Profile

Dr. Jordan combines professional experience in astrophysical, planetary, and earth sciences with a focus on numerical modeling of complex systems. Applications of her work include gas-phase contaminant migration, groundwater remediation, nuclear waste repository performance, geologic carbon sequestration, and nuclear nonproliferation. At Carbon Solutions, Amy is a research scientist working on technical analysis of decarbonization strategies and software development.

Contact

Phone:
+1-303-775-3835

Email:
amy.jordan@carbonsolutionsllc.com

Website:
www.carbonsolutionsllc.com

Amy Jordan

Research Scientist | **Carbon Solutions LLC**

Education & Training

Ph.D. | **Hydrology** | **New Mexico Institute of Mining and Technology (NMT)**
2011–2015

M.S. | **Astrophysical, Atmospheric, and Planetary Sciences** | **CU-Boulder**
2004–2005

B.S. | **Astrophysics** | **University of California at Berkeley**
1999–2003

Professional Experience

Research Scientist | **Carbon Solutions LLC** | **2022–Present**
Air quality modeling and analysis, carbon management, industrial decarbonization, climate and energy analysis. Subsurface hydrogeology and modeling.

Hydrogeologist | **Neptune and Company, Inc.** | **2015–2022**
Risk and decision science in environmental remediation at polluted sites. Systems and process level numerical modeling of radiological and chemical contamination for assessment of risk to human and ecological receptors, including predictive analysis, statistical analysis and data management, model validation, and sensitivity/uncertainty analysis.

Graduate Research Assistant | **Los Alamos National Laboratory** | **2010–2015**
Numerical modeling, high performance computing, and flow and transport code development for radionuclide gas transport from underground nuclear explosions, coupled thermal-hydrological-chemical modeling of salt for nuclear waste repository performance, and geologic CO2 sequestration. Laboratory investigations of heat/mass transport in granular salt. Earth-systems modeling of impacts of changing climate on Arctic river runoff.

Project Scientist | **TerranearPMC** | **2009–2010**
Statistical analyses of chemical and environmental data; comparing sampling results to NM and EPA quality standards; technical writing and data presentation for LANL reports; waste determinations on groundwater samples; performing field work in support of LANL's Environmental Programs Directorate.

Teacher | **Santa Fe Preparatory School** | **2007–2009**
Chemistry, Honors Chemistry

Teacher | **Desert Academy** | **2006–2007**
Chemistry, Physics/Honors Physics, Precalculus

Publications

1. **Jordan, A.B.,** Rodriguez, D.S., Bennett, J.A., Sale, K., & Gilhooley, C. (**2024**), Quantifying air quality co-benefits to industrial decarbonization: The local Air Emissions Tracking Atlas. *Frontiers in Public Health, 12*(1394678).
2. **Jordan, A.B.,** Stauffer, P.H., Knight, E.E., Rougier, E., & Anderson, D.N. (**2015**), Radionuclide Gas Transport through Nuclear Explosion-Generated Fracture Networks. *Scientific Reports, 5*(18383).
3. **Jordan, A.B.**, Boukhalfa, H., Caporuscio, F.A., Robinson, B.A., & Stauffer, P.H. (**2015**), Hydrous Mineral Dehydration around Heat-Generating Nuclear Waste in Bedded Salt Formations. *Environmental Science & Technology*, *49*(11).
4. **Jordan, A.B.**, Stauffer, P.H., Harp, D., Carey, J.W., & Pawar, R.J. (**2015**), A response surface model to predict CO_2 and brine leakage along cemented wellbores. *International Journal of Greenhouse Gas Control*, *33*, 27-39.
5. **Jordan, A.B.**, Stauffer, P.H., Zyvoloski, G.A., Person, M.A., MacCarthy, J.K., & Anderson, D.N. (**2014**), Uncertainty in Prediction of Radionuclide Gas Migration from Underground Nuclear Explosions. *Vadose Zone Journal*, *13*(10).
6. Middleton, R.S., G.N. Keating, P.H. Stauffer, **A.B. Jordan,** H. Viswanathan, Q. Kang, J.W. Carey, M. Mulkey, J.E. Sullivan, S. Chu, R. Esposito, and T. Meckel (**2012**), The Cross-scale Science of CO_2 Capture and Storage: From Pore Scale to Regional Scale, *Energy & Environmental Science*, *5*, 7328–7345.
7. Chiang, E.I.; **A.B. Jordan,** R.L. Millis, M.W. Buie, L.H. Wasserman, J.L. Elliot, S.D. Kern, D.E. Trilling, K.J. Meech, and R.M. Wagner (**2003**), Resonance Occupation in the Kuiper Belt: Case Examples of the 5:2 and Trojan Resonances, *The Astronomical Journal* 126(1), 430.
8. Chiang, E.I. and **A.B. Jordan** (**2002**), On the Plutinos and Twotinos of the Kuiper Belt, *The Astronomical Journal* 124(6), 3430.

Proceedings & Key Presentations

1. **Jordan, A.B.,** D. Boyle, L. Foster, L. Gains-Germain, D. Levitt, C. Peck, T. Stockton, G. Occhiogrosso, P. Black, and D. Katzman (**2021**), Probabilistic Groundwater Modeling of the Chromium Plume at Los Alamos National Laboratory, In: *Proc. of the 2021 Waste Management Symposia,* 7–11 March 2021, Phoenix, AZ. 21165.
2. **Jordan, A.B.,** P. Reiums, D. Katzman, M. Ding, L. Gains-Germain, A. Springsteen, A. Rice, and J. Carson (**2020**), Analysis of Hydrology and Interim Measure Performance in the Chromium Plume at Los Alamos National Laboratory, In: *Proc. of the 2020 Waste Management Symposia,* 3–7 March 2020, Phoenix, AZ. 20498.
3. **Jordan, A.**, S. Fitchett, K. Catlett, D. Levitt, G. Occhiogrosso, J. Tauxe, P. Meeks, M. Higgs, P. Black (**2017**), Realistic Geochemical Parameter Uncertainty for Performance Assessment Modeling, In: *Proc. of the 2017 Waste Management Symposia*, 5–9 March 2017, Phoenix, AZ. 17066. "Papers of Note" award.
4. 15th International Conference on the Chemistry and Migration Behaviour of Actinides and Fission Products in the Geosphere, September **2015**: "Modeling Radionuclide Gas Transport Through Explosion-Generated Fracture Networks"
5. LANL-IPGP (Institut de Physique du Globe de Paris) Workshop in Geosciences, July **2014**: "Coupled Model for Thermal-Hydrological-Chemical Processes in a High-Level Radioactive Waste Repository in Salt"
6. **Jordan, A.B.,** MacCarthy, J. K.; Stauffer, P. H.; Zyvoloski, G. A.; Person, M. A. & Anderson, D. N. (**2012**), Simulation of radionuclide gas breakthrough from underground nuclear explosions. In: Proc. of the 2012 Monitoring Research Review: Ground Based Nuclear Explosion Monitoring Technologies. 18-20 September. Albuquerque, NM. Vol. 2. 625–634.

Key Reports

1. **Jordan, A.B.**, G.A. Zyvoloski, D.J. Weaver, S. Otto, and P.H. Stauffer (**2015**), Coupled Thermal-Hydrologic-Chemical Model for In-Drift Disposal Test. U.S. Department of Energy Used Fuel Disposition Campaign, LA-UR-15-27442.
2. **Jordan, A.B.**, H. Boukhalfa, F.A. Caporuscio, and P.H. Stauffer (**2015**), Brine Transport Experiments in Granular Salt. U.S. Department of Energy Used Fuel Disposition Campaign, LA-UR-15-26804.
3. **Jordan, A.B.**, P.H. Stauffer, D. Reed, H. Boukhalfa, F.A. Caporuscio, and B.A. Robinson (**2014**), Draft Test Plan for Brine Migration Experimental Studies in Run-of-Mine Salt Backfill. U.S. Department of Energy Used Fuel Disposition Campaign, LA-UR-14-27338.

Professional Activities/Honors

NMT Langmuir Award, 2016

LANL Distinguished Student Award, 2014

LANL LAAP Award, 2014

LANL Student Symposium Technical Talk Award, 2013

UC Berkeley Astronomy Department Klumpke-Roberts Award, 2003

Peer reviewer for professional journals such as *Geology*, *Applied Energy, Pure and Applied Geophysics*

Program Advisory Committee (PAC) Member, *Waste Management Symposia* (2020–2022)