

DESIGN & OPPORTUNITY ANALYSIS OF SUSTAINABLE URBAN FARM + FOOD PANTRY PROTOTYPE

ILLINOIS INSTITUTE
OF TECHNOLOGY 

I P R O

It takes a team!

INTERPROFESSIONAL
PROJECTS PROGRAM

In Conjunction with Northern Illinois Food Bank and Greater Chicago Food Depository
(Not Sponsors)

Faculty Advisor: Andy Metter

CONTENTS

Abstract	3
Food Production:.....	3
Food Distribution Topology:	3
Scalability:	3
Team Information	4
Team Purpose	4
Team Objectives	4
Background.....	4
History	4
Current Issues.....	4
Team Values Statement	5
Desired Behavior	5
Conflict Resolution	5
Work Breakdown Structure	6
Problem Solving Process.....	6
Team Structure	6
Expected results	7
Deliverables	7
Potential Obstacles to Project Success	7
Budget.....	7
Designation of Roles	7
Appendix A	8
Appendix B.....	9

ABSTRACT

Most of the existing large scale urban food depositories / pantries are based on a model of food production and distribution which has not changed in the last forty years. It is essentially the same model used by large private grocery chains, involving off-site food acquisition (either through production or donation) and dissemination to large distribution centers. In some cases, these distribution centers are then accessed by either individuals or organizations which truck the goods to smaller, local urban distribution points. In other cases, patrons are required to visit the large facility, which it typically in a less accessible location.

Moving forward, this model will be unsustainable and requires rethinking and redesign, including food production techniques, locations, and more innovative, mobile, and finer-grained distribution strategies.

This IPRO proposes to examine this issue, through the design of a prototype urban farm / food pantry which will examine design options with regard to three issues:

1. Food production
2. Food distribution
3. Scalability

FOOD PRODUCTION:

From technical issues associated with food production, such as hydroponics, inflatable greenhouses, waste heat reuse, and recycled buildings for farm use to soil remediation. We will examine technical constraints on urban farming proposals

FOOD DISTRIBUTION TOPOLOGY:

From fixed sites such as urban infill lots, to mobile distribution centers via existing urban network systems such as the CTA, alternative, finer-grained distribution networks will be explored.

SCALABILITY:

From vacant infill lot, to corner urban condition, to the recycling of existing building stock, to entire City-wide infrastructural systems, such as median farm boulevards, the scalability of these proposals will be explored.

The final IPRO product will be a prototype urban farm/ food pantry design which will be serviceable and sustainable for an urban population, and flexible enough to adapt to local demographics and needs.

TEAM INFORMATION

The IPRO team roster along with each individual's strengths, skills, and expectations can be found in appendices A & B.

TEAM PURPOSE

I PRO 315 will work together to leverage existing rail, water, and roadway systems, infrastructure and networks to help efficiently distribute food from the bank to the food pantry.

TEAM OBJECTIVES

- Make food more accessible to the hungry
- Promote more equitable distribution of food
- Create sustainable urban farms
- Utilize less energy in per pound per person in poverty
- Explore the physical requirements of the existing infrastructure requirements
- Explore model of food pantry
- Investigate crossovers/nodes between transportation networks
- Maximize efficiency by leveraging system overlap and delivery methods between systems

BACKGROUND

HISTORY

In 1978, Tom O'Connell collaborated with Robert W. Strube, Sr., Father Philip Marquard, Gertrude Snodgrass, Ann Connors and Ed Sunshine to set up a food bank called the Greater Chicago Food Depository. The City of Chicago provided a start-up grant, and Strube Celery and Vegetable Company donated warehouse space. The Food Depository distributed 471,000 pounds of food from 22 food donors to 85 agencies in its first year of operation.

By 1998, the Food Depository's distribution topped 25 million pounds. In that same year, the food bank founded Chicago's Community Kitchens, a free, 12-week culinary training program for unemployed and underemployed adults. In 2001, the first Producemobile, a farmers' market on wheels, began distributing fresh produce to low-income communities.

Today, the Food Depository distributes 58 million pounds of food, including more than 12.8 million pounds of produce, to 650 pantries, soup kitchens and shelters in Cook County. Nearly 142,000 men, women and children turn to the Food Depository's network each week, and nearly 678,000 people turn to the network annually.

CURRENT ISSUES

According to the Greater Food Depository quadrennial report, hunger in America, 1 in 8 Cook County residents use one of their services (food pantries, soup kitchens, shelters) every year, about 700,000 people annually. Of those, 37% are children, and over 60,000 are under the age of 5.

- Overall, 45 percent of children missed a main meal in their last 24 hours:
- 15 percent of children did not eat breakfast.
- 23 percent of children did not eat lunch.
- 15 percent of children did not eat dinner.

- In no main food group (fruit, vegetables, grains, dairy, proteins) did even half of the children meet the recommended daily allowance (RDA) established by the U.S. Department of Agriculture.
- 7.8 percent of all children met the RDA for both fruit and vegetables.
- Only 0.7 percent met the RDA for all five food groups.
- Overall, food served through the out-of-school program was healthier than that served at home, and out-of-school programs had a significant positive impact on fruit and vegetable consumption.
- 54 percent of the children were food insecure
- 39 percent of the children were food insecure without hunger, meaning that they report reduced quality, variety, or desirability of diet, but little or no indication of reduced food intake.
- Nearly 1 in 6 children were food insecure *with* hunger, meaning that they report multiple indications of disrupted eating patterns and reduced food intake.

Clearly, immediate attention by accomplished professionals is required.

TEAM VALUES STATEMENT

DESIRED BEHAVIOR

We believe that there are essential values that must be agreed upon to effectively work together as a team.

- Collaboration with the Greater Chicago Food Depository, Northern Illinois Food Bank, IPRO leaders our overall team and sub-groups.
- Communication with each other to share information, express ideas and concerns and to listen to others.
- Working effectively toward our team and sub-groups goals.
- Mutual respect
- Accountability

CONFLICT RESOLUTION

When a conflict arises, our team has agreed to draw from a relational model by:

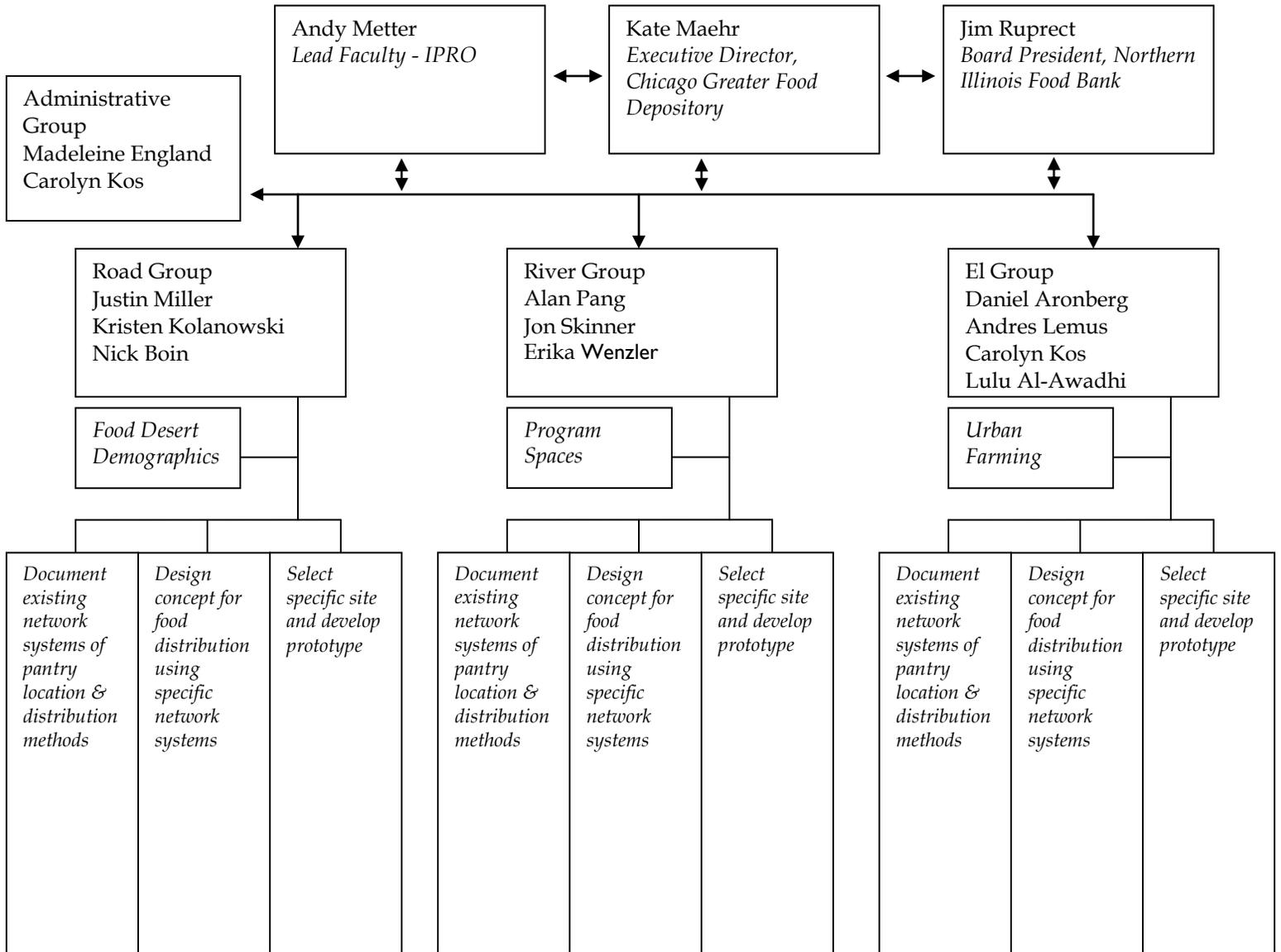
- Understanding your own biases and triggers
- Bring up problems as they arise
- Using active listening skills by restating what you have heard
- Express your concerns using facts and "I" statements
- Managing the conversation with patience and respect
- Arranging a solution that works for the team

WORK BREAKDOWN STRUCTURE

PROBLEM SOLVING PROCESS

Our team has decided to break into 3 sub-groups, each focusing on 2 different aspects of the problem. We come together as a group twice a week to report and update the entire group on progress made.

TEAM STRUCTURE



EXPECTED RESULTS

DELIVERABLES

A prototype design for an urban farm / pantry which will be documents in a user manual, outlining prototype options, dependant on certain variables, including demographic profile of the area, physical site constraints and programmatic scale of the desired service area.

POTENTIAL OBSTACLES TO PROJECT SUCCESS

A clear project manager has not surfaced. This may cause problems when it comes time for decision making and responsibilities. A lack of general knowledge of the food bank and pantry system needed to be understood before the project could get underway; this makes the delivery dates of the projects solution difficult to deliver on time. Scope creep is a major concern.

BUDGET

Activity	Cost	Description
Food	\$100	Random afternoon snacks for sustenance
Print / Supplies	\$100	Costs for printed materials
Transportation	\$10	Trip to visit GCFD
Total	\$210	

DESIGNATION OF ROLES

iGroups Moderator: Madeleine England will be responsible for ensuring the the IPRO deliverables are completed on time and uploaded. Carolyn Kos will serve as backup.

Agenda Maker: Andres Lemus and Alan Pang will jointly make the weekly agendas

Time Keeper: Alan Pang will be the time keeper

Minutes Taker: Carolyn Kos will be responsible for taking minutes and collecting minutes from individual and group meetings

APPENDIX A

IPRO 315 – Roster		
Team Member	Major	Contact Info
Al-Awadhi, Lulu	Architecture	██████████ luwaloo@gmail.com lalawad@iit.edu
Aronberg, Daniel	Architecture	██████████ daronber@iit.edu
Boin, Nicholas	Civil Engineering specializing in environmental engineering	NBoin@iit.edu
England, Madeleine	Information Technology Management, specializing in web development, minor in psychology	██████████ mengland@iit.edu
Kolanowski, Kristen	Architecture	██████████ kkolanow@iit.edu
Kos, Carolyn	Biomedical Engineer	██████████ ckos2@iit.edu carolynkos@gmail.com
Lemus, Andres	Architecture	alemus@iit.edu
Miller, Justin	Architecture	██████████ jmille28@iit.edu
Pang, Alan	Architecture	██████████ apangl@iit.edu
Skinner, Jonathan	Architecture	jskinne2@iit.edu
Wenzler, Erika	Civil Engineering, minor in entrepreneurship	██████████ EWenzler@iit.edu erikawenzler@gmail.com

APPENDIX B

IPRO 315 –Team Information				
Team Member	Strengths	Weaknesses	Knowledge/Skills to Develop	Expectation for the Project
Al-Awadhi, Lulu	Graphic design. communication, problem solving, Design	Poor time management	Well rounded in computer graphics software, need to improve on website design software	To find a successful and efficient method of food distribution. A way that eases the process for both the distributors and the receivers
Aronberg, Daniel	seeing the big picture, graphics, hands on	focus, business modeling	Gardening/horticulture, CTA transportation system, research skills	creating a real solution to efficient food distribution in Chicago
Boin, Nicholas	Critical thinker, creative, motivated, not an architecture major, science	Disorganized, sleepy, not good with graphics programs such as photoshop	I would like to develop: Selling my ideas and communication, graphic design	Develop and efficient way of providing food for the hungry
England, Madeleine	Program architect and leader. Executive computer skills, Former board president of a nonprofit. Program development/ marketing, operations leadership, staff training and leadership, community outreach.	Programming, networking systems	Presentation Skills	For all team members to do their best
Kolanowski, Kristen	AutoCAD, communication skills, listening skills, organizational skills	Verbal presentations, expressing my opinion more	Understanding the food distribution system, exploring urban farming, improve project management skills	Strengthen team coordination to make this project successful. Achieve a system of distribution that is effective and serves more people in need.
Kos, Carolyn	Organized, data oriented, broad science background	Not visually oriented	Farming techniques, transportation networks	I expect to collaborate in groups and subgroups about the various aspects of the project. I think communication will be the main barrier in advancing the IPRO project.
Lemus, Andres				
Miller, Justin	Sustainable design			

Pang, Alan	Computer related skills such as AutoCAD, 3ds Max, Adobe Products. Note-taking. Researching. I'm diligent, punctual and organized.	Easily discouraged	Communication and Team Work.	To produce something substantive to help combat hunger in Chicago and the surrounding areas.
Skinner, Jonathan	Computer graphic skills, Organized, Punctual, Diligent	Perfectionist	Need to learn more about food pantries	Create a project with solid content and help the food pantries save money so they can feed more people.
Wenzler, Erika	I am good at math, I am a people person, I have a background in entrepreneurship	I am not artistic in the sense of making PowerPoint and visual aids. Stubborn.	Presentation Skills	I hope to get a feel of what it is like to be given a problem and be able build a framework for an effective solution around it- a real world experience. I am still new to working with students from other majors so I hope to be able to learn about their strengths so we can assign tasks accordingly