

# Jessica M. Rudnick

---

University of California Davis  
Department of Environmental Science and Policy  
[jrudnick@ucdavis.edu](mailto:jrudnick@ucdavis.edu)  
(314) 488-7646

## **EDUCATION AND TRAINING**

### **Ph.D. Candidate, Ecology**

*Expected completion August 2020*

University of California Davis, *Davis, CA*

Dissertation: *Drivers of Individual and Institutional Change to Achieve of Improved Agricultural Nitrogen Management in California*; Advisor: Professor Mark Lubell

### **M.S., Ecology**

2018

University of California Davis, *Davis, CA*

### **B.A., Environmental Earth Science**

2015

Washington University in St. Louis (WUSTL), *St. Louis, MO*

*Magna Cum Laude* with Honors Thesis in Interdisciplinary Environmental Studies; Minor in French

### **Undergraduate Studies Abroad**

*European Environmental Policy*, University of Edinburgh, *Edinburgh, Scotland* (semester)

2014

*Green Energy Technologies*, University of Queensland, *Brisbane, Australia* (summer)

2013

## **PROFESSIONAL EXPERIENCE**

### **Graduate Research Fellow (2017-2020)**

UC Davis; Barriers to Adoption of Improved Nitrogen Management Practices; Mentors: Dr. Mark Lubell & Dr. Patrick Brown; Summary: Data collection & analysis of surveys (n=5,000), Interviews (n=30), participant observations (>100 hours); Peer-reviewed publications & policy briefs

### **Relevant Consulting Experience (2016- )**

- Monarch Tractor, *Freemont, CA*, Development of autonomous electric small tractor for specialty crops in CA (2019-2020; ~10 hours)
- Environmental Defense Fund, *Sacramento, CA*, Agriculture non-point source pollution policy engagement strategy (2018; 20 hrs/ week June-November)
- Climate Action Reserve, *Los Angeles, CA*, Nitrogen Management Project Offset Protocol (2016-2017; quarterly science advisory committee meetings)

### **Graduate Student Researcher (2016-2018)**

UC Davis; Project: Climate Change Agriculture and Food Security Research; Mentor: Dr. Meredith Niles; Summary: Social network analysis of climate change and agricultural organizations for global comparative study; peer-reviewed publications & policy briefs

### **Policy and Research Fellow (August- December 2016)**

California Department of Food and Agriculture, *Sacramento, CA*. Summary: Built database of climate-smart agriculture practices for CA growers; Evaluated California policies enabling climate-smart agriculture develop; Lead outreach to growers and international partners

### **Policy & Public Service Fellow (June-August 2016)**

*UC Davis World Food Center*; Summary: Organized international collaborative projects & webinars on climate-smart agriculture; Led coordination with Global Alliance for Climate-Smart Agriculture

**Food Distribution Intern** (May-September 2015)

Gateway Greening, *St. Louis, MO*. Summary: Led food distribution of Community Supported Agriculture (CSA) and wholesale from urban farm; Coordinated educational activities for farm students receiving job training and eco-horticultural therapy

**Undergraduate Research Assistant** (2014-2015)

WUSTL Remote Sensing Laboratory. Mentor: Dr. Ray Arvidson; Summary: Geospatial and archival analysis of historic land use change in Missouri River Basin

**Undergraduate Research Fellow** (2013)

WUSTL Aerosol and Air Quality Research Laboratory; *National Science Foundation Research Experience for Undergraduates*; Mentor: Dr. Pratim Biswas; Summary: Developed nanoscale solar-activated catalyst for carbon capture and conversion applications

**PEER-REVIEWED PUBLICATIONS**

**Rudnick, J.**, Niles, M.T., Lubell, M., Cramer, L. 2019. A Comparative Analysis of Governance and Leadership in Agricultural Development Policy Networks. *World Development*, 117. pp. 112-126. <https://doi.org/10.1016/j.worlddev.2018.12.015>

Lewis, J., and **Rudnick, J.** 2019. The Policy Enabling Environment for Climate Smart Agriculture: A Case Study of California. *Frontiers in Sustainable Food Systems*, 3: 31. pp. 1-12. <https://doi.org/10.3389/fsufs.2019.00031>

Méndez-Barrientos, L.E., DeVincentis, A., **Rudnick, J.** *Forthcoming*. Farmer participation in common-pool resource governance reforms: The case of groundwater management in California. *Society and Natural Resources*. Accepted February 2020.

**PUBLICATIONS IN REVIEW**

**Rudnick, J.**, Lubell, M., Khalsa, S., Brown, P. A Farm Systems Approach to Sustainable Nitrogen Management: Understanding Farmer Adoption of Multiple Best Management Practices in California. Submitted to *Ecology & Society* February 2020.

Niles, M., **Rudnick, J.**, Lubell, M., Cramer, L. Linking Household and Community Social Capital to Smallholder Food Security. Submitted to *Proceedings of the National Academies of Science* Dec 2019.

**NON-REFEREED PUBLICATIONS**

**Rudnick, J.**, DeVincentis, A., Méndez-Barrientos, L.E. 2016. The Sustainable Groundwater Management Act Challenges Diversity of California's Farms. *California Agriculture*, 70, 4. <https://doi.org/10.3733/ca.2016a0015>

**Rudnick, J.** 2015. An Interdisciplinary Analysis of the Missouri River: The History of a Changing System and a Proposal for Sustainable Future Management. WUSTL Undergraduate Honors Thesis. [https://openscholarship.wustl.edu/wushta\\_spr2015/105/](https://openscholarship.wustl.edu/wushta_spr2015/105/)

**SCIENCE-POLICY & SCIENCE EDUCATION WORK**

**WikiScientist** (2019-2020) Wikipedia Science Fellowship Training to use Wikipedia for science and policy outreach; Major page revisions: [https://en.wikipedia.org/wiki/Agriculture\\_in\\_California](https://en.wikipedia.org/wiki/Agriculture_in_California)

**Skype a Scientist** (2018-2020) On-call scientist, skyping k-12 classrooms to answer science questions

**Co-Founder Science Informed Leadership** (2016-2018) National science-policy advocacy group, now part of the national Science Rising network (<https://sciencerising.org/>)

**Farm Conservation Restoration Mentor** (2016-2019) Center for Land Based Learning, *Winters, CA*

**High School Science Fair Mentor** (2015-2016) EnvironMentors, *Davis, CA*  
**Green Schools Quest Mentor** (2014-2015) U.S. Green Building Council, *St. Louis, MO*  
**Guest Environmental Science Teacher** (2012-2015) VERDE Elementary Education, *St. Louis, MO*

### **SELECTED MEDIA INTERVIEWS AND FEATURES**

\*indicates authorship/ writing contribution

**Science Friday (CA Public Radio)** February 14, 2020, Bring California's Groundwater Into Balance  
**Popular Science**, August 15, 2019, A great climate comes from happy soil. Could happy soil come from California?

\***CCAFS News Blog**, February 12, 2019, How organizations in CCAFS sites coordinate on climate change and agriculture initiatives

\***SJC and Delta Field Crops (UC ANR)**, June 7, 2018, UC Davis Survey on Nitrogen Mangement  
**California Ag Today (Radio interview)**, January 22, 2018, Survey Coming to Gauge Nitrogen Fertilizer Use

**Scientific American**, January 20, 2017, We Need Science-Informed Leadership

\***Ecological Society of America Blog**, January 3, 2017, Science-Informed Leadership: Graduate Students Mobilize Involvement in the New Executive Administration

### **GRANTS & FELLOWSHIPS**

National Science Foundation Graduate Research Fellowship Program (\$138,000)	2019- 2020
California Sea Grant Delta Science Fellowship (\$103,600)	2017-2019
California Fertilizer Research and Education Program Grant (\$206,000)	2017-2020
Emerging Leaders in Policy and Public Service Fellowship (\$6,000)	2016
UC Davis Jastro Shields Research Grant (\$6,000)	2016-2017
Graduate Group in Ecology Fellowship (\$12,000)	2015- 2017

### **HONORS & AWARDS**

Ecological Society of America Graduate Student Policy Award	2017
Agricultural Sustainability Institute Internal Steering Committee Member, UCD	2016-2017
National Science Foundation <i>Climate Change, Water and Society</i> I-GERT Associate, UCD	2015
Courtney Werner Memorial Prize in Earth and Planetary Sciences, WUSTL	2015
Washington University Action Committee Member for Clinton Global Initiative	2013

### **TEACHING & MENTORSHIP EXPERIENCE**

Undergraduate and graduate research mentoring:

- Master's student Stephanie Tatge Thesis (2019)
- Undergraduate Kennedy Gould Honors Thesis (2018)
- 7 undergraduate research assistants (2017-2020)

*Invited Lecturer*, Agriculture and the Environment (PLS 101), UC Davis (2017-2019)

*Teaching Assistant*, Public Lands Management (ESP 172), UC Davis (2016)

*Teaching Assistant*, Intro to Field Ecology (ESP 123), UC Davis (2016)

*Undergraduate Teaching Assistant*, Biogeochemistry (EPSc 323), WUSTL (2015)

### **SELECTED SCIENTIFIC PRESENTATIONS**

**Rudnick, J., Lewis, J.** "The Policy Enabling Environment for Climate Smart Agriculture in CA".  
 National Science Policy Network 3<sup>rd</sup> Annual Meeting. *Madison, WI*. November 2019.

\**Won best poster presentation*

- Rudnick, J.** Khalsa, S.D., Lubell, M., Brown, P. “Understanding Uncertainty in Farmer Decision Making in the Context of Climate Change and Nitrogen Management”.
- International Association for the Study of the Commons. Oral Presentation. *Lima, Peru*. July, 2019.
  - 3<sup>rd</sup> Agriculture and Climate Change Conference. Oral Presentation. *Budapest, Hungary*. March 2019.
- Rudnick, J.** and A. DeVincentis. “Drought as a Driver of Change? Growers Perceptions and Participation in the Sustainable Groundwater Management Act.” California Plant and Soil Conference. Poster Presentation. *Fresno, CA*. February 2019. **\*Won 2<sup>nd</sup> place for student poster presentation**
- Rudnick, J.** California Farmers’ Perspectives on Nitrogen Management and Water Quality. **Invited Speaker** to USDA California Regional Office. Oral Seminar. *Davis, CA*. December 2018.
- Rudnick, J.** Khalsa, S.D., Lubell, M., and P. Brown. Barriers to Adoption of Improved Nitrogen Management Practices. 2018 California Department of Food and Agriculture Fertilizer Research and Education Program (FREP) Annual Conference. Poster Presentation. *Seaside, CA*. October 2018.
- Rudnick, J.** “Governance and Leadership in Agricultural Development Policy Networks”. 2018 Sunbelt Conference. Poster Presentation. *Utrecht, Netherlands*. June 2018.
- Rudnick, J.** “Boundary Organizations in California Agricultural Water Quality Policy”. 2018 Midwest Political Science Association. Oral Presentation. *Chicago, IL*. April 2018
- Rudnick, J.,** DeVincentis, A. and K. Dobbin. “Who cuts the pie? Equitable distribution under the Sustainable Groundwater Management Act”. California Water Policy Conference. Flash Talk. *Davis, CA*. March 2018.
- Rudnick, J.** “California Farmers’ Perceptions and Participation in Nonpoint Source Water Pollution Policy”. American Political Science Association. Oral Presentation. *San Francisco, CA*. Sept 2017.
- Rudnick, J.,** Niles, M.T., Lubell, M.N. “A Comparison of Agricultural Development Policy Networks across Multiple Regions and Places”.
- Duck Graduate Workshop in Environmental Politics and Governance. Oral Presentation. *Seattle, WA*. May 2017.
  - 2017 Political Networks Conference. Oral Presentation. *Columbus, OH*. June 2017.
- Rudnick, J.,** DeVincentis, A. “The Sustainable Groundwater Management Act Challenges Diversity of California’s Farms”. Climate Action Network Workshop. Poster Presentation. *Davis, CA*. Feb 2017.
- Rudnick, J.,** Niles, M.T., Lubell, M.N. “Organizational Coordination to Build Climate-Smart Food Systems.” Political Networks conference. Poster presentation. *St. Louis, MO*. June 2016.
- Hoal, J., Hoeflerlin, D., **Rudnick, J.**, Sims, T., Gunay, E. “MISI-ZIIBI: Living with the Great Rivers, Climate Adaptation Strategies in the Midwest River Basin”. Workshop presentation. UN Conference of the Parties 20. *Lima, Peru*. December 2014.
- Rudnick, J.,** Cirrincione, L., Kent, E., Oswald, W., Swenson, B. Campus Sustainability Initiatives: “The Eco-To-Go Project”. Net Impact Conference. Invited Speaker. *San Jose, CA*. October, 2013.

## **ORGANIZED WORKSHOPS & CONFERENCES**

- Chair** of session “Managing Land for Humans and Wildlife”. California Bay-Delta Science Conference. *Sacramento, CA*. September 2018.
- Rudnick, J.,** Eddy, J. Parker, D. “Drought Management Workshop: California- Vietnam Collaboration”. Co-organizer. Workshop jointly funded by California Department of Food and Agriculture,

University of California Agriculture and Natural Resources, and Vietnamese Ministry of Agriculture.  
Davis, CA. October 2016.

**Rudnick, J., et al.** “Weathering Change: The Impact of Climate and the Sustainable Groundwater Management Act on California’s Water”. Co-organizer. Conference funded by National Science Foundation. Davis, CA. April 2016.

### **LEADERSHIP & SERVICE EXPERIENCE**

<b>Graduate Group in Ecology Executive Committee Student Representative</b> , Davis, CA	2017-2019
<b>Graduate Group in Ecology Diversity Committee Co-Chair</b> , Davis, CA	2016-2019
<b>Graduate Group in Ecology Graduate Peer Mentor</b> , Davis, CA	2016-2020
<b>Student President</b> , Net Impact, Washington University in St. Louis Chapter, MO	2012- 2015
<b>Garden Educator</b> , Harvest Health Community Garden, St. Louis, MO	2014
<b>Urban Farming Policy Intern</b> , Environment Missouri, St. Louis, MO	2013

### **ADDITIONAL SKILLS**

**Language:** French proficiency; Spanish elementary conversation

**Statistical Software:** R Programming Language; Stata

**Geographic Information Systems:** ArcGIS; QGIS; ENVI

### **PROFESSIONAL ORGANIZATION MEMBERSHIPS**

National Science Policy Network

Ecological Society of America

Union of Concerned Scientists

American Association of Geographers

Natural Areas Association

American Political Science Association