D. Vale Cofer-Shabica, Ph.D.

vale.cofershabica@gmail.com • 843.870.0226 • valecs.github.io
139 9th Street, Providence, RI 02906

EDUCATION & TRAINING

Brown University — Providence, RI
Ph.D. Physical Chemistry — 2018
Potential landscape perspectives on roaming: Insights on formaldehyde from geodesic paths

Brown University, H. W. Sheridan Center for Teaching and Learning — Providence, RI
Certificate program, *Reflective Teaching* — 2013–2014

Brown University — Providence, RI
Sc.B. Chemical Physics — 2005–2009

RESEARCH

Brown University, Chemistry — Providence, RI
Graduate Researcher; Advisor: Richard Stratt — 2013–2018
Geodesic description of the inherent dynamics of the roaming mechanism in formaldehyde.

Brown University, Chemistry — Providence, RI
Research Associate; Advisor: Peter Weber — 2011–2013
Rydberg photo-electron spectroscopy and pump-probe x-ray diffraction of 1,3-cyclohexadiene.

Brown University, Chemistry — Providence, RI
Undergraduate Researcher; Advisor: Richard Stratt — 2008–2009
Direct simulation of the diffusion-percolation transition in the 2D Lorentz gas.

Brown University, Engineering & Ecology and Evolutionary Biology — Providence, RI
Undergraduate Researcher; Advisors: Sharon Schwartz, Kenny Breuer — 2006–2008
Bio-mechanics of mammalian flight in fruit bats and flying squirrels.

AWARDS

William R. Potter Prize for Doctoral Thesis of Outstanding Merit — 2018
Brown University Department of Chemistry, Providence RI

Elaine Chase Award for Leadership and Service — 2017
Brown University Department of Chemistry, Providence RI

William T. King Prize for Teaching — 2014
Brown University Department of Chemistry, Providence RI

Teaching Fellow — 2013–2015
Brown University Department of Chemistry, Providence RI

Thinker In Residence — 2010
Academic Magnet High School, Charleston, SC

Undergraduate Teaching and Research Award — 2008
Brown University, Providence RI

SERVICE

Diversity and inclusion Action Committee 2016–2018
Brown University Department of Chemistry

WE Teach STEM Discussion Group 2015–2018
About teaching by, for, and as women in STEM fields, Brown University

Stand Up for Graduate Student Employees 2013–2017
Graduate Student Union Organizer, Brown University

Exhibition Night Judge 2013–Present
Blackstone Academy High School, Pawtucket, RI

Graduate Student Recruitment 2012–2017
Brown University Department of Chemistry

TEACHING

Brown University Providence, RI
Problem Session Facilitator, Equilibrium, Rate, and Structure 2014, 2015
Problem Session Facilitator, Introductory Chemistry 2013, 2014
Tutorial Assistant, Equilibrium, Rate, and Structure 2013
Laboratory Teaching Assistant, Equilibrium, Rate, and Structure 2012

Kaplan Tutoring Services Barrington, RI
Science, Math, & Language Tutor 2008–Present

Blackstone Academy Charter School Pawtucket, RI
Full-Time High School Math Teacher 2010–2011

The Metropolitan Regional Career and Technical Center Providence, RI
Full-Time High School Math Teacher 2009–2010

Camp Ho Non Wah, BSA Wadmalaw Island, SC
Various positions incl. Program Director, Ecology Director 2001–2006

PUBLICATIONS & POSTERS

D. Vale Cofer-Shabica and Richard M. Stratt. What is special about how roaming chemical reactions traverse their potential surfaces? Differences in geodesic paths between roaming and non-roaming events. *The Journal of Chemical Physics*, 146(21):214303, 2017. doi:10.1063/1.4984617.

J. M. Budarz, M. P. Minitti, **D. V. Cofer-Shabica**, B. Stankus, A. Kirrander, J. B. Hastings, and P. M. Weber. Observation of femtosecond molecular dynamics via pump-probe gas phase x-ray scattering. *Journal of Physics B: Atomic Molecular and Optical Physics*, 49(3), 2016. doi:10.1088/0953-4075/49/3/034001.

D. Vale Cofer-Shabica and Richard M. Stratt. The geometries of potential energy landscapes

imply dynamical signatures for roaming reactions. Boston, MA, 2015. American Chemical Society, 250th National Meeting. PHYS 554.

Michael P. Minitti, James M. Budarz, Adam Kirrander, Joseph Robinson, Thomas J. Lane, Daniel Ratner, Kenichiro Saita, Thomas Northey, Brian Stankus, **Vale Cofer-Shabica**, Jerome Hastings, and Peter M. Weber. Toward structural femtosecond chemical dynamics: Imaging chemistry in space and time. *Faraday Discussions*, 171:81–91, 2014. doi:10.1039/c4fd00030g.

TALKS - INVITED

D. Vale Cofer-Shabica. Wandering molecules. Providence, RI, 2014. Brown University, Research Matters. `https://www.youtube.com/watch?v=X3xyMP9EAco`.

D. Vale Cofer-Shabica. Finding your way through service. Charleston, SC, 2010. Academic Magnet High School, Commencement Address.

TALKS - SUBMITTED

D. Vale Cofer-Shabica. What is special about how roaming chemical reactions traverse their potential surfaces? differences in geodesic paths between roaming and non-roaming events. Providence, RI, March 2017. Brown University, Physical Chemistry Tea Session.

D. Vale Cofer-Shabica. Global energy landscape perspectives on roaming: Geodesics paths on the formaldehyde photodissociation landscape. Providence, RI, February 2016. Brown University, Physical Chemistry Tea Session.

D. Vale Cofer-Shabica. Roaming formaldehyde photodissociation: Shining a light on a novel reaction mechanism with geodesics. Providence, RI, January 2015. Brown University, Physical Chemistry Tea Session.

D. Vale Cofer-Shabica. Roaming formaldehyde photodissociation: Novel reaction mechanism explained by geodesics? Providence, RI, December 2013. Brown University, Physical Chemistry Tea Session.

AFFILIATIONS

Member of the *American Chemical Society* 2015–Present