

Devin J. Cornell

Sociology Ph.D. Student
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Education

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| 2021
(expected) | Ph.D. | Sociology , UC, Santa Barbara. Focus on Sociology of Culture and Cognition using computational methods. |
| 2018
(expected) | M.A. | Sociology , UC, Santa Barbara. Thesis: <i>Political Culture in Colombia</i> using interviews and big data text analysis. |
| 2015 | B.S. | Electrical Engineering , Missouri University of Science and Technology. Minor in mathematics and emphasis on signal processing and machine learning. |

Research Interests: culture, cognition, politics, computational text analysis, network analysis, quantitative analysis.

Publications

- Fisher, Jacob T., Cornell, Devin J., Hopp, Frederic R., Weber, Rene. (2018). "But How are They Talked About?": A Novel Measure of Entity Framing in Online News. *International Communications Association Annual Conference*.
- Voth-Gaeddert, L. E., Stoker, M., Cornell, D. J., & Oerther, D. B. (2018). What causes childhood stunting among children of San Vicente, Guatemala: Employing complimentary, system-analysis approaches. *International Journal of Hygiene and Environmental Health*, 1–6.
- Voth-gaeddert, L., & Cornell, D. J. (2016). Improving Health Information Systems in Guatemala Using Weighted Correlation Network Analysis. In *Global Humanitarian Technology Conference*.
- Cornell, D. J. (2015). A System for Change : USAID Critical Process Improvements Executive Summary. *WISE Journal of Public Policy*, 19, 1–3.

Working Papers

- Cornell, Devin J., Mohr, John W. (2018). Measuring Meaning at Scale: Computational Methods for Semantic Construction of Austerity in the UK. *Working paper*.
- Cornell, Devin J., Cohen, Marcelle, Mohr, John W. (2018). Discursive Fields in the Colombian Right. *Working Paper*.

Talks & Workshops

"Semantic Construction Through Twitter in the Colombian Peace Process." Politics and State (Political Sociology), Pacific Sociological Association Annual Conference. March 28-31, 2018 (expected).

"Political Culture in the Colombian Peace Process." Theory Category, Pacific Sociological Association Annual Conference. March 28-31, 2018 (expected).

"Semantic Analysis of News Texts: An Argument for a 'Back to the Texts' Approach." Speaker at TextXD Conference Berkeley Institute for Data Science University of California, Berkeley, Nov 30-Dec 1, 2017.

"The Future of Natural Language Processing." Panelist at TextXD Conference Berkeley Institute for Data Science University of California, Berkeley, Nov 30-Dec 1, 2017.

"Word Embedding for Comparative Semantic Analysis." Workshop on Texts and Images of Austerity in Britain, Friedrich Alexander University Erlangen-Nürnberg, Sept 25-29, 2017.

Awards and Honors

IGERT Innovation award: *Populist Culture and Discourse in the Colombian Peace Process.*

Grant to explore the ways that social media has fundamentally changed strategies of populist leaders in the aftermath of the October 2, 2016 peace referendum that was rejected by popular vote. Examines Colombian "political culture" in a broader sense using a unique combination of qualitative interviews, computational text analysis of politician Tweets, and survey analysis with quantitative methods for culture. Travelled to Colombia in Summer 2017 to conduct interviews with politicians and diplomats involved in the peace process.

IGERT Fellowship in Network Science: Took courses and completed modules with an interdisciplinary focus on social, biological, and complex networks. Completed projects on quantitative belief networks, US News source comparison using text analysis, text analysis of National Security Strategy documents using word embedding algorithms and social influence network evolution.

Teaching and Mentorship

Computational Text Analysis Undergraduate Teaching Pilot Program Manager: worked with Prof. John Mohr to develop short project teaching students computational text analysis in a sociological power course. Nov-Dec 2017.

IGERT Network Science Summer Program Mentor: helped undergraduate student analyze text corpus of Betsy Devos news articles using topic modeling to determine how media was gender biased. June-July 2017.

Undergraduate Independent Study Mentor: worked with an undergraduate student for an independent study analyzing US National Security Strategy documents using word embedding algorithms. March-May 2017.

UCSB Data Science Club Mentor: work with multiple undergraduates in statistics, computer science, and physics to design and implement text analysis projects using various data sources: New York Times headlines 1851-2017, and NYT news articles about hurricanes in Puerto Rico and Florida. Jan 2017 - current.

Research Projects

- Aug 17-
Current **Austerity and Construction of Social Categories in the UK**
- Developing novel methods for computational text analysis to capture changing semantics in a corpus of 20k news articles 2010-2016
 - Exploring the ways conceptions of money and moral appeals become tied to politically motivated social categories
 - Collaborating with Corpus Linguists and political scientists for a multidisciplinary approach to text analysis
- Jan 17-
Current **Political Culture and Ideology in Colombia**
- Developing methods for computational text analysis of discursive fields in political party Twitter accounts
 - Traveled to Colombia with IGERT Innovation research grant to interview politicians and take ethnographic notes
 - Exploring how social media is fundamentally changing political cultural and ideological production
- Aug 16-
Current **Group Decision-Making and Team Performance**
- Modeling and empirical analysis of group decision-making experiments
 - Examining theoretical models from management and social psychology
- Jun 16-
May 17 **Quantitative Methods for Health Information Systems in Guatemala**
- Developing tools and methods for causal exploration on large datasets
 - Preparing to compare data analysis methods with analysis in case studies
- Jun
15-July
15 **USAID Operating Policy Improvements**
- Researched and published paper on USAID operating policy improvements
 - Applied reports from UK in complexity science to US procedures
 - Met with and interviewed international development professionals

Professional Service

Sociology Graduate Student Association: plan events, notify graduate students of upcoming conferences, and connect graduate students to resources on campus. March 2017-Jan 2018.

IEEE Region 5 Regional Student Activities Chair: represented students to region leadership; used data-driven map visualizations to track membership in ninety-six local IEEE student branches. June 2015-August 2016.

Engineering Research and Work Experience

- Albuquerque, NM Internship - Sandia National Laboratories
- Jan 16-Aug 16 **Computational Sensing and Satellite Systems**
- Programmed machine learning algorithms into embedded sensing platforms
 - Developed embedded drivers to support satellite orienting software

- Architected digital data acquisition and processing platforms

Aug 14-May 15 Research - **Brain-Computer Interfaces Using Electroencephalography**

- Studied potential of using EEG to control computer interfaces with thought
- Applied machine learning techniques and nonlinear system modeling
- Investigated related neuroscience to understand limitations and possibilities

Aug 11-Jul 14 Research - **Active Compression-Decompression CPR for Long Term Space Travel**

- Designed and tested zero gravity experiment aboard NASA Vomit Comet
- Used MATLAB to process sensor signal data and do quantitative analysis
- Created outreach program affecting over one thousand students each year

Albuquerque, NM Internships - Sandia National Laboratories

Jun 14-Aug 14 **Instrumentation Technologies**

May 13-Dec 13

- Investigated methods of data analysis for earth penetrator research
- Developed field support software for earth penetrator research
- Implemented software to support hardware instrument verification
- Designed PCB for Low Voltage Differential Signaling characterization

Huntsville, AL Internships - Adtran, Inc.

Jan 13-May 13 **Ethernet Access Devices / Systems Engineering**

May 12-Aug 12

- Worked with Agile product team on Layer 2 Ethernet Access Devices
- Used embedded C and C++ to extend features of SSH remote log-in
- Performed unit testing of product code for new features

Affiliations: IGERT Network Science Lab, UCSB Broom Center for Demography, and the Mellon Foundation *What Everyone Says About the Humanities Research* project.