Participatory Sensing:
smartphones + web services + social networking

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Enabled by $>3 \times 10^9$ mobile phone users, increasingly with gps, imagers, UI

Motivated by $6 \times 10^9$ people on planet earth and their concerns...
Civic and Citizen Data Campaigns

real time (always on), real place(always carried),
real context (historical, environmental, spatial, social)

GarbageWatch
Recycling Practices on Campus

What’s Bloomin
Blooming Flora on Campus
Example: Invasive Plants Campaign - “What’s Invasive!”

w/National Park Service, Santa Monica Mountains

http://whatsinvasive.com

Top 6 Invasives!

Harding grass
Perennial pepperwood
Poison hemlock
Spanish broom
Terracina spurge
Yellow starthistle

http://whatsinvasive.com
Rapid Campaign Platform: makes it easy to create campaigns

**Mobile Sensing Client**
Collects location, transportation mode traces and image information

**Data Storage Service**
Stores images to Flickr and other data to SensorBase

**Tagging Module**
Enables users to tag images with meta-information

**Mobility and Participation Analysis**
Service to analyze mobility, participation, and performance of users for recruitment purposes

**Analytics Engine**
Stores participant and campaign metrics and performs basic statistical operations

**Feedback Module**
Provides information to participants about their contributions

**Campaign Dashboard**
Enables organizers to get a snapshot of campaign status

[http://participatorysensing.org](http://participatorysensing.org)
Biketastic: bicycle commuters document, plan, share route data to promote safe cycle commuting

location+motion trace augmented with images and tagging

Capture & share route features

Collects: location, duration, stops/starts, roughness, prompted images/tags

Web interface compares route qualities

Mash up routes with air quality, traffic conditions, accidents

http://biketastic.com
Common workflow and services will enable broad application of systems and methods to environment, transportation, and health.
Conclusion

If you can’t go to the field with the sensor you want…
go with the sensor you have! (Anon)

The power of the Internet, the reach of the phone (Voxiva)
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