

# Stanford

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## Daniel McFarland

Professor of Education and, by courtesy, of Sociology and of Organizational Behavior  
at the Graduate School of Business

Graduate School of Education

### CONTACT INFORMATION

- **Admin Support**

Mitch Gilmer

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### Bio

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#### BIO

I study the intellectual, social and institutional dynamics of educational systems like schools, classrooms, universities and disciplines. I have performed a series of studies on classroom organization and interaction; on the formation of adolescent relationships, social structures, and identities; on interdisciplinary collaboration and intellectual innovation; and on the form, dynamics and innovation of scientific fields. I have broad research interests and have been drawn into a variety of interdisciplinary collaborations with linguists, computer scientists, and sociologists. This in turn has led to studies of big data and methodological advances in social networks, language modeling and the study of innovation.

#### ACADEMIC APPOINTMENTS

- Professor, Graduate School of Education
- Professor (By courtesy), Sociology
- Professor (By courtesy), Organizational Behavior
- Faculty Affiliate, Institute for Human-Centered Artificial Intelligence (HAI)

#### ADMINISTRATIVE APPOINTMENTS

- Chair, Social Sciences, Humanities and Interdisciplinary Policy Studies (Graduate School of Education), (2023- present)
- Professor, Stanford Graduate School of Education, (2000- present)
- Director, Stanford Center for Computational Social Science, (2012-2016)
- Director, Stanford Center for Computational Social Science, (2018-2020)

#### HONORS AND AWARDS

- Gould Award, American Journal of Sociology (2013-14)
- Friedrich Wilhelm Bessel Award, Alexander von Humboldt Foundation (2014-17)

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Faculty Senate steering committee (2024 - present)
- Member, Committee on Committees (Faculty Senate) (2023 - 2024)
- Member, Faculty Senate (2023 - present)

## PROGRAM AFFILIATIONS

- Science, Technology and Society

## PROFESSIONAL EDUCATION

- PhD/MA, University of Chicago, Sociology , Sociology
- BA, University of Chicago , Philosophy
- BA, University of Chicago , Sociology

## LINKS

- Graduate School of Education Site: <https://ed.stanford.edu/faculty/mcfarland>
- Google Scholar: <https://scholar.google.com/citations?user=nx8clgcAAAAJ&hl=en>

## Research & Scholarship

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### RESEARCH INTERESTS

- Data Sciences
- Diversity and Identity
- Higher Education
- Leadership and Organization
- Philosophy
- Research Methods
- Sociology

### CURRENT RESEARCH AND SCHOLARLY INTERESTS

The majority of my current research projects concern the sociology of science and research innovation. Here are some examples of projects we are pursuing:

1. the process of intellectual jurisdiction across fields and disciplines
2. the process of knowledge innovation and diffusion in science
3. the propagators of scientific careers and advance
4. the role of identity and diversity on the process of knowledge diffusion and career advance
5. the process of research translation across scientific fields and into practice
6. the formal properties and mechanisms of ideational change (network analysis, or holistic conceptions of scientific propositions and ideas)
7. developing methods for identifying the rediscovery of old ideas recast anew
8. investigating the process of scientific review

I am also heavily involved in research on social networks and social network theory development. Some of my work concerns relational dynamics and cognitive networks as represented in communication. This often concerns the communication of children (in their writings and speech in classrooms) and academic scholars.

Last, I am heavily involved in institutional efforts to develop computational social science, computational sociology, and education data science on Stanford's campus.

## Teaching

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### COURSES

2023-24

- Computational Sociology: EDUC 317, SOC 317W (Aut, Win, Spr)
- Social Network Methods: EDUC 316, SOC 369 (Spr)
- Sociology of Science: EDUC 120, EDUC 320, SOC 330, STS 200Q (Aut)

#### 2022-23

- Computational Sociology: EDUC 317, SOC 317W (Aut, Win, Spr)
- Relational Sociology: EDUC 312, SOC 224B (Win)
- Social Network Methods: EDUC 316, SOC 369 (Win)
- Sociology of Science: EDUC 120, EDUC 320, SOC 330, STS 200Q (Aut)

#### 2021-22

- Computational Sociology: EDUC 317, SOC 317W (Aut, Win, Spr)
- Education Data Science Seminar: EDUC 259A (Aut)
- Education Data Science Seminar: EDUC 259B (Win)
- Education Data Science Seminar: EDUC 259C (Spr)
- Relational Sociology: EDUC 312, SOC 224B (Win)
- Social Network Methods: EDUC 316, SOC 369 (Spr)
- Sociology of Science: EDUC 120, EDUC 320, SOC 330, STS 200Q (Aut)

#### 2020-21

- Computational Sociology: EDUC 317, SOC 317W (Aut, Win, Spr)
- Social Network Methods: EDUC 316, SOC 369 (Spr)
- Sociology of Science: EDUC 120, EDUC 320, SOC 330, STS 200Q (Win)

## STANFORD ADVISEES

### Doctoral Dissertation Reader (AC)

ELISA KIM, Sheridan Stewart

### Postdoctoral Faculty Sponsor

Daniel Scott Smith

### Doctoral Dissertation Advisor (AC)

Taylor LiCausi, Kemi Oyewole, Nick Sherefkin

### Doctoral Dissertation Advisor (NonAC)

Nick Sherefkin

### Master's Program Advisor

Ruishi Chen

### Doctoral (Program)

Mike Hardy, Hansol Lee, Haley Lepp, Taylor LiCausi, Kemi Oyewole

## Publications

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### PUBLICATIONS

- **Coming into relations: How communication reveals and persuades relational decisions** *SOCIAL NETWORKS*  
McFarland, D. A., Broska, D., Prabhakaran, V., Jurafsky, D.

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2024; 79: 57-75

- **Networking a career: Individual adaptation in the network ecology of faculty** *SOCIAL NETWORKS*  
Kim, L., Smith, S., Dahlander, L., McFarland, D. A.  
2024; 77: 166-179
- **Network Ecology: Introduction to the Special Issue** *SOCIAL NETWORKS*  
Doehne, M., Mcfarland, D. A., Moody, J.  
2024; 77: 1-4
- **Network ecology: Tie fitness in social context(s)** *SOCIAL NETWORKS*  
Doehne, M., Mcfarland, D. A., Moody, J.  
2024; 77: 180-196
- **Interdisciplinary Research, Tenure Review, and Guardians of the Disciplinary Order** *JOURNAL OF HIGHER EDUCATION*  
Makinen, E. I., Evans, E. D., McFarland, D. A.  
2024
- **Network ecology: Tie fitness in social context(s)** *SOCIAL NETWORKS*  
Doehne, M., McFarland, D. A., Moody, J.  
2024; 76: 174-190
- **Network ecology: Tie fitness in social context(s).** *Social networks*  
Doehne, M., McFarland, D. A., Moody, J.  
2024; 76: 174-190
- **WHEN ERGMS LEAD TO BIASED SAMPLES: REPLY TO KRETSCHMER ET AL.** *AMERICAN JOURNAL OF SOCIOLOGY*  
Smith, S., van Tubergen, F., Maas, I., Mcfarland, D. A.  
2023; 129 (2): 586-602
- **How New Ideas Diffuse in Science** *AMERICAN SOCIOLOGICAL REVIEW*  
Cheng, M., Smith, D., Ren, X., Cao, H., Smith, S., McFarland, D. A.  
2023
- **Sociality and Elementary Forms of Structure** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., Mcfarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 143-160
- **Breaking Out of the Ivory Tower: A Large-scale Analysis of Patent Citations to HCI Research**  
Cao, H., Lu, Y., Deng, Y., McFarland, D. A., Bernstein, M. S., ACM  
ASSOC COMPUTING MACHINERY.2023
- **Network Analysis Today** Introduction *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., Mcfarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 1+
- **Positions and Roles** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., Mcfarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 216-245
- **Cohesion and Groups** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., Mcfarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 161-189
- **Hierarchy and Centrality** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., Mcfarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 190-215
- **How Are Social Network Data Collected?** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., Mcfarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.

2023: 67-87

- **Models for Social Influence** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., McFarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 364-389
- **Network Analysis** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., McFarland, D. A.  
2023: 1-455
- **What Is Social Structure?** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., McFarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 19-44
- **Structuration and Egocentric Networks** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., McFarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 117-142
- **Models for Network Diffusion** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., McFarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 340-363
- **Networks and Culture** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., McFarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 269-298
- **How Are Social Network Data Visualized?** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., McFarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 88-114
- **Affiliations and Dualities** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., McFarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 246-268
- **What Is a Social Network?** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., McFarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 45-66
- **Models for Networks** *NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., McFarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 301-339
- **Network Analysis Tomorrow** *Conclusion NETWORK ANALYSIS*  
Rawlings, C. M., Smith, J. A., Moody, J., McFarland, D. A., Rawlings, C., Smith, J., Moody, J., McFarland, D.  
2023: 390-419
- **Writing into relationships** *SOCIAL NETWORKS*  
McFarland, D. A., Wolff, T.  
2022; 71: 96-114
- **Systematic analysis of 50 years of Stanford University technology transfer and commercialization.** *Patterns (New York, N.Y.)*  
Liang, W., Elrod, S., McFarland, D. A., Zou, J.  
2022; 3 (9): 100584
- **Abstract(s) at the core: a case study of disciplinary identity in the field of linguistics** *HIGHER EDUCATION*  
LiCausi, T. J., McFarland, D. A.  
2022
- **Diversifying the Professoriate** *SOCIUS*  
Hofstra, B., McFarland, D. A., Smith, S., Jurgens, D.

2022; 8

- **Diversifying history: A large-scale analysis of changes in researcher demographics and scholarly agendas.** *PloS one*  
Risi, S., Nielsen, M. W., Kerr, E., Brady, E., Kim, L., McFarland, D. A., Jurafsky, D., Zou, J., Schiebinger, L.  
1800; 17 (1): e0262027
- **Gendered knowledge in fields and academic careers** *RESEARCH POLICY*  
Kim, L., Smith, D., Hofstra, B., McFarland, D. A.  
2022; 51 (1)
- **Facets of Specialization and Its Relation to Career Success: An Analysis of US Sociology, 1980 to 2015** *AMERICAN SOCIOLOGICAL REVIEW*  
Heiberger, R. H., Galvez, S., McFarland, D. A.  
2021
- **Education Data Science: Past, Present, Future** *AERA OPEN*  
McFarland, D. A., Khanna, S., Domingue, B. W., Pardos, Z. A.  
2021; 7
- **Creative Destruction: The Structural Consequences of Scientific Curation** *AMERICAN SOCIOLOGICAL REVIEW*  
McMahan, P., McFarland, D. A.  
2021
- **The Meeting of Minds: Forging Social and Intellectual Networks within Universities** *SOCIOLOGICAL SCIENCE*  
Stark, T. H., Rambaran, J., McFarland, D. A.  
2020; 7: 433–64
- **The Diversity-Innovation Paradox in Science.** *Proceedings of the National Academy of Sciences of the United States of America*  
Hofstra, B., Kulkarni, V. V., Munoz-Najar Galvez, S., He, B., Jurafsky, D., McFarland, D. A.  
2020
- **The Patterning of Collaborative Behavior and Knowledge Culminations in Interdisciplinary Research Centers** *MINERVA*  
Makinen, E. I., Evans, E. D., McFarland, D. A.  
2020; 58 (1)
- **Paradigm Wars Revisited: A Cartography of Graduate Research in the Field of Education (1980-2010)** *AMERICAN EDUCATIONAL RESEARCH JOURNAL*  
Galvez, S., Heiberger, R., McFarland, D.  
2019
- **The Patterning of Collaborative Behavior and Knowledge Culminations in Interdisciplinary Research Centers** *Minerva*  
Mäkinen, E. I., Evans, E. D., McFarland, D. A.  
2019: 1-25
- **Superstars in the making? The broad effects of interdisciplinary centers** *RESEARCH POLICY*  
Biancani, S., Dahlander, L., McFarland, D. A., Smith, S.  
2018; 47 (3): 543–57
- **Measuring the evolution of a scientific field through citation frames** *Transactions of the Association for Computational Linguistics*  
Jurgens, D., Kumar, S., Hoover, R., McFarland, D., Jurafsky, D.  
2018; 6: 391-406
- **Modeling Affinity based Popularity Dynamics**  
Kim, M., McFarland, D. A., Leskovec, J., Assoc Comp Machinery  
ASSOC COMPUTING MACHINERY.2017: 477–86
- **Descriptive Analysis in Education: A Guide for Researchers. NCEE 2017-4023.** *National Center for Education Evaluation and Regional Assistance*  
Loeb, S., Dynarski, S., McFarland, D., Morris, P., Reardon, S., Reber, S.  
2017
- **Ethnic Composition and Friendship Segregation: Differential Effects for Adolescent Natives and Immigrants** *AMERICAN JOURNAL OF SOCIOLOGY*  
Smith, S., van Tubergen, F., Maas, I., McFarland, D. A.

2016; 121 (4): 1223-1272

- **Sociology in the era of big data: The ascent of forensic social science** *The American Sociologist*  
McFarland, D. A., Lewis, K., Goldberg, A.  
2016; 47 (1): 12-35
- **Community (in) colleges: The relationship between online network involvement and academic outcomes at a community college** *Community College Review*  
Evans, E. D., McFarland, D. A., Rios-Aguilar, C., Deil-Amen, R.  
2016; 44 (3): 232-254
- **Measuring paradigmaticness of disciplines using text** *Sociological Science*  
Evans, E. D., Gomez, C. J., McFarland, D. A.  
2016; 3: 757-778
- **Citation classification for behavioral analysis of a scientific field** *arXiv preprint arXiv:1609.00435*  
Jurgens, D., Kumar, S., Hoover, R., McFarland, D., Jurafsky, D.  
2016
- **Streams of Thought: Knowledge Flows and Intellectual Cohesion in a Multidisciplinary Era** *SOCIAL FORCES*  
Rawlings, C. M., McFarland, D. A., Dahlander, L., Wang, D.  
2015; 93 (4): 1687-1722
- **The Organization of Schools and Classrooms** *Emerging Trends in the Social and Behavioral Sciences: An Interdisciplinary, Searchable, and Linkable Resource*  
Diehl, D., McFarland, D. A.  
2015: 1-15
- **Big data and the danger of being precisely inaccurate** *Big Data & Society*  
McFarland, D. A., McFarland, R.  
2015; 2 (2): 2053951715602495
- **Social Informatics: SocInfo 2014 International Workshops, Barcelona, Spain, November 11, 2014, Revised Selected Papers**  
Aiello, L. M., McFarland, D.  
Springer.2015
- **Network Ecology and Adolescent Social Structure** *AMERICAN SOCIOLOGICAL REVIEW*  
McFarland, D. A., Moody, J., Diehl, D., Smith, J. A., Thomas, R. J.  
2014; 79 (6): 1088-1121
- **The Semiformal Organization** *ORGANIZATION SCIENCE*  
Biancani, S., McFarland, D. A., Dahlander, L.  
2014; 25 (5): 1306-1324
- **Encouraging Forum Participation in Online Courses with Collectivist, Individualist, and Neutral Motivational Framings.** *eLearning Papers*  
Kizilcec, R., Schneider, E., Cohen, G., McFarland, D. A.  
2014; 37
- **The Semi-Formal Organization** *Organization Science*, Permalink: <http://dx.doi.org/10.1287/orsc.2013.0882>  
Biancani, S., Dahlander, L., McFarland, D. A.  
2014
- **Hierarchical models for relational event sequences** *JOURNAL OF MATHEMATICAL PSYCHOLOGY*  
DuBois, C., Butts, C. T., McFarland, D., Smyth, P.  
2013; 57 (6): 297-309
- **Differentiating language usage through topic models** *POETICS*  
McFarland, D. A., Ramage, D., Chuang, J., Heer, J., Manning, C. D., Jurafsky, D.  
2013; 41 (6): 607-625
- **Making the Connection: Social Bonding in Courtship Situations** *AMERICAN JOURNAL OF SOCIOLOGY*  
McFarland, D. A., Jurafsky, D., Rawlings, C.

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2013; 118 (6): 1596-1649

- **Transdisciplinary translational science and the case of preterm birth** *JOURNAL OF PERINATOLOGY*  
Stevenson, D. K., Shaw, G. M., Wise, P. H., Norton, M. E., Druzin, M. L., Valentine, H. A., McFarland, D. A.  
2013; 33 (4): 251-258
- **Ties That Last: Tie Formation and Persistence in Research Collaborations over Time** *ADMINISTRATIVE SCIENCE QUARTERLY*  
Dahlander, L., McFarland, D. A.  
2013; 58 (1): 69-110
- **Social Networks Research in Higher Education.** *Higher Education: Handbook of Theory and Research*  
Biancani, S., McFarland, D. A.  
2013; 28: 151-215
- **Detecting friendly, flirtatious, awkward, and assertive speech in speed-dates** *COMPUTER SPEECH AND LANGUAGE*  
Ranganath, R., Jurafsky, D., McFarland, D. A.  
2013; 27 (1): 89-115
- **Measurement error in network data: A re-classification** *SOCIAL NETWORKS*  
Wang, D. J., Shi, X., McFarland, D. A., Leskovec, J.  
2012; 34 (4): 396-409
- **Classroom Ordering and the Situational Imperatives of Routine and Ritual** *SOCIOLOGY OF EDUCATION*  
Diehl, D., McFarland, D. A.  
2012; 85 (4): 326-349
- **Influence flows in the academy: Using affiliation networks to assess peer effects among researchers** *SOCIAL SCIENCE RESEARCH*  
Rawlings, C. M., McFarland, D. A.  
2011; 40 (3): 1001-1017
- **The Ties that Influence: How Social Networks Channel Faculty Grant Productivity.** *Social Science Research*  
Rawlings, C., McFarland, D. A.  
2011; 40: 1001-1017
- **Network Search: A New Way of Seeing the Education Knowledge Domain** *TEACHERS COLLEGE RECORD*  
Mcfarland, D., Klopfer, E.  
2010; 112 (10): 2664-2702
- **Toward a Historical Sociology of Social Situations** *AMERICAN JOURNAL OF SOCIOLOGY*  
Diehl, D., Mcfarland, D.  
2010; 115 (6): 1713-1752
- **Organization by Design: Supply- and Demand-side Models of Mathematics Course Taking** *SOCIOLOGY OF EDUCATION*  
McFarland, D. A., Rodan, S.  
2009; 82 (4): 315-343
- **Inside Student Government: The Variable Quality of High School Student Councils** *TEACHERS COLLEGE RECORD*  
McFarland, D. A., Starmanns, C.  
2009; 111 (1): 27-54
- **Curricular flows: Trajectories, turning points, and assignment criteria in high school math careers** *SOCIOLOGY OF EDUCATION*  
McFarland, D. A.  
2006; 79 (3): 177-205
- **Bowling young: How youth voluntary associations influence adult political participation** *AMERICAN SOCIOLOGICAL REVIEW*  
McFarland, D. A., Thomas, R. J.  
2006; 71 (3): 401-425
- **The Art and Science of Dynamic Network Visualization.** *Journal of Social Structure, Permalink: <http://www.cmu.edu/joss/content/articles/volume7/deMollMcFarland/>*  
Bender-deMoll, S., McFarland, D. A.



2006; 7 (2)

- **Motives and contexts of identity change: A case for network effects** *98th Annual Meeting of the American-Sociological-Association*  
McFarland, D., Pals, H.  
SAGE PUBLICATIONS INC.2005: 289–315
- **Dynamic network visualization** *AMERICAN JOURNAL OF SOCIOLOGY*  
Moody, J., McFarland, D., Bender-deMoll, S.  
2005; 110 (4): 1206-1241
- **Resistance as a social drama: A study of change-oriented encounters** *AMERICAN JOURNAL OF SOCIOLOGY*  
McFarland, D. A.  
2004; 109 (6): 1249-1318
- **When tensions mount: Conceptualizing classroom situations and the conditions of student-teacher conflict** *Conference on Stability and Change in American Education*  
McFarland, D. A.  
ELIOT WERNER PUBLICATIONS INC.2003: 127–150
- **Student resistance: How the formal and informal organization of classrooms facilitate everyday forms of student defiance** *AMERICAN JOURNAL OF SOCIOLOGY*  
McFarland, D. A.  
2001; 107 (3): 612-678