

**MICHIGAN STATE**  

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**U N I V E R S I T Y**

# Alpha Presentation

## Patient Service Delivery Planning

### The Capstone Experience

Team Spectrum Health

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*From Students...  
...to Professionals*

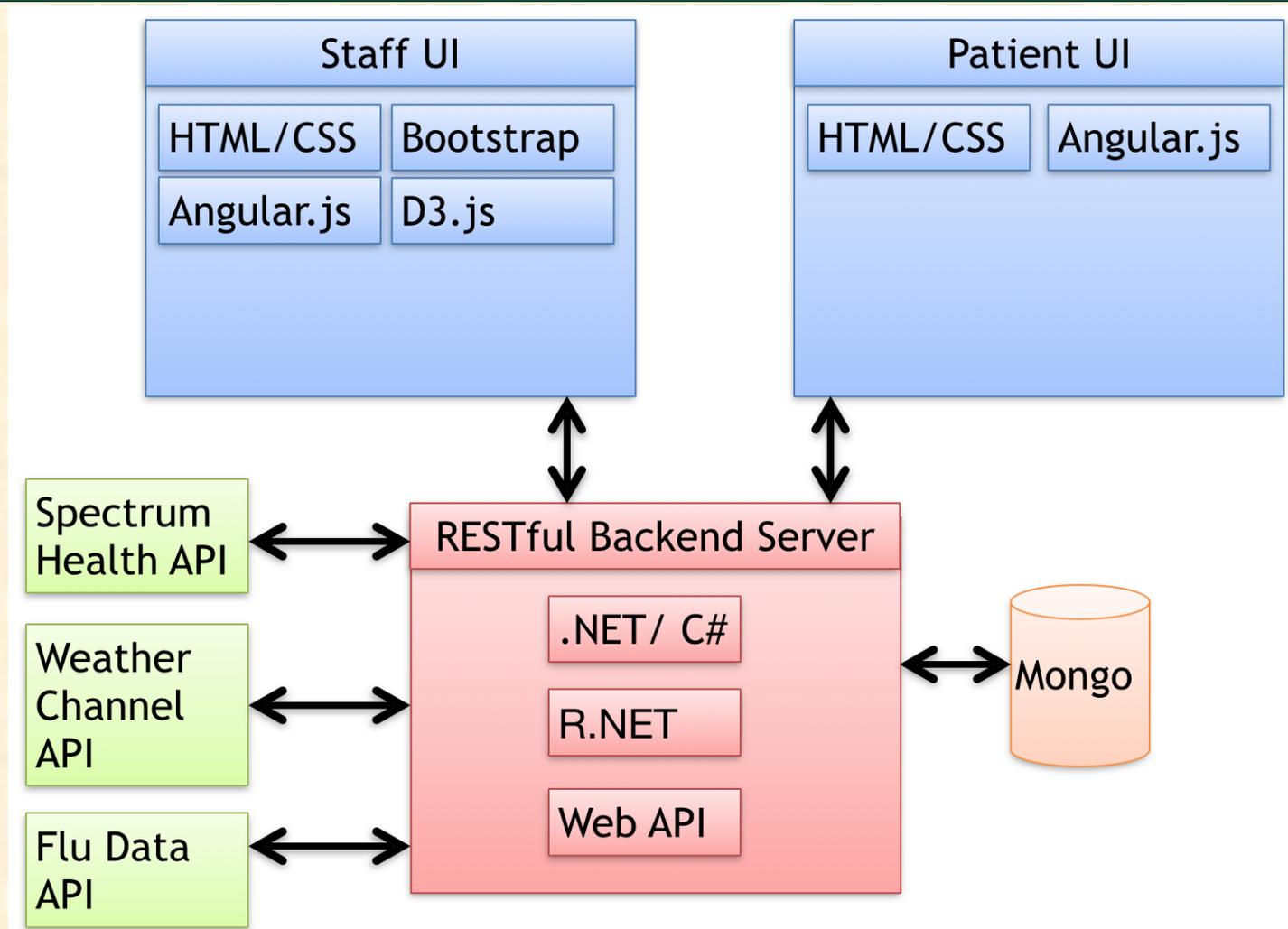
# Project Overview

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- Allows Spectrum Health to provide optimal care by predicting staff needs
- Allows patients to find the facility with the shortest estimated treatment time
- Predictions are based on
  - Past Data
  - Flu Data
  - Weather forecasts

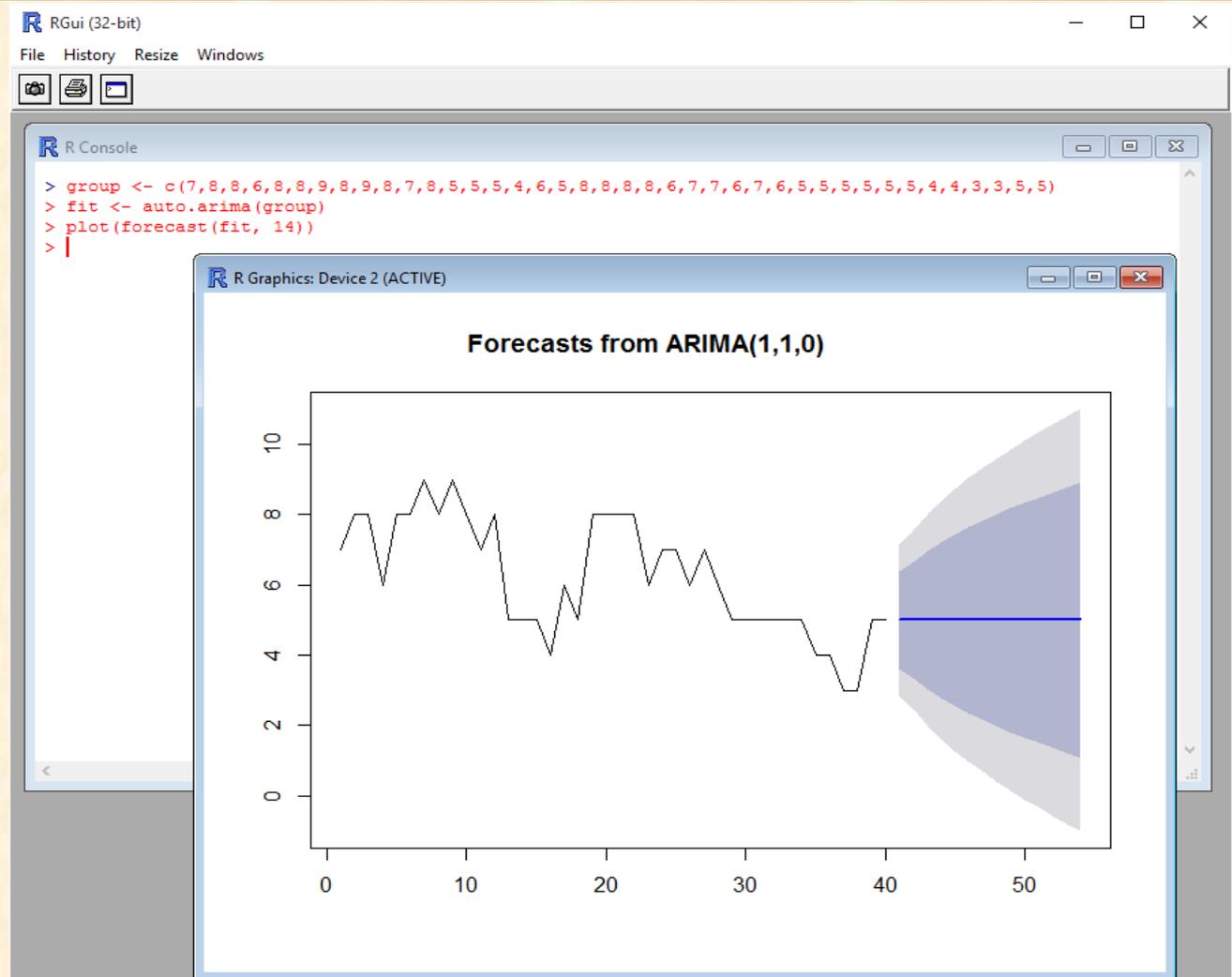


# System Architecture



# Forecast in R

- Prediction of the patient traffic via the “auto regressive moving average model”
- Advised by MSU statistics department



# The Patient Interface

The interface is titled "SPECTRUM HEALTH Urgent Care" and is in "Map View".

**Recommended:**

- South Pavilion Urgent Care**  
416.391.8242  
4 miles away  
0 patients waiting per provider

**Nearest:**

- Zeeland Community Hospital Urgent Care**  
416.773.4644  
0.4 miles away  
11 patients waiting per provider

**Calendar View (Monday 19 to Thursday 22):**

Time	Monday 19	Tuesday 20	Wednesday 21	Thursday 22
8:00 am -	5			
9:00 am -	4			
10:00 am -	7			
11:00 am -	2			
Now -	1			

# The Patient Interface

map view

**Recommended**

South Pavilion Urgent Care  
616.391.8242

4 miles away

0 patients waiting per provider

**Nearest**

Zealand Community Hospital Urgent Care  
616.772.4644

0.4 miles away

11 patients waiting per provider

Show all

Hide

South Pavilion Urgent Care  
616.391.8242

4 miles away

0 patients waiting per provider

Zealand Community Hospital Urgent Care  
616.772.4644

0.4 miles away

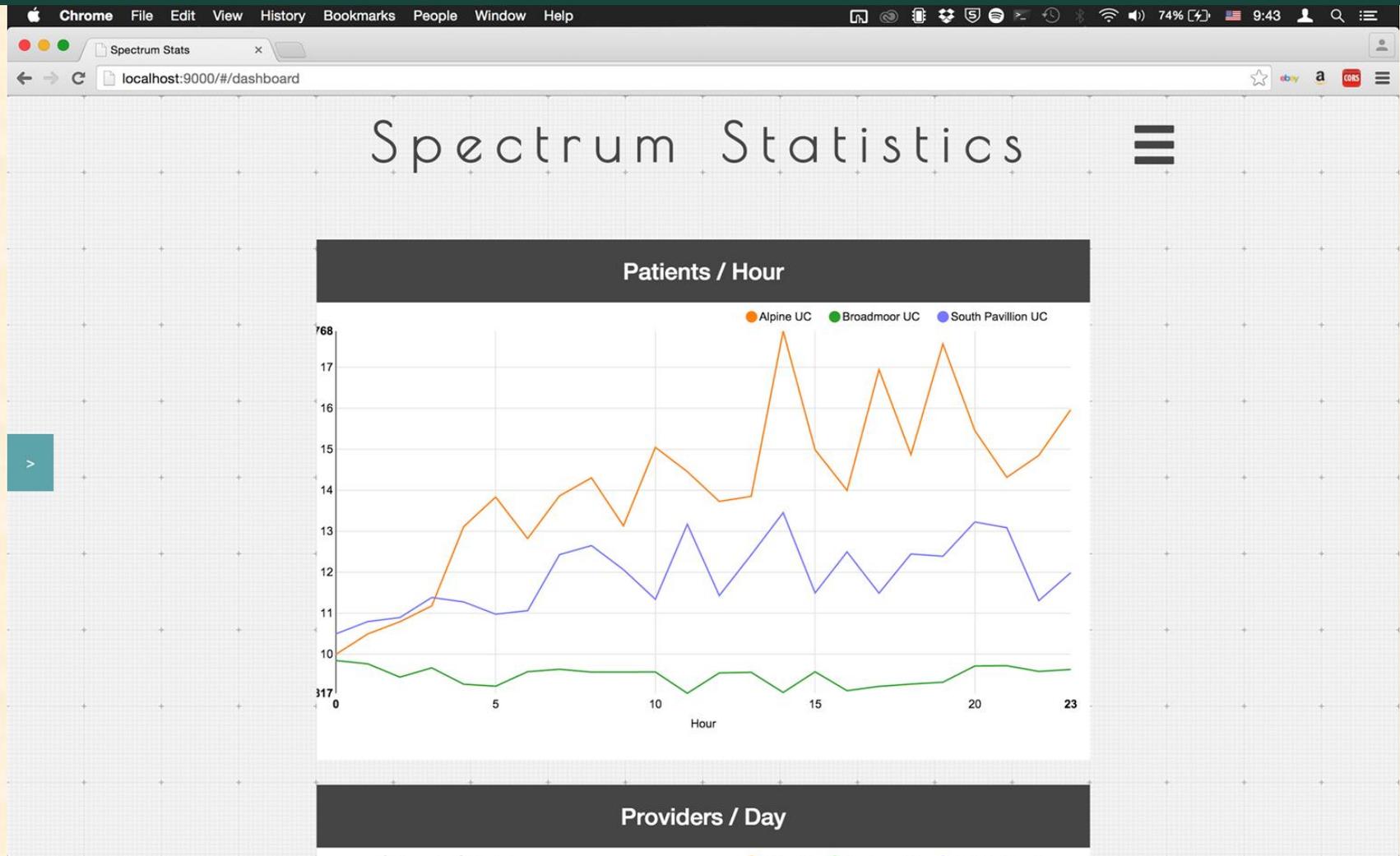
11 patients waiting per provider

Broadmoor Urgent Care  
616.391.8020

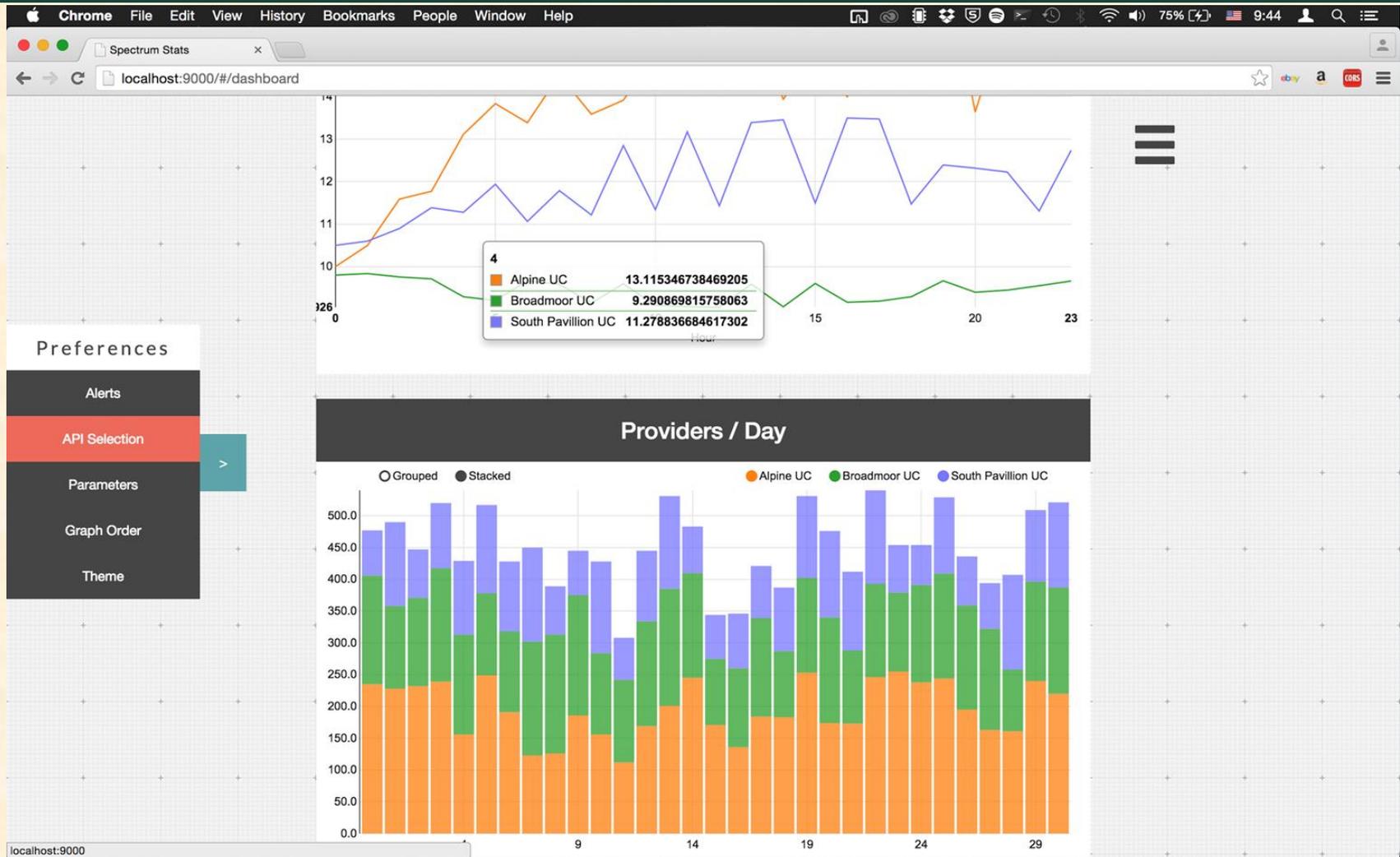
4.7 miles away



# The Staff Interface



# The Staff Interface



# What's left to do?

- Patient UI
  - Fetch and utilize more data from the back end
  - Display the user's distances to each facility
- Staff UI
  - Implement preferences and responsivity
  - Utilize multiple graphs
- Backend
  - Use existing data for future predictions
  - Tweak performance in several areas
  - Fetch and store other public APIs

