

Joseph James Radler

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2800 Franklin Ave E. #17, Seattle WA, 98102

EDUCATION

UNIV. OF WASHINGTON

MASTER OF SCIENCE (MS)

June 2018 | Seattle, WA

Conc. Computational & Theoretical
Quantum Chemistry

PURDUE UNIVERSITY

BACHELOR OF SCIENCE (BS)

May 2012 | West Lafayette, IN

Major Chemistry

Minor Japanese Language

IVY TECH COMM. COLL.

ASSOCIATE OF APPLIED SCIENCE
(AAS)

Dec. 2010 | Lafayette, IN

Major Chemical Technology

SKILLS

SCIENTIFIC COMPUTING

Numerical Modeling • Simulation Design

- Open Source Development
- Data Visualization • Machine Learning
- Discrete Time-Frequency Analysis
- High-Performance Computing
- Data Management • Automation

PROGRAMMING EXPERIENCE

5+ Years: Python • C • MATLAB • \LaTeX

3-5 Years: Bash Script • C++ • Markdown

1-3 Years: Haskell • SQL • HTML • Scala

QUANTITATIVE:

Mathematics: • Discrete

Mathematics • Group Theory

- Differential Equations • Linear Algebra
- Complex Analysis • Numerical Analysis
- Vector Calculus • Statistics

SOFTWARE TOOLS

Workload Schedulers: PBS • Slurm

Version Control Systems: Git •
Subversion

OPERATING SYSTEMS

Proficient: Windows • MacOS

Familiar: Linux (Fedora, Debian &
Ubuntu)

RELEVANT WORK & RESEARCH EXPERIENCE

INDUCED POLARIZATION ASSOCIATES, LLC | SEATTLE, WA

MARINE INDUCED POLARIZATION DEVELOPMENT RESEARCH ASSOCIATE

May 2019 - Present

- Develop detection hardware for electrical waveforms in a noisy environment.
- Build and implement automated data processing and analysis tools in Python.
- Design applications for controlling and detecting data from field devices.
- Create and implement documentation workflows for testing.
- Implement a variety of digital signal processing software algorithms.
- Write reports for collaborators, investors, and funding bodies apprising them of our progress.
- Plan and construct data management tools such as code libraries, SQL database schemas, and version control workflows.

UNIVERSITY OF WASHINGTON | SEATTLE, WA

RESEARCH ASSISTANT | XIAOSONG LI GROUP

DEPARTMENT OF CHEMISTRY

Jan 2016 - Sept. 2018

- Wrote and published *three (3) original research articles* on simulating coupled quantum dynamics in peer-reviewed journals (please see Publications section below).
- Collaborated with researchers from various experimental disciplines.
- Constructed a novel computational approach to treating fast intersystem crossings with Time-Dependent Density Functional Theory (TD-DFT).
- Developed high-performance computing pipelines, data analysis, and simulation software tools.
- Worked on a development team for an Open Source simulation application.
- Created visualizations for time-resolved frequency analysis.
- Automated parsing and analysis of large data sets from simulations.
- Presented my original work in both small-group settings and public seminars.
- Designed, typeset, and presented award-winning posters for conference presentations.

PUBLICATIONS

- Valentine, A. J. S.; **Radler, J. J.**; Mills, A.; Kim, P.; Castellano, F. N.; Chen, L. X.; and Li, X.; *Resolving the ultrafast intersystem crossing in a bimetallic platinum complex*. J. Chem. Phys., **2019**. DOI: 10.1063/1.5115169
- **Radler, J. J.**; Lingerfelt, D. B.; Castellano, F. N.; Chen, L. X.; Li, X.; *Role of Vibrational Dynamics on Excited-State Electronic Coherence in a Binuclear Platinum Complex* (Featured Cover Article) J. Phys. Chem. A, **2018**. DOI: 10.1021/acs.jpca.8b01352
- Lingerfelt, D. B.; Lestrage, P. J.; **Radler, J. J.**; Brown-Xu, S. E.; Kim, P.; Castellano, F. N.; Chen, L. X.; Li, X.; *Can Excited State Electronic Coherence Be Tuned via Molecular Structural Modification? A First-Principles Quantum Electronic Dynamics Study of Pyrazolate-Bridged Pt(II) Dimers*. J. Phys. Chem. A., **2017**. DOI: 10.1021/acs.jpca.6b12099

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RELEVANT COURSES

CHEMISTRY & PHYSICS

- Computational Molecular Dynamics
- Quantum Computational Chemistry
- Group Theory for Physical Chemistry
- Advanced Inorganic Chemistry
- Computational Chemistry
- Quantum Chemistry I
- Quantum Chemistry II

MATHEMATICS

- Numerical Linear Algebra
- Computational Data Analysis
- Ordinary Differential Equations
- Multivariable & Vector Calculus

COMPUTER PROGRAMMING

- High-Performance Computing
- C Programming
- Intro Engineering with MATLAB
- Developing Quantum Models

WRITING AND LANGUAGE

- Grant and Proposal Writing
- Technical Writing and Editing
- English Composition
- Japanese Language & Literature

OTHER SKILLS

NATURAL LANGUAGES

Native or Fluent:

English • Japanese

Conversational:

French • Portuguese • Russian • Spanish

Basic:

German • Mandarin

COMMUNICATION

Technical Writing • Editing
Visualizations • Developing Tutorials
Publishing • Poster & Oral Presentation

LINKS

Github:// [jjradler](#)

LinkedIn:// [jjradler](#)

Webpage:// [jjradler.github.io](#)

POSTER PRESENTATIONS

- **Radler, J. J.**; Lingerfelt, D. B.; Li, X.; *Cascading into Coherence – Theoretical Investigations of Long-Lived Excited State Coherences in Bimetallic Pt(II) Complexes*. Conference on Excited State Processes (ESP 2018); **06/2018**.
- **Radler, J. J.**; Lingerfelt, D. B.; Li, X.; *Exploring the Role of Nuclear Motion on Excited State Coherences in Binuclear Pyrazolate-Bridged Platinum Complexes*. 1st North-west Theoretical and Computational Chemistry Conference; **10/2017**.
- Houferak, C.; Kasper, J.; **Radler, J. J.**; Sun, S.; *Applications of Compressive Sensing to Simulated Chemical Spectra*. University of Washington Engineering in Data Science Symposium; **03/2016**
- **Radler, J. J.**; Jackson, G. S.; Koopman, H.; Westgate, A.; *Determination of ^{14}C Pelagic Ocean Values through Atomic Bomb Radiocarbon Dating of Dolphin Teeth*. 13th Accelerator Mass Spectrometry Conference; **08/2014**.
- **Radler, J. J.**; Schauer, D. J.; *Probing the Nature of Metal-Phosphonate Interactions by FTIR Spectroscopy*, Central Regional Meeting of the ACS; **06/2010**.

OTHER WORK EXPERIENCE

UNIVERSITY OF WASHINGTON | SEATTLE, WA

GRADUATE TEACHING ASSISTANT / ASSOCIATE | GENERAL CHEMISTRY
DEPARTMENT OF CHEMISTRY

Sept. 2015 - Mar. 2019

- Taught students the theoretical and technical aspects of chemistry.
- Conveyed abstract concepts from physics in introductory-level chemistry courses.
- Instructed First Year Graduate students at a Teaching Assistant Orientation Seminar.

PURDUE RARE ISOTOPE MEASUREMENT (PRIME) LABORATORY

CHEMIST | GEOLOGICAL SAMPLE PROCESSING CHEMISTRY OPERATIONS

May 2012 - Aug 2015 | West Lafayette, IN

- Processed soil, rock, and water samples for ^{36}Cl analysis by Accelerator Mass Spectrometry.
- Optimized sample processing, tripling sample throughput.
- Wrote and revised sample processing documentation and procedures.
- Collaborated remotely with researchers to advise them with their own processing facilities.

AWARDS

- **2017** J. Phys. Chem. A Award for Best Original Research Poster (1st NWTCC)
- **2012** Dean's List, Purdue University

SOCIETIES

- **2016 - Current** Society of Industrial and Applied Mathematicians (SIAM)
- **2015 - Current** American Chemical Society (ACS)
- **2016** UW High-Performance Computing Club (UW-HPCC)
- **2006** Alpha Chi Sigma Beta Nu Chapter