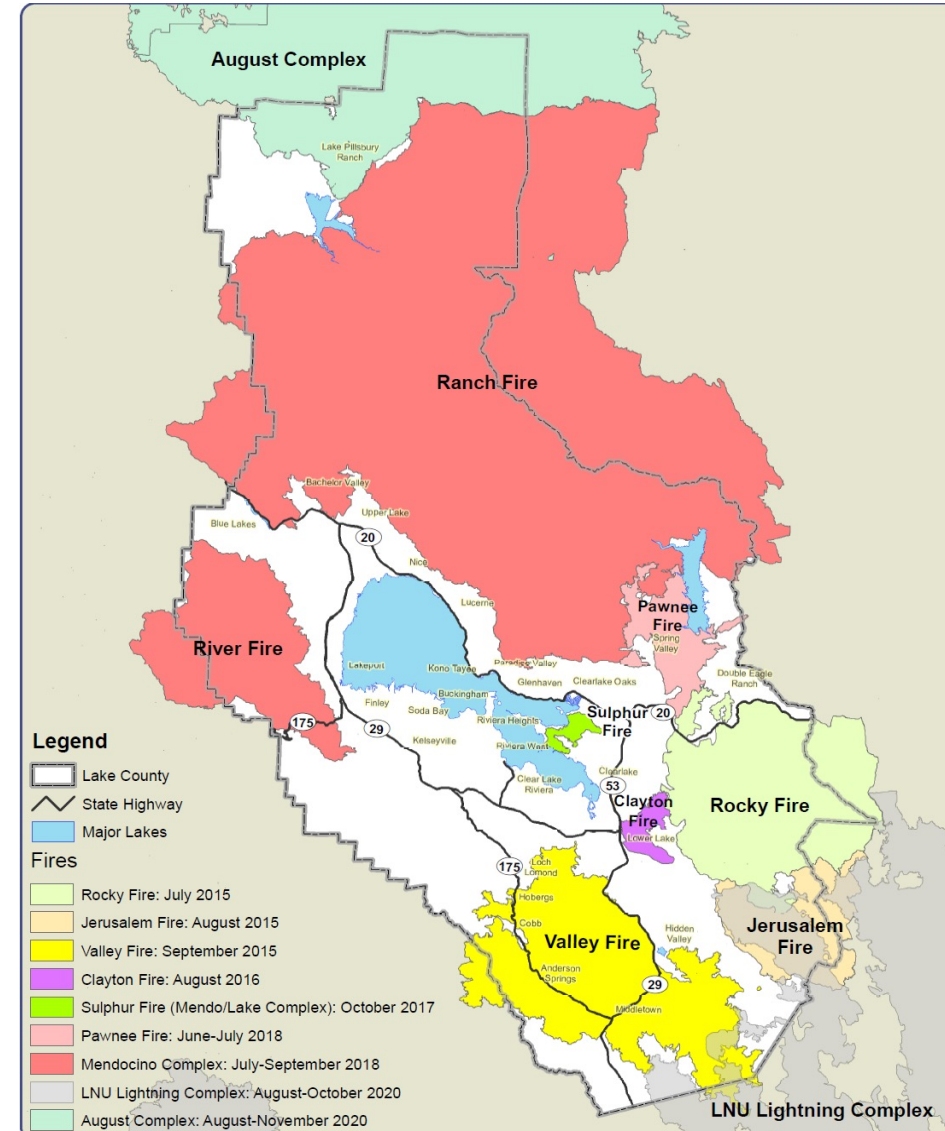Lake County Office of Education

PG Activities

- Investigatie hazard drivers and their interactions
- Identify research needs, existing assets, and key stakeholders
- Conduct focus groups
- Synthesize results of the survey
- Finalize research questions and objectives
- Conduct a 3-day proposal writing meeting
- Work on collaborative publication

Green: completed activities, blue: ongoing, and purple: anticipated activities

Suggested length: 30(s)

Project Update

- Performed bi-weekly and monthly barnstorming meetings with the research team and our community partners
- Identified key research gaps and community needs that we can address related to the risk posed to disadvantaged communities by cascading hazards under a changing climate
- Strengthened our team by adding new members to the research team and community partners
- Formed and conducted focus group with emergency managers
- Submitted an IRG proposal in February 2021

Suggested length: 45(s)

Project Evolution

- *We learned that there are critical gaps about the general public perception and understating about the risks posed by cascading hazards associated with wildfires. The issue is more pronounced in disadvantaged communities. Thus, we added a K-12 education and outreach expert to the team to design and create a place-based curriculum that empowers students to participate in community resilience planning. This will equip local youth, the future leaders of the community, to address the ever-increasing impacts of cascading hazards and climate change. To complement the proposed effort, we plan to work with teachers and students in Lake County school districts.*

- *In our focus group with emergency mangers, we learned that emergency notifications are usually in English and creating multilingual messages is unwieldy and time-consuming. Local agencies also do not have the resources to retain bilingual dispatchers and disaster personnel around the clock to translate the messages about the current events or ongoing risks. We thus plan to develop a real time English/Spanish messaging service to inform rural Hispanic communities about current and on-going risks of cascading hazards. The messaging will be for a broadcast radio and SMS-based Alert system that can broadcast messages in English by Lake County personnel and built-in software will provide capacity to translate the message into Spanish (or another language) in real-time for dissemination immediately after the English version. This will accelerate dissemination of the risk-based information to the large Spanish-speaking population in Lake County.*

Suggested length: 30(s)