BRIAN D. NGUYEN

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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

CORE COMPETENCIES

- English - Native
- Vietnamese - Conversational
- Python
- MATLAB
- R
- Fortran
- Bash
- Leadership
- Research design

RESEARCH EXPERIENCE

Graduate Researcher, Chemistry *Sept 2016-Present*
University of California, Irvine
Advisor: Filipp Furche
Research: Developed models to predict the behavior of noncovalent interactions, collaborated with the Vanderwal Lab to develop improved cancer drugs, collaborated with the Long Group at UC Berkeley to understand single molecule magnets of dilanthnide complexes and mentored 4 undergraduates (Emily, Poorvi, Devin, and Emmanuel).

Undergraduate Researcher, Mathematics *Jun - Sept 2016*
University of California, Irvine
Advisor: Frederic Y. Wan
Research: Collaborated with mathematicians to model the early development of fruit fly.

Undergraduate Researcher, Biology *Mar 2014 - Jun 2016*
University of California, Irvine
Advisor: Thomas L. Poulos
Research: Simulated the mechanism of *Leishmania major* peroxidase and predicted the dominant protein conformation of cytochrome P450 using CHARMM and AMBER packages, respectively.

Undergraduate Researcher, Chemistry *Oct 2013 - Jun 2016*
University of California, Irvine
Advisor: Filipp Furche
Research: Collaborated with Prescher Lab to create improved luciferin derivatives for bioluminescence, and improved algorithms for molecular property calculations within TURBOMOLE quantum package.

SELECTED PUBLICATIONS

1. *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.

2. Darago, L.E.; Boshart, M.D.; **Nguyen, B. D.**; Perlt, E.; Ziller, J.W.; Lukens, W.W.; Furche, F.; Evans, W.J.; Long, J.R. Strong Ferromagnetic Exchange Coupling and Single-Molecule Magnetism in MoS_4^{3-}-Bridged Dilanthanide Complexes. *J. Am. Chem. Soc.* **2021**, *143*(22), 8465–8475.

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.
5. Steinhardt, R. C.; [and 8 others, including **Nguyen, B.D.**] Brominated Luciferins Are Versatile Bioluminescent Probes. *ChemBioChem* **2016**, *18*(1), 96–100.
6. Hollingsworth, S. A.†; Batabyal, D.†; **Nguyen, B. D.**; Poulos, T. L. Conformational Selectivity in Cytochrome P450 Redox Partner Interactions. *Proc. Natl. Acad. Sci.* **2016**, *113*(31), 8723–8728.
7. Furche, F.; Krull, B.T.; **Nguyen, B.D.**; Kwon, J. Accelerating Molecular Property Calculations with Nonorthonormal Krylov Space Methods. *J. Chem. Phys.* **2016**, *144*(17), 174105.

† 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.

SELECTED EXTRACURRICULARS

Furche High School Outreach Program - Irvine, CA *Sept 2016 - present*
Program Coordinator
- Founded the outreach program to provide one-on-one research mentorship
- Funded the program through the NSF research grant under CHE-1800431
- Supported 15 high school students and 8 graduate mentors
- Mentored 4 high school students (Matthew, Jenny, Thanh, and Natalie) and co-authored papers with them

Orange County Regional Science Olympiad - Irvine, CA *Sept 2016 - Feb 2020*
Proctor and Test Writer
- Developed experimental design exams for middle and high school students
- Mentored undergraduate Gabriel to design and proctor the exam

SELECTED AWARDS

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*

CERTIFICATES

UCI Graduate Division Mentoring Excellence Program	*Mar 2020*
UCI GPS-BIOMED Effective Communication Program	*Jun 2017*