

# Devin J. Cornell

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## Education

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|--------------------|-------|---|
| 2021<br>(expected) | Ph.D. | <b>Sociology</b> , UC, Santa Barbara. Focus on Sociology of Culture and Cognition using computational methods.  |
| 2018<br>(expected) | M.A.  | <b>Sociology</b> , UC, Santa Barbara. Thesis: <i>Political Culture in Colombia</i> using interviews and big data text analysis.                             |
| 2015               | B.S.  | <b>Electrical Engineering</b> , 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 - Journal Articles

- 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., Mohr, John W. (2018). Semantic Construction of Social Categories and Economic Policies of Austerity in the UK. *Working Paper*.
- Cornell, Devin J., Cohen, Marcelle, Mohr, John W. (2018). Discursive Fields in the Colombian Right. *Working Paper*.

## Conference Talks

- Cornell, Devin J. (2018). "Measuring Meaning at Scale: Computational Methods for the Semantic Construction of Austerity in the UK." American Sociological Association Annual Conference. Computational Social Science, Culture, and Cultural Analysis. August 11-14, 2018 (forthcoming).
- Cornell, Devin J. (2018). "Discursive Fields and Socio-semantic Networks in the Colombian Right." *Networks in the Global World. Socio-Semantic Networks*. July 4-6, 2018 (forthcoming).
- Cornell, Devin J. (2018). "Institutions, Cognition, and Discursive Fields in Colombian Politics." *Sunbelt. Social Networks and Political Participation*. June 26-July 1, 2018 (forthcoming).
- 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*. May 24-28, 2018 (forthcoming).
- Cornell, Devin J. (2018). "Discursive Fields on Twitter in the Colombian Right." *Pacific Sociological Association Annual Conference. Politics and State (Political Sociology)*. March 28-31, 2018.
- Cornell, Devin J. (2018). "Dual Process Theory and Political Culture." *Pacific Sociological Association Annual Conference. Theory*. March 28-31, 2018.

## Workshops

- "Discourse and Medium: Effects of Twitter Bots on the Mobilization of Political Followers." Participant in *Diverse Intelligences Summer Institute*. University of St Andrews, Scotland July 29-August 12, 2018.
- "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

**Top Student Contribution:** *Institutions, Cognition, and Discursive Fields in Colombian Politics*. Examines the contributions of dual-process models to cultural and institutional analysis in the age of mass social media campaigns.

**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- **Austerity and Construction of Social Categories in the UK**  
Current
- 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- **Political Culture and Ideology in Colombia**  
Current
- 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

- Jun 16- **Quantitative Methods for Health Information Systems in Guatemala**  
May 17
- Developing tools and methods for causal exploration on large datasets
  - Preparing to compare data analysis methods with analysis in case studies

- Jun 15- **USAID Operating Policy Improvements**  
July 15
- 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:** one of 10 world representatives for students 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:** UCSB IGERT Network Science Lab, UCSB Broom Center for Demography, and the Mellon Foundation *What Everyone Says About the Humanities Research* project.