BRIAN D. NGUYEN

Linkedin: brian-nguyen bdnguye2@uci.edu Irvine, California (714) 204-6033

EDUCATION

University of California, Irvine *Sept 2016 - expected May 2022*
Doctor of Philosophy in Chemistry
with concentration in Chemical and Materials Physics

University of California, Irvine *Sept 2011 - Mar 2015*
Bachelor of Science, Chemistry
Bachelor of Science, Biology

OBJECTIVE

Computational and theoretical chemistry researcher and educator for the past 8+ years seeking to work closely with colleagues and provide computational support that contribute to scientific knowledge.

RESEARCH EXPERIENCE

Graduate Researcher, Chemistry *Sept 2016-Present*
University of California, Irvine
Advisor: Filipp Furche

- Extensive experience running electronic structure calculations developing theories and models to predict the behavior of noncovalent interactions (NI)
- Initiated collaboration with the Vanderwal Lab leveraging knowledge in NIs to improve cancer drugs
- Collaborated with the Long Group at UC Berkeley to understand the electronic structure of single molecule magnets
- Provided one-on-one mentoring for 4 undergraduates (Emily, Poorvi, Devin, and Emmanuel) and 4 high school students (Matthew, Jenny, Thanh, and Natalie).

Undergraduate Researcher, Mathematics *Jun - Sept 2016*
University of California, Irvine
Advisor: Frederic Y. Wan

- Successfully developed mathematical model that predicted the early development of fruit fly by accounting for the role of the pentagon hormone

Undergraduate Researcher, Biology *Mar 2014 - Jun 2016*
University of California, Irvine
Advisor: Thomas L. Poulos

- Simulated the mechanism of *Leishmania major* peroxidase through molecular dynamics (MD) simulations
- Predicted the dominant protein conformation of cytochrome P450 through MD simulations

Undergraduate Researcher, Chemistry *Oct 2013 - Jun 2016*
University of California, Irvine
Advisor: Filipp Furche

- Collaborated with Prescher Lab to create improved luciferin derivatives for bioluminescence
- Improved algorithms for molecular property calculations within TURBOMOLE quantum package

PUBLICATIONS

Selected Publications from 8 published, 1 under review and 2 in preparation

1. **Nguyen, B.D.***; Hernandez, D.J.*; Flores, E.; Furche, F. Dispersion Size-Consistency. *Under Review.* **2021**.
2. *Editor's Pick* - **Nguyen, B.D.***; Yu, J.M.*; Tsai, J.; Furche, F. Selfconsistent Random Phase Approximation Methods. *J. Chem. Phys.* **2021**, *155*(4), 040902.
3. **Nguyen, B.D.**; Chen, G.P.; Agee, M.M.; Burow, A.M.; Tang, M.P.; Furche, F. Divergence of Many-Body Perturbation Theory for Noncovalent Interactions of Large Molecules. *J. Chem. Theory Comput.* **2020**, *16*(4), 2258–2273.
4. **Nguyen, B.D.***; Hollingsworth, S.A.*; Chreifi, G.; Arce, A.P.; Poulos, T.L. Insights into the Dynamics and Dissociation Mechanism of a Protein Redox Complex Using Molecular Dynamics. *J. Chem. Info. Model.* **2017**, *57*(9), 2344–2350.

$*$ Indicates that authors contributed equally

SELECTED POSTER PRESENTATIONS

1. **2020 Fall ACS National Meeting & Expo**, San Francisco, CA - Poster.
   Nguyen, B.D.; Chen, G.P.; Agee, M.M.; Burow, A.M.; Tang, M.P.; Furche, F. Divergence of Many-Body Perturbation Theory, April **2020**.
2. **2019 Southern California Theoretical Chemistry Symposium**, Los Angeles, CA - Poster.
   Nguyen, B.D.; Chen, G.P.; Agee, M.M.; Burow, A.M.; Furche, F. Size dependence of noncovalent interactions within RPA, May **2019**.

WORK EXPERIENCE

Morpho Detection, LLC - Santa Ana, CA *Dec 2015 - Jun 2016*
Chemist Intern

- Supported senior scientists with the development of new portable mass spectrometry devices for airport bombing detection
- Calibrated and conducted tests on devices

SELECTED EXTRACURRICULARS

Furche High School Outreach Program - Irvine, CA *Sept 2016 - present*
Program Coordinator

- Led the outreach program to provide one-on-one research mentorship
- Wrote research grants to support the program
- Supported 15 high school students and 8 graduate mentors

Orange County Regional Science Olympiad - Irvine, CA *Sept 2016 - Feb 2020*
Proctor and Test Writer

- Prepared and wrote experimental design exams for middle and high school students
- Mentored undergraduate Gabriel to design and proctor the exam

SELECTED AWARDS AND HONORS

UCI School of Physical Sciences Faculty Endowed Fellowship	*Jun 2021*
UCI Chancellor's Undergraduate Award of Distinction	*Jun 2015*
Phi Beta Kappa	*May 2015*
Phi Lambda Upsilon	*May 2015*
Hypercube Scholar Award	*Jun 2014*
OC American Chemical Society Undergraduate Award	*Apr 2014*