

# Jessica M. Rudnick

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California Sea Grant Extension Specialist  
Social Scientist at Delta Stewardship Council  
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## **EDUCATION AND TRAINING**

- Ph.D., Ecology** 2020  
University of California Davis, *Davis, CA*  
Dissertation: *Drivers of Individual and Institutional Change to Achieve of Improved Agricultural Nitrogen Management in California*; Advisor: 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**

### **California Sea Grant Extension Specialist (Dec 2020- )**

Social Science Extension Specialist at the Delta Stewardship Council; Leading efforts to build collaborative social science working group, synthesize data on human dimensions of the Delta and establish long-term monitoring of social health indicators. Extension efforts focused on community capacity building for policy engagement and youth environmental policy education and training.

### **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=2,000), 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; quarterly)
- Environmental Defense Fund, *Sacramento, CA*, Agriculture non-point source pollution policy engagement strategy (June – Nov 2018, 10 hrs/ week)
- 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** (April-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.**, Lubell, M., Khalsa, S.D.S., Tatge, S., Wood, B.L., Sears, M., and P.H. Brown (2021) A farms systems approach to the adoption of sustainable nitrogen management practices in California. *Agriculture and Human Values*, pp. 1-19.  
<https://doi.org/10.1007/s10460-021-10190-5>

Niles, M. T., **Rudnick, J.**, Lubell, M., & Cramer, L. (2021). Household and Community Social Capital Links to Smallholder Food Security. *Frontiers in Sustainable Food Systems*, 5, pp. 44.  
<https://doi.org/10.3389/fsufs.2021.583353>

Méndez-Barrientos, Linda Estelí, DeVincentis, A., **Rudnick, J.** et al. 2020. Farmer Participation and Institutional Capture in Common-Pool Resource Governance Reforms. The Case of Groundwater Management in California. *Society & Natural Resources*, pp. 1-22.  
<https://doi.org/10.1080/08941920.2020.1756548>

**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>

**OTHER PUBLICATIONS**

**Rudnick, J.** 2020. Drivers of Individual and Institutional Change to Achieve Improved Agricultural Nitrogen Management in California. Dissertation. University of California, Davis.

**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/)

### **PUBLICATIONS IN PREPARATION**

**Rudnick, J.** Brokering Water Quality Narratives: The role of boundary organizations in a collaborative approaches to agricultural nonpoint source pollution. In preparation for *Public Administration Review*.

**Rudnick, J.** and M. Lubell. Understanding uncertainty: the causes and implications of uncertainty in farmer decision-making. In preparation for *Environmental Research Letters*.

Mendez, L.E. **Rudnick, J.,** Ye, A., Lowry, B. The persistence of environmental injustice networks despite political regime shifts. In Preparation for *Environmental Justice*.

Ng, J., Laca, E., **Rudnick, J.** et al. Holistic review in graduate admissions for an R1 STEM Program: Collaborative design, implementation, and assessment. In Preparation for *Frontiers in Ecology and Evolution*.

### **SCIENCE-POLICY & SCIENCE EDUCATION EXPERIENCE**

**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)

**Technical Advisory Network Scientist** (2019-2020) with Union of Concerned Scientists, provide technical support reviewing water plans for marginalized communities & EJ community organizations

**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)

**California Department of Food and Agriculture Blog**, April 14, 2020, [Research Update: Nitrogen Management Adoption Rates](#)

**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 Management](#)

**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 (UCD, 2019); Darcy Bostic (UCD, 2020); Lita Brydie (OSU, 2022)
- Undergraduate Kennedy Gould Honors Thesis (UCD, 2018)
- 7 undergraduate research assistants (2017-2020)

*Invited Lecturer*, Agriculture and the Environment (PLS 101), UC Davis (2017-2021)

*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 EXTENSION/ OUTREACH PRESENTATIONS

**Rudnick, J.** Integrating social science in the Sacramento-San Joaquin Delta. Invited Presentations given to: Delta Protection Commission (May 2021), Delta Science Program Science Advisory Committee (May 2021), SFEP (March 2021), Sacramento San Joaquin Delta Conservancy (March 2021), Delta Stewardship Council (Jan 2021)

**Rudnick, J.** Understanding Grower Decision-Making on Nitrogen Management and Water Quality in California. **Invited Speaker.** Almond Board of California. May 2020.

**Rudnick, J.** UC ANR Public Symposium: Advancing Climate Change Policy and Environmental Justice in California. **Invited Panelist.** *Half Moon Bay, CA.* October 2019.

**Rudnick, J.** UC Agriculture and Natural Resources (ANR) Public Symposium: Small Farms and Groundwater Management under SGMA. **Invited Panelist.** *Fresno, CA.* September 2019.

**Rudnick, J.** California Farmers' Perspectives on Nitrogen Management and Water Quality. USDA California Regional Office. **Invited Brownbag Speaker.** *Davis, CA.* December 2018.

**Rudnick, J., & S.D. Khalsa.** 5 UC ANR Field Days on Nitrogen Management. **Co-organizer & presenter.** *Arbuckle, Stockton, Madera, Fresno and Bakersfield, CA.* March- October 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.

## **SELECTED SCIENTIFIC CONFERENCE PRESENTATIONS**

**Rudnick, J.** et al. “Integrating social science into the Sacramento-San Joaquin Delta”. International Association of Society and Natural Resources. Annual Conference. June 2021.

**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. \***1<sup>st</sup> place poster**

**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. \***2<sup>nd</sup> place poster presentation**

**Rudnick, J.** “Boundary Organizations in California Agricultural Water Quality Policy”. 2018 Midwest Political Science Association. Oral Presentation. *Chicago, IL*. April 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”.

- International Sunbelt Conference. Poster Presentation. *Utrecht, Netherlands*. June 2018.
- Duck Graduate Workshop in Environmental Politics and Governance. Oral Presentation. *Seattle, WA*. May 2017.
- 2017 Political Networks Conference. Oral Presentation. *Columbus, OH*. June 2017.

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 CONFERENCES, WORKSHOPS & SESSIONS**

**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>UC Davis Leaders for the Future 2019 cohort</b> , Davis, CA	2019-2020
<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

**Student President**, Net Impact, Washington University in St. Louis Chapter, MO 2012- 2015  
**Garden Educator**, Harvest Health Community Garden, St. Louis, MO 2014  
**Urban Farming Policy Intern**, 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  
**Facilitation/ Mediation:** Sustained Dialogue facilitation certified

**PROFESSIONAL ORGANIZATION MEMBERSHIPS**

National Science Policy Network  
Ecological Society of America  
Union of Concerned Scientists  
American Association of Geographers  
Natural Areas Association  
Western Political Science Association