

Zachary E. Dyott

UNIVERSITY OF WISCONSIN-MADISON

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Education

University of Wisconsin-Madison

PH.D. IN CHEMISTRY

- Advisor: Prof. Edwin Sibert

Madison, Wisconsin

Expected 2022

University of South Florida (USF)

B.S. IN CHEMISTRY, MAGNA CUM LAUDE

- GPA: 3.72/4.00
- Advisor: Prof. Brian Space
- Honors Thesis: "Detailed and Accurate Simulation of rht-MOF-9 as a Hydrogen Gas Sorbent"
- Provost's Scholar: Accelerated degree program in the Honors College focused on research, global engagement, and leadership with support from Provost Ralph Wilcox

Tampa, Florida

2014 - 2017

Research Experience

Research Assistant

ADVISOR: PROF. EDWIN SIBERT, UW-MADISON

- Investigated nonlinear phenomena and interfacial vibrational dynamics utilizing a local-mode framework
- Calculated and predicted vibrational spectra including IR, Raman and VCD with the goal of predicting SFG spectra

Madison, WI

January 2018 - Present

Research Assistant

ADVISOR: PROF. BRIAN SPACE, USF

- Performed simulations of gas sorption in nanoporous materials to investigate utility in storage or separations
- Wrote molecular dynamics and Grand Canonical Monte Carlo algorithms for gas sorption simulations
- Began development on transferable force field using novel parametrization methods

Tampa, FL

Mar. 2015 - May 2017

Research Assistant

ADVISOR: PROF. MIKE ZAWOROTKO, UNIVERSITY OF LIMERICK

- Performed solid state synthesis of novel ligands for use in metal-organic materials (MOMs)
- Characterized substances using powder X-ray diffraction (PXRD), thermal gravimetric analysis (TGA), and single-crystal X-ray diffraction (SCXRD)

Limerick, Ireland

May 2016 - Jul. 2016

Publications

Simulations of Hydrogen, Carbon Dioxide, and Small Hydrocarbon Sorption in a Nitrogen-Rich rht-Metal-Organic Framework

DOUGLAS M. FRANZ, ZACHARY E. DYOTT, KATHERINE A. FORREST, ADAM HOGAN, TONY PHAM, AND BRIAN SPACE

- *Phys. Chem. Chem. Phys.* **2018**, 20, 1761 - 1777. DOI: 10.1039/c7cp06885a.

2018

Selected Presentations

74th Meeting of the International Symposium on Molecular Spectroscopy

TALK

- "A Path from Gas to Liquid: Development of Model Hamiltonians for Condensed Phase Local Mode IR Spectra via Benzene (Bz) and Bz₂"
- Development of accurate condensed phase model for simulations of benzene in an effort to calculate SFG spectra and provide physically motivated interpretations of the CH stretch region

Champaign, IL

Jun. 2019

15th USF Castle Conference

POSTER

- "Toward Next-Generation Force Fields: Atom Typing as a Viable Parametrization Tool"
- Investigation of atom typing for use in creating transferable force fields for use in nanoporous material simulations

Tampa, FL

Apr. 2017

14th USF Castle Conference

POSTER

- "Simulation of Hydrogen Gas Sorption Using Explicit Polarization Monte Carlo Methods"
- Comparison project of two nanoporous materials for purposes of clean energy storage and gas phase separations

Tampa, FL

Apr. 2016

Honors & Scholarships

T.C. Owen Outstanding Undergraduate Research Award , USF Chemistry Department	2017
Calvin S. Maybury Department Scholarship , USF Chemistry Department	2017
Chemistry Honor Roll , USF Chemistry Department	2017
Honors College Outstanding Research Award , USF Chemistry Department	2016
Dean's List , USF, Spring	2015
Godbold Scholarship , Tampa Bay Times Private Scholarship	2014
Director's Award , USF	2014
Honors Scholar , USF Honors College	2014
Bright Future's Academic Scholar , USF	2014

Teaching Experience & Outreach

Teaching Assistant

UNIVERSITY OF WISCONSIN-MADISON

Madison, WI

May 2017 - Present

- TA for General Chemistry, Advanced Honors General Chemistry, and Physical Chemistry 2
- Experience in teaching, lecturing, and facilitating students
- Prepared targeted materials for students to reinforce lecture material

Graduate Student Faculty Liaison Committee

UNIVERSITY OF WISCONSIN-MADISON

Madison, WI

Aug. 2018 - Present

- Social Subcommittee member
- Organized department-wide fundraiser which successfully raised <\$1500

Catalyst

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Madison, WI

Aug. 2017 - Present

- Mentored underrepresented first year student to facilitate transition from undergraduate to graduate school
- Attended regular monthly professional development events

CHOPS

UNIVERSITY OF WISCONSIN-MADISON

Madison, WI

Sep. 2017 - Present

- Hosted several underrepresented students for an in-depth look at the graduate school experience
- Participated in program as senior undergraduate student in Sep. 2016

Tutor

USF

Tampa, FL

Sep. 2015 - Dec. 2016

- Tutored students for General Physics 1 and 2, Advanced General Physics 1 and 2, and Organic Chemistry 1 and 2
- Implemented novel teaching strategies to guide students in understanding challenging material
- Gained official certification in tutoring

Peer Leader

USF

Tampa, FL

Aug. 2015 - Dec. 2015

- Led discussions for two sections of General Chemistry 1 as an undergraduate
- Facilitated and lectured class on material with a focus on active learning in the classroom

Provost's Scholars Program Co-Chair

USF

Tampa, FL

Aug. 2015 - May 2017

- Social and Events committee co-chair for two years
- Organized events for scholarship program to promote integration into university setting for first years
- Experience in balancing budgets

Skills

Programming	Fortran, Bash scripting, Awk scripting, C/C++
Quantum Computing Programs	Gaussian09, NWChem, OpenMM
Experimental Techniques	PXRD, SCXRD, TGA
Tutoring	CRLA Level 1 Certified Tutor
Collaborative Research	Internationally collaborative research, experience working in large teams of diverse individuals