Learning from Outdoor Webcams: Capturing Active Commuting Behavior Across Environments

Alicia Manteiga, MPH
Washington University in St. Louis
Alicia.manteiga@wustl.edu

Acknowledgements

Co-authors

Aaron Hipp, Deepti Adlakha, Rebecca Gernes, Agata Kargol, Abby Stylianou, Robert Pless

Support

National Institutes of Health

GEORGE WARREN BROWN SCHOOL of Social Work

MM Media and Machines
computer science dept
washington university in st. louis

PRC PREVENTION RESEARCH CENTER in St. Louis
Promoting Healthy Communities

Outline

- Discuss the process of using webcams to capture long-term active transportation trends
- Describe several studies we are conducting using webcams to examine active transportation
- Conclusions and implications

AMOS

Archive of Many Outdoor Scenes

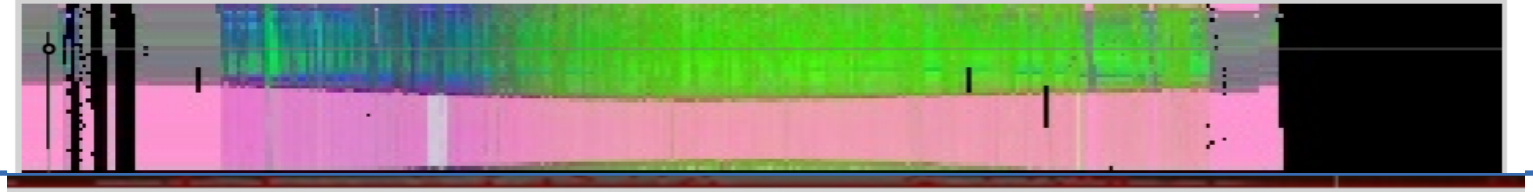
http://amos.cse.wustl.edu

Fri Feb 15 2013 08:31:49 GMT-0600 (Central Standard Time)

Fri Sep 07 2012 11:58:00 GMT-0500 (Central Daylight Time)

« Previous **St Louis Arch** Next »

« Back **2014** Forward » RGB PCA Error



Crowdsourcing

Mechanical Turk is a marketplace for work.

We give businesses and developers access to an on-demand, scalable workforce.
Workers select from thousands of tasks and work whenever it's convenient.

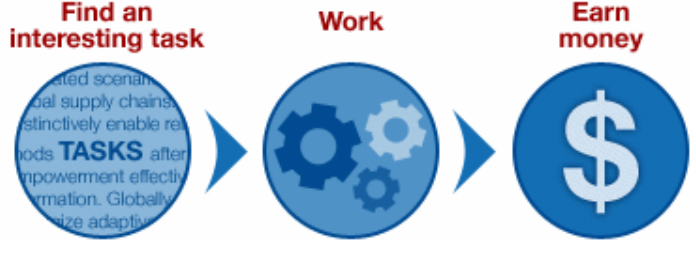
227,692 HITs available. View them now.

Make Money
by working on HITs

HITs - *Human Intelligence Tasks* - are individual tasks that you work on. Find HITs now.

As a Mechanical Turk Worker you:

- Can work from home
- Choose your own work hours
- Get paid for doing good work



Find HITs Now

Get Results
from Mechanical Turk Workers

Ask workers to complete HITs - *Human Intelligence Tasks* - and get results using Mechanical Turk. Register Now

As a Mechanical Turk Requester you:

- Have access to a global, on-demand, 24 x 7 workforce
- Get thousands of HITs completed in minutes
- Pay only when you're satisfied with the results

Get Started

https://www.mturk.com/

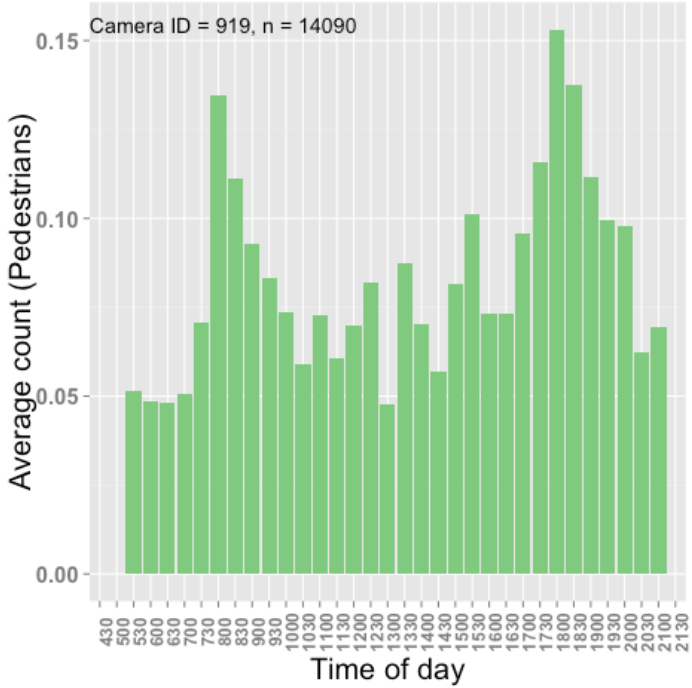
Long-term Active Transportation Capture

2007

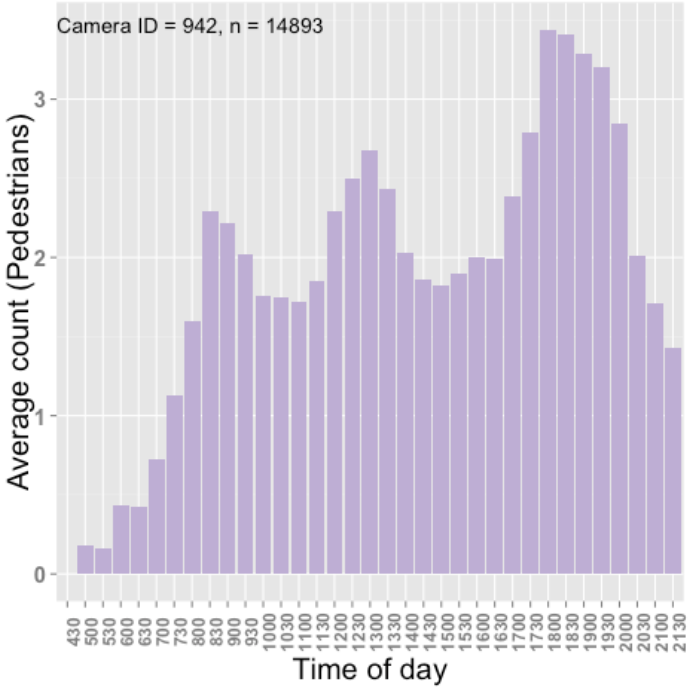
2008

Crowdsourcing Human Intelligence Task

Hourly Pedestrian Trends

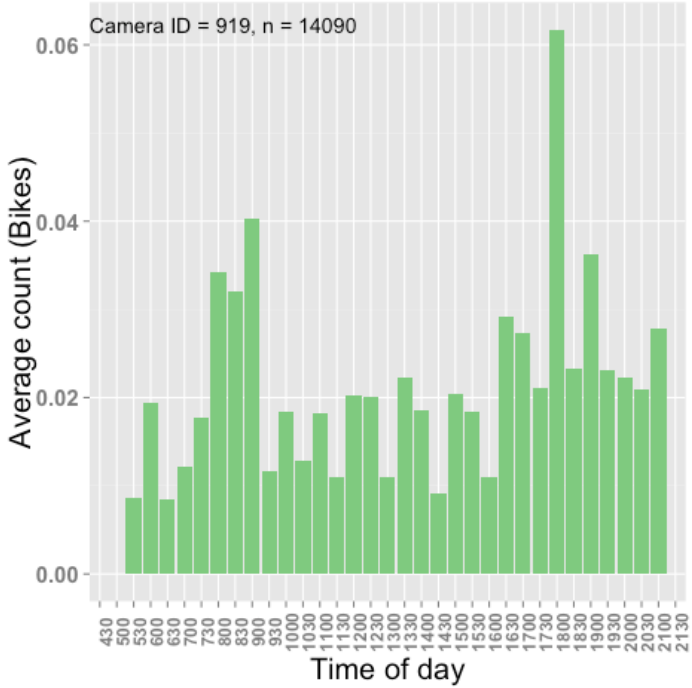


Residential Intersection

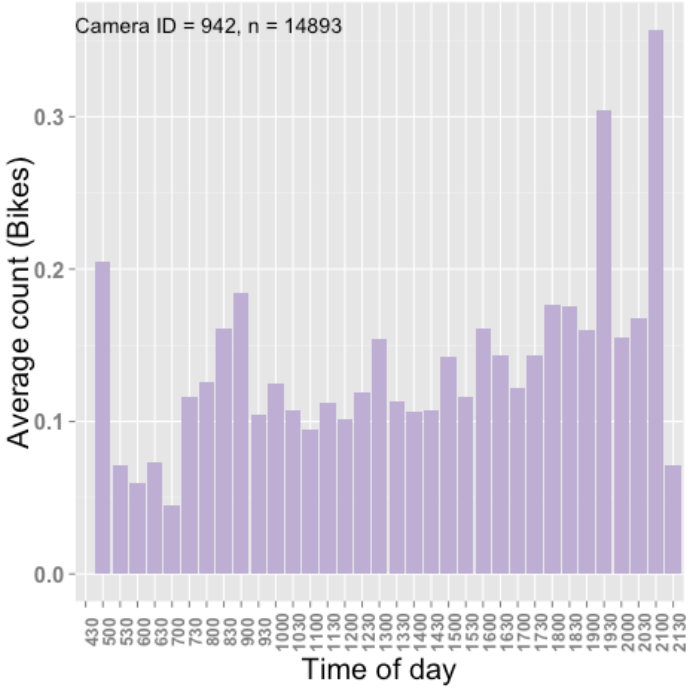


Downtown Intersection

Hourly Cyclist Trends

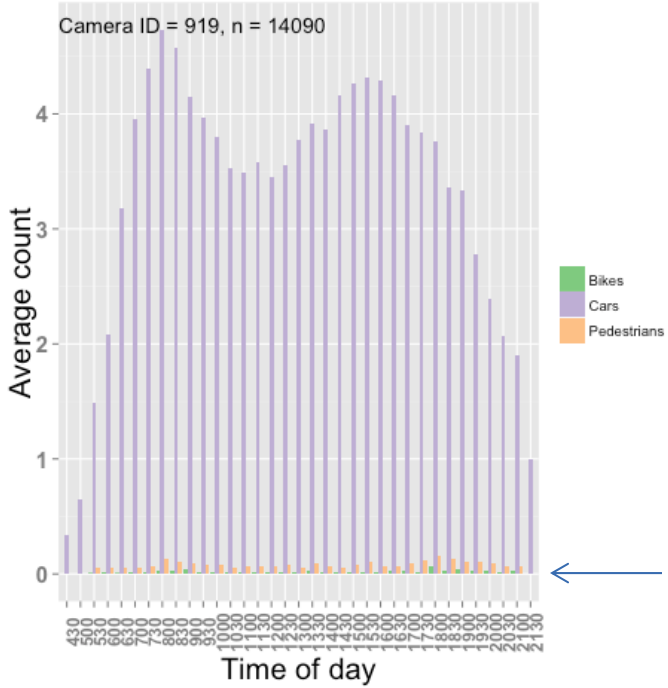


Residential Intersection

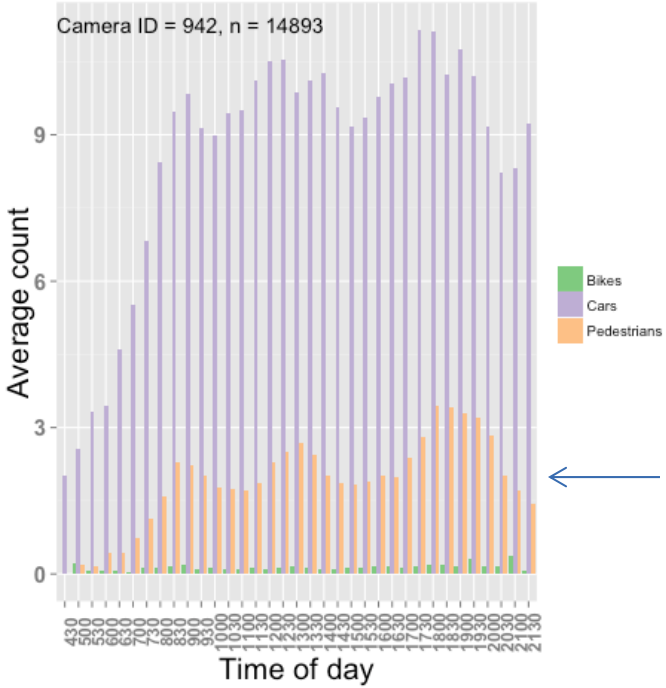


Downtown Intersection

Hourly Transportation Trends

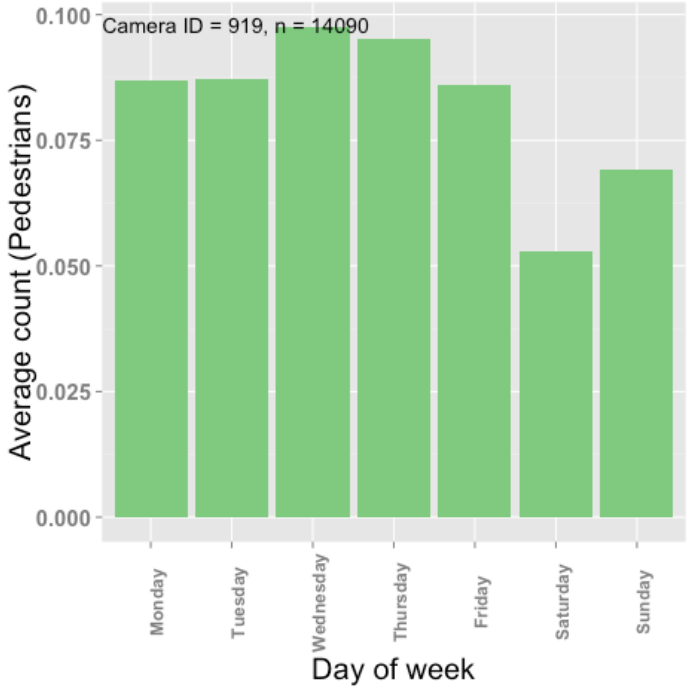


Residential Intersection

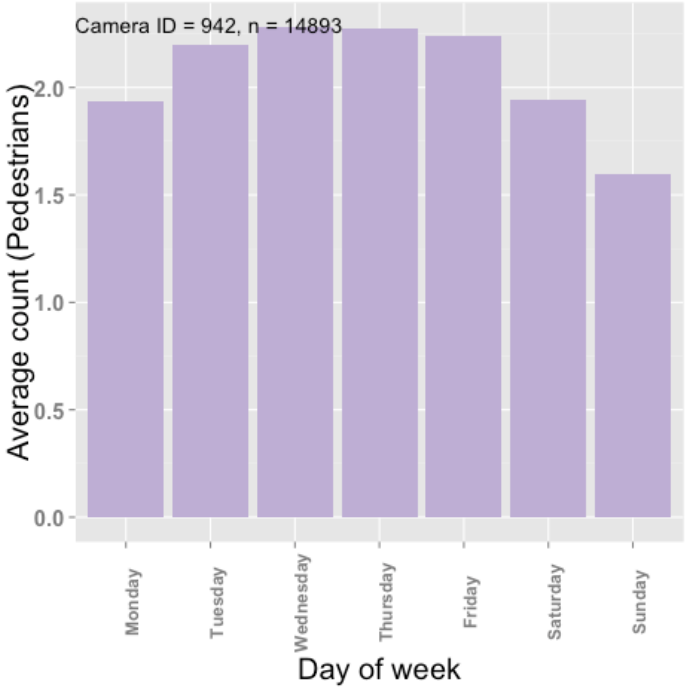


Downtown Intersection

Weekly Pedestrian Trends

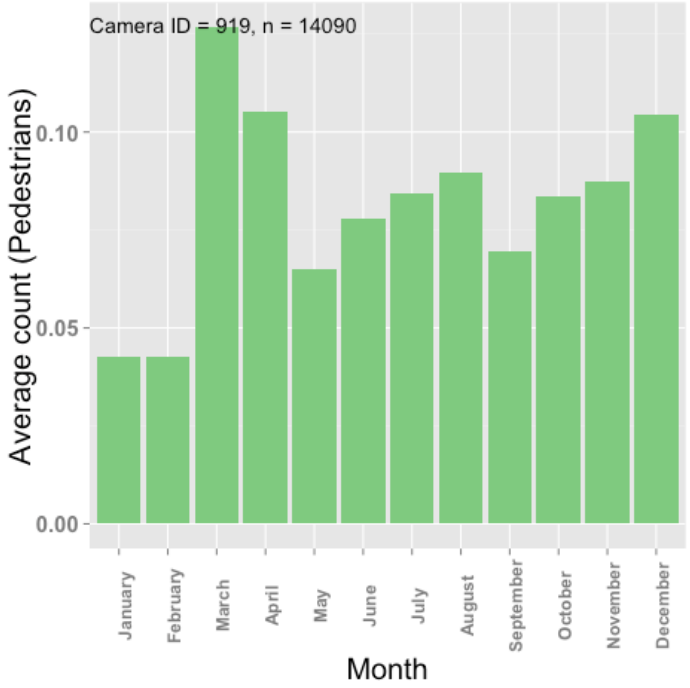


Residential Intersection

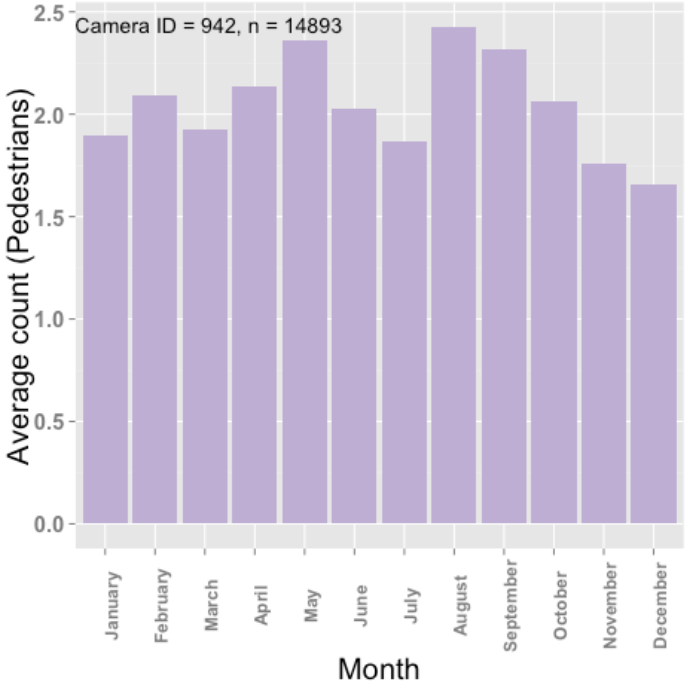


Downtown Intersection

Monthly Pedestrian Trends

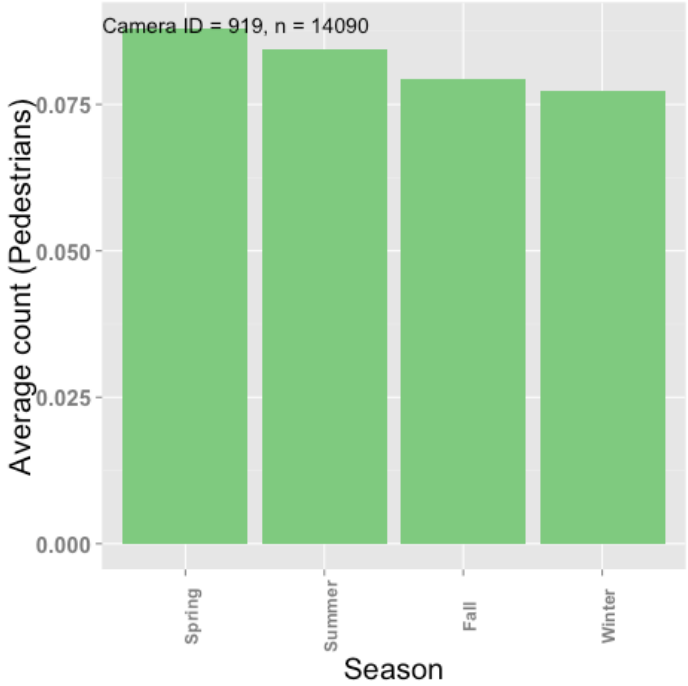


Residential Intersection

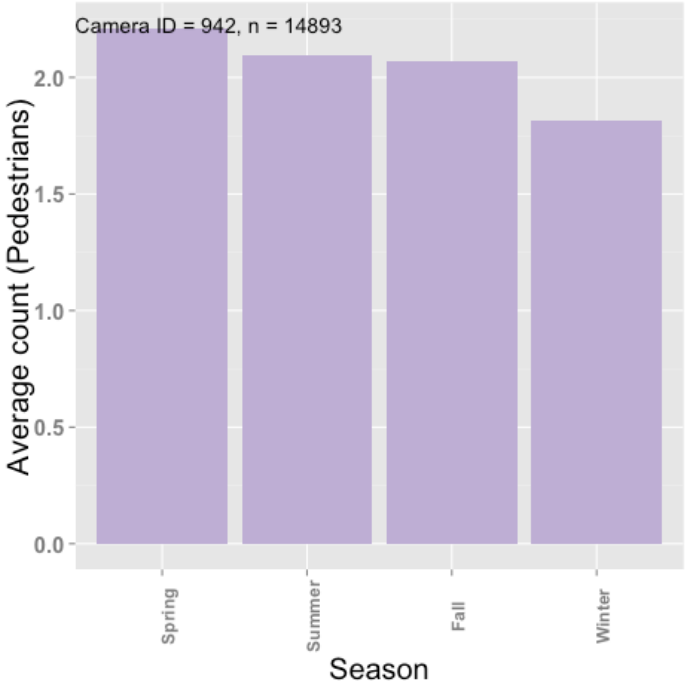


Downtown Intersection

Seasonal Pedestrian Trends



Residential Intersection



Downtown Intersection

Long-term Active Transportation Capture

2007

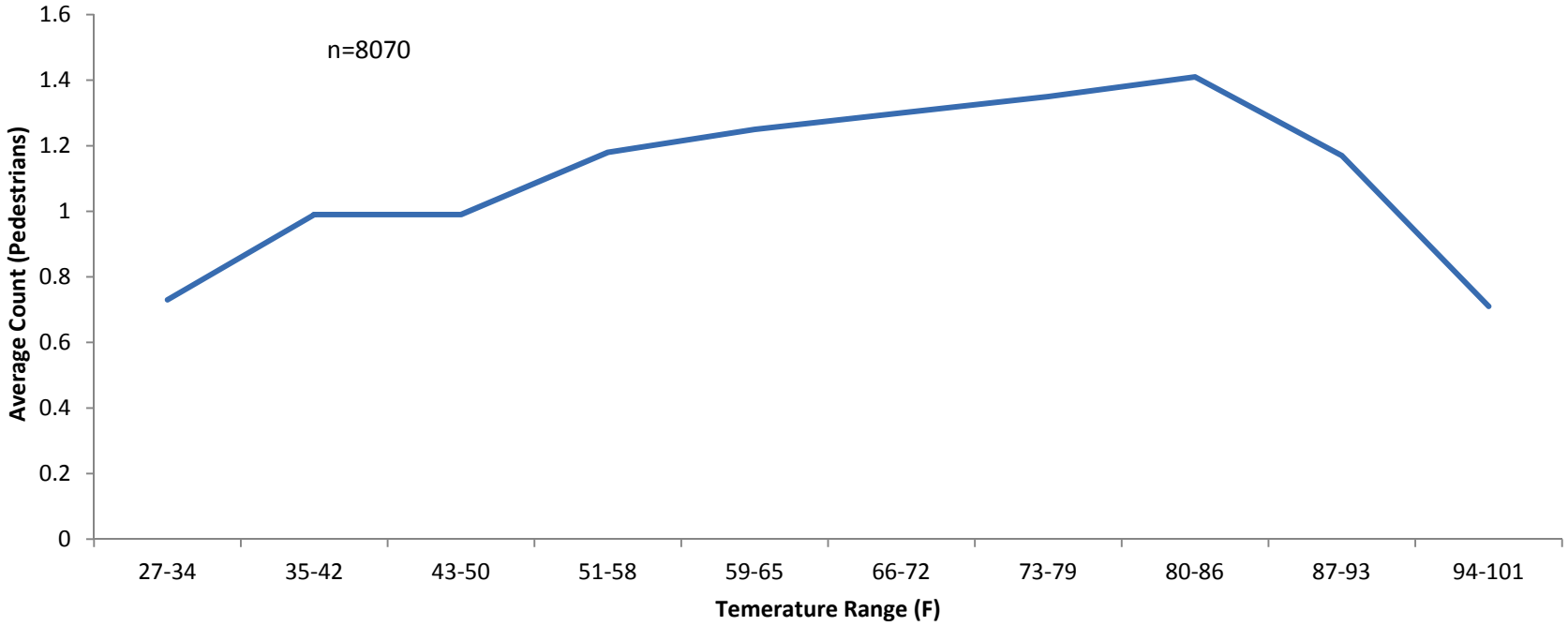
2008

Built Environment Change and Active Transportation

		N Images	Mean	SD
Residential	Pre	4959	0.08	0.34
	Post	6878	0.09	0.35
Downtown	Pre	5246	2.2	2.4
	Post	7191	2.0	2.3

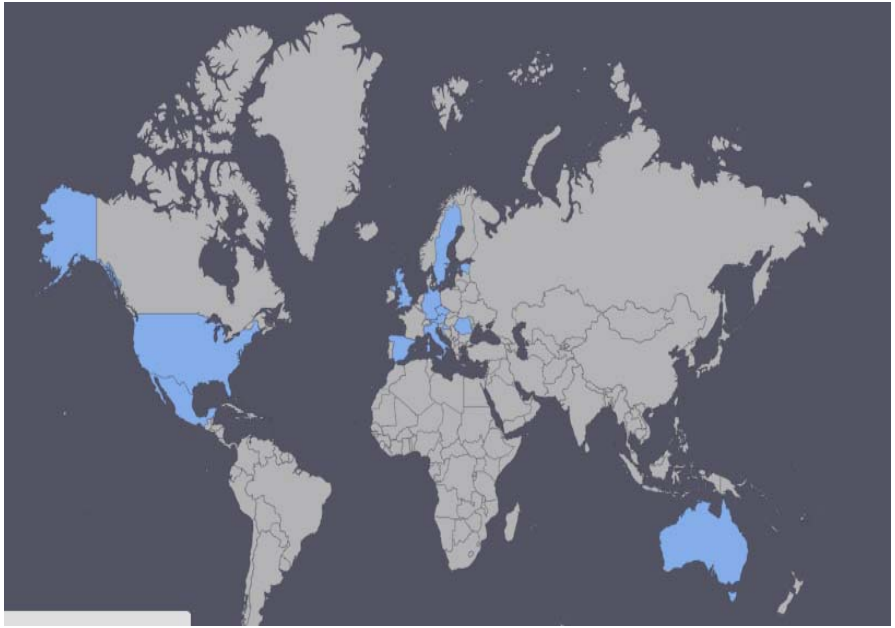
* p< .05
** p< .001

Weather and Active Transportation

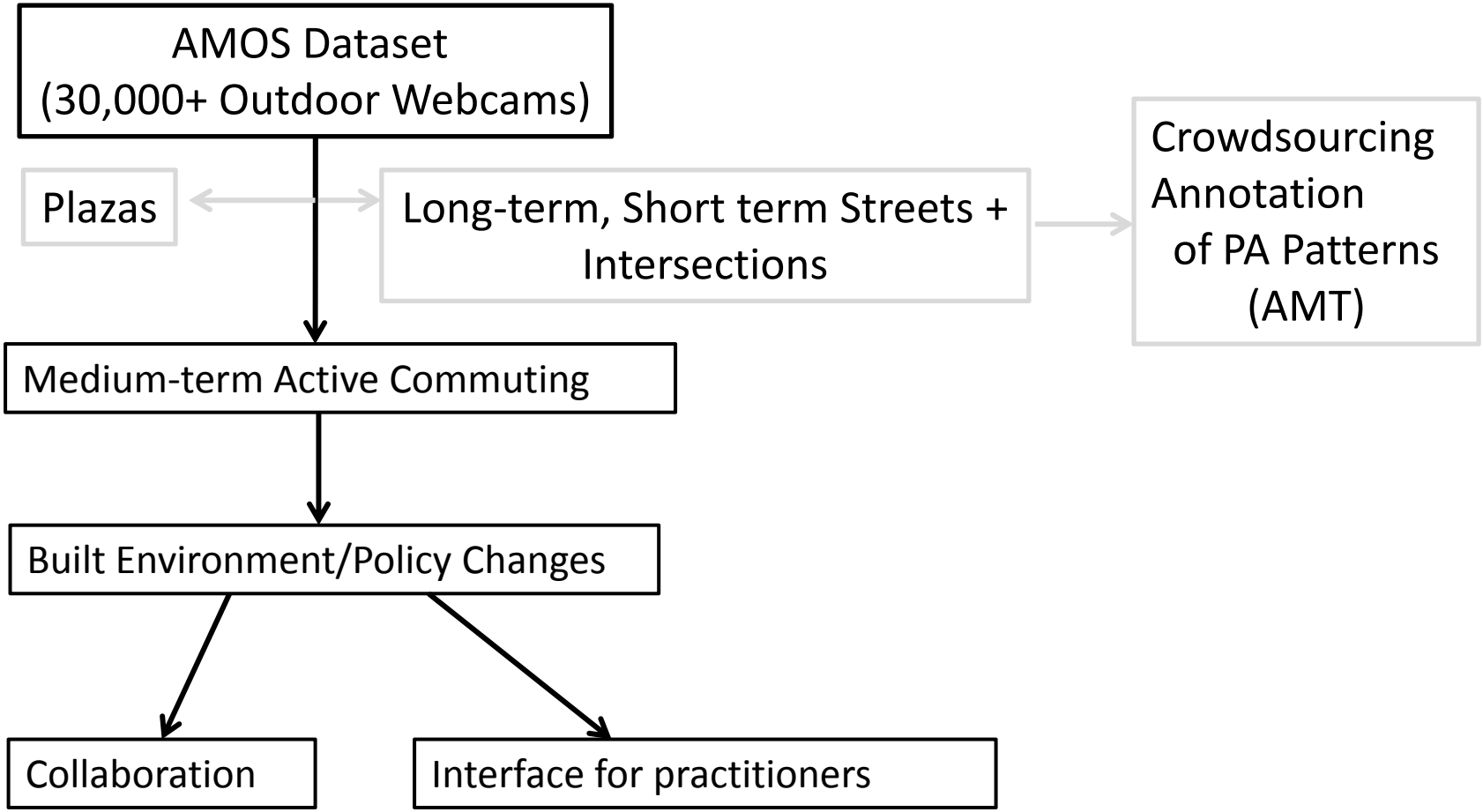


Short-term Active Transportation Capture

Multi-Site Active Transportation Capture



Next “Steps”: Active Commuting



Limitations/Advantages

- Camera issues
- Trends vs. actual use
- Infrequent event validity
+ Participant reactivity less likely
+ Increased accessibility to environments

Implications

- Analysis of trends over time
- Built Environment change effects on transportation
- Policy planning and resource allocation/effects
- Appropriately target interventions
- Baseline data

Active Living Research

Building Evidence to Prevent Childhood Obesity and Support Active Communities
www.activelivingresearch.org

RESEARCH BRIEF | February 2013

Counting Bicyclists and Pedestrians to Inform Transportation Planning

Introduction

Creating communities that support walking and bicycling is an important strategy for promoting health, reducing air pollution, and lessening our dependency on an auto-centric transportation system.[1] Yet the design of our cities, neighborhoods, and transportation systems often discourages people from walking or bicycling to places where they work, learn, play, or shop. Urban planners, transportation engineers, and other public health professionals need accurate counts of bicyclists and pedestrians to help inform transportation planning and investments that support physical activity, such as walkways and bicycle facilities.

In response to this need, the Federal Highway Administration, along with a number of states and localities, has launched initiatives to count bicyclists and

Thank you

alicia.manteiga@wustl.edu

ahipp@wustl.edu