

Name: Justin Hollander

Is this a project that you will work on alone, or will you collaborate with others? If you are collaborating with others, list their names, their Tufts affiliation, and their contact emails. Please indicate which member of your team will be the principle contact.

AS&E Campus Planning & Development Committee, Operations Division, and the Student Planning and Policy Association

Please provide a 300-350 word description of your project

We propose a project to address a serious problem on the Tufts Medford Campus: the challenges and barriers to walking and biking. Walking and biking are the most green of all modes of transportation and when walking/biking infrastructure (namely sidewalks and bike lanes) are absent, people will use less sustainable means to travel about, like cars. New technology that combines visual sensors, machine learning, and artificial intelligence can improve the ability of campus planners here at Tufts to monitor and analyze pedestrian circulation on campus. This project will involve a pilot test by setting up such sensors at three locations around the intersection of Boston and College Avenue, where pedestrian and bike safety is a challenge, to measure and examine the flow of pedestrian, bike, and car movement. The sensors will provide the paths of each pedestrian, bike, and car, over the course of 24 hours, 7 days a week, for 3 months. The software we will use helps process and organize that vast data source to reveal key trends and patterns of circulation for each travel mode. The aim of this research will be to propose the development of new/revised sustainable transportation infrastructure through this intersection and beyond. A strong prior working relationship between the Tufts Administration, the AS&E Campus Planning and Development Committee, and UEP faculty and students gives us great confidence that the results of this intervention will inform key University decision-making and result in a safer, more sustainable campus. (244 words)

What is the problem that you are looking to solve?

The problem on the Tufts Medford Campus is that walking and biking are not safe or inviting. Walking and biking are the most green of all modes of transportation and when walking/biking infrastructure (namely sidewalks and bike lanes) are absent, people will use less sustainable means to travel about, like cars. Additionally, the introduction of the Green Line onto campus will drastically alter the road traffic at the Boston/College Ave. intersection, exacerbating the current problems there.

Has this been done before? How is this project different?

Yes. We will draw on the internationally renowned researchers and scholars at Tufts to analyze the data that comes from the sensors in a unique and novel manner.

How would you sustain or expand the project after the pilot has ended?

Because the project involves a partnership with a AS&E Faculty/Student Committee, an AS&E Department, and an AS&E Student group, there are many ways to institutionalize this project and sustain it into the future.

How will you measure success?

Success will be measured by how the results influence the redesign of the Boston/College Avenue intersection and by data on traffic accidents in that zone.

How many people would this project impact? Please categorize them as students, faculty, staff, and other

In the execution of the project, we estimate that 20 students, 10 faculty, and 3 staff will be impacted. Once implemented, the entire Medford campus of thousands of people will be impacted.

What is the environmental impact?

This project can measurably reduce the use of cars as a mode of transport, thus reducing air pollution and the numerous other environmental impacts of driving.

What are the educational impacts of this project?

The project will have a major educational component that will help Tufts students understand the potential of new "smart city" tools to improve sustainability right here at Tufts.

**What is the social impact (excluding educational aspects)?
(e.g. alleviating climate injustice, community resiliency, culture change, equity, etc)**

This project can drastically alter people's relationship with mobility by making walking and biking safer and more attractive, thus improving people's social-emotional well being.

Will it help Tufts meet its sustainability goals? If so, how?

This project can help advance the University's goals towards carbon neutrality by helping to shift people's modes of travel away from driving towards walking and biking.

What are the life cycle cost savings or the immediate cost savings, if applicable?

Costs of handling cars on campus and the health saving related to active transportation could be in the tens of thousands of dollars.

Provide us with a timeline of planning and implementation of the project. (This question is for optional additional information not included in the Gantt chart)

Stage 1: Install sensors (Winter 2019/2020); Stage 2: Collect and analyze data (Spring-Summer 2020); Stage 3: Synthesize findings, write report, make recommendations for sustainable infrastructure improvements (Fall 2020).

How much funding are you requesting from the Green Fund? Are you seeking funding from other places?

\$12,000. Covers the costs of the sensors and student/researcher time to monitor and analyze results. Funds have not been sought from other sources.

What will the data be used for?

See answers above: The sensors will provide the paths of each pedestrian, bike, and car, over the course of 24 hours, 7 days a week, for 3 months. The software we will use helps process and organize that vast data source to reveal key trends and patterns of circulation for each travel mode.

How would this data help solve the problem? Would Tufts pay attention to this data?

See answers above: The aim of this research will be to propose the development of new/revised sustainable transportation infrastructure through this intersection and beyond. A strong prior working relationship between the Tufts Administration, the AS&E Campus Planning and Development Committee, and UEP faculty and students gives us great confidence that the results of this intervention will inform key University decision-making and result in a safer, more sustainable campus.

We think that an area with heavier traffic (i.e. the Boston Ave intersection) might lead more interesting data.

We agree and have changed the focus of the project to the Boston Ave. intersection.