Studying Big Data and Social Media
with Hyperlocal Human Dynamics and Social Networks

Hosted by the Center for Human Dynamics in the Mobile Age (HDMA)
San Diego State University, San Diego.
August 11, 12 (Tuesday and Wednesday), 2015

This specialist meeting (workshop) is co-funded by two National Science Foundation (NSF) projects (#1416509, *IBSS: Spatiotemporal Modeling of Human Dynamics Across Social Media and Social Networks* http://socialmedia.sdsu.edu and #1028177, *CDI-Type II: Mapping Cyberspace to Realspace: Visualizing and Understanding the Spatiotemporal Dynamics of Global Diffusion of Ideas and the Semantic Web*, http://mappingideas.sdsu.edu/). The goal of this workshop is to foster the multidisciplinary collaboration in related research disciplines, including geography, linguistics, computer science, political science, and communication. The two-day workshop (August 11 and August 12, 2015), organized by **the Center for Human Dynamics in the Mobile Age (HDMA)** at San Diego State University, will bring together over 30 specialists drawn from the many disciplines with interest in these issues. The workshop will assess the current state of the art technologies and tools, identify and prioritize a research agenda, and begin the development of a research community of collaborating scholars working on these big data and social media issues.

Over **30** specialists and scholars will be invited by the NSF project team, consisting of PI Ming-Hsiang Tsou (Geography) and Co-PIs from both projects: Dipak Gupta (Political Science), Jean Mark Gawron (Linguistics), Brian Spitzberg (Communication), Li An (Geography), Heather Corliss (Public Health), Jay Lee (Geography, Kent State), Ruoming Jin (Computer Science, Kent State), Xinyue Ye (Geography, Kent State), and Xuan Shi (Geosciences, U of Arkansas). The meeting will include plenary presentations by invited experts, lightning talks, and small focus group discussion of the issues. This workshop will generate a final report to be published on the IBSS project website. This year, our research theme will be "**Studying Big Data and Social Media with Hyperlocal Human Dynamics and Social Networks**". The dynamic supply of big data from millions of social media messages, GPS tracks, medical records, wireless sensors, electronic health records, web pages, and cellular phones, becomes an important research domain today. Big data provide untapped potentials for discovering and analyzing dynamic human problems, including business analytics, disease outbreaks, traffic patterns, urban dynamics, bioinformatics, and environmental changes. Such data offer golden opportunities for scientists to develop new tools, new methods, and new theories. However, Big Data Science requires transdisciplinary collaboration and research methodologies to integrate multiple perspectives into collaborative research endeavors. This workshop will build a collaborative platform for scientists and researchers to work together. Specific research questions to be addressed in the workshop may include:

1. What are the unique characteristics of big data in the context of human dynamics and social media?
2. How can we analyze non-normal probability distributions and dynamic patterns of big data from a spatiotemporal perspective?
3. What type of innovative research frameworks can help us to collect, analyze, visualize and predict hyperlocal human dynamics and social media?

4. What are the limitations of traditional GIS database and spatial statistics in studying big data and social media?
5. To what extent, and how, should theory and/or hypothesis-testing drive big data, or big data drive theory--what is the role of theory in relation to big data?
6. To what extent can social network analyses yield (dis)confirming results in regard to theory?
7. Given time-series and potential nonlinearity of spatial data (big data), what statistical methods, measures or statistics can be developed and/or used to "dig out" the space-time pattern(s) in human dynamics, and describe/characterize/explain/predict such patterns?

The workshop participants will be invited by the CDI and IBSS project PI and Co-PIs. The NSF projects will cover participants' travel and lodging costs (but no stipends). Invitees are required to submit a two page resume (bio, NSF style) and a two page position papers for related topics. Each position paper should conform to the following formatting requirements: 1) Arial font type at a size of 10 points or larger; and 2) the margins must be at least one inch on all sides in the letter size.

Please submit the **two-page resume** (bio-sketch) and the **two-page position paper** to **Ming-Hsiang Tsou mtsou@mail.sdsu.edu** by **June 15, 2015**. Both position papers and participants' bio will be published on the project website (http://mappingideas.sdsu.edu and http://socialmedia.sdsu.edu).

TRAVEL ARRANGEMENT for the specialist meeting:

Airline and Ground Transportation: Please reserve the airline and ground transportation (such as shuttle or taxi) by yourself. We will reimburse the costs of the airfares, parking, taxi, shuttles, etc. after the meeting. The meeting dates are August 11, 12 (from 8:30am - 5:30pm) in San Diego. Local airport: San Diego International Airport (SAN).   The hotel (Marriott Courtyard San Diego Old Town) is very close to the San Diego Airport (5 miles). The hotel provides free shuttle services from/to Airport from 5AM to 12pm Noon and then again from 3PM-9PM. Please call the Front Desk directly at 619-260-8500 to request pick up from the Shuttle. If you don't want to wait, you can also take taxi, it will only cost $12-15 from the airport to the hotel. We will reimburse you the taxi fee.

Hotel: (already paid and reserved by San Diego State University). **Please DO NOT make your reservations** directly with the hotel, but notify **Elias Issa <elieissa333@gmail.com>** of your travel dates and lodging needs and he will provide the Hotel with the guest list. When you arrive at the hotel, reference our room block under "**SDSU-CDI**". The meeting will cover the basic hotel room fee on August 10, August 11 and 12 (three nights) for each participant.

Marriott Courtyard San Diego Old Town Hotel
http://www.marriott.com/hotels/travel/sanot-courtyard-san-diego-old-town/

Meals: SDSU will provide light breakfast, lunches and dinners during the meeting. Additional per diem cost can be reimbursed after the meeting by SDSU.

Meeting Location: Hotel Meeting Rooms.