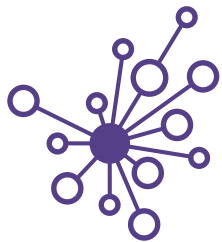


Urban Data Science for Social Good

An eScience Incubation Program



UNIVERSITY *of* WASHINGTON
eScience Institute



2016 Data Science for Social Good



In collaboration with [Urban@UW](#) and Microsoft, the eScience Institute is excited to announce the 2016 Data Science for Social Good (DSSG) summer program.

- Modeled after similar programs at the [University of Chicago](#) and [Georgia Tech](#)
- With elements from our own [Data Science Incubator](#)

DSSG Program Overview



Goal: The program brings together data and domain scientists to work on focused, collaborative projects that are designed to impact public policy for social benefit. Teams will be co-located in the WRF Data Science Studio.

Proposal Protocol: ~2-page proposals for 10 week (summer), on-site data science collaborations with eScience mentors and a team of students

What we were looking for: Projects where fruitful collaboration is possible, with potential for significant impact, and that offer sustained engagement

<http://escience.washington.edu/dssg/>

Project Proposals

- Project Leads typically bring a project from their own research
- Some Project Leads may wish to select an external project
 - A Citizen Open-Data Dashboard (CODD)
Interactive web product supporting geospatial analysis of Seattle Crime and 311 complaint datasets
 - Cross-City Crime Analysis & Comparison
 - Urban Data Science “Deep Dives”
 - Evaluating the “Broken Window” Theory
 - Where should I park?
 - How safe is my neighborhood?

Domain Areas of Interest: Data-Intensive Urban Science

- Transportation
- Poverty, equality, income
- Crime, justice, legal
- Housing
- Public Education
- City planning
- Hazards / Resilience
- Utilities
- Economics



Technical Areas of Interest

- new platforms, new algorithms, new methods, new datasets
- working with large, heterogeneous, and noisy datasets
- scalable analytics and predictive models
- interactive visualization
- code review, publishing, and reproducibility
- online teaching materials, tutorials



Project Proposals - what we were looking for:

- strong science, strong methods
- new directions, new questions
- availability, engagement, commitment
- “do only what we can only do together”
 - with apologies to Dijkstra
- alignment with sponsor and program goals
- clarity and shovel-readiness
- capacity for measurable outcomes and sustained engagement



DSSG Project Teams - each team consists of:

- 1-2 Project Lead(s)
 - science guidance, student task assignment
- 2 eScience Mentors – 1 primary, 1 secondary
 - technical guidance, student mentorship
- 4 student researchers (grad, undergrad)
- In some cases, one or more stakeholders (faculty advisor, industry sponsor, government subject matter expert, etc.)

Program Logistics - Overview

- Project Leads and eScience Leads are engaged 16 hours/week
 - Timing is flexible and will be based on project lead and eScience lead schedules
 - Weekly “stand up” meeting with all teams
 - Many other events planned tutorials, talks, happy hour
- Students will be engaged full-time 5 days/week
- We will work out of the Data Science Studio

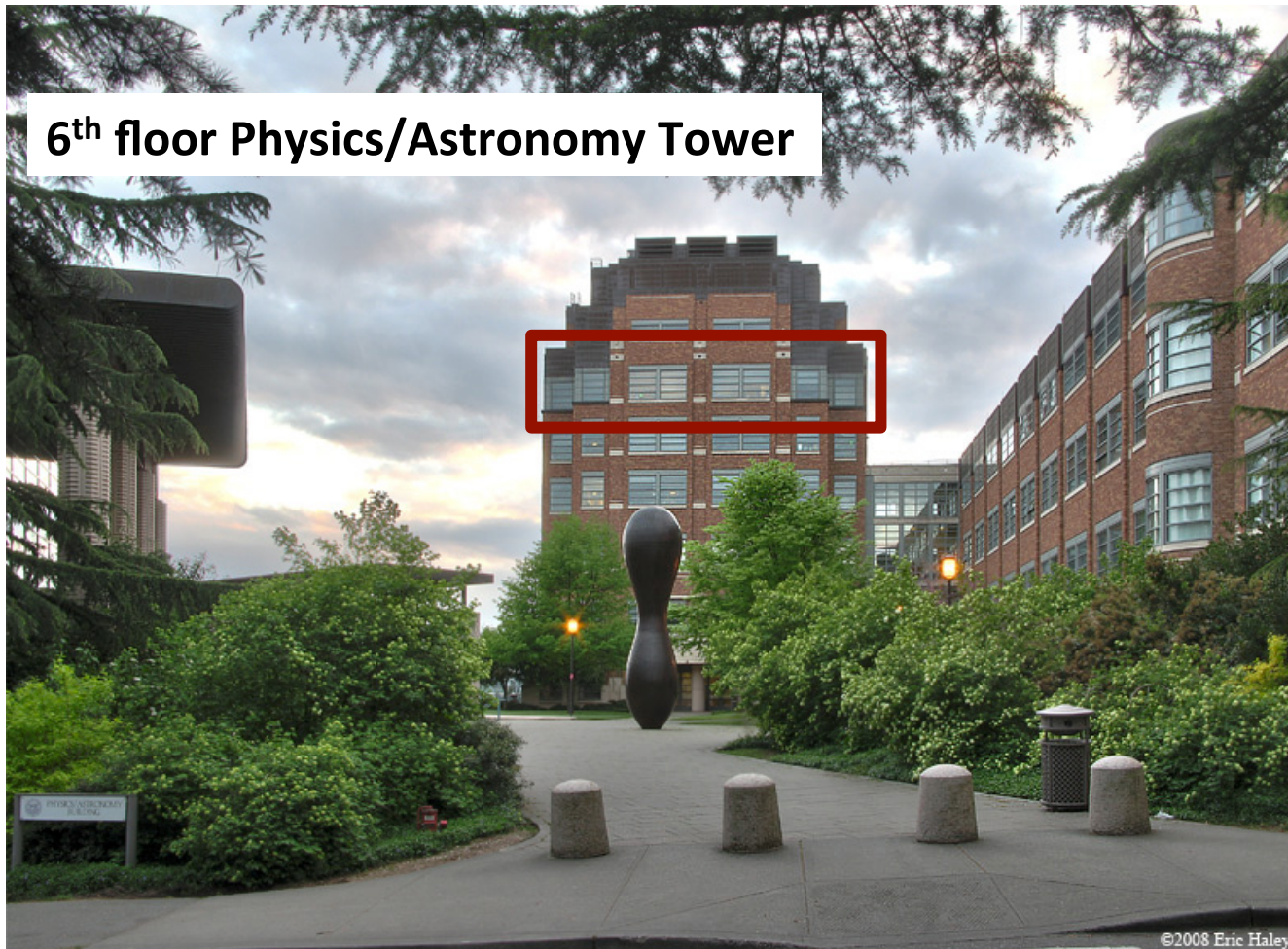
Expectations at end of summer

- Online data product delivered
 - an online visualization, a public library on github
- Findings summarized in a brief online report
- All code hosted on github
- Acknowledgment on any papers resulting from the project
 - in some cases, co-authorship may be appropriate at the discretion of the project lead

Data Science for Social Good Program Organizers

- Micaela Parker and Sarah Stone, Program Managers and Data Science Fellows, eScience Institute, *manager@escience.washington.edu*
- Anissa Tanweer, Graduate Research Assistant, HCDE
- Brittany Fiore-Silfvast, Data Science Fellow, eScience Institute and Postdoctoral Fellow, HCDE
- Bill Howe, Associate Director, eScience Institute
- Ed Lazowska, Founding Director, eScience Institute

WRF Data Science Studio – a campus-wide collaboration space



WRF Data Science Studio



Last year's DSSG projects can be found here:

<http://escience.washington.edu/get-involved/data-science-for-social-good/dssg-project-summaries>

Data Science for Social Good Summer Program

The eScience Institute is pleased to announce a new summer program: Data Science for Social Good (DSSG). The program is modeled after similar programs at the [University of Chicago](#) and [Georgia Tech](#), but with elements taken from the eScience Institute's [Data Science Incubator](#). Similar to the Incubator program, the goal of the DSSG is to enable new insight by bringing together data scientists and domain scientists to work on focused, collaborative projects. For the summer program, these projects will be designed to impact public policy for social benefit.

This year, the theme for DSSG projects will be Urban Science. Projects will involve analysis, visualization and/or software engineering of data from urban environments such as crime data, government and NGO financials, health care, public health, sustainable urban planning, disease prevention, education, transportation,

DSSG teams will be composed of:

- 4 students (see application link)
- 1 project lead, responsible for the project (see proposal below) @ 2 days/week
- 1 public stakeholder, the organization or agency with the research question (see proposal)
- 1 eScience data scientist @ 2 days/week

Our team of data scientists can provide expertise in large-scale data manipulation and analysis, distributed computing, cluster computing, statistics and machine learning, and domain knowledge from large, complex, and noisy datasets.

Assessing Community Well-Being

Third-Place Technologies

Optimization of King County Metro Paratransit

Computer Science & Engineering

Predictors of Permanent Housing for Homeless Families

Bill and Melinda Gates Foundation

Open Sidewalk Graph for Accessible Trip Planning

Electrical Engineering

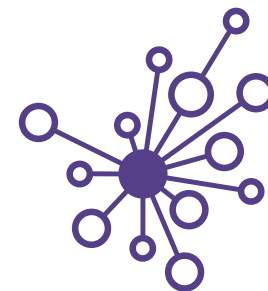
Any UW faculty, research staff, or non-UW scientist may submit a proposal to be considered for this program. DSSG projects are not "for-hire" software jobs -- each project will be led by

Welcome!

Please direct questions to:

Sarah Stone and Micaela Parker, co-Program Managers

manager@escience.washington.edu



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eScience Institute

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