An aerial photograph of a city grid, likely New York City, showing a dense network of streets. A prominent green line highlights a specific path or route through the grid. Several buildings are highlighted in yellow, indicating a specific area of interest. The image is partially obscured by a dark grey overlay on the left side, which contains the text.

# Summer 2022 Final Deliverables Review

ENVIRONMENTAL FRONTIERS  
CAMPUS LABS PROJECT

Labs Team: Rory, Will, Izzy, and Asad

8/9/2022



## AGENDA

- **Shut the Sash and Behavior Change Campaigns**
  - **Overview**
  - **Competition Refinement and Methods**
  - **Preliminary Summer 2022 Results**
  - **Promotional Material**
  - **Expansion Plan Deliverable**
  
- **Lab Design Tool**
  - **Overview**
  - **Tool Advancements**
  - **Beta Testing**
  - **Rollout**
  - **Final Deliverables**

# Summer 2022 Behavioral Change Plan Outcomes

1|

Write manual outlining data interpretation for future teams

2|

Refine the Shut the Sash competition and lay out a methodology

3|

Create feedback survey and prepare for distribution

4|

Design promotional materials for greater awareness

5|

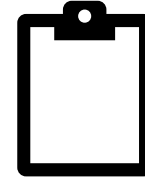
Determine actionable next-steps and make recommendations for expansion

# Competition Refinement



## Fairness

- Met with statistics Master's student, Ander Feistritzer, to refine process
- Implemented rank statistics to winner determination process
- Removing averages and evaluating by the fume hood



## Feedback

- Developed short feedback survey with option to interview
- Currently deciding an incentive for survey completion
- Laying out distribution strategy post-competition

# Shut the Sash Methodology

## Data Collection and Cleaning

- In Excel, refine the data for useability and relevance
- In R, clean data and calculate the winners

## Winner Announcements

- Sending out emails to PIs and printing certificates
- Coordinating a time to deliver prizes

## Prize Distribution

- Ordering Stan's Donuts and delivering them with certificates
- Celebrating winners in newsletter and website announcements
- Sending out feedback survey post-competition

# Winners for Summer 2022 Shut the Sash

## GCIS

- **Justin Jureller** for Biggest Improvement
- **Dmitri Talapin** for Most Consistent Performance
- **Michael D. Hopkins** for Best Overall Performance

## Searle

- **Viresh Rawal** for Biggest Improvement
- **Mark Levin** for Most Consistent Performance
- **Guangbin Dong** for Best Overall Performance

## ERC

- **Matthew Tirrell** for Biggest Improvement
- **Melody Swartz and Jeffrey Hubbell** for Most Consistent Performance
- **Juan de Pablo** for Best Overall Performance

## Promotional Materials

**Win prizes!**

**Reduce emissions!**

All you have to do is shut your sash

Find out more about our competition:

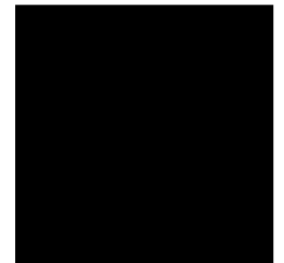


**Win prizes!**

**Reduce emissions!**

All you have to do is shut your sash

Find out more about our competition:



We have created designs to place on fume hoods for the competition, and currently in the process of deciding on whether to create clings, vinyl stickers, or magnets

# Fume Hoods: Shut the Sash!

## What does it mean?

Fume hood sashes are open up to 18 inches in height when actively in use.

Whenever not in use, however, it is best practice to shut the fume hood sash completely.

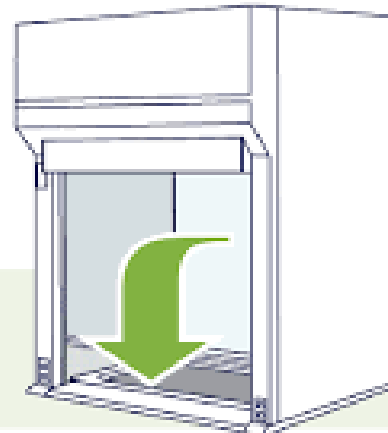
## Competition Updates

### Spring 2022 in GCIS:

- **21% reductions in average sash height overall**
- **27 labs improved their Shut the Sash performance!**

# shut the Sash

An open fume hood will consume as much energy as 3.5 homes. Please fully close the fume hood sash when not in use or at the end of day.



## Why shut the sash?

- Shutting the Sash decreases energy consumption by preventing excess ventilation in idle open fume hoods
- Even when just slightly open, fume hoods use substantial energy
- Fume hoods are the one of the most energy-intensive equipment in our labs



# Behavioral Change Expansion Plan

## Deliverable Outlining Next Steps

- Finalizing report of recommendations
- Acknowledgement of changes, considerations needed before expanding
- Analysis of efficacy of STS versus other campaigns



## Expanding Shut the Sash

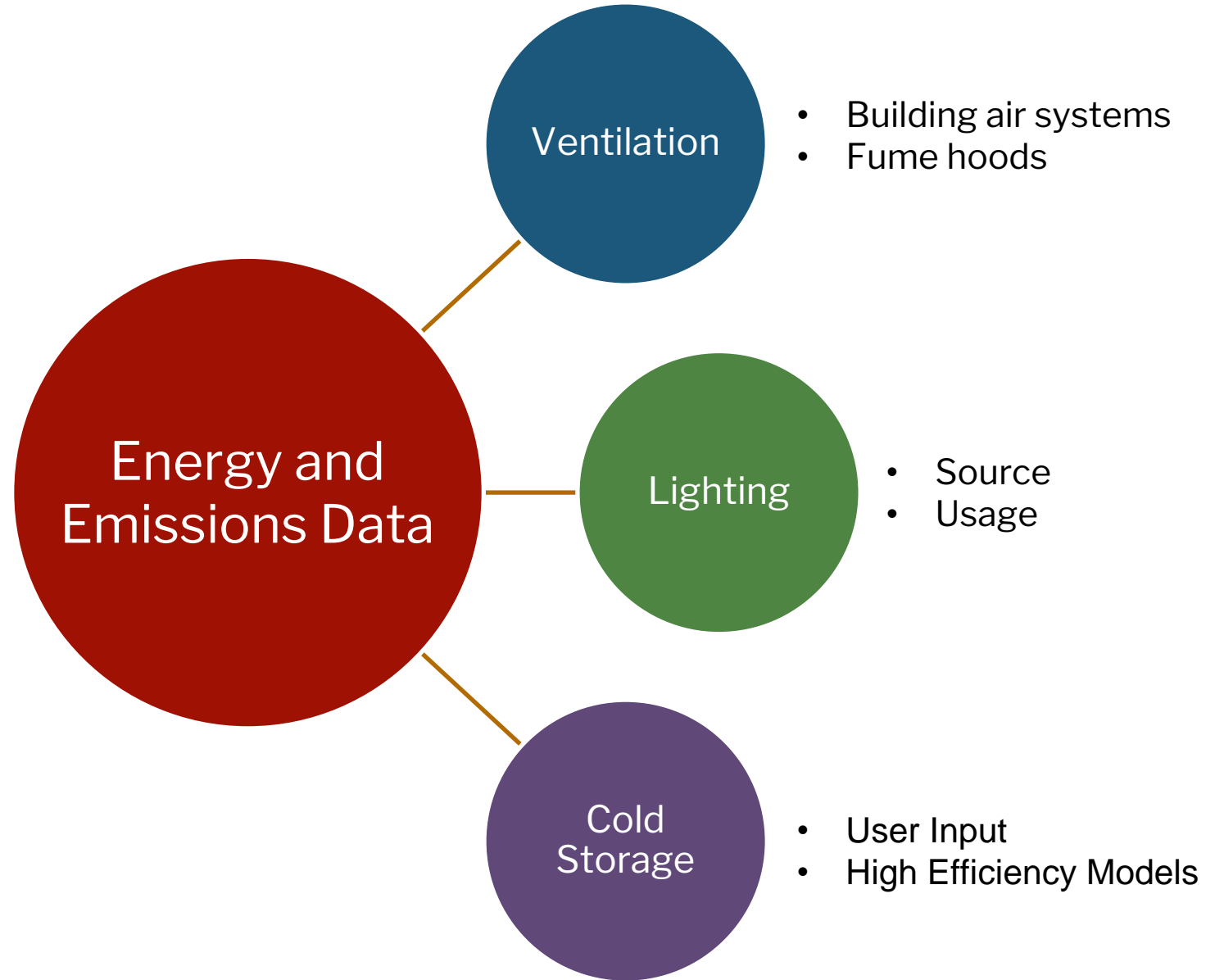
- Expand to all buildings
- Prioritize maximizing energy savings
- Account for remaining issues

## Behavior-Change Beyond STS

- Not all labs have fume hoods
- Office of Sustainability reports: areas of interest
- Equipment and promotional considerations

## Tool Overview

- The Lab Decision Tool helps users model potential lab energy costs and carbon emissions depending on different equipment choices.
- Intended for PI's planning a new lab build-out, replacing equipment, or retrofitting a lab.



# Lab Design Tool: Interface and Functionality

## Changes

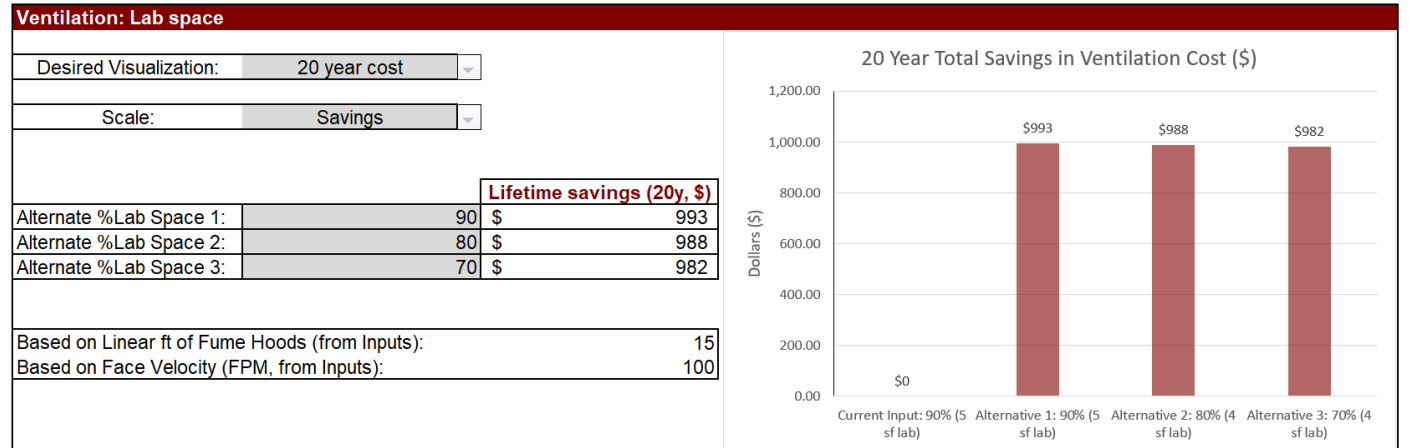
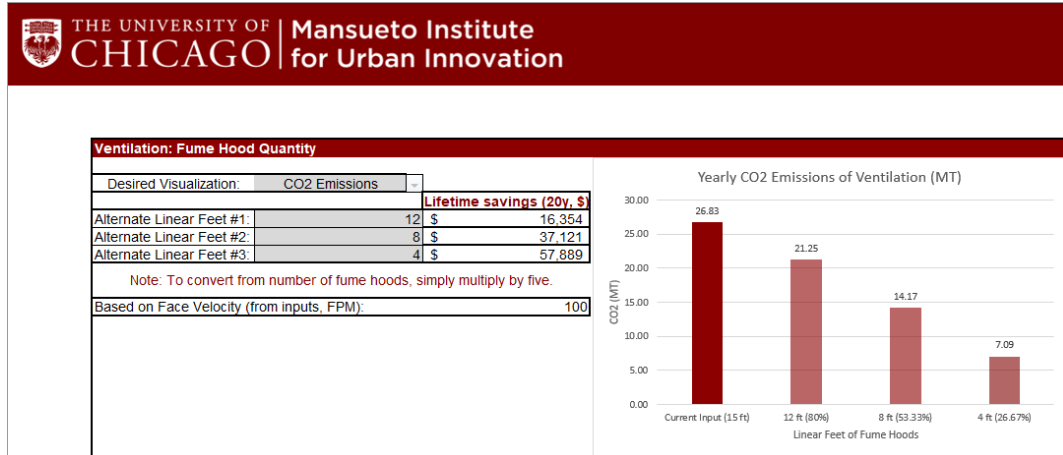
### Modifications

- Functioning Inputs
- Functioning Outputs
- Branding and authorship
- Interinstitutional generality
- Updated data values

### Additions

- Emissions output
- Comprehensive notes
- Bias mitigation
- Contact sheet

## Modified Input and Output Spaces



# Lab Design Tool: Beta Testing

## Preparations:

- Google Forms Survey
- Email Instructions
- Qualitative Questions
- 1-1 Presentation

Tom Deal

Jim Passolano

Brain Bozell & James Murphy

NREL

Grumman Butkus

## Results:

- Updated tool & manual
- Documented ideas for future



Ease of Use



Relevancy

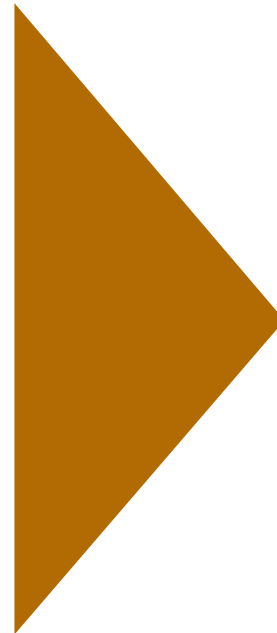


Time

# Lab Decision Tool: Rollout Strategy

## UChicago

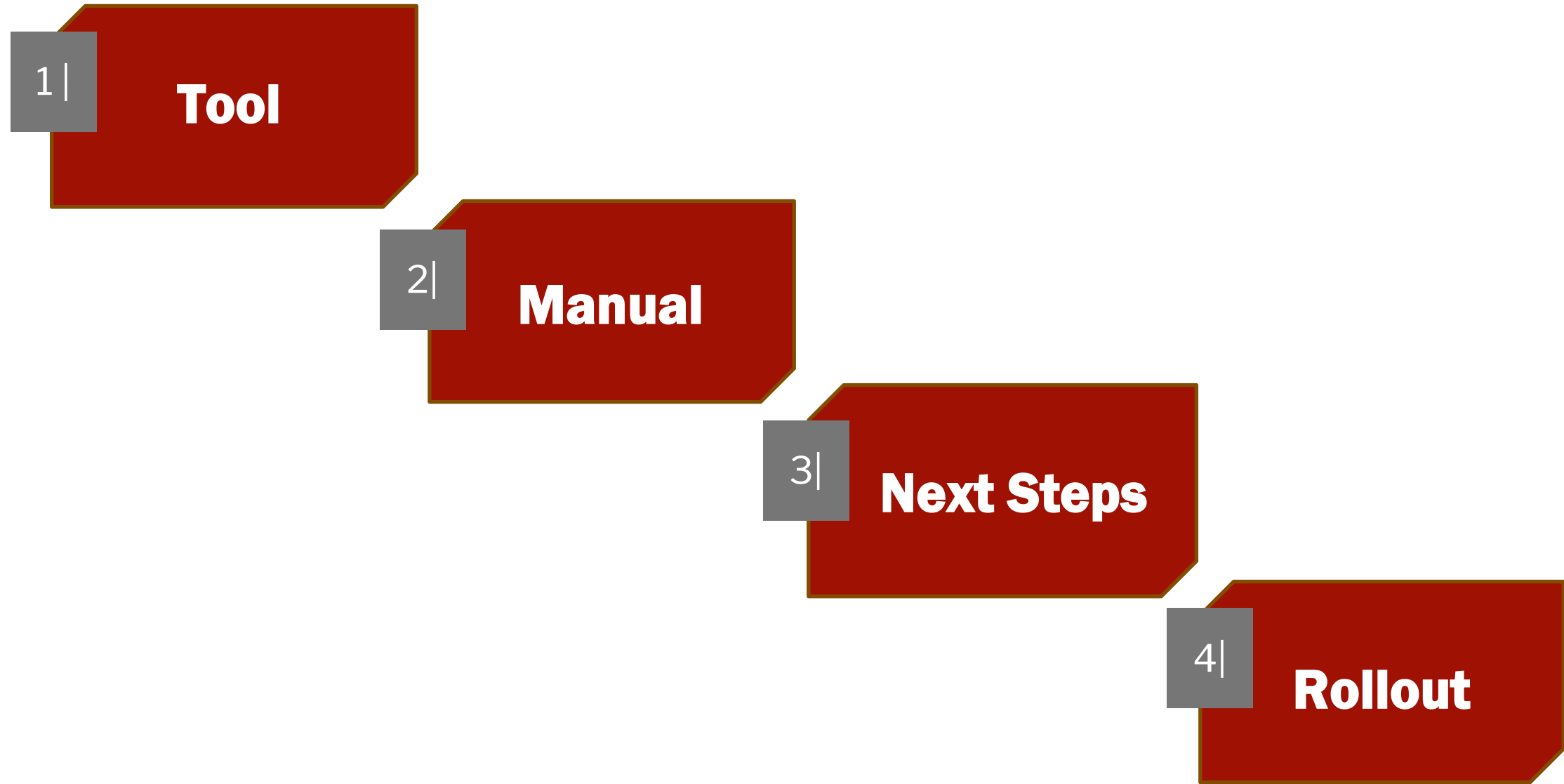
- Upload to website
  - Live in one spot
  - Reference on relevant pages
- Introduce to users
  - Email PIs and FS staff
  - Host a webinar
- Conduct a Case Study
  - Interviews, data collection
  - Post article



## Public

- NREL
  - Smart Labs Toolkit website
  - Webinar for their network
- Ivy+ Sustainability Consortium
  - Annual meeting
  - Encourage upload
- I<sup>2</sup>SL
  - Great Lake Chapter
  - National Conference

# Lab Design Tool Final Deliverables



## Professional Development Goals

**Environmental  
Research**

**Data Analysis**

**Communication**

**Campaign Design**

## Acknowledgements

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**Additional Contributors:** James Passolano, Tom Deal, Joe Kanabrocki, Sa-Lin Bernstein NREL, Grumman Butkus, James Murphy, Anders Feistritz, Ryan Hoff, Art Del Muro, Scott DeBlaze, Erin Adams, Jennifer Robles, Paul Julson



An aerial photograph of a city grid, likely New York City, showing a dense pattern of streets and buildings. A dark blue rectangular overlay covers the left portion of the image. In the center of the grid, a cluster of buildings is highlighted in a bright yellow color. A green line is drawn across the grid, extending from the bottom left towards the center. The right side of the image shows a waterfront area with some greenery and white structures.

**Thank You!**

Questions?