

Using Social Media to Predict Material Convergence

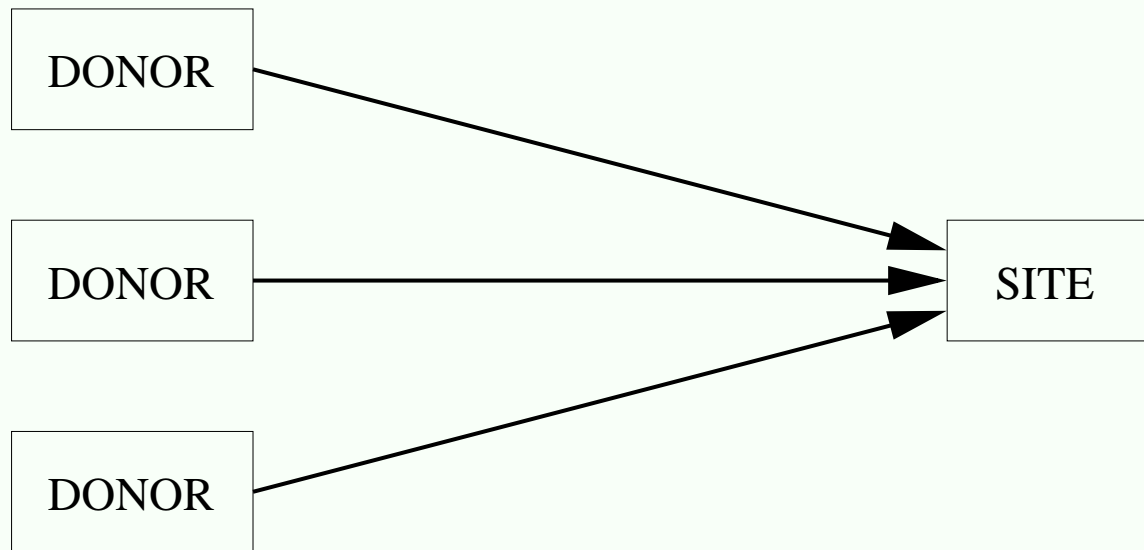
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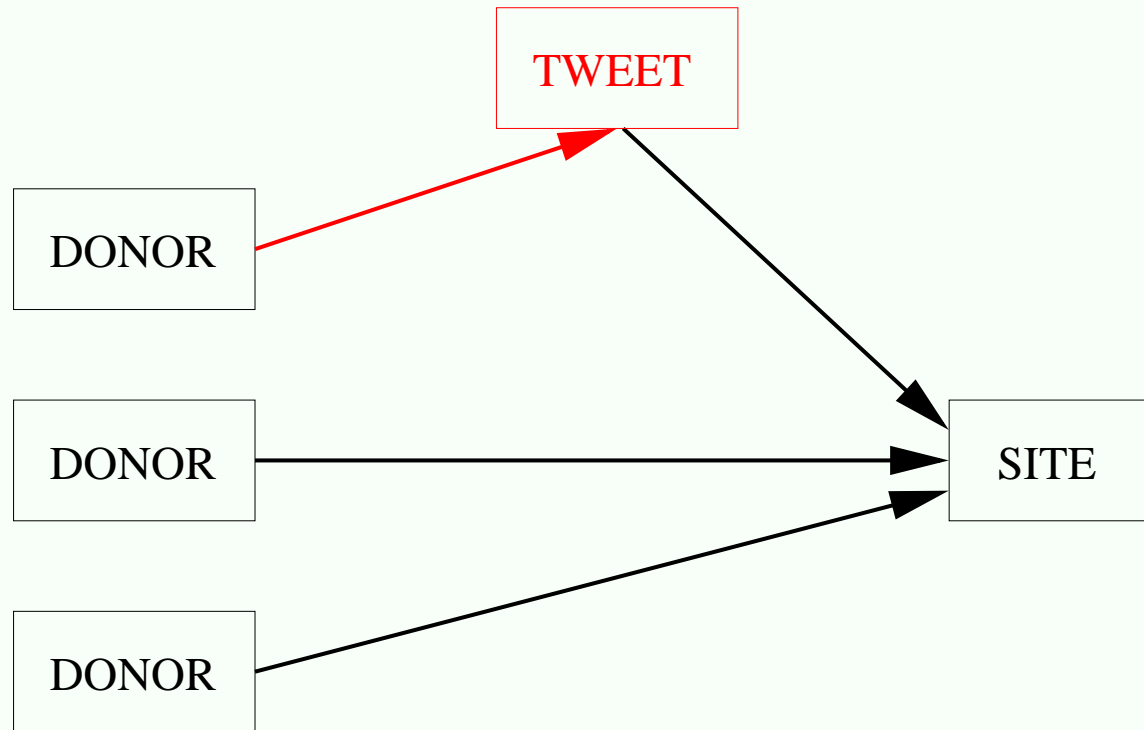
Joint Work: Holguin Veras, Wachtendorf, Das (WUSTL), M-I, Wallace, Ji, Korolov, Peabody (WUSTL), Lavoie (WUSTL)

December 3, 2014.

Material Convergence

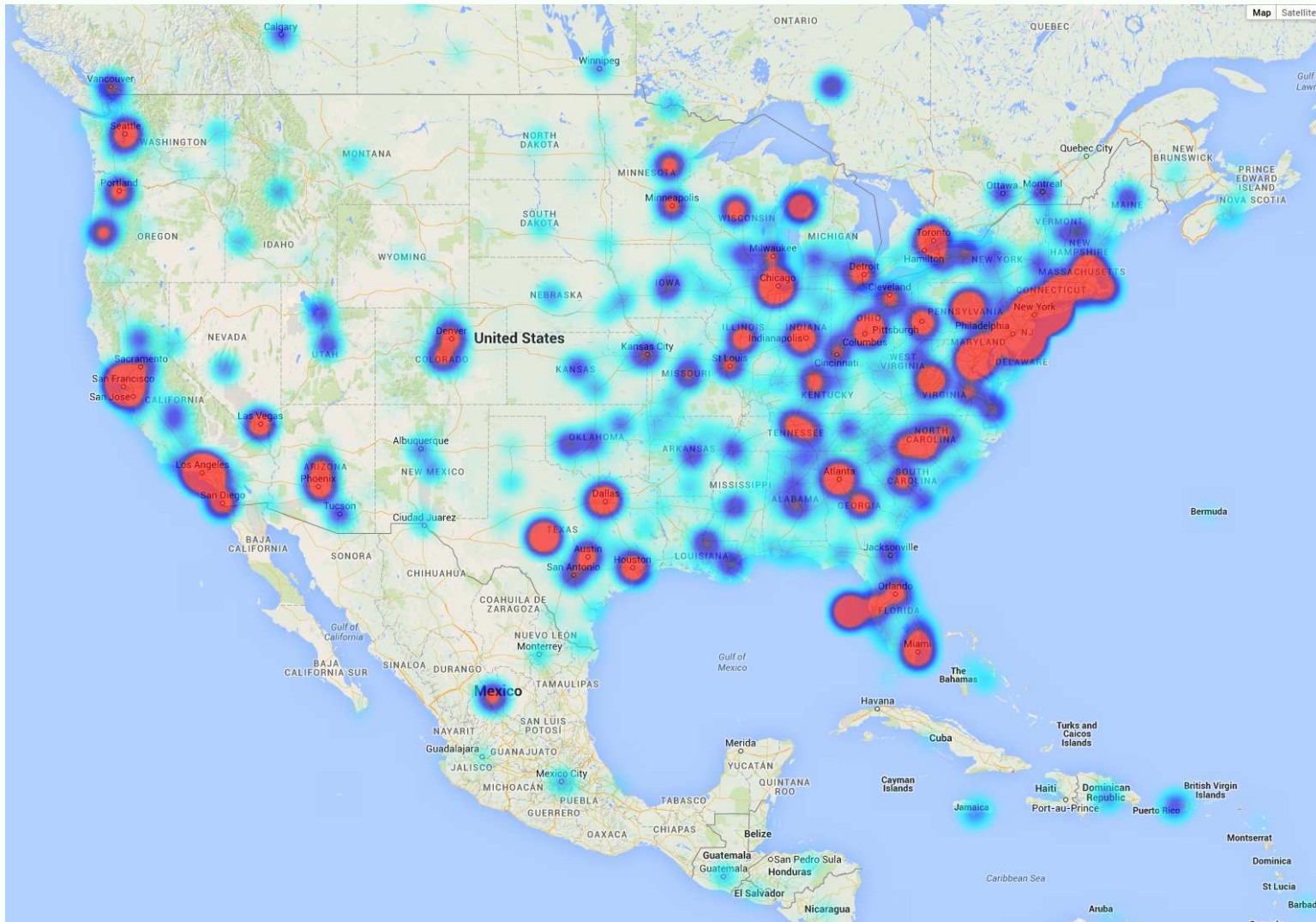


Social Media Monitoring of Donations



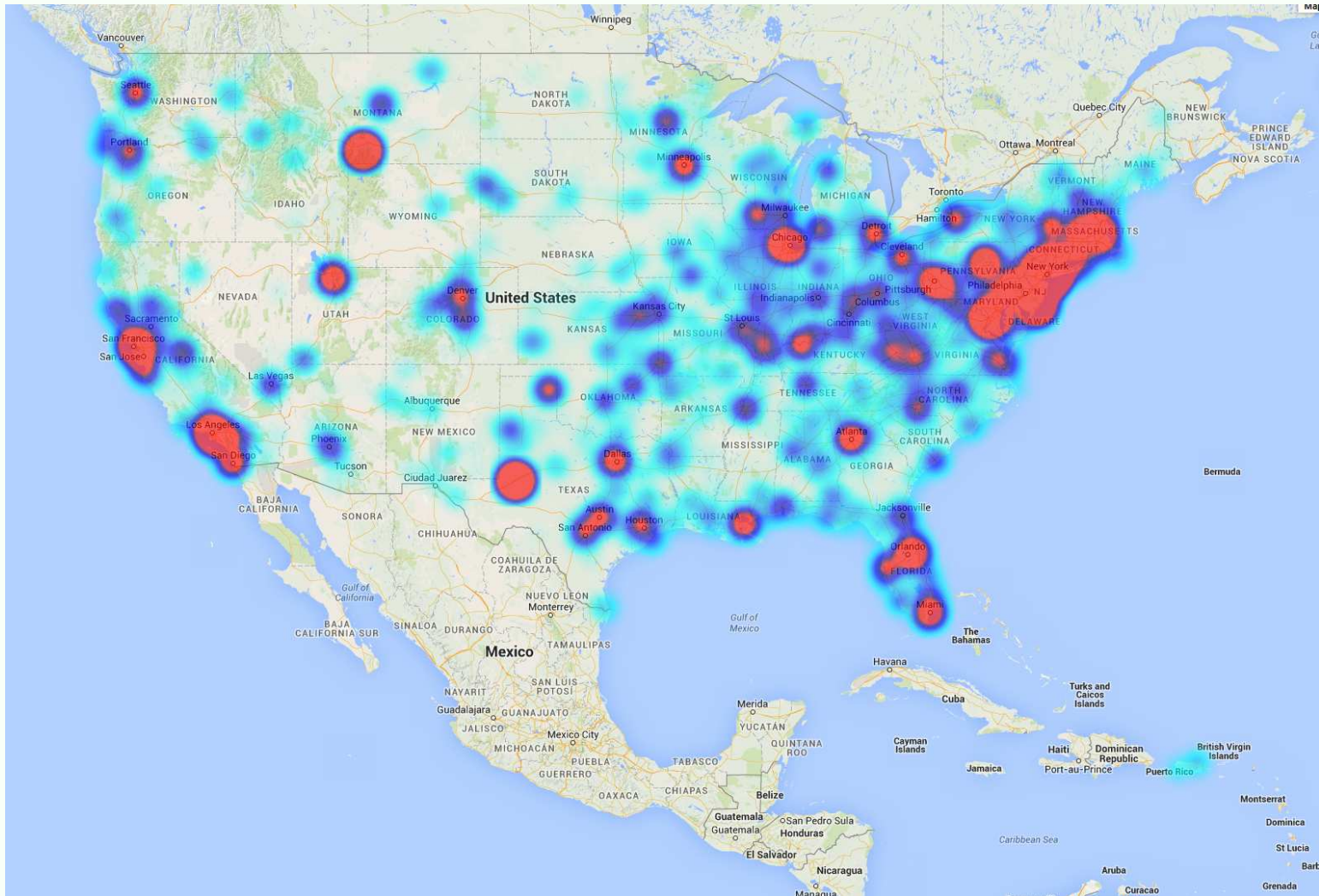
MonitorTwitter → DonationIntent (NLP) → GeoLocation (ML-predictor) → PredictMaterialConvergence
Demographics (ArcGIS)

Hurricane Sandy Aggregated Tweet Intent



http://www.cse.wustl.edu/~peabody/research/nd/heatmaps/all_dynamic.html

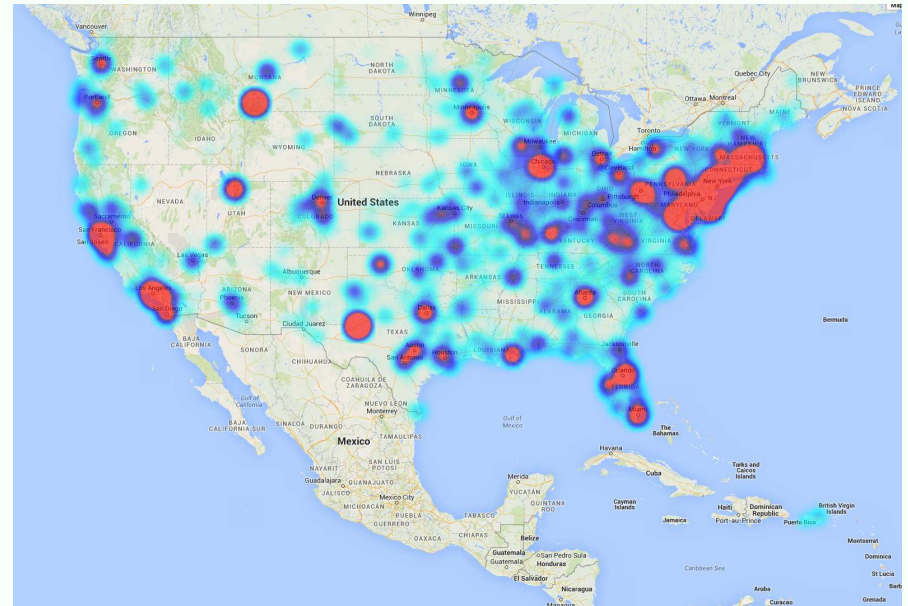
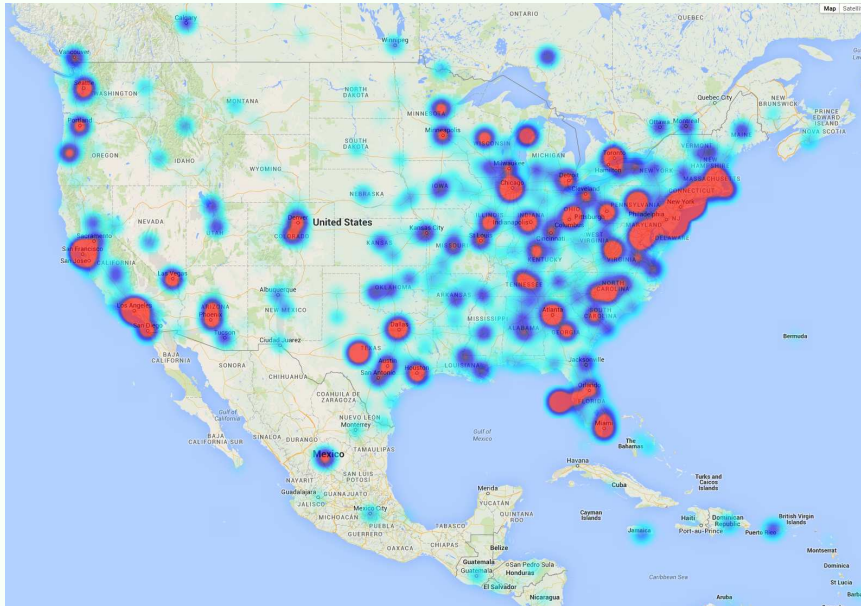
Validation with News



Regression on Demographics

Demographic Feature	Weight
UERatio: Fraction of 16+ years old and unemployed	0.19
Distance: log of distance in miles from tweets GPS to Sandys GPS.	0.035
HSDiploma: fraction of population 25+ years old with HSD	-0.16
Income: Average household income (normalized by max)	0.49

THANKS!



Social media appears to be a powerful tool for predicting donation.

