# D. Vale Cofer-Shabica, Ph.D.

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## 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