CHRISTOPHER STEVEN MARCUM

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ORCID

● Experienced mathematical sociologist and data scientist with a demonstrated history of working in the biomedical, sociology, and statistics fields ● Winner of several prestigious awards, including the Matilda White Riley Early Stage Investigator Honor from the National Institutes of Health, a GREAT Award for Mentorship and a GREAT Award for Service from the National Human Genome Research Institute, and the Order of Merit from the University of California-Irvine ● Interested in advancing a career in data science policy

Skills

- Data science policy
- Programming (R, Python, bash, APIs)
- Quantitative research methods
- Social network analysis
- Relational database management (SQL, JSON)
- Scientific writing
- Statistics and bioinformatics
- Graphic design and informatics

EXPERIENCE

JUNE 1 2020 – PRESENT

STAFF SCIENTIST – DATA SCIENCE STRATEGY DETAILEE (TITLE 42, GS-14 EQUIVALENT)

NATIONAL INSTITUTE OF ALLERGIES AND INFECTIOUS DISEASES
BETHESDA, MD USA

- Established permanent Data Access Committee
- Provides program development support to the Office of Data Science and Emerging Technologies
- Established NIAID as a co-signer to the joint NIH/NSF Smart & Connected Health Initiative
- Supports the Emerging Leaders in Data Science Fellowship Program
- Coordinates a transdisciplinary community workshop on data science to establish a roadmap for data science policy and program development at NIAID

JANUARY 1 2013 – JUNE 1 2020

STAFF SCIENTIST – METHODOLOGIST (TITLE 42, GS-14 EQUIVALENT)

NATIONAL HUMAN GENOME RESEARCH INSTITUTE
BETHESDA, MD USA

- Conducted basic research on network dynamics of health communication and social behavior within families affected by heritable disease
- Supervised research methods training of NHGRI fellows and taught statistics and network science seminar
- Advanced quantitative methods in network science through peer-reviewed publications and open-source software development
- Managed data and lab infrastructure, including database management, for three major intramural research protocols

NOVEMBER 1 2011 – JANUARY 1 2013

POSTDOCTORAL FELLOW IN ECONOMICS AND STATISTICS

RAND CORPORATION

SANTA MONICA, CA USA

- Built realistic models of social contact for influenza disease diffusion in a metropolitan area
- Conducted basic research on influenza vaccination behavior
- Published the Network Inductive Reasoning Model open-source software for estimating agent-based models of infectious diseases
- Developed workshop on relational event model for social dynamics

JANUARY 1 2007 – NOVEMBER 1 2011

GRADUATE RESEARCH ASSISTANT

CALIT2, UC-IRVINE

IRVINE, CA USA

- Conducted basic research in organizational disaster response networks leading to peer-reviewed publications
- Managed high power computational resources and relational databases
- Mentored interdisciplinary junior labmates in network science
- Published open-source software for estimating sequence statistics for the relational event model of social action

JANUARY 1 2009 – JUNE 1 2010

ADJUNCT FACULTY

UNIVERSITY OF SOUTHERN CALIFORNIA

LOS ANGELES, CA USA

- Taught graduate seminar in the Sol Price School of Public Policy on demography
- Mentored public policy and urban planning masters and doctoral students in statistics

JUNE 1 2007 – AUGUST 1 2007 (20 HOURS PER WEEK)

CONSULTANT

CITADEL LAW FIRM

IRVINE, CA USA

- Provided demographic consultation on a multi-national economic development project

AUGUST 1 2005 – DECEMBER 30 2007

GRADUATE TEACHING ASSISTANT

UNIVERSITY OF CALIFORNIA, IRVINE

IRVINE, CA USA

- Assisted in teaching several undergraduate and graduate courses

AUGUST 1 2000 – AUGUST 1 2005

CURATORIAL ASSISTANT

ARIZONA HISTORICAL SOCIETY

TUCSON, AZ USA

- Promoted from Educational Federal Work Study Intern to Curatorial Assistant
- Developed educational and interpretation materials for exhibits and public outreach programs
- Developed interpretation and construction on the Rio Nuevo Project Exhibition
- Published educational software to teach principles of anthropology and archeology to elementary school children

EDUCATION

AUGUST 2005 - NOVEMBER 2011

PHD SOCIOLOGY, WITH HONORS

UNIVERSITY OF CALIFORNIA, IRVINE

AUGUST 2005 - MAY 2007

MA DEMOGRAPHIC AND SOCIAL ANAYLSIS

UNIVERSITY OF CALIFORNIA, IRVINE

AUGUST 2000 - MAY 2004

BA SOCIOLOGY, SUMMA CUM LAUDE

UNIVERSITY OF ARIZONA

FEATURED SERVICE

National Institutes of Health

JUNE 2020 - PRESENT
CHAIR, DATA ACCESS COMMITTEE
NIAID

JUNE 2020 - PRESENT
MEMBER, DATA ACCESS COMMITTEE
NHGRI

JUNE 2016 - PRESENT
MEMBER, SCIENTIFIC REVIEW COMMITTEE
NHGRI

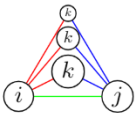
Professional Organizations

JANUARY 2020 - PRESENT
MEMBER, EDITOR-IN-CHIEF SEARCH WORKGROUP
GERONTOLOGICAL SOCIETY OF AMERICA

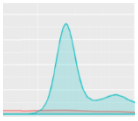
AUGUST 2018 – AUGUST 2019
CHAIR, STUDENT PAPER AWARD COMMITTEE
ASA SECTION ON MATHEMATICAL SOCIOLOGY

NOVEMBER 2015 – PRESENT
ASSOCIATE EDITOR FOR SOCIAL MEDIA
JOURNALS OF GERONTOLOGY: SERIES B

FEATURED PUBLICATIONS

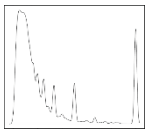


Pavel Krivitsky, Laura M Koehly, and Christopher Steven Marcum. (2020). Exponential family random graph models for multi-layer networks. *Psychometrika*, 85:630 – 569, DOI: 10.1007/s11336-020-09720-7



Jeffrey Lienert, Christopher Steven Marcum, Laura Koehly, and Felix Reed-Tsochas. (2020). A passive monitoring tool using hospital administrative data enables earlier specific detection of healthcare-acquired infections. *The Journal of Hospital Infection,* in press. DOI: 10.1016/j.jhin.2020.07.031

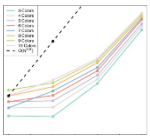
Christopher Steven Marcum, Dawn Lea, Dina Eliezer, Don Hadley, and Laura M Koehly. (2020). The structure of emotional support networks in families affected by Lynch Syndrome. *Network Science*, 8(4):492 – 507, DOI: 10.1017/nws.2020.13



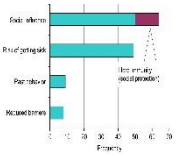
Jeffrey Lienert, Felix Reed-Tsochas, Laura M Koehly, and Christopher Steven Marcum. (2019) Using hospital administrative data to infer patient-patient contact via the consistent co-presence algorithm. *IEEE International Conference on Big Data*, 9-12 Dec. 2019:2756 – 2762, DOI: 10.1109/BigData47090.2019.9006148

Christopher Steven Marcum and Laura M Koehly. (2020). Editorial for special issue on Social networks and health: Micro processes and macro structures. *Journal of Social Structure*, 20(3):1 – 6, DOI: 10.21307/joss-2019-003

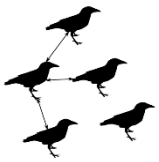
Laura M Koehly, Susan J Persky, Philip Shaw, Vence L Bonham Jr., Christopher Steven Marcum, Gustavo Sudre, Dawn E Lea, and Sharon K Davis. (2019). Social and behavioral science at the forefront of genomics: Discovery, translation, and health equity. *Social Science & Medicine*, in press, DOI: 10.1016/j.socscimed.2019.112450



Jeffrey Lienert, Laura Koehly, Felix Reed-Tsochas, and Christopher Steven Marcum. (2019). An efficient counting method for the colored triad census. *Social Networks*, 58:136– 142, DOI: 10.1016/j.socnet.2019.04.003



Andrew M Parker, Raffaele Vardavas, Christopher Steven Marcum, and Courtney A Gidengil. (2016) Conscious consideration of herd immunity in influenza vaccination decisions. *American Journal of Preventive Medicine*, 45(1):118 – 121, DOI: 10.1016/j.amepre.2013.02.016



Mark Tranmer, Christopher Steven Marcum, F Blake Morton, Darren P Croft, and Selvino R de Kort. (2014). Using the relational event model (REM) to investigate the temporal dynamics of animal social networks. *Animal Behaviour*, 101:99 – 105, DOI: 10.1016/j.anbehav.2014.12.005

Raffaele Vardavas and Christopher Steven Marcum. (2013). Modeling influenza vaccination behavior via inductive reasoning games. In Alberto d'Onofrio and Piero Manfredi, editors, Modeling the Interplay between Human Behavior and Spread of Infectious Disease, *Behavioral Epidemiology*, 203 – 227. DOI: 10.1007/978-1-4614-5474-8_13