

## Curriculum Vitae: Robert J. Webber

### POSITIONS

**CMX Postdoctoral Fellow**, California Institute of Technology 2021-  
- *Sponsor: Joel A. Tropp*

### EDUCATION

New York University [New York, NY] Mathematics PhD, 2021  
- *Thesis: Non-intrusive Monte Carlo methods for high-dimensional estimation*  
- *Advisor: Jonathan Weare*  
New York University [New York, NY] Mathematics MPhil, 2020  
University of Chicago [Chicago, IL] Computational & Applied Math MS, 2018  
Brown University [Providence, RI] Education BA, 2012

### HONORS & AWARDS

**Wilhelm T. Magnus Memorial Prize**, NYU Courant Institute 2021  
- *For “significant contributions to the mathematical sciences”*  
**Dean’s Dissertation Fellowship**, New York University 2020-2021  
- *For “excellence and exceptional promise” in dissertation research*  
**Henning Biermann Prize**, NYU Courant Institute 2020  
- *For “outstanding contributions to education or service”*  
**Moses A. Greenfield Research Prize**, NYU Courant Institute 2020  
- *For “outstanding interdisciplinary studies”*

### PREPRINTS

1. SM Greene, **RJ Webber**, JET Smith, J Weare, TC Berkelbach, *Full configuration interaction excited-state energies in large active spaces from randomized subspace iteration*, arXiv:2201.12164.
2. J Finkel, **RJ Webber**, DS Abbot, EP Gerber, J Weare, *Exploring stratospheric rare events with transition path theory and short simulations*, arXiv:2108.12727.
3. **RJ Webber**, M Lindsey, *Rayleigh-Gauss-Newton optimization with enhanced sampling for variational Monte Carlo*, arXiv: 2106.10558.
4. SM Greene, **RJ Webber**, TC Berkelbach, J Weare, *Approximating matrix eigenvalues by randomized subspace iteration*, arXiv:2103.12109.
5. **RJ Webber**, D Aristoff and G Simpson, *A splitting method to reduce MCMC variance*, arXiv:2011.13899.

### PUBLICATIONS

1. DS Abbot, **RJ Webber**, S Hadden, D Seligman, J Weare, *Rare event sampling improves Mercury instability statistics*, *Astrophysical Journal*, vol. 923, no. 2, 2021.
2. J Finkel, **RJ Webber**, DS Abbot, EP Gerber, J Weare, *Learning forecasts of rare stratospheric transitions from short simulations*, *Monthly Weather Review*, vol. 149, no. 11, pp. 3647-3669, 2021.
3. J Coullon and **RJ Webber**, *Ensemble sampler for infinite-dimensional inverse problems*, *Statistics and Computing*, vol. 31, no. 3, 2021.
4. **RJ Webber**, EH Thiede, D Dow, AR Dinner, and J Weare, *Error bounds for dynamical spectral estimation*, *SIAM Journal on the Mathematics of Data Science*, vol. 3, no. 1, pp. 225-252, 2021.

5. C Lorpai boon, EH Thiede, **RJ Webber**, J Weare, and AR Dinner, *Integrated variational approach to conformational dynamics: A robust strategy for identifying eigenfunctions of dynamical operators*, Journal of Physical Chemistry B, vol. 124, no. 42, pp. 9354-9364, 2020.
6. SM Greene, **RJ Webber**, J Weare, and TC Berkelbach, *Improved fast randomized iteration approach to full configuration interaction*, Journal of Chemical Theory and Computation, vol. 16, no. 9, pp. 5572-5585, 2020.
7. JH Checlair, DS Abbot, **RJ Webber**, YK Feng, JL Bean, et. al., *A statistical comparative planetology approach to maximize the scientific return of future exoplanet characterization efforts*, Bulletin of the AAS, vol. 51, no. 3, 2019.
8. SM Greene, **RJ Webber**, J Weare, and TC Berkelbach, *Beyond walkers in stochastic quantum chemistry: Reducing error using fast randomized iteration*, Journal of Chemical Theory and Computation, vol. 15, no. 9, pp. 4834-4850, 2019.
9. **RJ Webber**, DA Plotkin, ME O'Neill, DS Abbot, and J Weare, *Practical rare event sampling for extreme mesoscale weather*, Chaos: An Interdisciplinary Journal of Nonlinear Science, vol. 29, no. 5, 2019.
10. DA Plotkin, **RJ Webber**, ME O'Neill, J Weare, and DS Abbot, *Maximizing simulated tropical cyclone intensity with action minimization*, Journal of Advances in Modeling Earth Systems, vol. 11, pp. 863-891, 2019.

#### INVITED TALKS

European Nonlinear Dynamics Conference	2022
AMS Spring Western Sectional Meeting	2022
USC Probability & Statistics Seminar	2022
UCSD Institute of Geophysics & Planetary Physics Seminar	2022
IPAM: Advancing Quantum Mechanics with Mathematics and Statistics	2022
SIAM Annual Meeting	2021
University of Chicago Computational & Applied Math Colloquium	2021
University of Delaware Stochastic Processes & Applications Seminar	2021
Tulane Applied & Computational Math Seminar	2021
SIAM Computational Science & Engineering	2021
Georgia Tech Applied and Computational Mathematics Seminar	2021
Duke University Applied Math & Analysis Seminar	2021
Penn State CCMA Seminar on Mathematics of Data & Computation	2020
UC Berkeley / Berkeley Lab Applied Mathematics Seminar	2020
SIAM Mathematics of Planet Earth	2020
Flatiron Institute Numerical Analysis Seminar	2019
SIAM Computational Science & Engineering	2019
SIAM Annual Meeting	2018

#### ACADEMIC SERVICE

1. Committee member for the Computing & Mathematical Science Department DEI Steering Committee (2021-)
2. Reviewer for SIAM Journal on Uncertainty Quantification, Entropy, Biometrika, and French National Research Agency (2019-)
3. Session chair for Women in Probability's Conference on New Developments in Probability (2021)
4. Co-coordinator of NYU's Applied Math Summer Undergraduate Research Experience (2019)
5. Volunteer statistical consultant for non-profit Thirty Million Words organization devoted to improving literacy of low-income children (2014-2017)

6. AmeriCorps Member at homeless shelter, case manager and teacher of computer skills (2013-2014)
7. Fulbright English Teaching Assistant at rural Indonesia boarding school (2012-2013)