

Developing Food Oases in the Urban Food Deserts with Smart Urban Grower Network

1952013

Jejung Lee, Department of Earth and Environmental Sciences, University of Missouri – Kansas City

PG, FY2019

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Community Partners

- **Mike Gawron**, *Cultivate KC*
- **Semra Fetahovic**, *Cultivate KC*
- **Mark Samborski**, *Antioch Urban Growers*
- **Maggie St. John**, *Antioch Urban Growers*
- **Neil Rudisill**, *Ivanhoe Neighborhood Council*
- **Jeff Samborski**, *Missouri Extension*



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University of Missouri

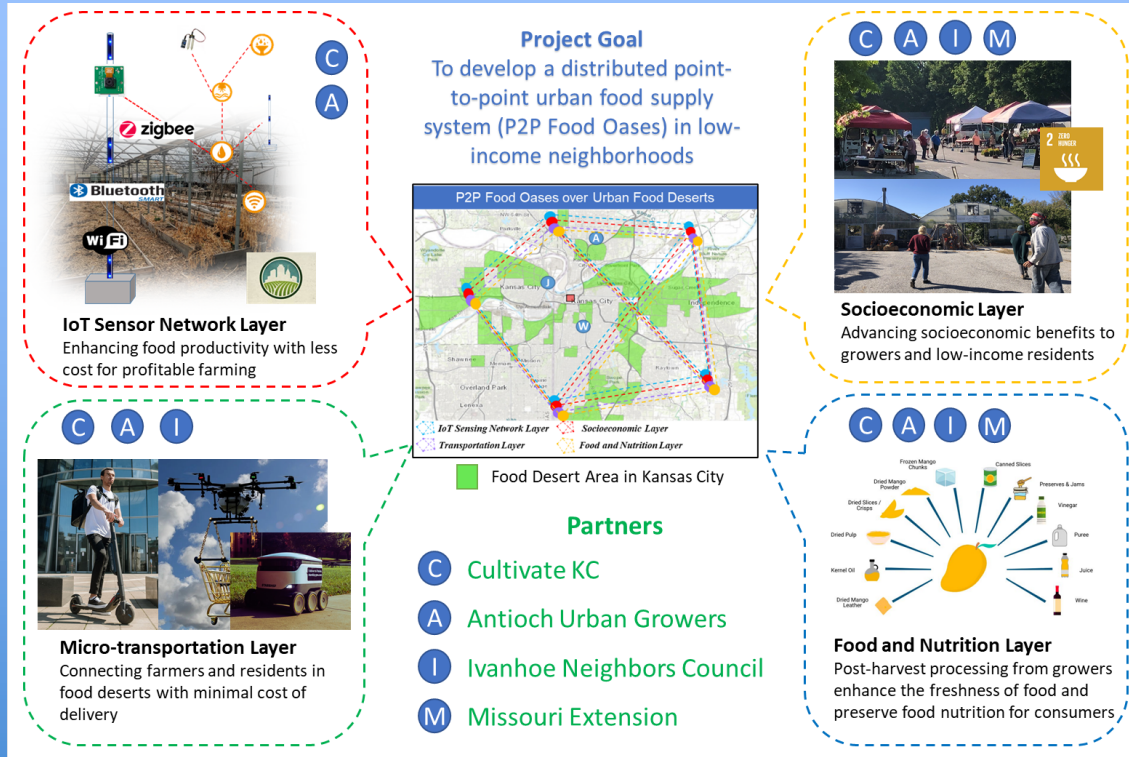


Extension
University of Missouri



Project Overview

Visual Schematic



Project Vision

Vision 1: Convergent Ag System

The parallel layers of IoT sensors, socioeconomic platform, micro-transportation, and food engineering will be converged into the sustainable urban Ag system.

Vision 2: Resilient Food Ecosystem

The P2P Food Oases system will build resilience for food security under climate change, natural disasters, disease outbreaks, and civil conflicts.

Vision 3: Transformative Ag System

The P2P Food Oases system will be transformative to both urban and rural cities with synergetic community engagement and adaptive policy making.

Project Overview

User-Inspired Research

C, A, I

Can IoT-based sensors enhance food productivity with less cost and make farming more profitable?

C, A, I

Can emerging micro-transportation solutions connect farmers and residents in food deserts conveniently and with minimal cost?

C, A, I, M

• Can post-harvest processing from farmers enhance the freshness of food and preserve food nutrition for consumers?



Partners

- C Cultivate KC
- A Antioch Urban Growers
- I Ivanhoe Neighbors Council
- M Missouri Extension

PG Activities

First Workshop
(Oct 2020)

Focus Group
Discussions
(Jan, 2021)

Prototype Model
Development
(Mar - May, 2021)

Residents
Interview
(Mar - Apr, 2021)

Stakeholder
Training and Data
Collection
(Jun - Aug, 2021)

Second
Workshop
(Sep, 2021)

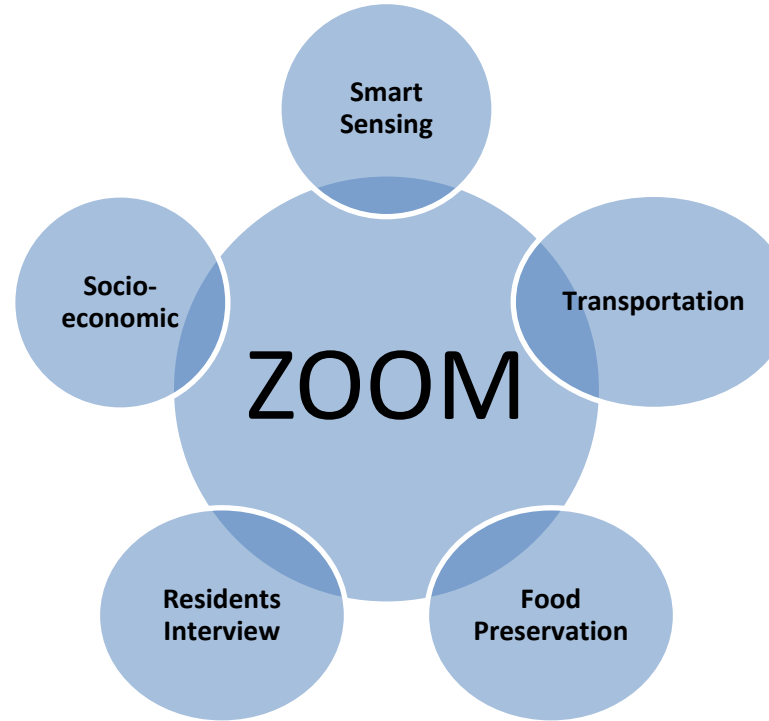
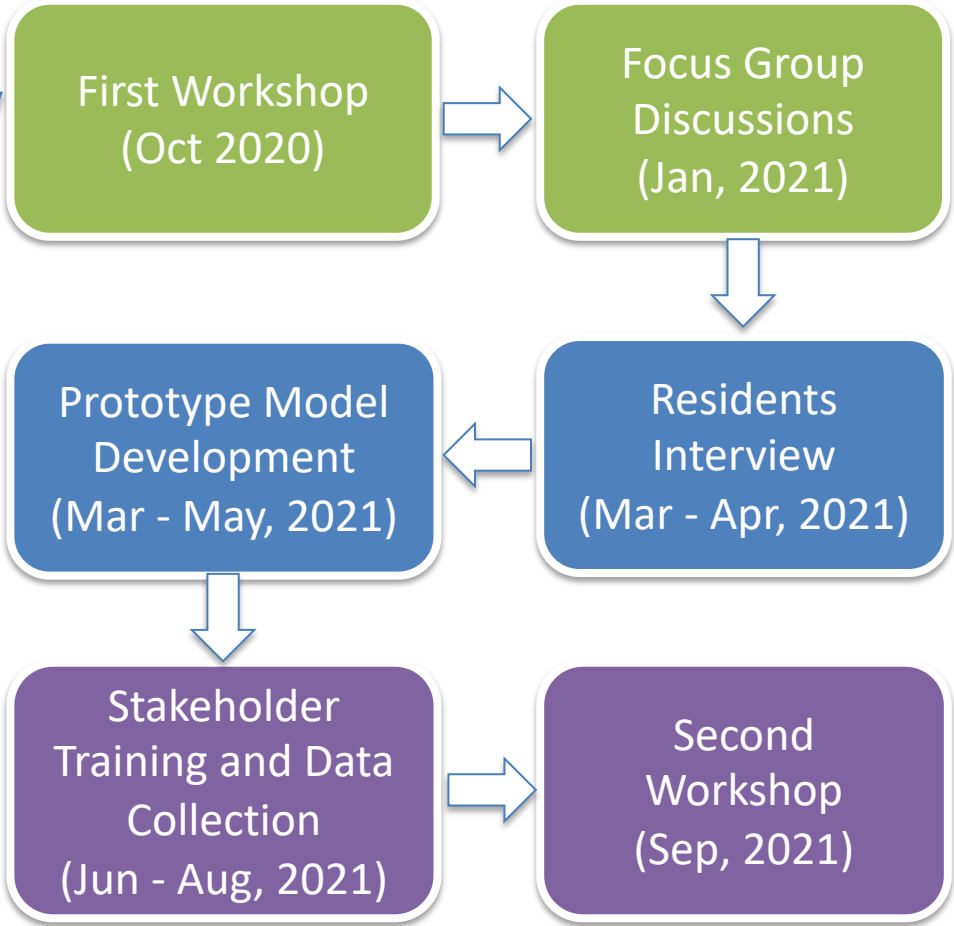
Project Update



Westport Farm Visit



Kanbe's Market Visit

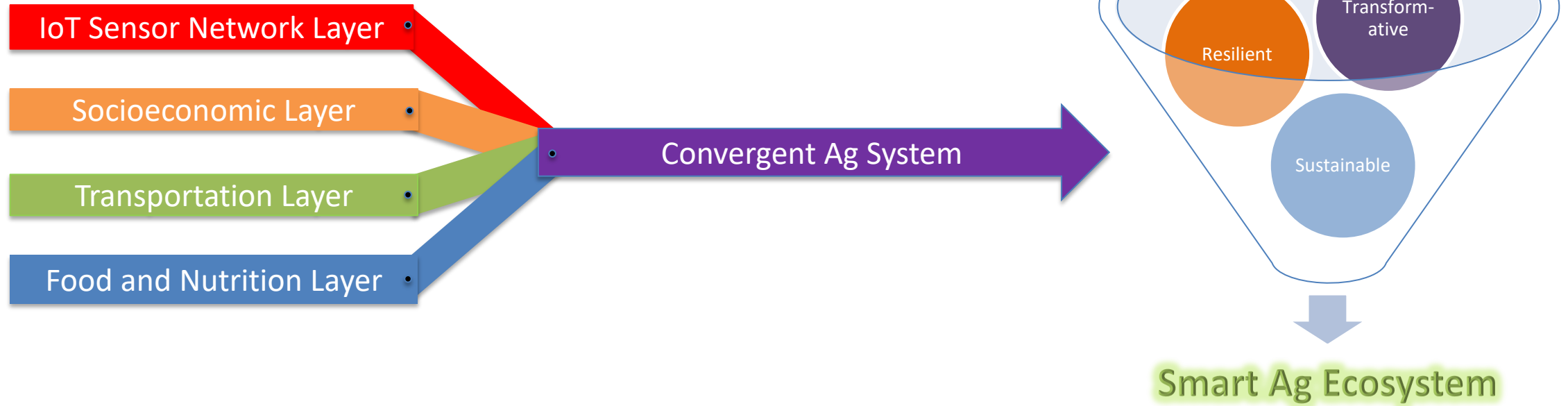


Strict Guidelines



IRB

Project Evolution



From Transportation Focus Group Discussion

*"We learned that most food producers currently use box trucks or vans to transport food. One participant in the focus group noted that **their vehicle choice may depend on food demand**. Some participants also mentioned that the ability to transport food is greatly dependent on refrigeration of the transport vehicle."*

From Socioeconomic Focus Group Discussion

"Participant tries to stay out of grocery stores, instead using a delivery service (Imperfect Foods). This particular delivery service qualifies for a 30% discount for those who qualify for assistance programs like WIC and SNAP. Most delivery services don't have any assistance programs available. One participant had a young child and didn't feel comfortable physically going to the grocery store due to the pandemic."

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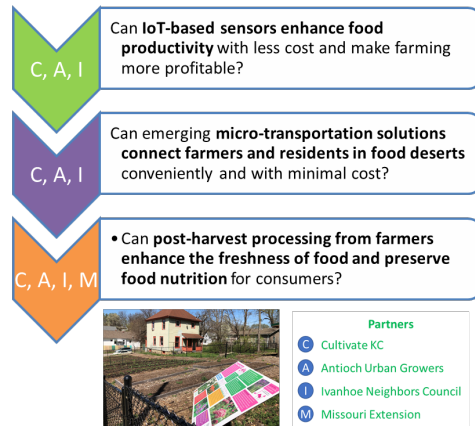
Vision 2: Resilient Food Ecosystem

The P2P Food Oases system will be built to sustain and recover from food emergencies caused by natural disasters, disease outbreaks, and civil conflicts.

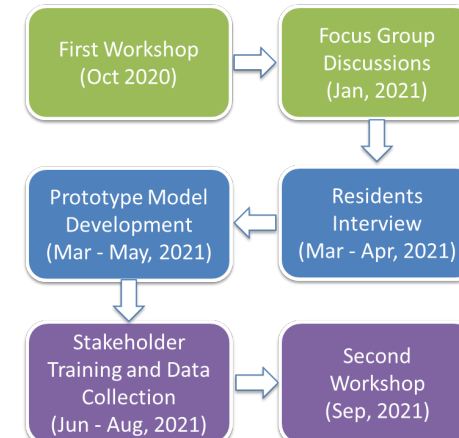
Vision 3: Transformative Ag System

The P2P Food Oases system will be transformative to both urban and rural cities with synergetic community engagement and adaptive policy making.

User-Inspired Research



PG Activities



Please organize the contents of slides (2) and (3) as a quad-chart using the template below. The quad chart should not be included in your lightning talks but should be submitted to NSF S&CC through an upload link that will be provided in the coming weeks.