

**Solomon Messing**  
Pew Research Center  
1615 L Street NW, Washington, DC

[firstname.lastname] AT gmail DOT com (email)  
<http://solomonmessing.wordpress.com/> (website)

## Education

**Stanford University** Stanford, CA  
*Ph.D. Communication (2013), M.S. Statistics (2012)* 2008 - 2013

**University of California, San Diego** La Jolla, CA  
*Masters, School of Global Policy and Strategy (Int'l MBA-curriculum)* 2003 - 2005

**University of California, Santa Barbara** Santa Barbara, CA  
*Bachelor of Arts with Honors in Political Science and Global Studies, Japanese minor*

**Sophia University (上智大学, 市谷キャンパス)** Tokyo, Japan  
*Study abroad*

## Employment

**Pew Research Center** Washington, DC  
*Director, Data Labs* 2015 - Present

- Established new research group that leverages unconventional (non-survey) data sources and methods for computational social science. Research agenda includes social science methodology, public opinion, political representation
- Oversaw development of Python-oriented data science infrastructure: Linux-based AWS cloud servers, automated data collection with Scrapy; PostGreSQL, Hive, Mongo, S3 storage; GitHub version control; Jupyter and RStudio Server web interfaces for analysis.
- Developing protocols for data science at Pew: security, data management, content analysis and machine learning standards.
- Managing team of computational social scientists, researchers, engineers conducting research on text, behavioral, network data sets.
- Advocating, advising, and collaborating on computational social science efforts around the Center; hosting periodic workshops and guest speakers.
- Hiring data scientists, researchers, engineers for Data Labs and other groups around the Center.

**Facebook, Core Data Science Team** Menlo Park, CA  
*Computational Social Scientist/Consultant/Ph.D. Intern* 2012 - 2015

- Research on experimentation and machine learning, statistical techniques for estimating heterogeneous effects, social influence, social media.
- R&D for systems to encourage civic engagement, constituent communication; measuring heterogeneous treatments & effects; adaptive experimentation (contextual multi-armed bandits). Implementation in Python.
- Predictive modeling for political campaigns; strong positive impacts on revenue, CTRs, client feedback.
- Taught statistics for large behavioral social datasets (DataCamp), instructed joint Facebook-Udacity Exploratory Data Analysis course.

**Stanford University, Social Science Data and Software (SSDS)** Stanford, CA  
*Consultant* 2011 - 2013

- Guided Stanford clients through scraping, text analysis, network analysis, statistical modeling, visualization in R.
- Led workshops introducing R, data visualization, scraping & analysis of text data.

**Science Applications International** Washington, DC  
*Media Analytics Developer/Team Leader/Analyst* 2005 - 2011

- Developed multi-language media content analysis framework capturing sentiment, attribution of responsibility, economic framing; GUI; database; visualizations. Oversaw human-coder training, calibration, report production.
- Developed network visualizations to show spread of distinct themes across media sources, and highlight key originators and distributors of content on the web. Automated and helped integrate visualizations into web-based analytic system.
- Published more than 50 reports using primary language internet sources, with readership across the U.S. Public Diplomacy community. Citations, follow-up research requests from government officials including Undersecretary Hughes, Congressman Markey, and then-Senator Clinton.

#### Law-on-line, Inc.

Tucson, AZ

Information Technology Associate/Consultant

1996 - 2005 (non-continuously)

- Developed and helped bring to market multiple security software products for applications related to digital signature technology, Java & web scripting.

#### Books

*The Impression of Influence: Legislator Communication, Representation, and Democratic Accountability* with Justin Grimmer & Sean Westwood. 2014. *Princeton University Press*.

#### Publications

“Exposure to ideologically diverse news and opinion on Facebook” with Eytan Bakshy and Lada A. Adamic. *Science*, 2015.

“Bias in the Flesh: Skin Complexion and Stereotype Consistency in Political Campaigns” with Ethan Plaut & Maria Jabon. *Public Opinion Quarterly*, 2015.

“Quantifying Social Media’s Political Space: Estimating Ideology from Publicly Revealed Preferences on Facebook” with Robert Bond. *American Political Science Review*, 2015.

“Selective Exposure in the Age of Social Media: Endorsements Trump Partisan Source Affiliation when Selecting News Online” with Sean Westwood. *Communication Research*, 2013.

“How Words and Money Cultivate a Personal Vote: The Effect of Legislator Credit Claiming on Constituent Credit Allocation” with Justin Grimmer & Sean Westwood. *American Political Science Review*, 2012.

“Do Attitudes about Immigration Predict Willingness to Admit Individual Immigrants? A Cross-National Test of the Person-Positivity Bias” with Shanto Iyengar, Simon Jackman, Nicholas Valentino, Toril Aalberg, Raymond Duch, Kyu S. Hahn, Stuart Soroka, Allison Harell, & Tetsuro Kobayashi. *Public Opinion Quarterly*, 2012.

“Who is a ‘Deserving’ Immigrant? An Experimental Study of Norwegian Attitudes” with Toril Aalberg & Shanto Iyengar. *Scandinavian Political Studies*, 2011.

“Role of Diffusion Weighted Imaging in the Diagnosis of Pediatric Abdominal Tumors” with Rakhee Gawande, Gabriel Gonzalez, Aman Khurana, & Heike Daldrup-Link. *Pediatric Radiology*, 2013.

“Intravenous Ferumoxytol Allows Noninvasive MR Imaging of Stem Cell Transplants” with Aman Khurana, Rakhee Gawande, Guiting Lin, Sungmin Lee, Rosalinda Castaneda, Nikita Derugin, Laura Pisani, Tom F. Lue, & Heike Daldrup-Link. *Radiology*, 2012.

“Differentiation of the Normal Thymus from Anterior Mediastinal Lymphoma on Pediatric PET-CTs” with Rakhee Gawande, Aman Khurana, Dong Zhang, Rosalinda Castaneda, Robert Goldsby, Randal Hawkins, & Heike Daldrup-Link. *Radiology*, 2011.

#### Honors and Awards

- 2010** \$60,000 Google Research Award (with Sean Westwood, supervised by Dan McFarland & Jeremy Bailenson) “Harnessing the social graph: Social cues and reliability in content selection and evaluation”
- 2010** \$1,000 A-REP Research Grant (with Sean Westwood), “The impact of social news ratings on media consumption heuristics and agenda setting”
- 2008** Department of Communication Fellowship
- 2007** Annual Achievement Award for Excellence in Science and Technology - Technical Collaboration, Science Applications International
- 2007** Selected for Future Leaders program, Science Applications International
- 2004–2005** Dean’s Fellow, University of California, San Diego IR/PS
- 2001** Phi Beta Kappa, University of California, Santa Barbara
- 2000** Golden Key, University of California, Santa Barbara

## Invited Talks and Workshops

- Analyst Institute Social Networks Roundtable, March 9, 2016.
- Duke Network Analysis Center (DNAC), October 20, 2015.
- Spatial Computational Social Science at Stanford, Oct 20, 2014.
- UCLA Institute for Politics in Math, April 22, 2014.
- Stanford Political Science American Politics Workshop, April 22, 2013.
- Stanford Computational Social Science, Analyzing large data sets, September 20, 2012.
- Stanford Political Science Methods Workshop, May 2, 2012.

## Software

- HetEffects** with Justin Grimmer. R package utilizing ensemble machine learning methods to estimate high-dimensional causal effects that vary by treatment-group combination. See Estimating Heterogeneous Treatment Effects and the Effects of Heterogeneous Treatments with Ensemble Methods.
- ImageMetrics** R package to facilitate the analysis of image data, designed to facilitate analysis described in “Bias in the flesh” (see above).
- NetCluster**, **triads**, **NetData** with Mike Nowak, Sean Westwood & Dan McFarland. R packages to determine node-level triad type membership for the 16 types of triads that occur in a directed network, facilitate network clustering and evaluation of cluster configurations, and provide example data. Examples in “Social network analysis labs in R.”
- Open IAT/bIAT** with Sean Westwood. Web application that implements the Implicit Associations Test and brief Implicit Associations Test, based on JavaScript, PHP, and MySQL. Builds on the “Open and Online IAT.” Available here: <http://pclresearch.stanford.edu/iat/>

## Computing

- R Statistical Programming Language** Data visualization, conventional statistical analysis/econometrics, Bayesian statistics, text-as-data, image, GIS, and network data, including authoring multiple software packages.

**Python** Data analysis (Pandas, NumPy, SciPy), Machine Learning (SciKit Learn, Gensim), parsing data from the web, computer vision, text-as-data, deep-learning (text data), data management.

**SQL** Experience utilizing Hive (HQL) with petabyte scale data sets, PostGreSQL, database design with MySQL, SQLite.

**Java** Undergraduate & natural language processing courses taken; some instrustry coding experience.

**Web Dev** Working knowledge of JavaScript, PHP, JSON, RegEx, HTTP, Linux shell scripts, C-sharp/.NET.

## Conference Presentations

“Social News in Black and White: How Ethnic and Socioeconomic Attributes Shape the Way We Consume and Evaluate Social Media.” Paper presented at the *American Political Science Association* annual conference, Washington, DC, 2014.

“Social Influence and Participation: How Socially Shared Content Boosts Civic Participation” with Eytan Bakshy and Andrew Fiore. Paper presented at the *Midwest Political Science Association* annual conference, Chicago, IL, 2014.

“How Words and Money Cultivate a Personal Vote” with Justin Grimmer and Sean Westwood. Paper presented at the *Midwest Political Science Association* annual conference, Chicago, IL, 2012, and the West Coast Experiments conference, Berkeley, CA, 2012.

“How Social Distance Structures Exposure and Evaluation of Content in Social Media” with Sean Westwood. Paper presented at the *Midwest Political Science Association* annual conference, Chicago, IL, 2012; *International Communication Association* annual conference, 2013.

“Economic and Cultural Threat as Antecedents of Opposition to Immigration” with Shanto Iyengar, Nicholas Valentino, Ray Duch, Kyu Hahn, Tetsuro Kobayashi. Paper presented at the *Midwest Political Science Association* annual conference, Chicago, IL, 2012

“Explicit and Implicit Racial Attitudes: A Test of Convergent and Predictive Validity” with Shanto Iyengar, Kyu Hahn, Mahzarin Banaji & Christopher Dial. Paper presented at the *American Political Science Association* annual conference, Seattle, WA, 2012.

“Selective Exposure in the Age of Social Media” with Sean Westwood. Paper presented at the *Midwest Political Science Association* annual conference, Chicago, IL, 2011

“Opinion change in deliberation: The role of peer influence and persuasion” with Sean Westwood. Paper presented at the *Midwest Political Science Association* annual conference in Chicago, IL, 2011.

“Does skin complexion influence candidate preference? The case of the 2008 campaign” with Shanto Iyengar, Kyu Hahn, & Jeremy Bailenson. Paper presented at the *American Political Science Association* annual conference, Washington, DC, 2010.

“Bias in the flesh: Attack ads and the effects of visual cues in the 2008 presidential campaign” with Ethan Plaut & Maria Jabon. Paper presented at the *International Communication Association* annual conference, Singapore, 2010.

“Flesh-tone pixel comparison: A method to test for bias in images of political candidates.” Paper presented at the *International Association of Media and Communication Research* annual conference, Mexico City, 2009.

## Journal Service

Reviewer, *American Journal of Political Science*

Reviewer, *Political Analysis*

Reviewer, *Public Opinion Quarterly*

Reviewer, *Political Behavior*

Assistant Editor, Reviewer, *Political Communication*

Founding Editor, Reviewer, *Journal of International Policy Solutions*

Guest Editor, Reviewer, *Journal of Public and International Affairs*

## Professional Societies

**American Political Science Association (APSA)**, member

**Midwest Political Science Association (MPSA)**, member

**International Communication Association (ICA)**, member

**United States-Indonesia Society (USINDO)**, member

## Languages

**Indonesian/Malay Bahasa** 2 years professional experience as Indonesian analyst/linguist; 2 years intensive Indonesian graduate study; Certified 3/2 Written/Spoken on the Interagency Language Roundtable (ILR) scale used by the U.S. Foreign Service.

**Japanese** 3 years undergraduate language study, 1 year study abroad in Tokyo, Japan.

**Arabic** Digital courses taken; introductory-level translation experience.