Ryan BRADLEY Jadrich

The University of Texas at Austin

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EDUCATION

Ph.D., Chemistry, 2009-2014

**University of Illinois at Urbana - Champaign**

Research: Statistical Mechanics of Soft Condensed Matter, Liquid State Theory, Glassy and Disordered Systems

Thesis: [Structure, Slow Dynamics, Kinetic Arrest, and Massively Reconfigurable Assembly in Colloidal Suspensions](https://www.ideals.illinois.edu/handle/2142/72919)

Advisor: [Kenneth S. Schweizer](https://www.matse.illinois.edu/directory/profile/kschweiz)

**B.S., Chemistry, Highest Honors, 2005-2009**

**Rochester Institute of Technology**

Focus: Theoretical and Physical Chemistry

Minor: Mathematics

PROFESSIONAL CERTIFICATION

**Data Science, 2015-2016**

**General Assembly of Austin, TX**

Course Material: Supervised and Unsupervised Machine Learning Techniques

Capstone Project: [Disaster detection via Twitter (Python Notebook on GitHub)](https://github.com/rjadrich/disaster_detection_via_twitter)

Instructor: [Kevin Safford](https://www.linkedin.com/in/kevinsafford)

PROFESSIONAL EXPERIENCE

Postdoctoral Fellow, 2014-Present

The University of Texas at Austin, McKetta Department of Chemical Engineering

Research: Computational Inverse Design and Optimization of Liquid and Solid State Statistical Mechanics Models

Advisor: [Thomas M. Truskett](http://www.truskettgroup.com/)

**Analytical Chemistry Cooperative Education with Rochester Institute of Technology, 2007-2008**

**Xerox Analytical Services**

Overview: Provided Technical Support to Various Divisions in Xerox both Local and Foreign

Supervisor: [Kevin Marcell](https://www.linkedin.com/pub/kevin-marcell/12/589/762)

SELECT PUBLICATIONS

\*Full List with Free Copies on [GitHub](https://github.com/rjadrich/peer_reviewed_publications)

(1) B. A. Lindquist, **R. B. Jadrich** and T. M. Truskett, *Soft Matter (Communication)*, DOI: 10.1039/C5SM03068D (2016); “Assembly of Nothing: Equilibrium Fluids with Designed Structured Porosity” [[Journal](http://dx.doi.org/10.1039/C5SM03068D), [GitHub](https://github.com/rjadrich/peer_reviewed_publications/blob/master/publications/Assembly_of_Nothing_Equilibrium_Fluids_with_Designed_Structured_Porosity.pdf)]

(2) A. Singh, B. A. Lindquist, G. K. Ong, **R. B. Jadrich**, A. Singh, H. Ha, C. J. Ellison, T. M. Truskett and D. J. Milliron, *Angewandte Chemie* **54**, 14840–14844 (2015); “Linking Semiconductor Nanocrystals into Gel Networks through all Inorganic Bridges” [[Journal](http://dx.doi.org/10.1002/anie.201508641), [GitHub](https://github.com/rjadrich/peer_reviewed_publications/blob/master/publications/Linking_Semiconductor_Nanocrystals_into_Gel_Networks_through_all_Inorganic_Bridges.pdf)]

(3) **R. B. Jadrich**, J. A. Bollinger, B. A. Lindquist and T. M. Truskett, *Soft Matter* **11**, 9342-9354 (2015); “Equilibrium Cluster Fluids: Pair Interactions via Inverse Design” [[Journal](http://t.co/lrxJI9PMaV), [GitHub](https://github.com/rjadrich/peer_reviewed_publications/blob/master/publications/Equilibrium_Cluster_Fluids_Pair_Interactions_via_Inverse_Design.pdf)]

(4) **R. B. Jadrich** and K. S. Schweizer, Physical Review Letters **113**, 208302 (2014); “Directing Colloidal Assembly and a Metal-Insulator Transition Using a Quench-Disordered Porous Rod Template” [[Journal](http://dx.doi.org/10.1103/PhysRevLett.113.208302), [GitHub](https://github.com/rjadrich/peer_reviewed_publications/blob/master/publications/Directing_Colloidal_Assembly_and_a_Metal-Insulator_Transition_Using_a_Quench-Disordered_Porous_Rod_Template.pdf)]

Select AWARDS

**List of Teachers Ranked as Excellent by Their Students**

University of Illinois Center for Teaching Excellence, Spring Semester 2010, **(With Designation of Outstanding)**

University of Illinois Center for Teaching Excellence, Fall Semester 2009

**Undergraduate Senior Achievement Award**

American Chemical Society (Rochester NY Region), May 2009

**Outstanding Student in Physical Chemistry Award**

Chemistry Department, Rochester Institute of Technology, May 2009

ComputING EXPERIENCE

**Programming Languages**

C/C++, Python, Bash Scripting

**Coding**

Monte Carlo and Molecular Dynamics Simulations **|** Relative Entropy Maximization **|** Integral Equation Solvers **|** Simulated Annealing Optimization **|** Stochastic Integration

**Statistical and Mathematical Packages**

SciKit-Learn [Python] **|** Gensim for Natural Language Processing and Topic Modeling [Python] **|** Pandas [Python] **|** Numpy [Python] **|** Mathematica **|** GSL Mathematical Library [C/C++] **|** KINSOL Optimization Code [C/C++]

**Molecular Simulation Packages**

Groningen Machine for Chemical Simulations (GROMACS)

**Statistical Mechanics Probabilistic Optimization Packages**

Versatile Object-oriented Toolkit for Coarse-graining Applications (VOTCA)

**Supercomputing Experience**

Texas Advanced Computing Center (TACC)

Relevant Graduate Coursework

Atomic Scale Simulations (Fall 2010)

• Monte Carlo and Molecular Dynamic Simulation • Genetic Algorithms and Simulated Annealing

TEACHING EXPERIENCE

University of Illinois at Urbana-Champaign

Teaching Assistant for CHEM 315: Instrumental Chemical Systems Lab (Spring 2010)

• Taught Fundamentals of Nuclear Magnetic Resonance (NMR) Spectroscopy

Teaching Assistant for CHEM 102: General Chemistry I (Fall 2009)

• Held Six Weekly 50 minute Discussion Sections, Graded Quizzes and Administered Examinations

Chemistry Learning Center Tutor (Fall 2009)

Rochester Institute of Technology

Teaching Assistant for 1008 - 261: Quantitative Analysis (Winter 2008-2009)

• Helped Construct and Grade Quizzes and Exams while Providing Tutoring Outside of Class

Teaching Assistant for 1014 - 447: Chemical Kinetics Lab (Fall 2008-2009)

• Helped Teach and Assist With the Various Chemical Measurement Techniques

Teaching Assistant for 1008 - 265: Quantitative Analysis Lab (Winter 2006-2007)

• Taught Wet Lab Chemical Techniques, Lab Safety and Helped Students Develop Lab Writing Skills