Bio

I study the intellectual, social and institutional dynamics of educational systems like schools, classrooms, universities and disciplines. In particular, 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

- 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)

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
• Stanford Center for Computational Social Science: https://css-center.stanford.edu
• Graduate School of Education Site: https://ed.stanford.edu/faculty/mcfarland
• My Lab: https://web.stanford.edu/dept/SUSE/cgi-bin/drupal/mimir/
• Google Scholar: https://scholar.google.com/citations?user=nx8clgcAAAAJ&hl=en

Research & Scholarship

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 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. I am also co-editing a special issue in Social Networks on "network ecology", or a theoretical account of social networks dynamics; a special chapter on education and social networks for Cambridge Press; and I am a coauthor on a social network methods textbook coming out with Cambridge Press (Forthcoming, by Craig Rawlings, Jeff Smith, James Moody and Daniel McFarland).

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

Teaching

COURSES

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)

2019-20
• Introduction to Data Science: EDUC 143, EDUC 423, SOC 302 (Win)
• Social Network Methods: EDUC 316, SOC 369 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

ELISA KIM, Sheridan Stewart, Paul Vicinanza, Matthew Wilsey

Postdoctoral Faculty Sponsor

Daniel Scott Smith

Doctoral (Program)

Hancheng Cao, Hansol Lee, Taylor LiCausi, Kemi Oyewole

Publications

PUBLICATIONS

• 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

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  LiCausi, T. J., McFarland, D. A.
  2022

• Diversifying the Professoriate SOCIUS
  Hofstra, B., McFarland, D. A., Smith, S., Jurgens, D.
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• Diversifying history: A large-scale analysis of changes in researcher demographics and scholarly agendas. PloS one
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- 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.
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- 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.
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- The Diversity-Innovation Paradox in Science. *Proceedings of the National Academy of Sciences of the United States of America*
  Hofstra, B., Kuikarni, 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*
  Mäkinen, 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.
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- 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.
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Community (in) colleges: The relationship between online network involvement and academic outcomes at a community college  *Community College Review*
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Evans, E. D., Gomez, C. J., McFarland, D. A.
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Citation classification for behavioral analysis of a scientific field  *arXiv preprint arXiv:1609.00435*
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2016

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  Biancini, S., McFarland, D. A.
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• Detecting friendly, flirtatious, awkward, and assertive speech in speed-dates. *COMPUTER SPEECH AND LANGUAGE*
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• The Ties that Influence: How Social Networks Channel Faculty Grant Productivity. *Social Science Research*
  Rawlings, C., McFarland, D. A.
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• Bowling young: How youth voluntary associations influence adult political participation. *AMERICAN SOCIOLOGICAL REVIEW*
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Student resistance: How the formal and informal organization of classrooms facilitate everyday forms of student defiance AMERICAN JOURNAL OF SOCIOLOGY
McFarland, D. A.
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