Nusrat Molla

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Education

UC Davis
Ph.D. Hydrologic Sciences, Water Policy & Management Focus *2018–2023*

UC Berkeley
B.S. Civil and Environmental Engineering, Global Poverty & Practice Minor *2013–2017*

Research Interests

- Dynamical systems modeling of social-ecological dynamics of natural resources management
- Mixed methods research combining participatory modeling and qualitative analysis
- Sustainability transitions in resource-based communities

Skills

- Programming in Python and MATLAB
- Dynamical systems analysis
- Simulation and optimization
- Qualitative analysis (e.g. using NVivo)

Professional Experience

Distinguished Postdoctoral Fellow, Andlinger Center *2023–Present*
Graduate Student Researcher, Herman Lab *2018–2023*
Visiting Researcher, Helmholtz Institute for Functional Marine Biodiversity *July–August 2022*
Research Assistant, Gadgil Lab for Water and Energy Research *January–May 2017*

Summer Research Fellow, Nat. Institute of Standards & Technology *May–August 2015*
Research Assistant, UC Berkeley Quantitative Biosciences Laboratory *August 2014–May 2015*

Teaching Experience

Teaching Assistant for ECI 273: Water Systems Engineering *Spring 2019*

Publications

Peer-Reviewed Journal Articles

Molla, N., DeIonno, J., Gross, T., & Herman, J. (2022). Governing change: A dynamical systems approach to understanding the stability of environmental governance. Earth System Dynamics, 13(4), 1677–1688. https://doi.org/10.5194/esd-13-1677-2022

Srikrishnan, V., Lafferty, D., Wong, T., Lamontagne, J., Quinn, J., Sharma, S., **Molla, N.**, Herman, J., Sriver, R., Morris, J. & Lee, B. Uncertainty analysis in multi-sector systems: Considerations for risk analysis, projection, and planning for complex systems. https://doi.org/10.1029/2021EF002644

Molla, N., DeIonno, J. & Herman, J. Dynamics of resilience–equity interactions in resource-based communities. Communications Earth & Environment 2, 27 (2021). https://doi.org/10.1038/s43247-021-00093-y

Buckley, H. L., **Molla, N.**, Cherukumilli, K., Boden, K. S., & Gadgil, A. J. Addressing technical barriers for reliable, safe removal of fluoride from drinking water using minimally processed bauxite ores. Development Engineering, 3, (2018). https://doi.org/10.1016/j.deveng.2018.06.002

Papers In Review

Molla, N., Jaiswal, R., DeIonno, J., & Herman, J. Contested flows: a modeling approach to understanding narratives and strategies for navigating water governance.

Presentations

**Presenter*
*Molla, Nusrat, DeIonno, John, Herman, Jonathan. "Contested flows: a modeling approach to understanding narratives and strategies for navigating water governance." Oral presentation at American Geophysical Union Fall Meeting 2022.
*Molla, Nusrat, DeIonno, John, Gross, Thilo, Herman, Jonathan. "Governing change: A

dynamical systems approach to understanding the stability of environmental governance." Oral presentation at Social Simulation Conference September 2022.

*Molla, Nusrat, Jaiswal, Ruchika Gross, Herman, Jonathan. "Narratives and Strategies for Navigating Water Governance in the San Joaquin Valley." Oral presentation at Duck Family Graduate Workshop on Environmental Politics and Governance May 2022.

*Molla, Nusrat, DeIonno, John, Gross, Thilo, Herman, Jonathan. "A Dynamical Systems Approach to the Stability of Complex Governance." Oral presentation at International Association of the Commons Polycentricity Conference May 2021.

*Molla, Nusrat, DeIonno, John, Gross, Thilo, Herman, Jonathan. "A Generalized Modeling Approach to the Stability of Natural Resource Governance." Oral e-lightning presentation at American Geophysical Union Fall Meeting 2020.

*Molla, Nusrat, DeIonno, John., and Herman, Jonathan. "Dynamics of resilience and equity in resource-based communities." Oral presentation at American Geophysical Union Fall Meeting 2019.

*Molla, Nusrat. "Low Cost Fluoride Removal from Drinking Water: Evaluating the Effects of Co-Occurring Anions on Fluoride Adsorption." Oral presentation at 25th Annual National Ronald E. McNair Scholars Symposium Plenary Session. July 30, 2017. Berkeley, CA

Awards, Honors, and Fellowships

Gates Millennium Scholarship	*2013 – Present*
UC Davis McNair Graduate Fellowship	*2018 – 2019*
UC Berkeley McNair Scholars	*2016 – 2017*
Global Poverty and Practice Fellowship	*2016*
UC Berkeley Honors	*Fall 2016, Spring 2017*
UC Berkeley Dean's List	*Spring 2017*

Professional Activities and Service

Representative on College of Agriculture & Environmental Sciences Diversity, Equity, and Inclusion Committee

Mentor for UCD Minorities in Agriculture and Natural Resources

Mentor for Girls' Outdoor Adventure in Leadership and Science (GOALS)

Peer Mentor for Hydrologic Sciences Graduate Group

Reviewer for *Journal of Hydrology* and *Journal of Water Resources Planning and Management*

Member, American Geophysical Union

Member, International Association for the Study of the Commons