

MARION DUMAS

Santa Fe Institute
1399 Hyde Park Road
Santa Fe, NM, 87501
(505)-946-2712
marion@santafe.edu

<http://tuvalu.santafe.edu/~marion>

Research statement: <http://tuvalu.santafe.edu/~marion/research.pdf>

Teaching statement: <http://tuvalu.santafe.edu/~marion/teaching.pdf>

CURRENT POSITION

2015-present Omidyar Fellow, Santa Fe Institute

EDUCATION

2009-2015 PhD, Columbia University

PhD in Sustainable Development · School: International and Public Affairs
Dissertation: *Three essays on political institutions and environmental governance*
Relevant coursework: microeconomics, game theory, econometrics, political economics, advanced quantitative analysis

2011-2012 Exchange Scholar, Harvard University,
Department of Government

2007-2009 M.Sc., ETH Zürich

Major in Ecology and Evolution
Thesis: *Developing a model and database for assessing food production systems' sensitivity to phosphate rock shortages at the world scale*

2002-2006 B.Sc., Massachusetts Institute of Technology

Major: Environmental Sciences, Department of Earth, Atmospheric and Planetary Sciences
Minor: Applied Mathematics

WORK IN PROGRESS

with Eugenie Dugoua, in prep. Coordinating Complex Innovations in Economic Networks.

with Eleanor Power and Jessie Barker, expected 2017. When Does Reputation Lie? Dynamic Feedbacks between Reputation, Social Structure, and Wealth.

with Josh Grochow, Hyejin Youn, and Daniel Burkhardt-Cerigo, expected 2017. Complex versus Simple Innovations

with Henrik Olsson and Josh Grochow, expected 2017. Why this Opinion? Understanding Belief Systems Underlying Public Opinion on Climate Change.

with Michael Livermore, expected 2017. Feedbacks between Courts, the Environment and Interest Groups: Evidence from Superfund

UNDER REVIEW

Dumas, M., 2015. *American Journal of Political Science* The Autonomy of Law from Politics: Evidence from a Network Analysis of US Environmental Law.

SFI Postdocs, 72 Hrs of Science, 2016. *PNAS R&R Dynamics of Beneficial Epidemics*.

PUBLICATIONS

Dumas, M., 2016. *American Journal of Political Science*, forthcoming
Taking the Law to Court: Citizen Suits and the Legislative Process.

O'Halloran, S., Dumas, M., Maskey, S., McAllister, G., and Park, D.K., 2016. Computational Data Sciences and the Regulation of Banking and Financial Services, *Advances in Social Networks Analysis and Mining* In Press

Dumas, M., Rising, J. and Urpelainen, J., 2016. Political Competition and Renewable energy Transitions over Long Time Horizons: a Dynamic Approach, *Ecological Economics* Vol 124 (2016): 175-184.

Dumas, M., Frossard, E. and R. Scholz, 2011. Modeling Biogeochemical Processes of Phosphorus for Global Food Supply, *Chemosphere* Vol 84(6): 798-805.

Burt, D., M. Dumas, N. Spring and D. Vaccari, 2012. Global Phosphorus: Geological Sources and Demand-driven Production, In Wyant, K.A. et al., Eds., *Phosphorus, Food, and Our Future*, New York: Oxford University Press.

Dumas, M. and Y. Blumer, 2008. *Technical Report* Participatory Decision Making Processes in Radioactive Waste Management, *Nucleo8*

INVITED TALKS

2016 · *Whose Law Is It? Network Analysis of the Evolution of U.S. Environmental Law* · Midwest Political Science Association Meeting, Chicago and 20th Annual Conference of the Society for Institutional Organizational Economics, Paris

2016 · *Impact of Supply Chain Structure on Radical Innovation: Insights and Strategic Implications* · Women Corporate Directors Foundation Meeting

2016 · *Cities and Governance for Sustainability* · Global Sustainability Summer School, SFI

2016 · *Building the Institutional Foundations for Sustainability in a Complex World* · Alliance Summer School in Science and Policy, Sciences-Po Paris

2016 · *When Does Reputation Lie? Dynamic Feedbacks between Reputation, Social Structure and Wealth* (with Eleanor Power)
· *Human Behavior and Institutions Workshop, SFI*

2017 · *Studying Legal Systems and the Properties of Good Laws from the Perspective of Complex Systems* · University of Michigan, Political Science Department

WORKSHOPS

2017 · Co-organizer of SFI Workshop *Frontiers in Socio-hydrological Dynamics*

2017 · Co-organizer of SFI Working Group *Modeling Dynamics of Violent Radicalization in Western Democracies* 2016 · Chair and

organizer of Satellite Session on Law and Complexity at the 2016 Conference on Complex Systems, Amsterdam

TEACHING AND
MENTORING

- 2016 · Member of **CORE-econ**
- 2016 · Students mentored: Kat Wicks, Shane Dabor and Xavier Gutierrez
- 2015 · Instructor Complexity Science, Columbia University
Developed and taught an introductory course on methods and concepts from complexity science
- 2015 · TA Economics of Energy, Columbia University
- 2012-2014 · TA Political Economy of Development, Columbia University
- 2011 · TA Environmental Science for Sustainable Development, Columbia University

ACADEMIC
SERVICE

- 2016 · Referee for *American Journal of Political Science*
- 2015-2016 · Selection Committee Omidyar Fellowship SFI
- 2014 · Selection Committee Mellon Fellowship, Columbia University
- 2013-2015 · Organizer of a Graduate Seminar in Complexity Science

GRANTS AND
AWARDS

- 2016 · Invited by the National Science Foundation to submit a proposal for a workshop on Water and Governance
- 2013 · Mellon Fellowship
- 2010 · Sasakawa Young Leaders Fellowship Fund Grant for summer research
- 2010 · ETH Medal for Excellence in Research
- 2009-2014 · Columbia Graduate Fellowship
- 2009-2012 · Stanford Graduate Fellowship (declined)
- 2006 · MIT Goetze Prize for Undergraduate Research

OTHER WORK
EXPERIENCE

- 2013-2015 · Consultant, DataPop Alliance, New York
Recommendations to ODI, World Bank and DfID on Leveraging Big Data for Climate Resilience
Description: Synthesis report on the applications of Big Data for Climate Resilience; design of an information system as part of a Rockefeller Grant on Climate Resilience
- 2006-2007 · Consultant, Utopies, Paris, France
Sustainability strategies of companies; Co-lead of the sustainable construction working group
- 2003 · Engineer Intern, Consorzio Venezia Nuova, Venice, Italy
Computational Modeling of the Venice Lagoon's Dynamics

PARTICIPATION
IN WORKSHOPS
AND SUMMER
SCHOOLS

- June 2013 · Santa Fe Institute

Advanced Graduate Workshop in Computational Social Science
Core Faculty: John MILLER · Scott PAGE

December 2012 · Workshop in Institutional Analysis
Coase Institute

Core Faculty: Lee BENHAM · John NYE · Gary LIBECAP

September 2010 · Oxford Poverty & Human Development Initiative (Amman,
Jordan)

Capability and Multidimensional Poverty Graduate Summer School

Core Faculty: Sabina ALKIRE

LANGUAGES

FRENCH, ENGLISH, GERMAN

COMPUTER
LANGUAGES

PYTHON, MATLAB, R, MATHEMATICA, STATA, BASH SCRIPTING, GIS

January 13, 2017