BRIAN D. NGUYEN

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OBJECTIVE

8+ years experience in computational and theoretical chemistry research and education. Seeking a position in molecular modeling and working alongside experimentalists to develop better materials.

EDUCATION

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

University of California, Irvine *Sept 2011 - Mar 2015*
B.S. Chemistry
B.S. Biology

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 at UCI leveraging knowledge in NIs to improve cancer drugs; publication *in prep*
- Collaborated with the Long Group at UC Berkeley to understand the electronic structure of single molecule magnets; published in *J. Am. Chem. Soc.*
- Provided one-on-one mentoring for 4 undergraduates and 4 high school students
- 1 undergraduate pursued Chemical Engineering Ph.D. program at Columbia University and 4 high school students pursued chemistry majors at UCI and UCSB

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

- Developed mathematical model that predicted the early development of fruit flies 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 resulting in a co-first author publication
- Predicted the dominant protein conformation of cytochrome P450 through MD simulations; published in *PNAS*

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; published in *ChemBioChem*
- Improved algorithms for molecular property calculations within TURBOMOLE quantum package

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

PUBLICATIONS

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

$*$ Indicates that authors contributed equally

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. 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.
4. **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.
5. **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.

SELECTED PRESENTATIONS

Selected presentations from 6 conferences

1. **2022 Spring ACS National Meeting & Expo**, San Francisco, CA - *accepted* Oral.
   Nguyen, B.D.; Hernandez, D.J.; Flores, E.V.; Furche, F. Dispersion Size Consistency, March **2022**.
2. **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**.
3. **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**.

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 supporting 18 high school students and 10 graduate mentors
- Volunteered 10 hours per week
- Wrote research National Science Foundation grants to support the program

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

- Prepared and wrote 8 experimental design exams for middle and high school students in 2017, 2018, 2019, and 2020 OC Regional Science Olympiad at UCI
- Mentored undergraduate 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*

SKILLS

- Communication
- Responsibility
- Teamwork
- Python
- MATLAB
- R
- Fortran
- Bash