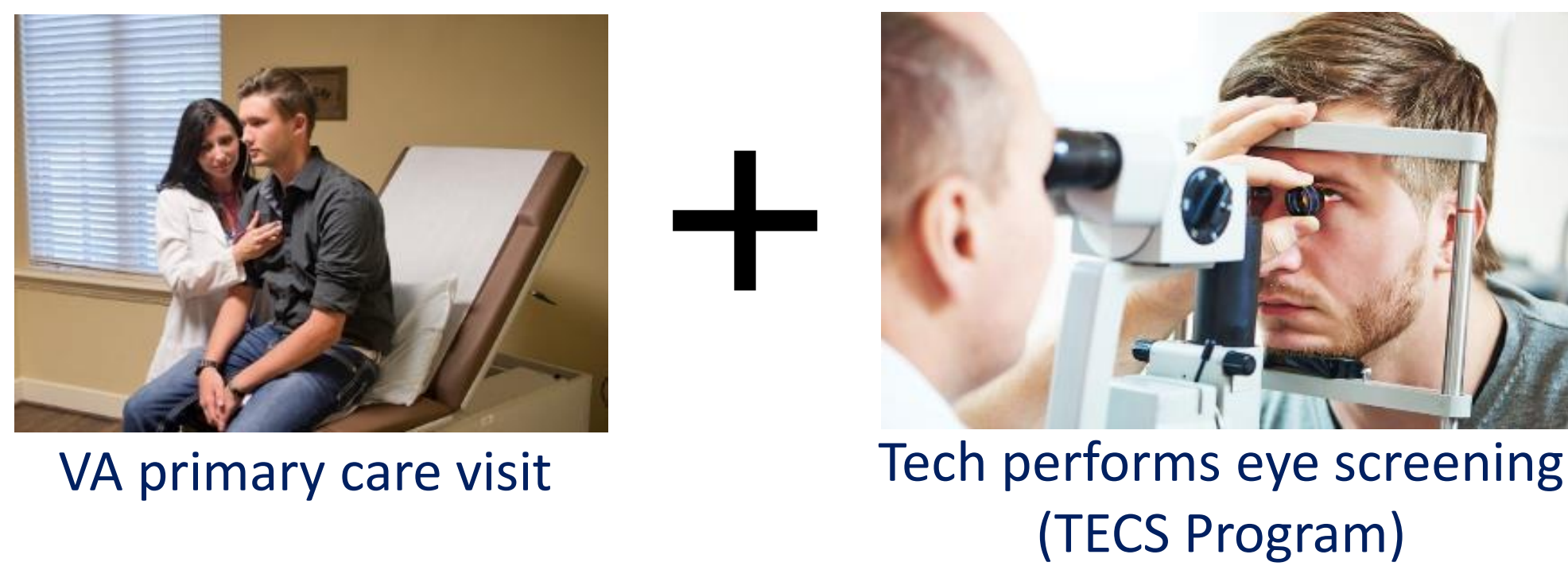


## The Problem

Veterans often use the VA for eye care, but may face barriers to care, including:



Technology-based Eye Care Services (TECS) can help reduce barriers:



# Using Operations Research to Improve Veteran Access to Eye Care

Matthew Levenson, Adam VanDeusen, Prof. Amy Cohn, Dr. April Maa

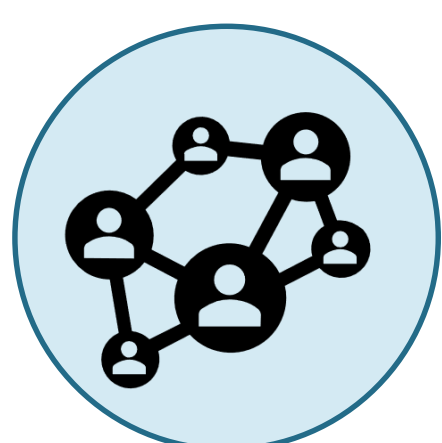
## Our Approach



Develop models to optimize placement of new TECS locations



Design tools to enable VA decision-makers to use these models in practice



More broadly, demonstrate how systems engineering can be used to improve access to care

## Models

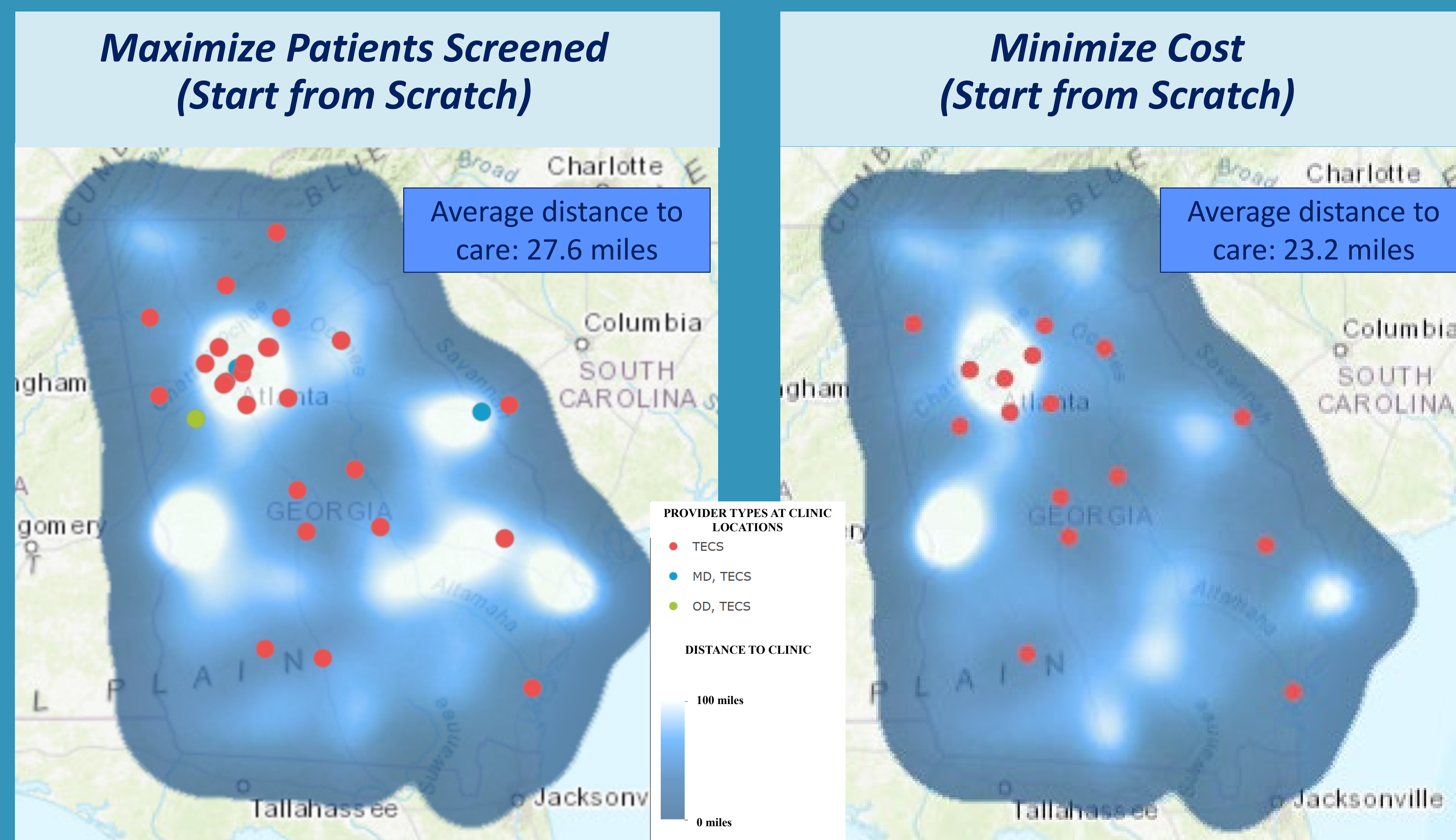
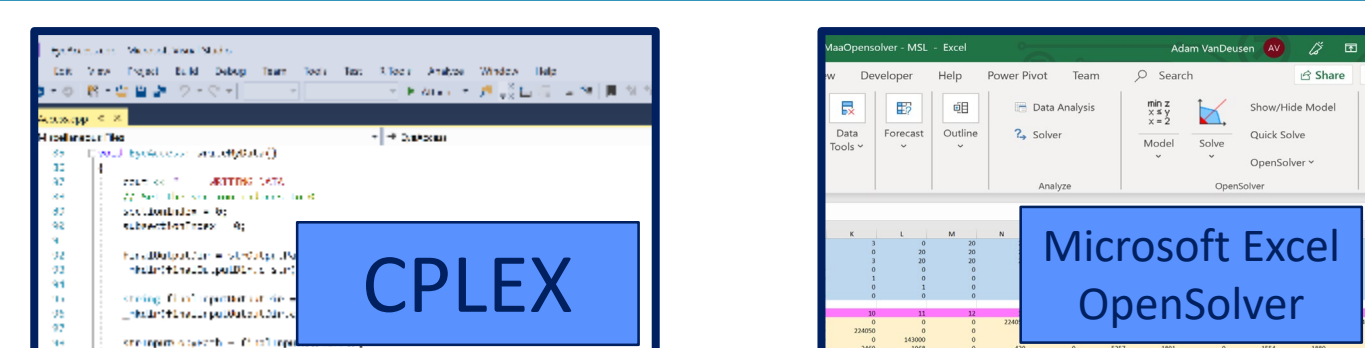
Model A: Maximize number of patients screened

Model B: Minimize cost

### Constraints:

- Fixed patient population to be screened
- Finite provider capacity
- Upper bound on distance for patients to travel
- Lower bound on percent of patients to be screened from each zip code
- Finite budget (Model A only)
- Lower bound on number of patients to be screened (Model B only)

Implement using:



**M** | CHEPS  
CENTER FOR HEALTHCARE  
ENGINEERING & PATIENT SAFETY



## Results

	Model A: Maximize Patients Screened		Model B: Minimize Cost	
	Baseline Providers*	Start from Scratch	Baseline Providers*	Start from Scratch
Patients Screened	86,340	91,577	20,371	20,160
Average Driving Distance (miles)	15.8	27.6	21.9	23.2
Total Cost	\$24.0M	\$25.0 M	\$7.0 M	\$5.3 M
Per Patient Cost	\$277	\$273	\$329	\$266

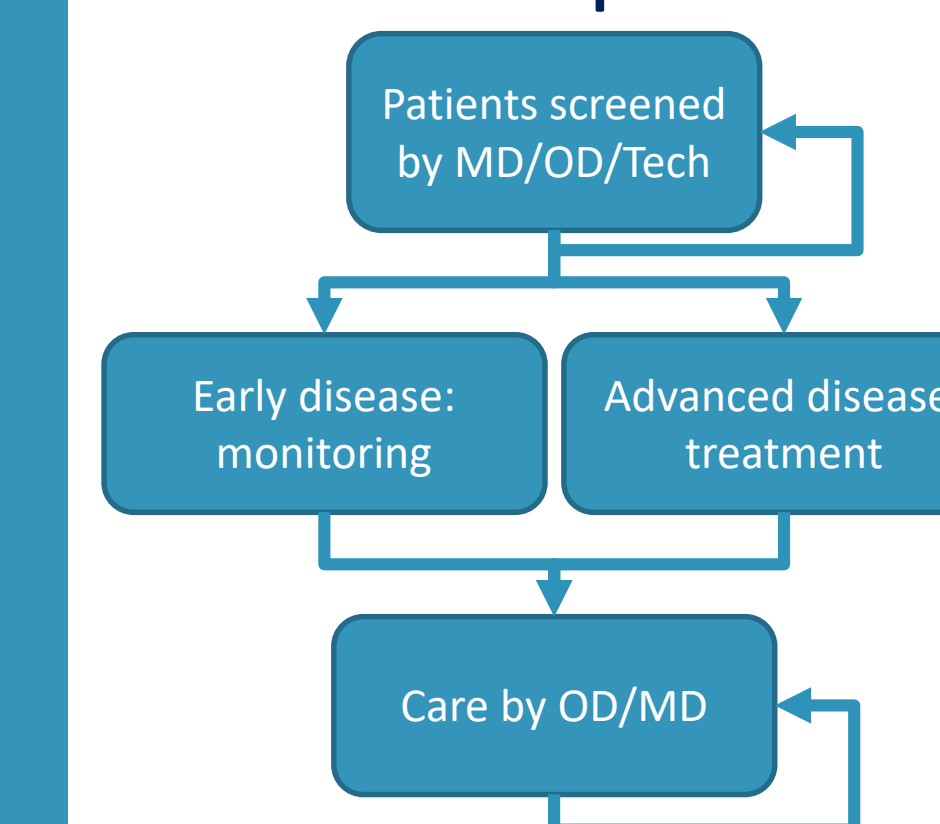
\*Baseline providers: requires current eye care providers at the VA to stay in the same location

### Constraints

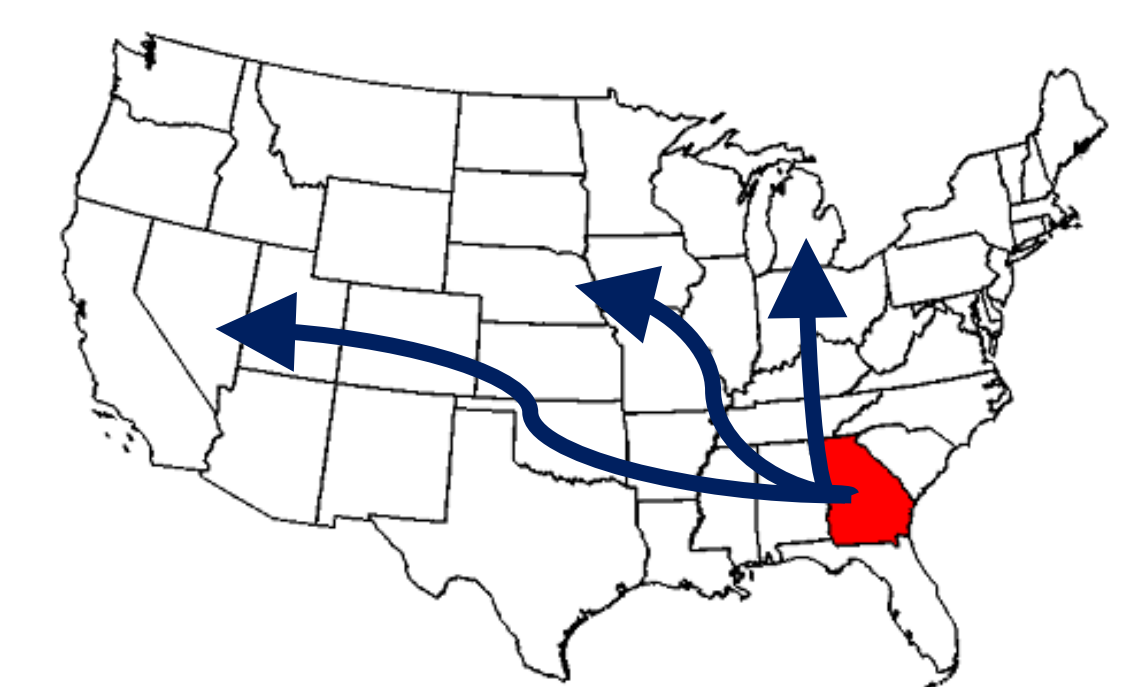
- Max. travel distance: 100 miles
- Min % patients screened per zip code: 10%
- Budget (Model A): \$25M
- Minimum patients screened (Model B): 20,000

## What's next?

Incorporate follow-up care



Expand model to other states



## Acknowledgements



Lea Harris, Jiaqi Lei, Erin Mitchell, Carolyn Wu, and all prior CHEPS students who have contributed to this work!