

F&S Project meeting
Crowd Management for Quad Day
April 6, 2020

"DeLorenzo, Stacey" <sdeloren@illinois.edu>
"Lee-Olukoya, Eugena" <golukoya@illinois.edu>
"Matthews, Janett" <janett@illinois.edu>
"Li, Weichen" <wl17@illinois.edu>
"Ouyang, Yanfeng" <yfouyang@illinois.edu >
"Prasad, Sarthak" <sprasad9@illinois.edu>
"She, Rui Feng" <rshe2@illinois.edu>
"Zhang, Shelly" <zhangxs@illinois.edu>

Information about Quad-Day last year and this year:

- This year, there will be NO carnival games (may be replaced by other activities/booths)
- Last year, there is a total of 660 spaces: ~500 for student communities/organizations, 85 for fraternities, 31 for school departments, 25 for non-campus communities. This year, there may be more than 660.

Data acquisition:

- The number of students:
 - Each year, approximately 8000 new students. New students will be led to certain areas (more predictable); other students are hard to predict
 - Difficult to estimate/predict the popularity of various groups
 - No historical data of traffic directly available
- Estimation using app "Illinois" for Quad Day this year:
 - Can acquire students' locations through the app
 - Need to make sure most attending students will use the app before Quad-Day
 - The app can identify where to vote, get food, or do other activities
 - Can potentially work with the developers to make the app interactive
- Quad Day registration:
 - Registration status is known after June 30

Practical situation:

- Will not be able to extend Quad Day to two days

Potential solutions:

- Relocating the booths
- Adding guiding facilities or barriers
- Distribute guides/maps for the students before Quad-Day
- Use apps to guide students going to various destinations; suggest routes based on origins and destinations; each route takes a certain percentage of the traffic.

Ongoing and future steps:

- Model verification: benchmark/reproduce the traffic/congestion pattern of Quad Day last year
- Solution/optimization: improve the traffic flow and reduce congestions