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
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 Sr. Research Scientist
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 (pleaser 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 conferences.

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.; Lestrange, 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**

SELECTED 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 Northwest 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