



HDMA
@SDSU

THE CENTER FOR
HUMAN DYNAMICS
IN THE MOBILE AGE

Introduce **SMART Dashboard** and **GeoViewer**

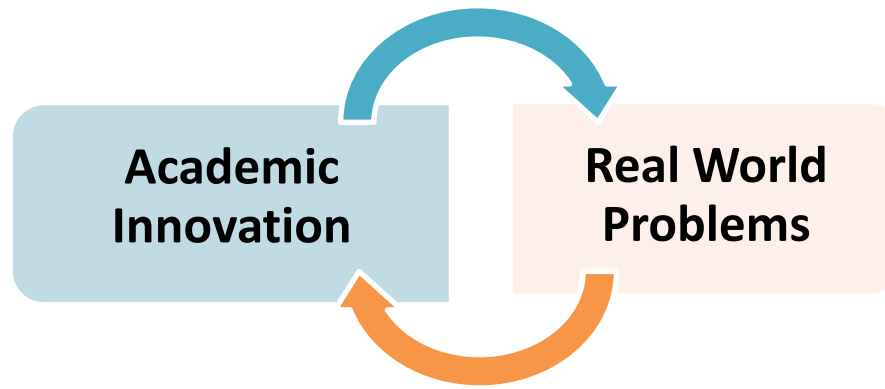
August 12, 2015

Dr. Ming-Hsiang (Ming) Tsou (Director of the HDMA Center)
Dr. Calvin Jung (Chief Data Scientist)



SAN DIEGO STATE
UNIVERSITY

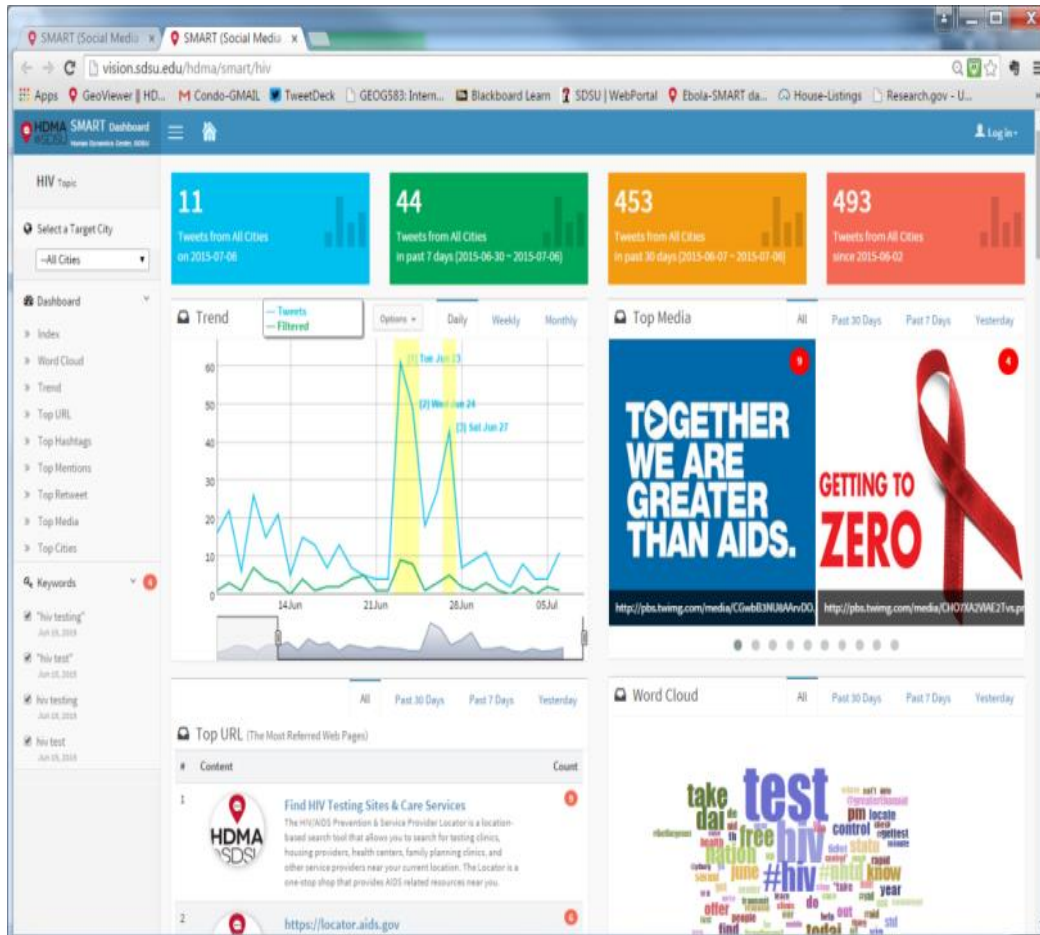
Mission Statement of the Center for Human Dynamics in the Mobile Age



1. Analyze real world problems and big data to build transformative scientific theories and computational models
(New theories for human dynamics, big data, social media, and computational science)
2. Transform academic research into innovative technology solutions for solving real world problems
(Disease outbreaks, disaster response and recovery, cancer disparities, urban crime rates)

Social Media Analytic and Research Testbed
<http://vision.sdsu.edu/hdma/smart/hiv>

[YouTube Video](#)
[6 minutes](#)

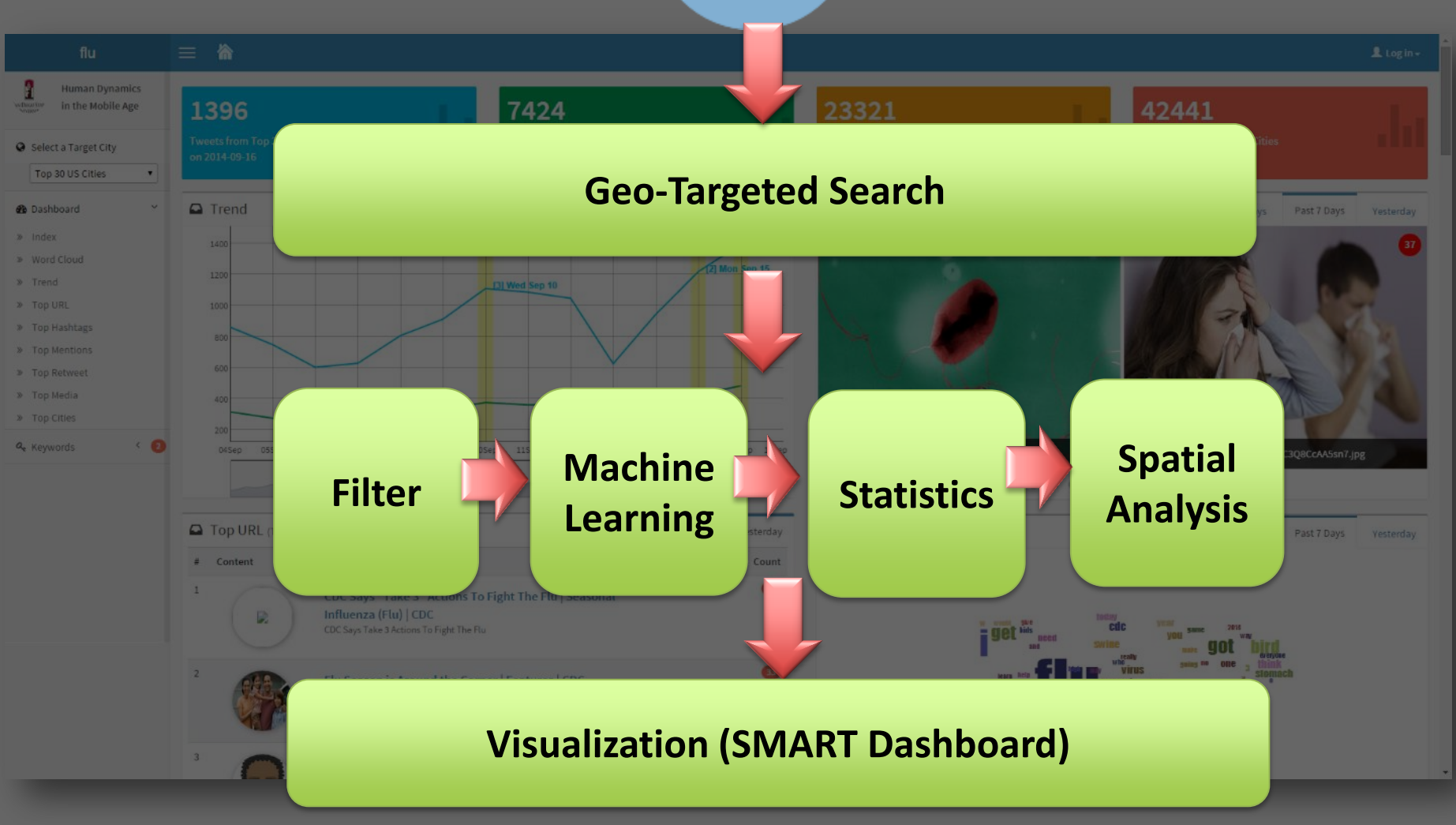


Real-time social media analytics:

- Trend Analysis,
- Word Clouds,
- Top URL, web pages,
- Top Hashtags /Mentions /Stories).
- Top Media (Pictures)



Twitter Search API



Social Media Analytic and Research Testbed

<http://humandynamics.sdsu.edu/NepalEarthquake.html>

NEPALEARTHQUAKE
Topic

- Dashboard
- Index
- Word Cloud
- Trend
- Top URL
- Top Hashtags
- Top Mentions
- Top Retweet
- Top Media
- Keywords (20)
- Privacy Policy
- Feedback

11,375

Tweets from the Selected City on 2015-05-24

151,026

Tweets from the Selected City in past 7 days (2015-05-18 ~ 2015-05-24)

981,331

Tweets from the Selected City in past 30 days (2015-04-25 ~ 2015-05-24)

981,331

Tweets from the Selected City since 2015-04-28

Trend | Options | Daily | Weekly | Monthly

Top Media | All | Past 30 Days | Past 7 Days | Yesterday

2444

<http://pbs.twimg.com/media/CDutYrGUM>

In Case of Earthquake

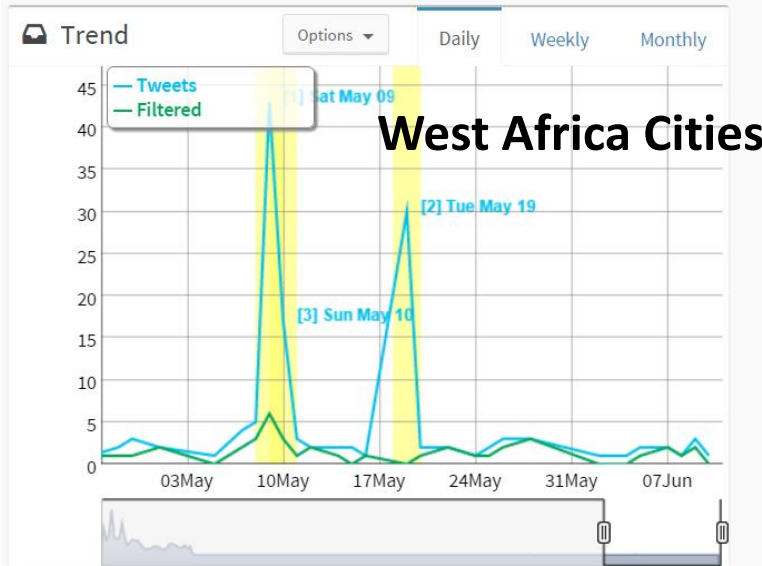
2087

<http://pbs.twimg.com/media/CEypAEeUJ>

Word Cloud | All | Past 30 Days | Past 7 Days | Yesterday

Ebola

Different regions will have different “Voices” and “Opinions”



Top Media

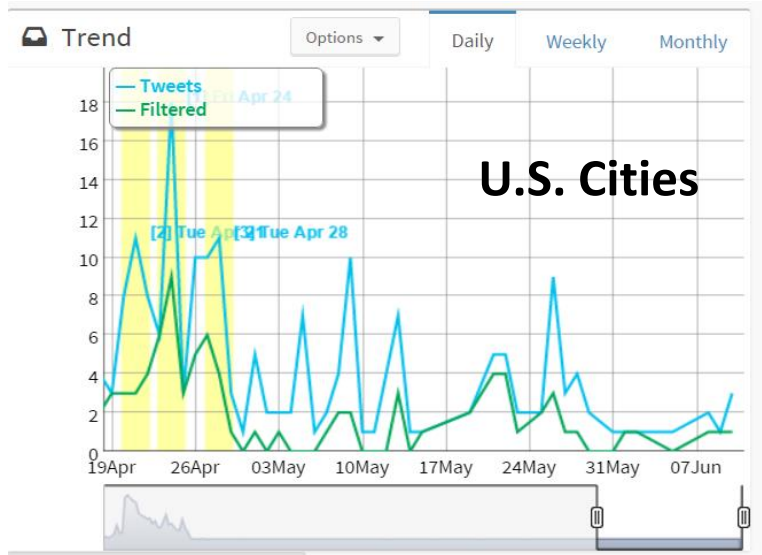
“I like going over to the patients and interacting with them, giving them hope.”
 J. Sam T. G. Siakor

THE NETWORK FOR CHANGE

- For Dr. Khan
- For Dr. Salia
- For Dr. Cole
- For Dr. Buck
- For Dr. Rogers
- For Dr. George

We are so sorry. You were worth so much more. Thank you for YOUR SERVICE. REST IN PEACE.

<http://pbs.twimg.com/media/B1SIVJ5CUA> <http://pbs.twimg.com/media/B2vW3m71M>



Top Media

Enjoy **Ebola** Made in USA®

<http://pbs.twimg.com/media/BzoQqyMCM> <http://pbs.twimg.com/media/B1CvXYCIYA>

SMART Dashboard Won **the BEST METHOD PAPER Award** in the 2015 International Conference of Social Media and Society, Toronto, Canada.

<http://dl.acm.org/citation.cfm?doid=2789187.2789196>



Next Step: **Syndromic Surveillance**

(tracking multiple Symptoms: fever, cold, cough, vomiting, etc.)

<http://vision.sdsu.edu/hdma/smart/syndromic>



<http://vision.sdsu.edu/ec2/geoviewer/sanDiego> (Live)

The screenshot shows the GeoViewer web application interface. The browser address bar displays the URL: vision.sdsu.edu/hdma/geoviewer/sanDiego#. The page title is "GeoViewer @ sanDiego".

Search & Filter:

- Keyword: Input keywords
- Location: place name, mile
- From: Only real-time tweets
- To: Only real-time tweets
- View Mode: Image, Text, Both
- Buttons: Download, Save Search, Clear, Search

Total Tweets: 304

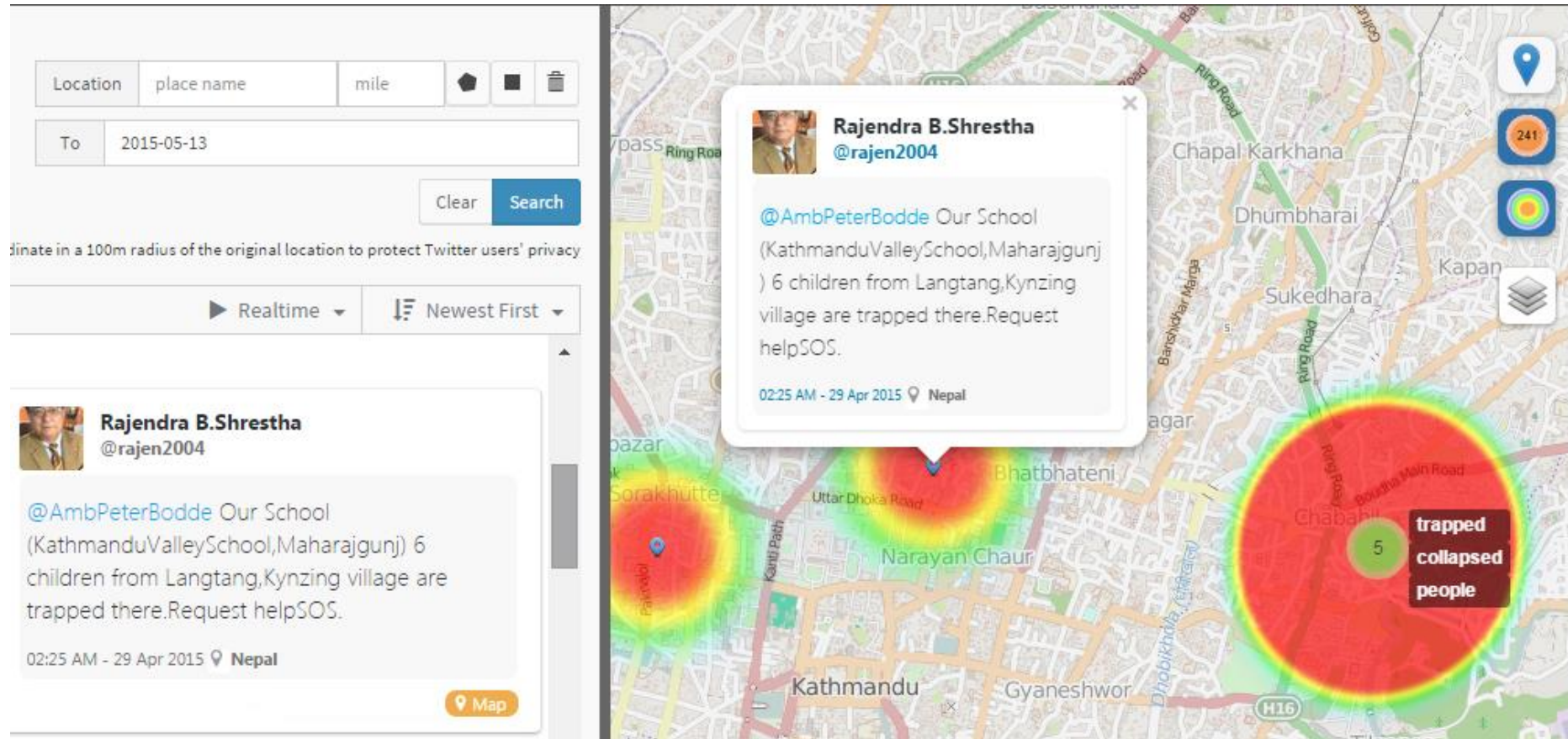
Tweets List:

- #BlackLivesMatter @MaileHampton**
@mviaaa @queen_pollaro @ChrisBurritos ok the only free people here are white Americans why would y'all want to be patriotic anyway tho....
09:33 AM - 01 Jul 2015 San Diego, CA
- TMJ-CO Retail Jobs @tmj_co_retail**
Join the LEGO Group team! See our latest #Retail #job opening here: <http://t.co/06TpnkOBw> #LEGO #SanDiego, CA #Hiring
09:32 AM - 01 Jul 2015 San Diego, CA
- Alyssa Campos @1217_Alyssa**
#FollowMeAaron PLEASE @AaronCarpenter
09:32 AM - 01 Jul 2015 Chula Vista, CA
- #BlackLivesMatter @MaileHampton**
@sirjamesa12 EXACTLY. Trying to replace capitalism with black capitalism
09:31 AM - 01 Jul 2015 San Diego, CA
- Danielaaaa @ewdani**
I'm waking to summer school while eating a torta ☐
- Kristine Simmons @KSonaee**
Day 8: in a row! Killed the run again! 3miles/26.40min! This is soo fast for short ol me! Increased...

Map: A map of San Diego showing tweet locations as heatmaps. The map includes labels for various areas like Mission Hill, Five Points, Coronado, and San Diego Airport. The map also shows major roads and landmarks.

How to find out critical information from thousands of GPS-tagged tweets or hundreds of thousands of Non-GPS-tagged tweets?

Nepal Earthquake Example: (keyword search: “trap”)



One Possible Solution: Manual labeling (first 1000 tweets by volunteers) + Machine Learning Classification (built-in).

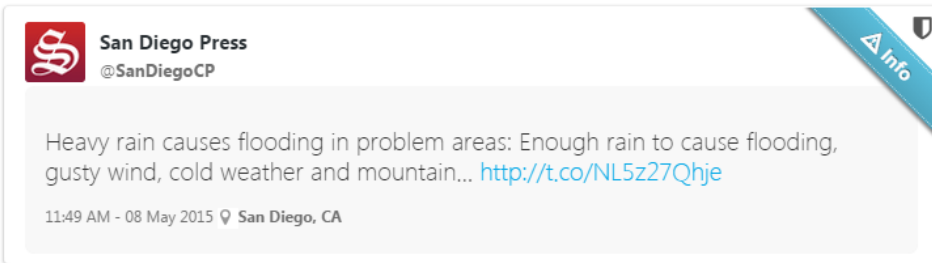
Digital Volunteers may help us identify and select important Tweets (for machine learning) during and after the disaster events.

Need Some programming and design help from OES, RedCross, and 211:

1. How to **combine multiple volunteers' Inputs** and Integration Systems (ranking system).
2. Which category and color schemes/labels should we use for **each types of disasters** (flooding, wildfires, earthquake, hurricanes).
3. Which tags might be useful?
4. **Who are the target users?** What kinds of “Output” system should we create? (for OES staff? For RedCross staff?)
5. Other suggestions?

Tag Tweet

Preview



1. Topic

Please select a topic to decide the label schema

2. Color & Label Info

Please select a color



3. Sentiment

Please select a sentiment

 Unknown Negative Neutral Positive

4. Tags

Please input tags separated with comma

Cancel

Submit

Develop Manual Labeling methods for both SMART dashboard and GeoViewer?

From the Wildfires CA collection (the Whole World):
Select 500 Original Tweets (Remove RT and URL).

Conduct a manual Coding for (Based on Red Cross Suggestions)

DS – seeking information

DS – Need for help/service (Urgent)

DS – Need for help/service (Non-Urgent)

DS – Offer of help/service

DS – Situation reports

DS – In kind donations

DS – Emotional support

Not-DS relevant

Then Run Machine Learning to test the auto-classification results (For Wildfire Disaster).

DUI Site Mapping Services

<http://vision.sdsu.edu/dui/>

The screenshot displays the 'California DUI Program Map' website. The main map shows San Diego and surrounding areas with various DUI program locations marked by blue circles containing numbers (e.g., 2, 3, 4, 8). A 'Layers' menu is open, listing several categories with checkboxes: San Diego Alcohol Permit, San Diego DUI Arrest Location, San Diego DUI Arrest HotSpot, San Diego DUI Arrest Zipcode (checked), San Diego DUI Resident Zipcode, San Diego Hospital, and San Diego Clinic. The sidebar on the right includes a search bar, a list of navigation links (California DUI Program Directory, California DMV Annual Report, Best Practice, Useful Resources), a filter for 'DUI Program by name' (set to 267), and a detailed view for the 'Bi-Bett Education Program' for a 'First Offender'. The program details include the address (22429 Hesperian Boulevard, Hayward, CA 94541), contact information (Josephine Ojeda, Phone: (510) 783-8708, Fax: (510) 783-8725, Email: bibethwd@sbcglobal.net), and fees (Program Fees: First Offender: \$345; Additional Fees: Late Payment: \$5, Missed Activity: \$18.44).

Annual Big Data Science Symposium (Oct 2): project strong academic influences at national and international levels.

Annual Big Data Hackathon for San Diego (Oct 3, 4, and 10): examine important civic issues with actionable results in San Diego: **Water Drought/Conservation, Disaster Response/Assistance, and Crime Monitor/Prevention.**

Build a collaborative community for the future development of the **Open Government and Open Data Initiative** in San Diego (City of San Diego, County of San Diego, SANDAG, SanGIS).



SDSU Hackathon Event in Fall 2015:

<http://bigdataforsandiego.challengepost.com/> (website)

<http://bigdataforsandiego.github.io/> (code repository)

OCT. 3, 4, 10

BIG DATA HACKATHON \ SAN DIEGO

Home
Participants
Rules
Submissions
Updates
Discussions
Manage

Hacking Big Data and Open Data in San Diego for Tackling the Challenges in Water Conservation, Disaster Response, and Crime Monitoring!

#Hack4SD

The Big Data Hackathon for San Diego aims to promote the development of data science and information technology solutions for San Diego on important civic issues related to *water drought and conservation, disaster response, and crime monitoring*.

Where: *San Diego State University Campus. (Peterson Gym Room 153), 5500 Campanile Drive, San Diego. CA 92182.*

Email Contact: Prof. Amy Schmitz Weiss. aschmitz@mail.sdsu.edu

Organized by the [Center for Human Dynamics in the Mobile Age](#), San Diego State University.

Dates:

- *Week 1:* Oct. 3 (9am - 5pm), Oct. 4 (9am - 4pm), 2015 (First Round awards)
- *Week 2:* Oct. 10 (10am - 2pm), 2015 (Second Round awards)

Themes:
The Hackathon will focus on three themes: Water Drought and Conservation, Crime Analysis and Wildfire Alerts and Responses. See the [submission guidelines](#) for more details.

Look for teammates

You're registered for this hackathon.
[Unregister](#)

Submissions open soon
Oct 3 – 4, 2015
[view all dates](#)

San Diego State University
[San Diego State University, 5400 55th Street, San Diego, CA 92115, USA](#)

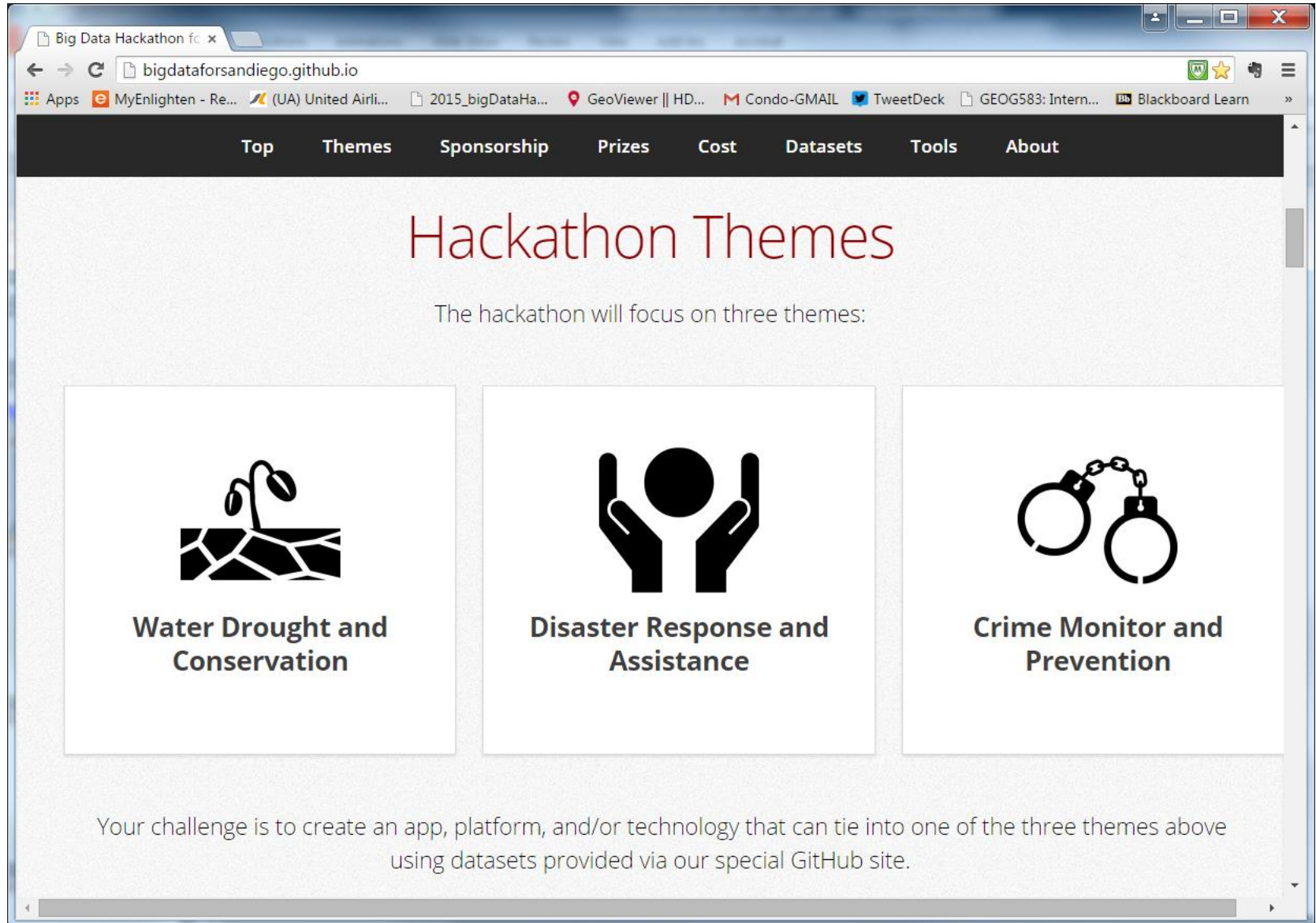
Invite others to compete





\$2,500 in prizes

★ Best Proposals: Most Innovative Idea



Big Data Hackathon for x


bigdataforsandiego.github.io

Apps MyEnlighten - Re... (UA) United Airli... 2015_bigDataHa... GeoViewer || HD... Condo-GMAIL TweetDeck GEOG583: Intern... Blackboard Learn


Top Themes Sponsorship Prizes Cost Datasets Tools About

Hackathon Themes


The hackathon will focus on three themes:



Water Drought and Conservation



Disaster Response and Assistance



Crime Monitor and Prevention

Your challenge is to create an app, platform, and/or technology that can tie into one of the three themes above using datasets provided via our special GitHub site.



Thank You

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<http://mappingideas.sdsu.edu/>
- NSF Interdisciplinary Behavioral and Social Science (IBSS) Program, **Award #1416509** (2014-2018):
“Spatiotemporal Modeling of Human Dynamics Across Social Media and Social Networks”.
<http://socialmedia.sdsu.edu/>