



College of Information Studies

University of Maryland Hornbake Library Building College Park, MD 20742-4345

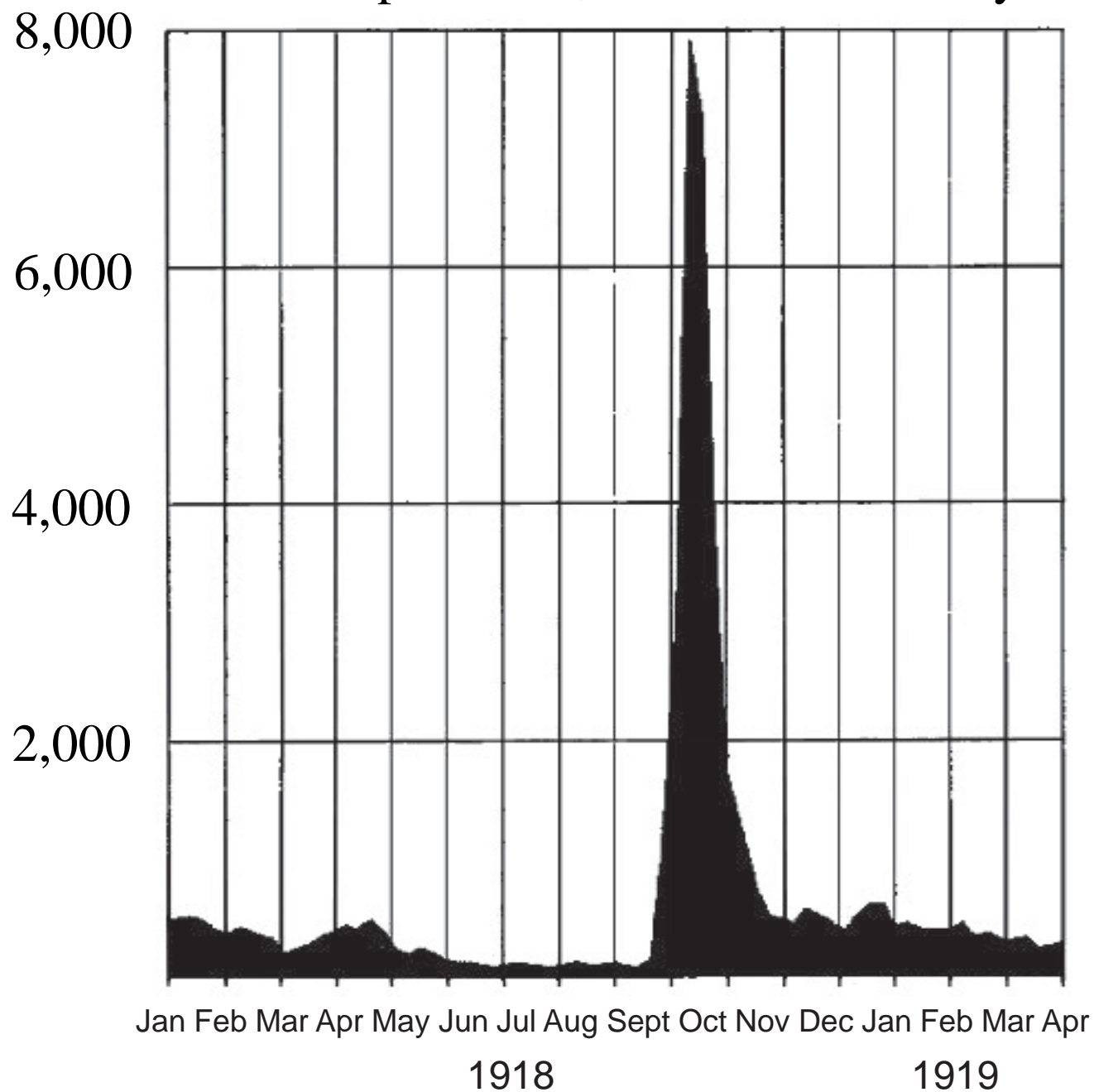
Social Networks

Session 8

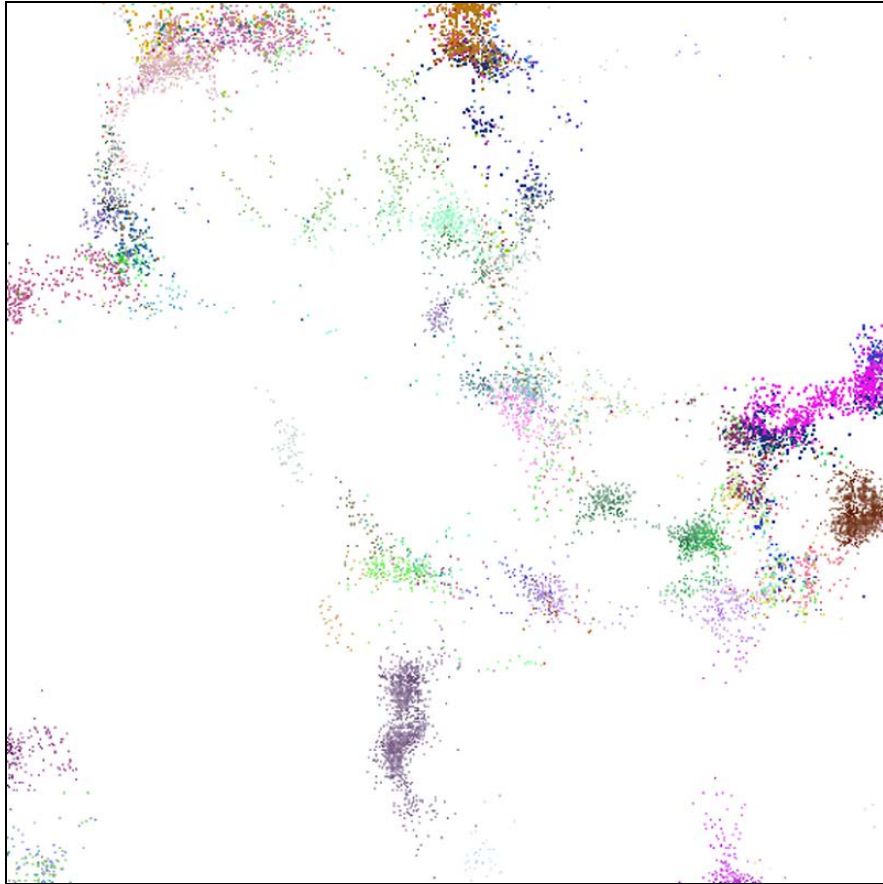
INST 301

Introduction to Information Science

Deaths per Week, United States Army

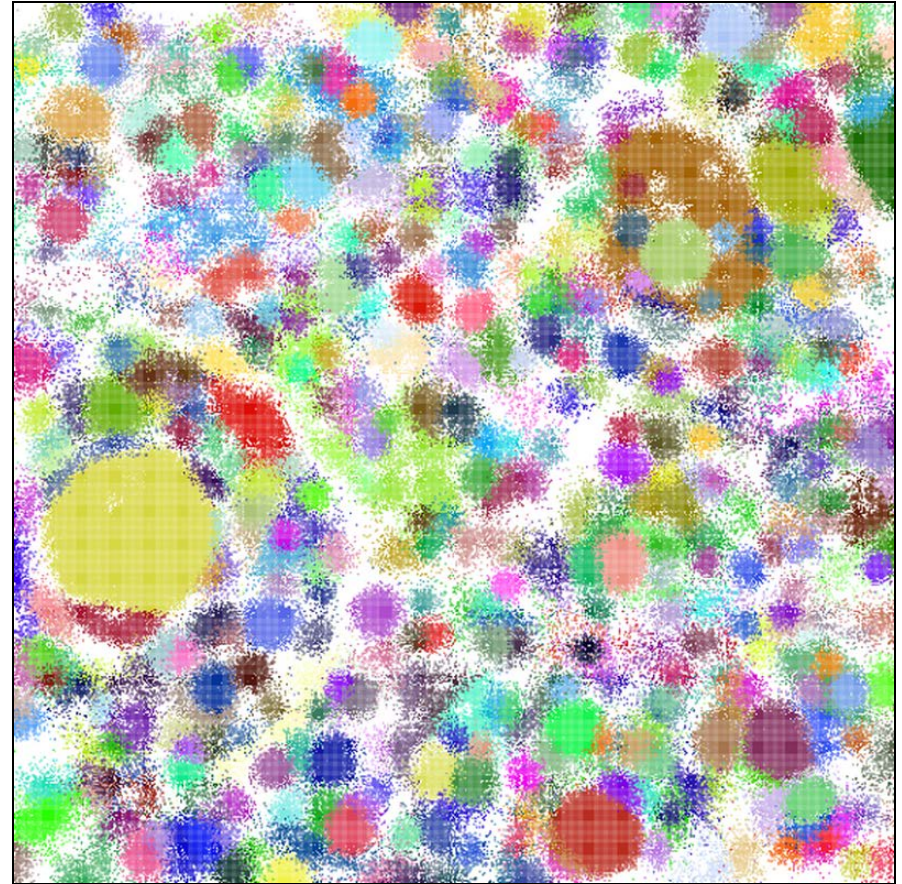


500 randomly chosen users



Day 1

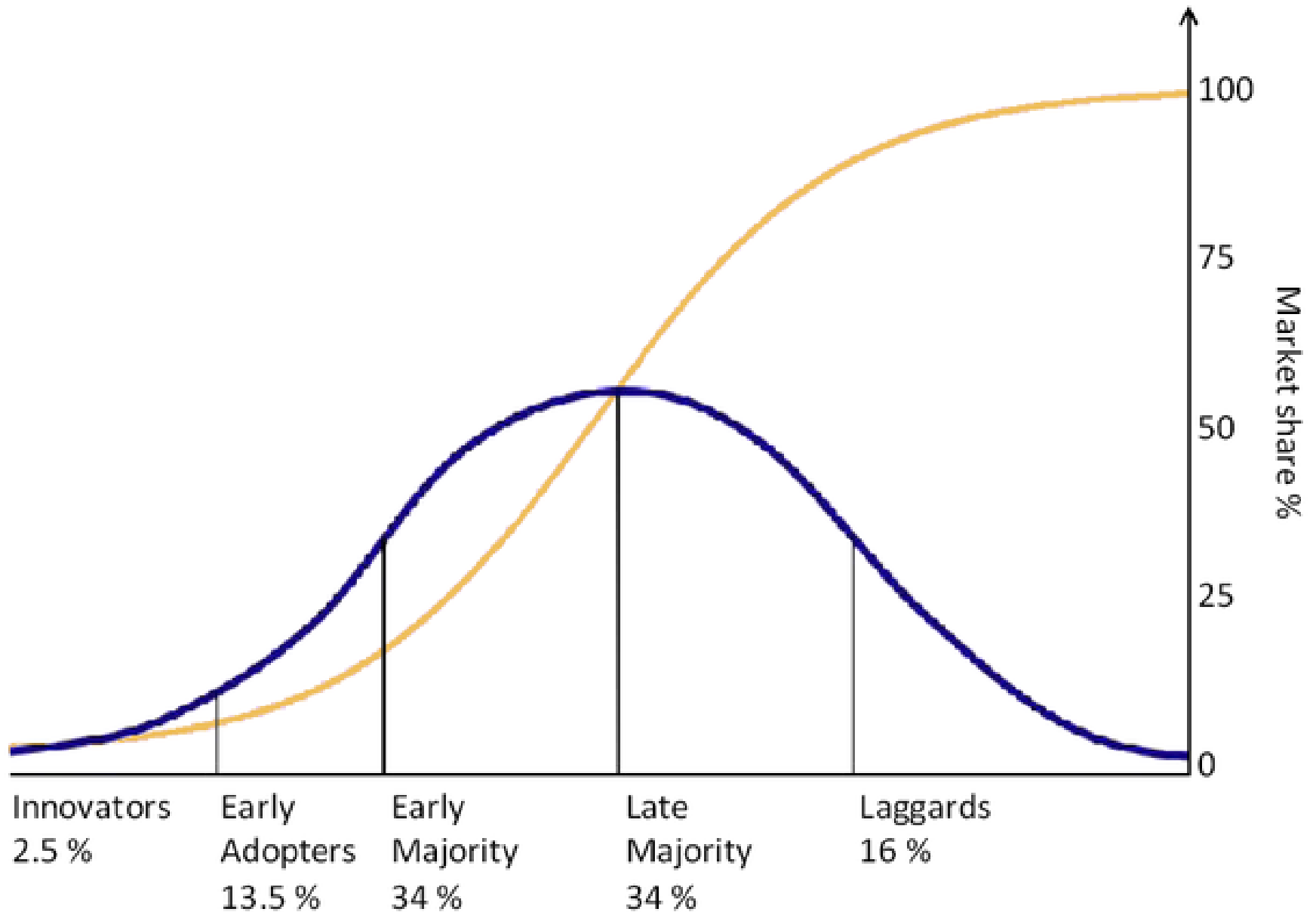
500 *most active* users



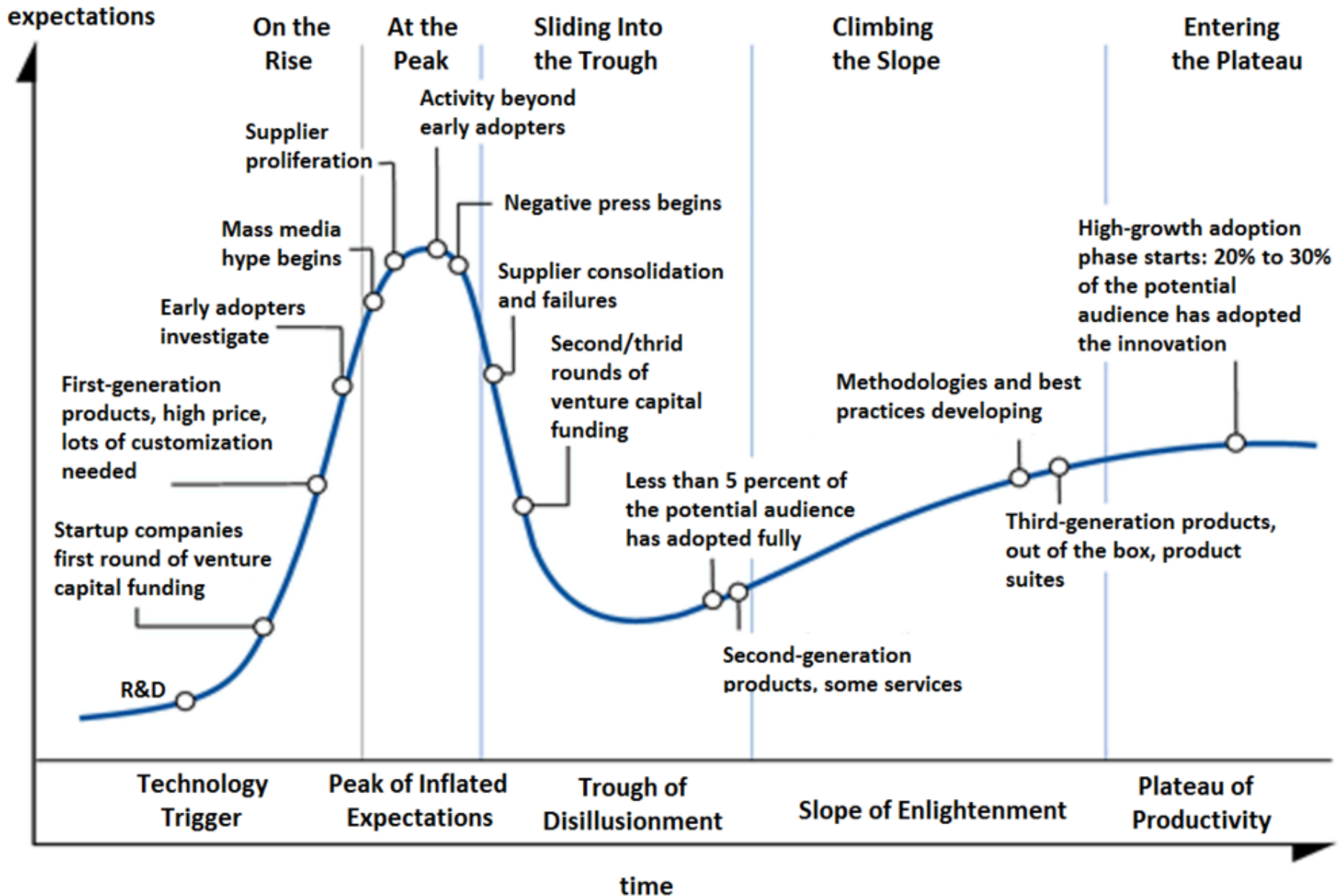
Day 1

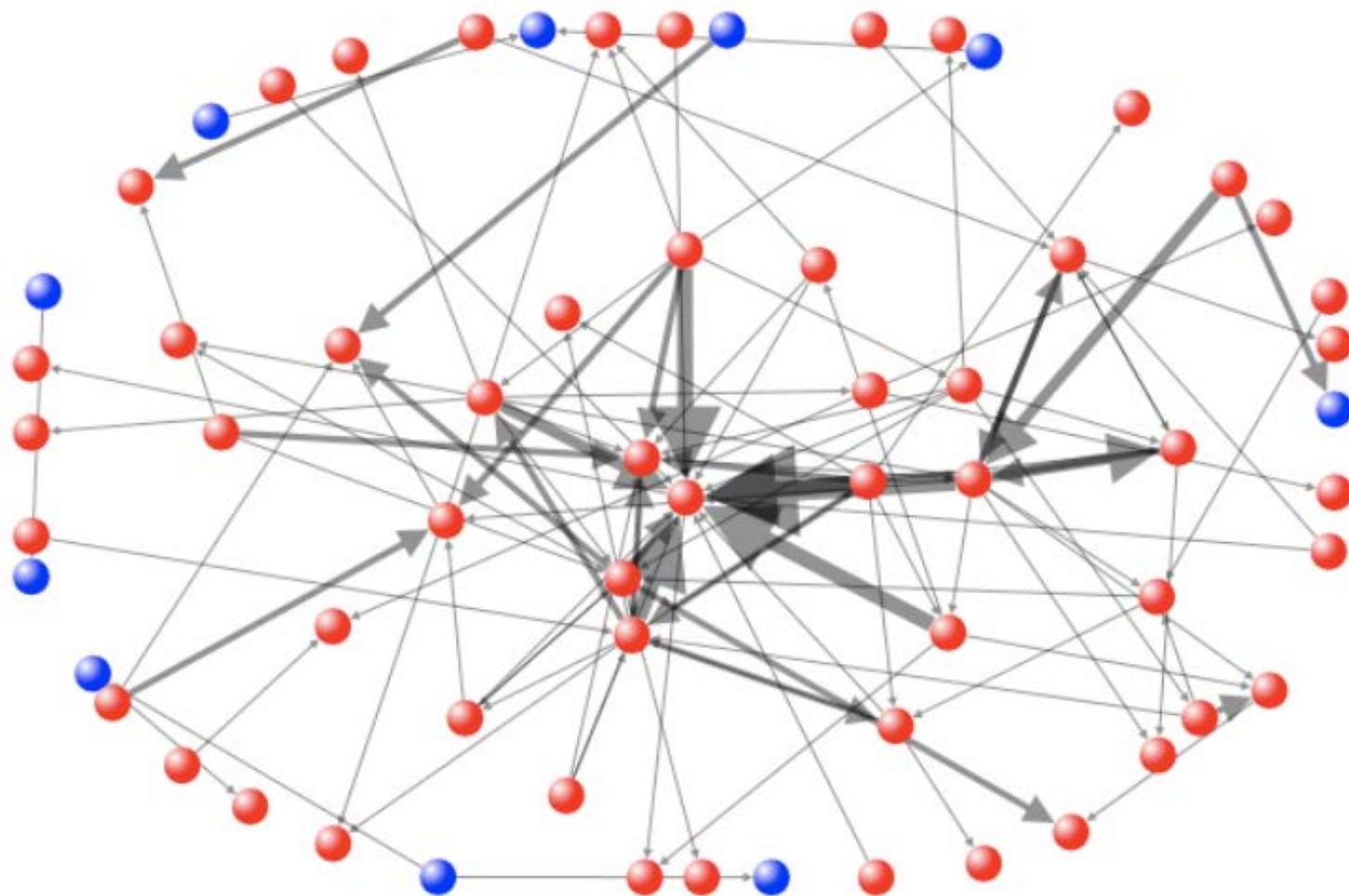
Credit: Jen Golbeck

Adoption Curve

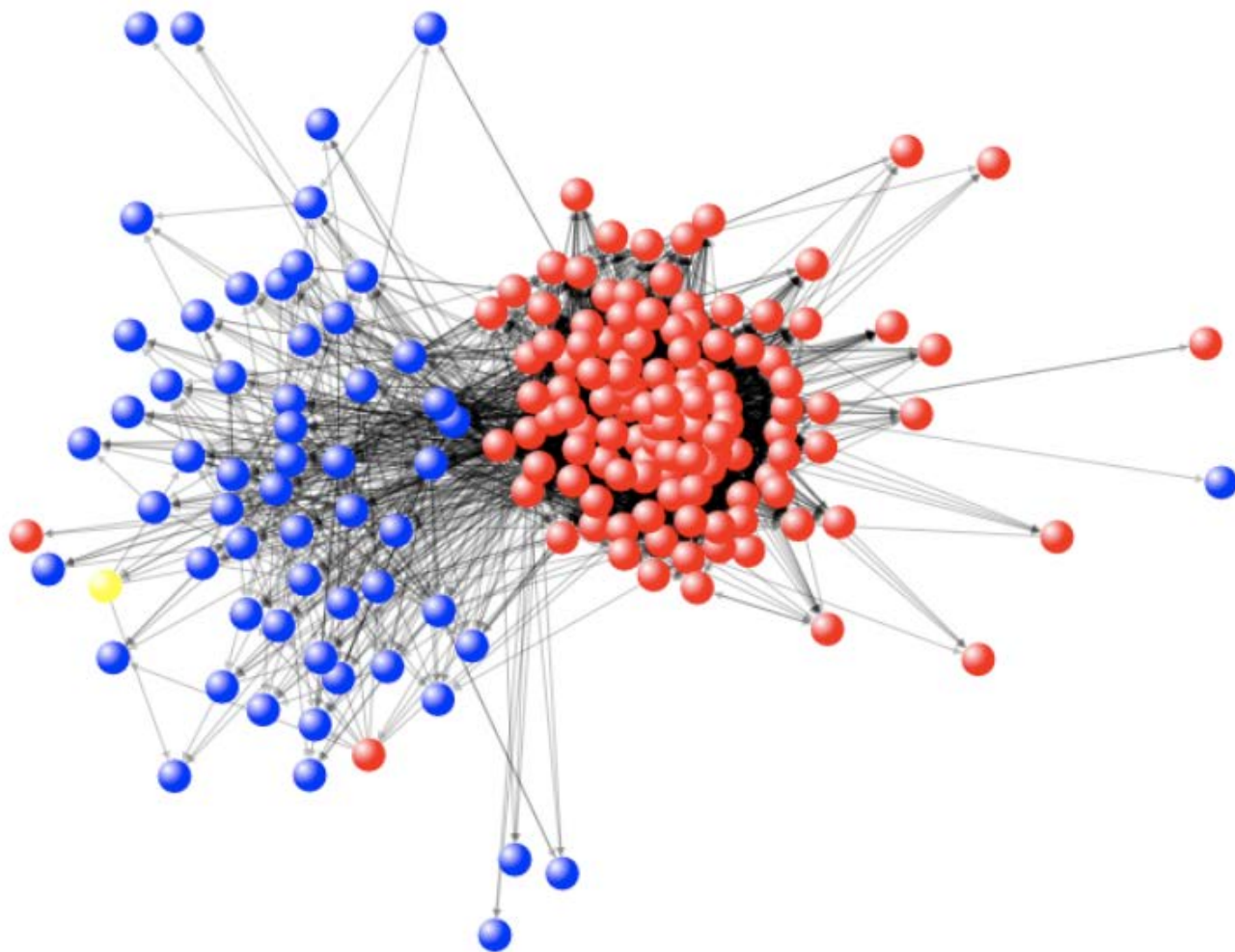


Hype Cycle



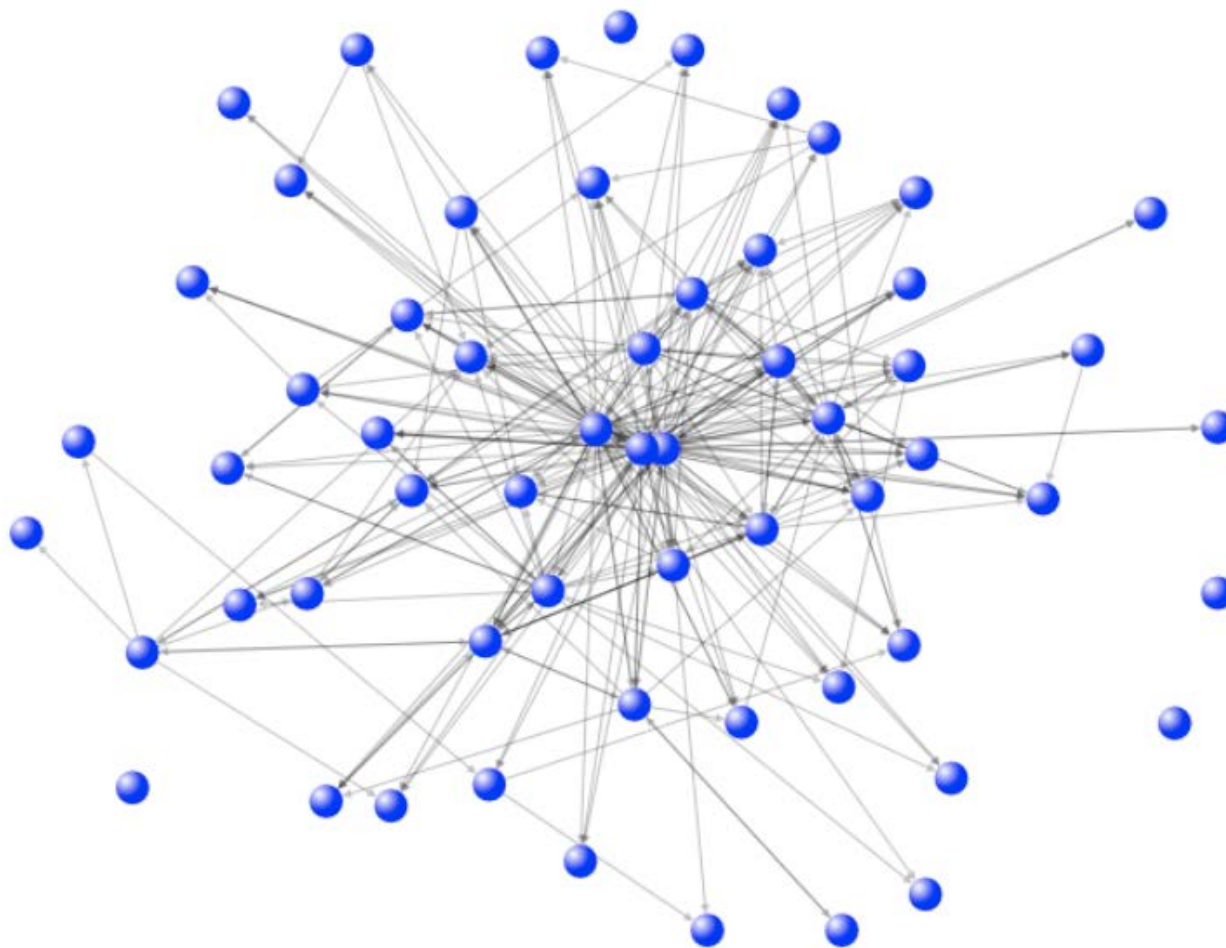


(a) Full Mention Network Visualiztion

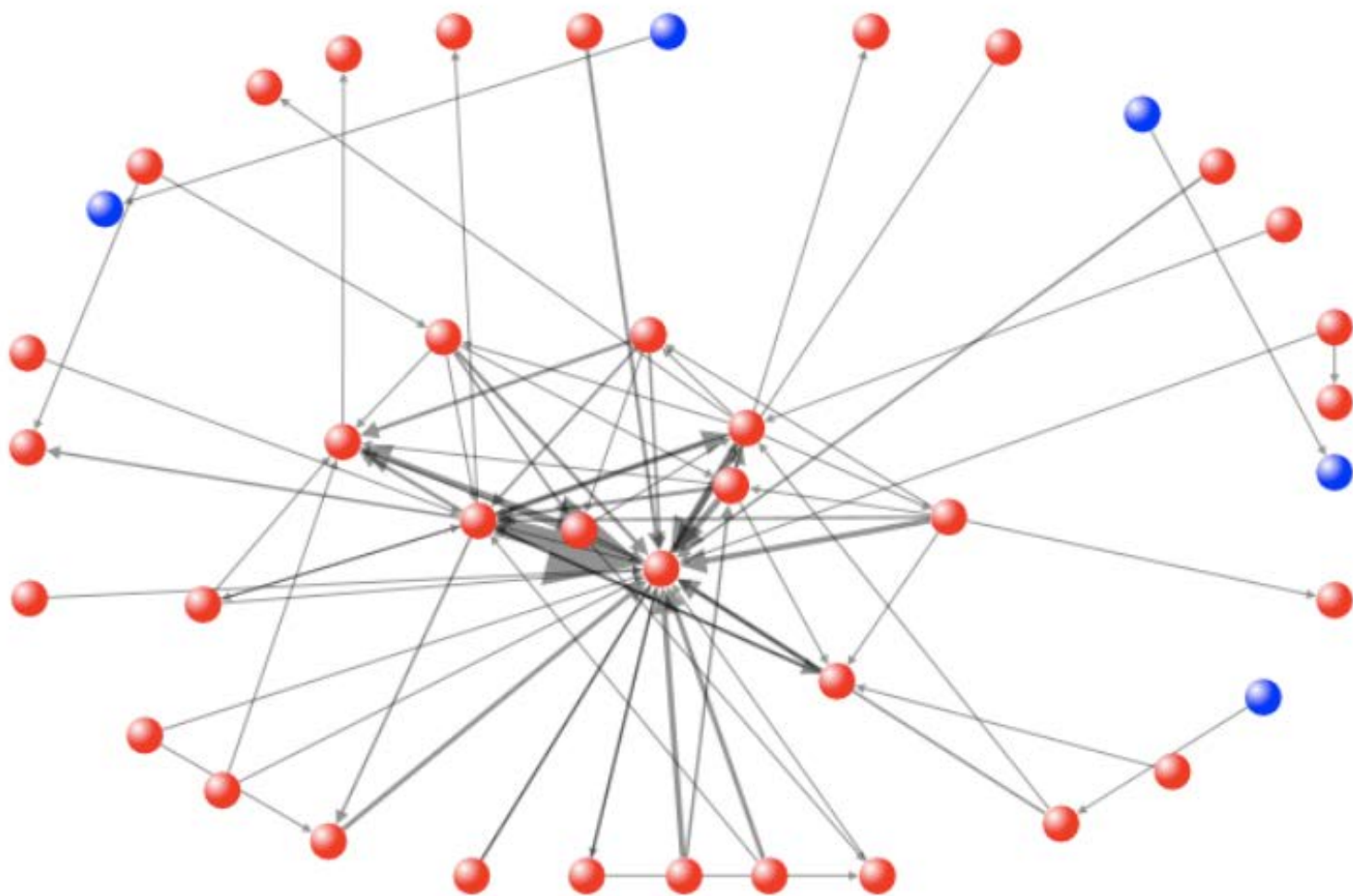


(a) Full Following/Follower Network Visualiztion

Credit: Jen Golbeck

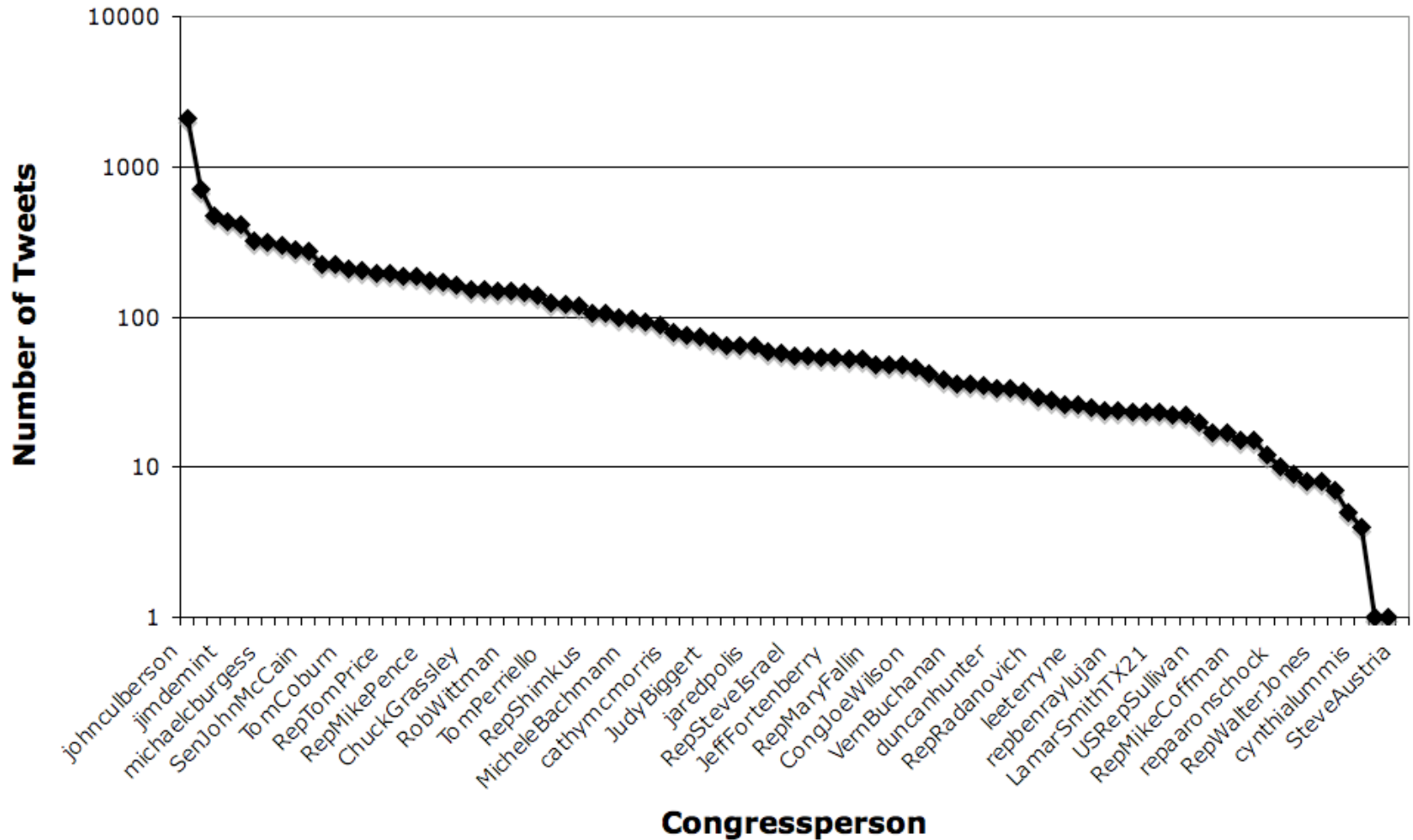


(c) Democrat Following/Follower Network

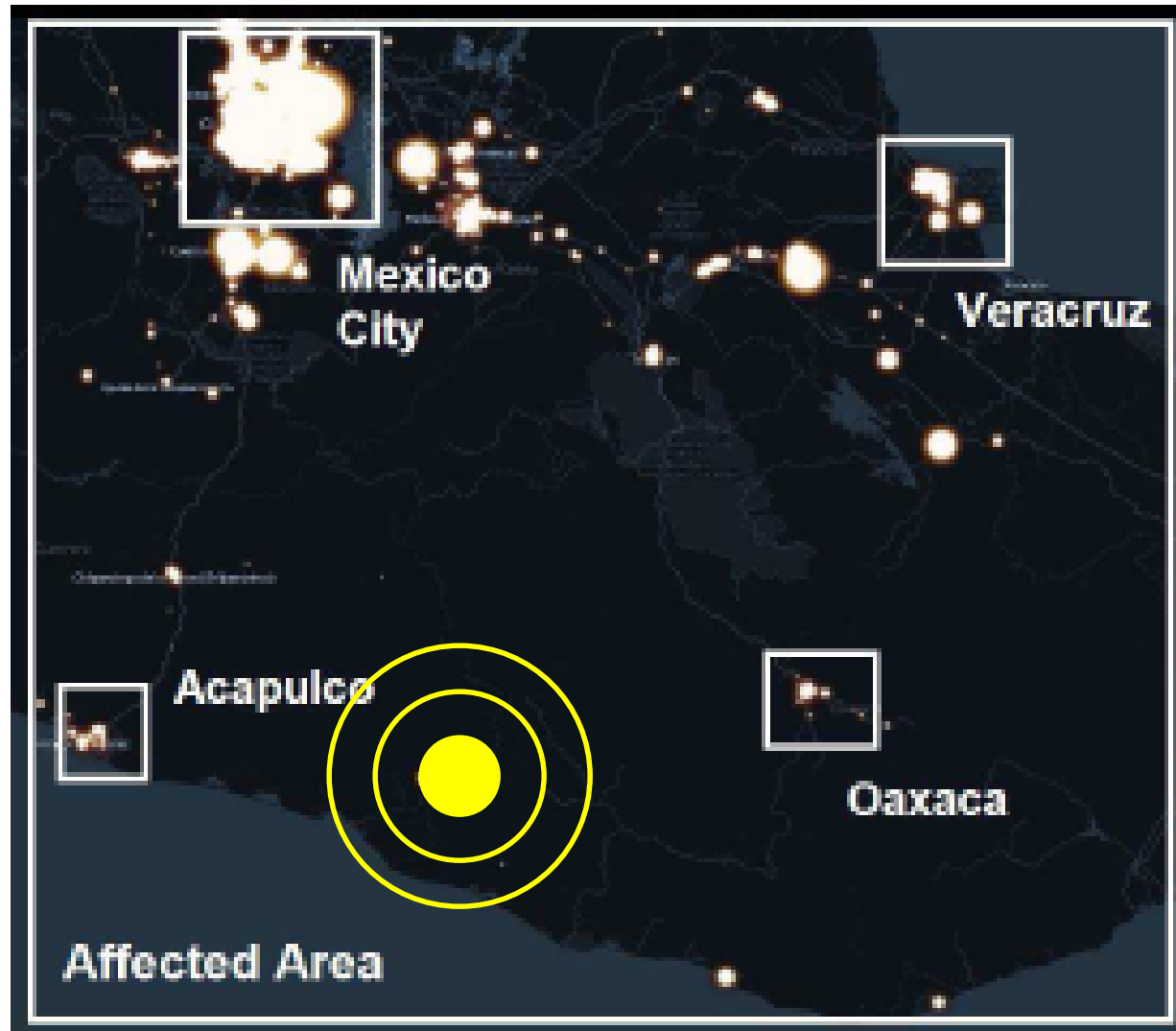


(a) Full Retweet Network Visualiztion

Tweets By Congressperson



Oaxaca Earthquake



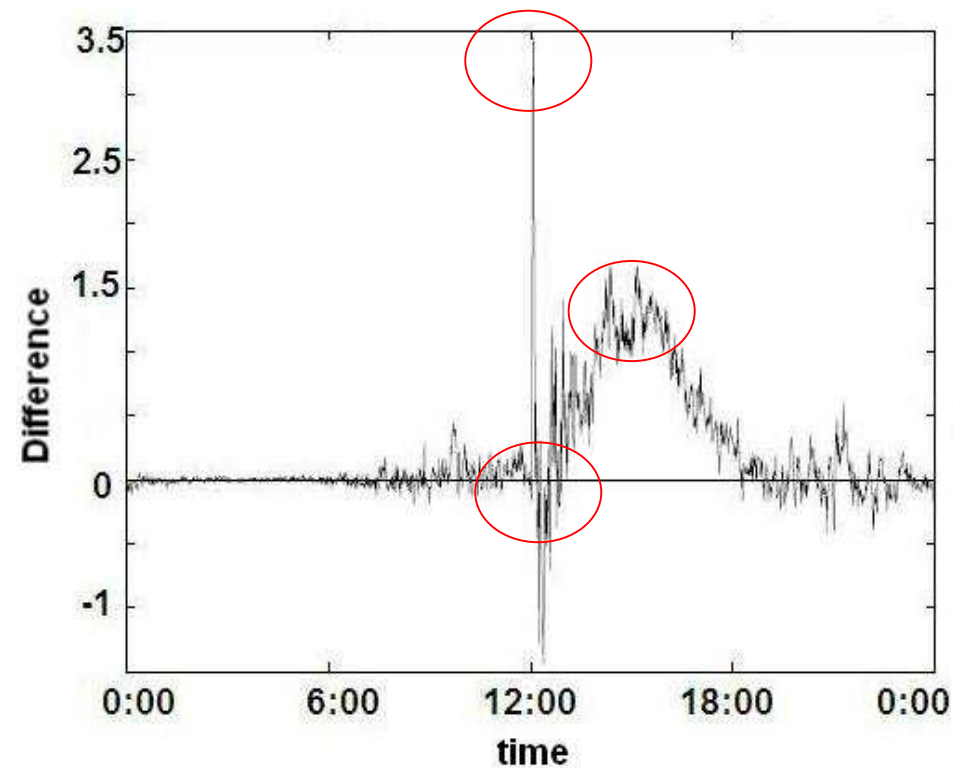
Credit: Vanessa Frias-Martinez

Video

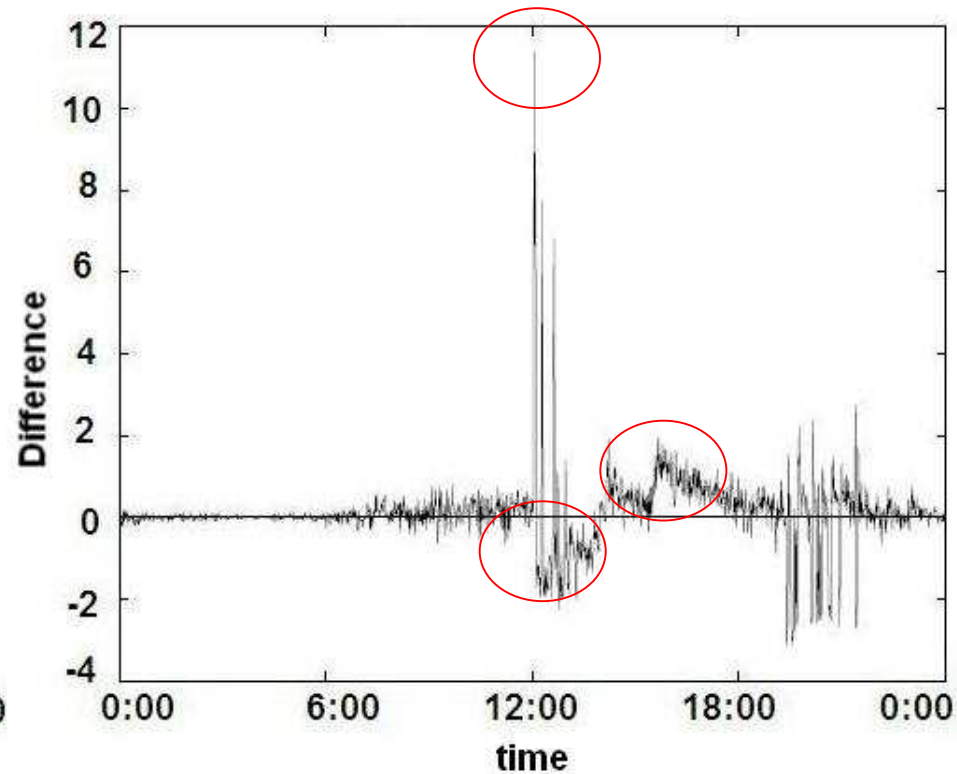


Call Volumes

- Compute time series of call volumes
 - 1-minute resolution
 - compare to baseline (normalized difference)

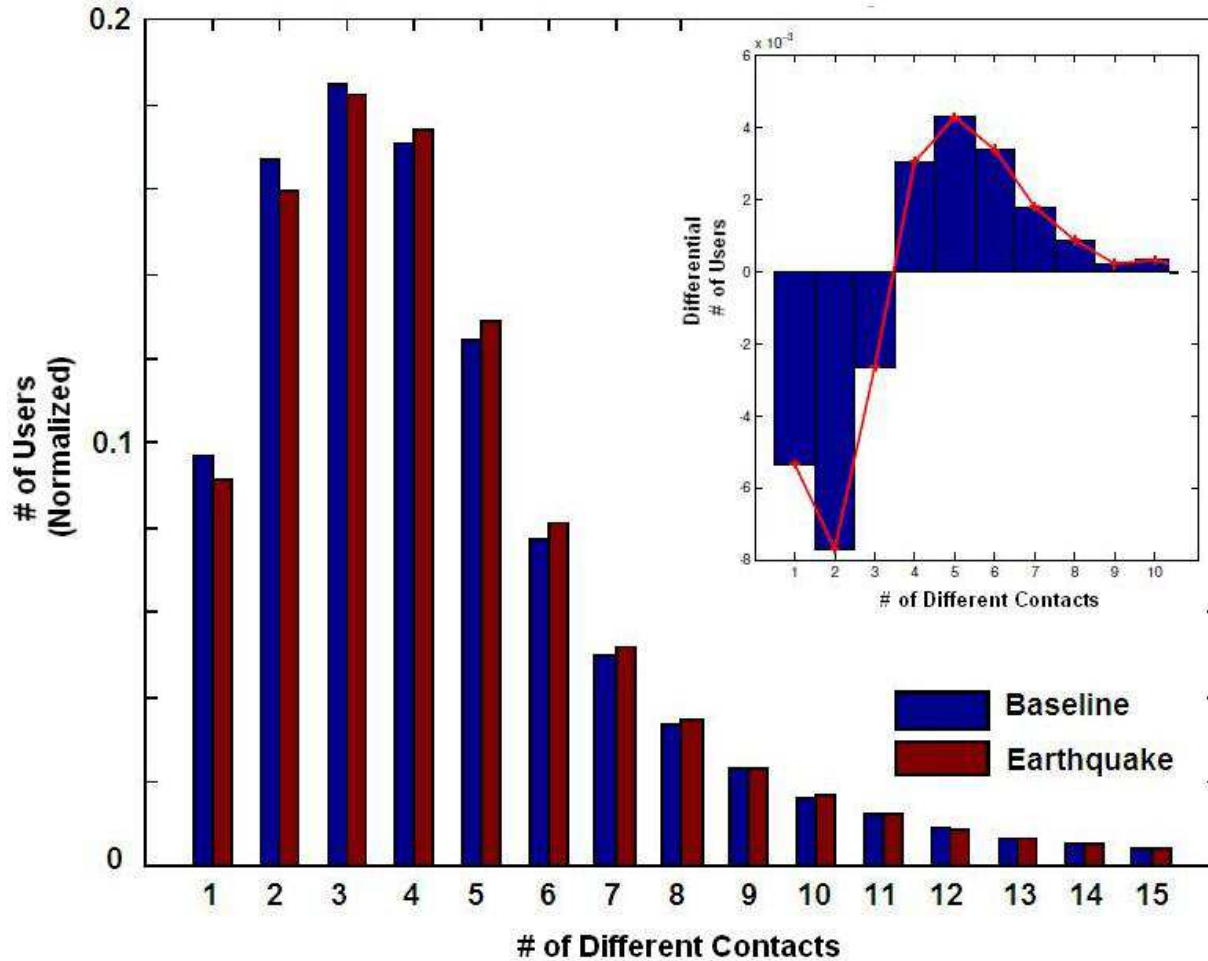


Mexico City



Oaxaca

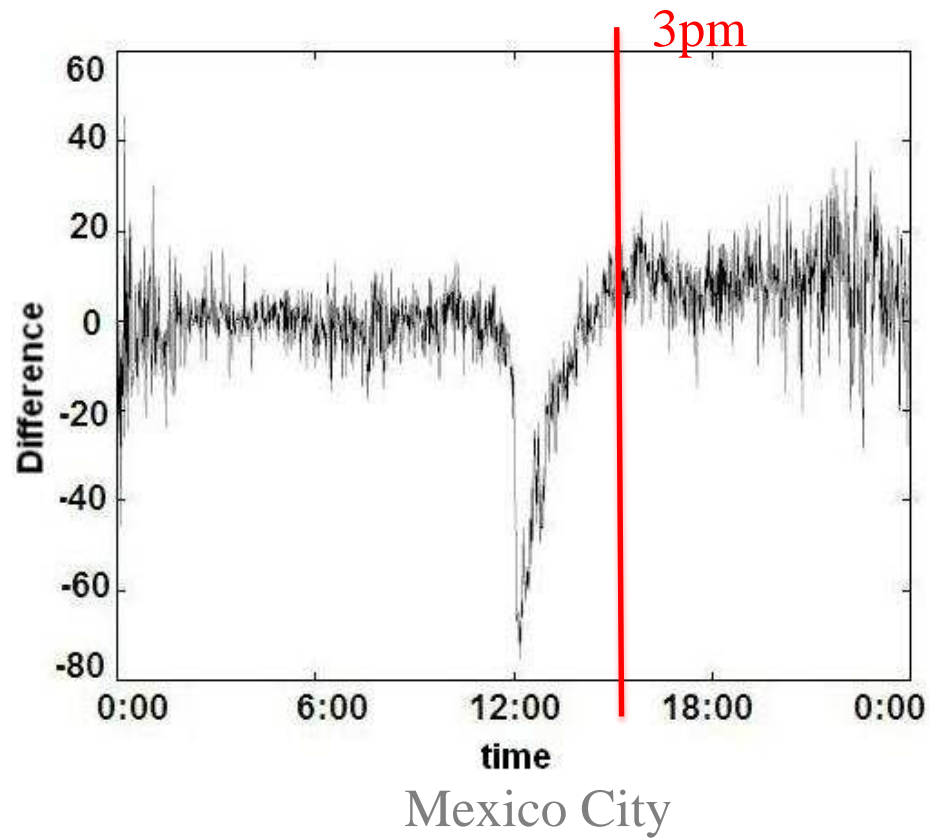
Social Activity



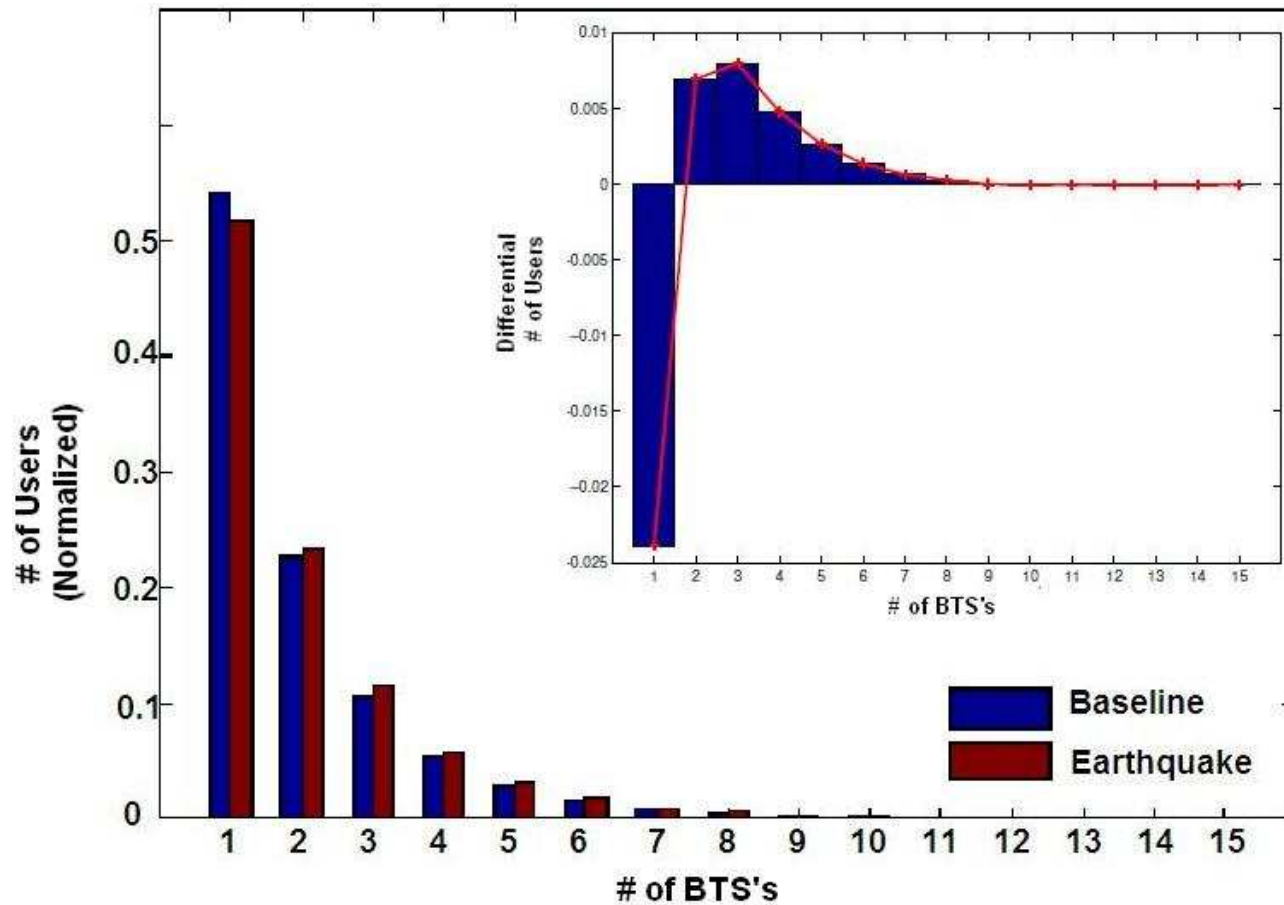
Mexico City

Credit: Vanessa Frias-Martinez

Call Duration



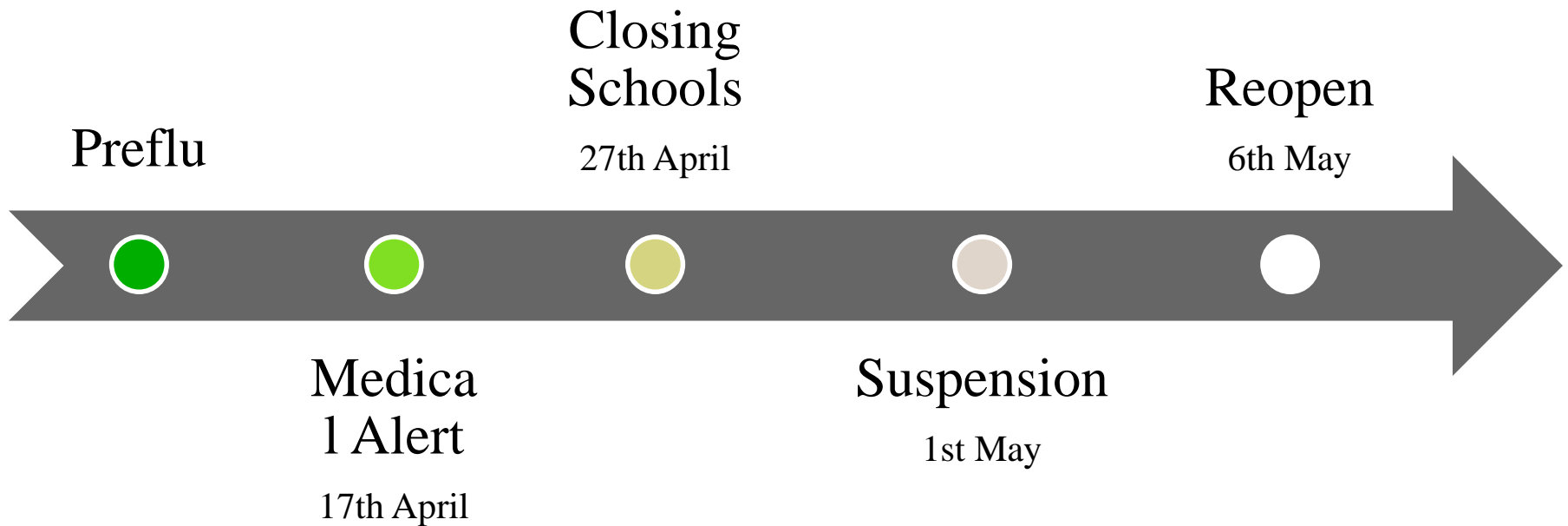
Mobility Behavior



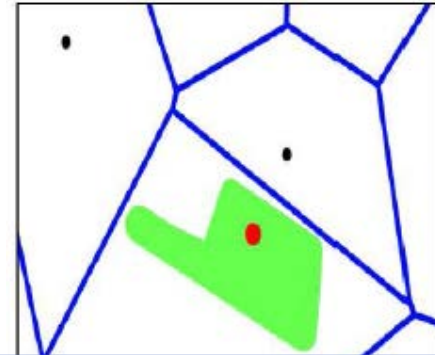
Summary

- Larger call volumes right after earthquake
- Shorter call durations (“check call”)
- Longer calls at the end of the day
- Highly connected users contact larger number of peers
- Larger mobility patterns during earthquake

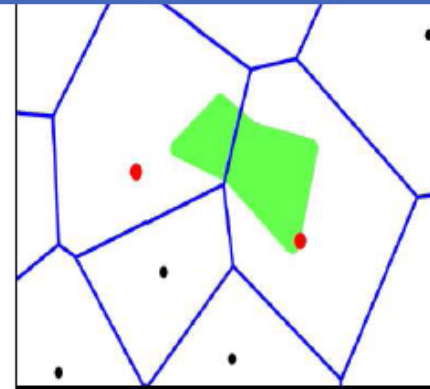
H1N1 Mexico Timeline



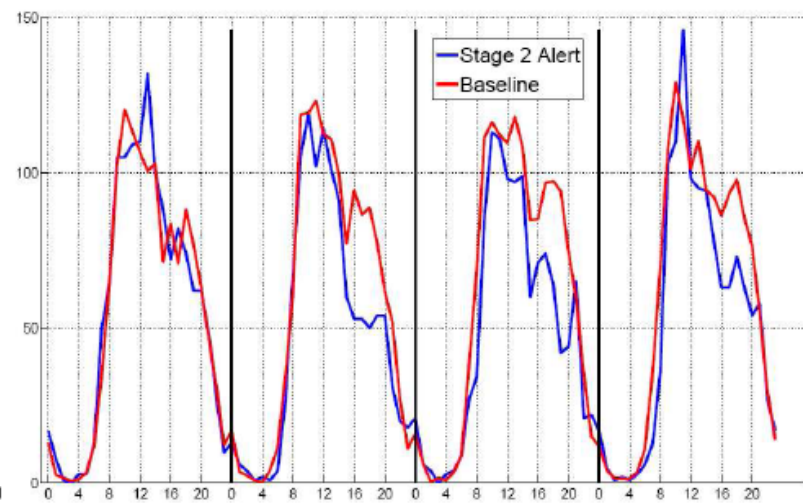
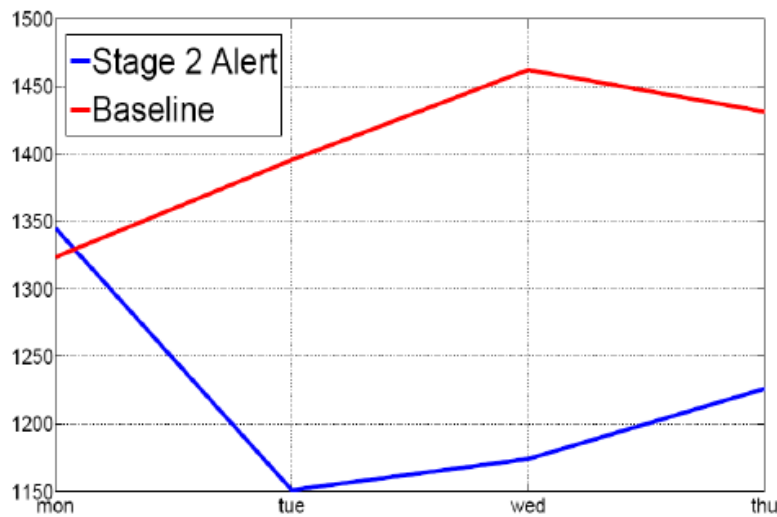
Infrastructure Analysis



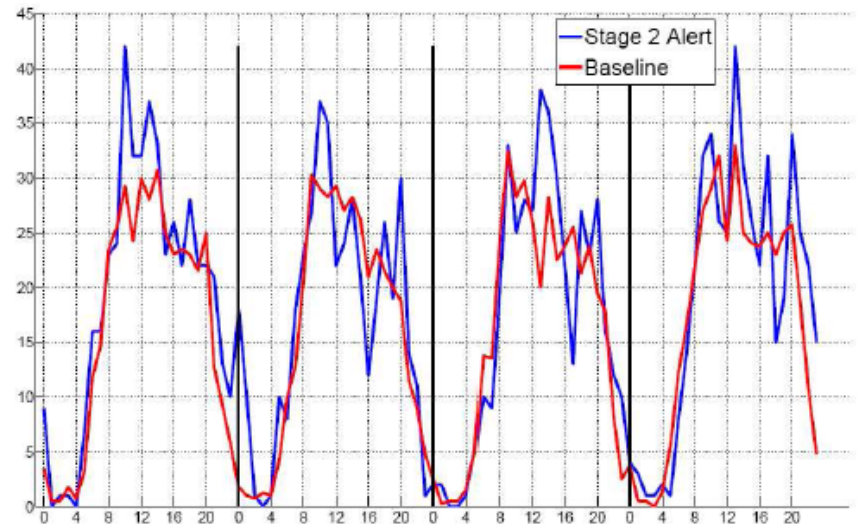
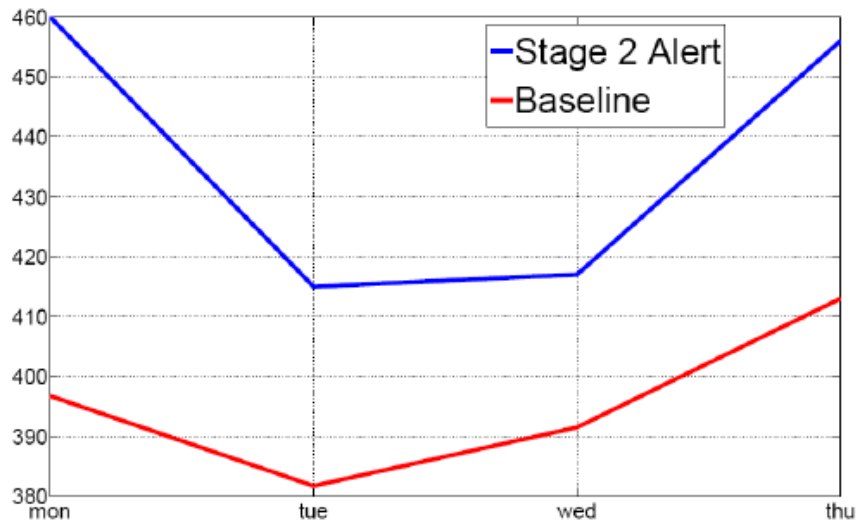
Only citizens that DO
NOT LIVE in these
BTS areas



University Campus
















Airport





























Evaluating IR Systems














- User-centered strategy
 - Given several users, and at least 2 retrieval systems
 - Have each user try the same task on both systems
 - Measure which system works the “best”
- System-centered strategy
 - Given documents, queries, and relevance judgments
 - Try several variations on the retrieval system
 - Measure which ranks more good docs near the top














Which is the Best Rank Order?














A.             

B.             

C.             

D.             

E.             

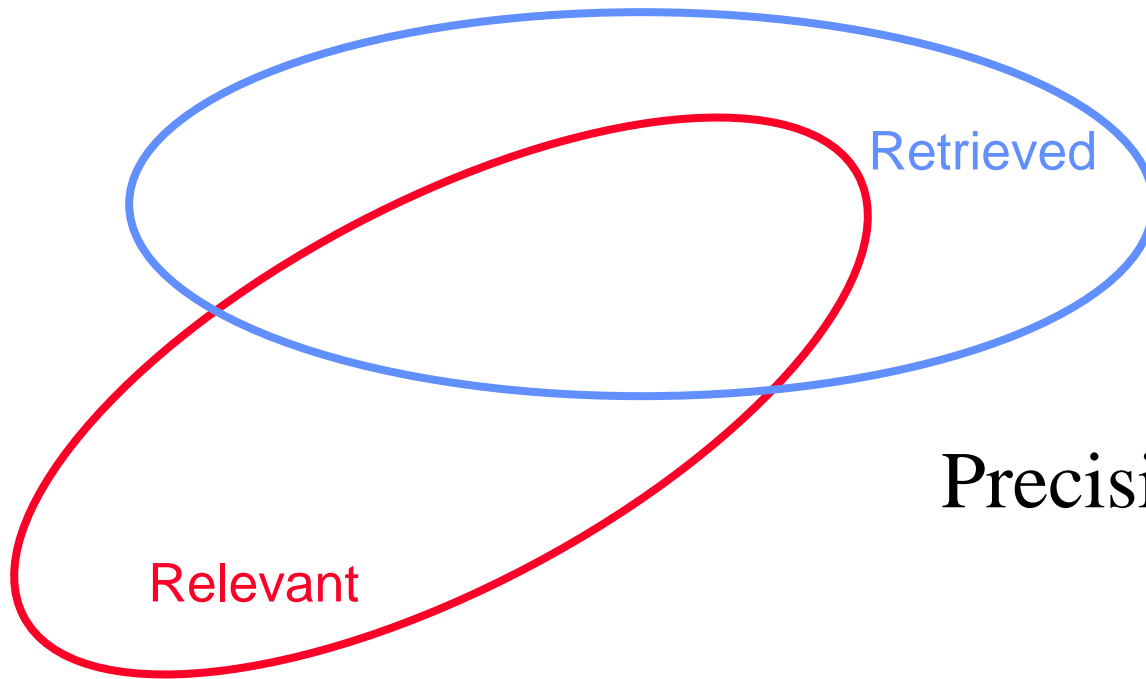
F.             

 = relevant document

Precision and Recall

- Precision
 - How much of what was found is relevant?
 - Often of interest, particularly for interactive searching
- Recall
 - How much of what is relevant was found?
 - Particularly important for law, patents, and medicine

Measures of Effectiveness



$$\text{Precision} = \frac{|\text{Ret} \cap \text{Rel}|}{|\text{Ret}|}$$

$$\text{Recall} = \frac{|\text{Ret} \cap \text{Rel}|}{|\text{Rel}|}$$

Affective Evaluation

- Measure stickiness through frequency of use
 - Non-comparative, long-term
- Key factors (from cognitive psychology):
 - Worst experience
 - Best experience
 - Most recent experience
- Highly variable effectiveness is undesirable
 - Bad experiences are particularly memorable

Before You Go

On a sheet of paper, answer the following (ungraded) question (no names, please):

What was the muddiest point in today's class?