David D. L. Minh

Updated 18th August 2020

Robert E. Frey, Jr. Endowed Chair in Chemistry
Associate Professor, Department of Chemistry
Associate Director,
Center for Interdisciplinary Scientific Computation
Illinois Institute of Technology

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Highlights

Research

- Coauthored 45 peer-reviewed journal articles, 29 as corresponding author.
- Cited over 1000 times with an h-index of 17 (17 articles with at least 17 citations), according to Google scholar.
- Principal investigator on two grants awarded by the National Institutes of Health, the first from 2015 to 2018 and second from 2018 to 2022, and one grant awarded by the National Science Foundation, from 2019 to 2022.

Teaching

- Mentored 1 visiting scholar, 5 senior research associates, 2 Ph.D. students, 3 M.S. students, 2 undergraduate honors thesis students, 9 research project students, 23 undergraduate summer interns, and 9 high school summer interns.
- Taught 8 different courses from the freshman to graduate level.

Academic Service

- Serving as Associate Director for the Center for Interdisciplinary Scientific Computation.
- Developed 5 new undergraduate B.S. chemistry programs (committee member), as highlighted in the premier chemistry trade journal Chemical and Engineering News.
- Chaired the chemistry department's Ph.D. Qualifying Exam committee for several years. Initiated major revision and developed new guidelines.
- Conducted over 70 manuscript reviews.

Honors

- Appointed as inaugural Robert E. Frey, Jr. Endowed Faculty in Chemistry in 2020.
- Named as one of 40 under 40 Chicago Scientists by Halo Cures in 2019.
- Recipient of the 2019 Sigma Xi Junior Faculty Award, Illinois Tech chapter, in recognition of Outstanding Accomplishments in Research and Scholarship.
- Recipient of a 2018 College of Science Dean's Excellence Award in Research, at the Junior Level.

Table of Contents

Biographical

Professional History

2020 – present	**Robert E. Frey, Jr. Endowed Faculty in Chemistry**, Illinois Institute of Technology (Illinois Tech), Chicago, IL
2019 – present	**Associate Professor** (tenured), Department of Chemistry, Illinois Tech
2018 – present	**Associate Director**, Center for Interdisciplinary Scientific Computation, Illinois Tech
2013 – 2019	**Assistant Professor** (tenure-track), Department of Chemistry, Illinois Tech
2011 – 2013	**Postdoctoral Research Associate**, Duke University, Durham, NC
2009 – 2011	**Director's Postdoctoral Fellow**, Argonne National Laboratory, Argonne, IL
2007 – 2009	**Postdoctoral Trainee**, National Institutes of Health, Bethesda, MD

Education

2004 – 2007	**Ph.D. in Physical Chemistry**, University of California, San Diego. Thesis Title: Free Energy Reconstruction from Irreversible Single-Molecule Pulling Experiments. Recipient of Molecular Biophysics Training Grant and Aguoron Kamen and Kaplan Fellowship.
2000 – 2003	**B.A. in Chemistry**, University of California, Berkeley. Recipient of Chancellor's Scholarship (Berkeley's most prestigious scholarship) and National Merit Scholarship.

Awards

2019	40 under 40 Chicago Scientists. Selected by Halo Cures.
2019	Sigma Xi Junior Faculty Award, in recognition of Outstanding Accomplishments in Research and Scholarship. Awarded by the Illinois Tech chapter of the scientific research honor society, Sigma Xi.
2018	College of Science Dean's Excellence Award in Research, at the Junior Level
2012	OpenMM Visiting Scholar (at Stanford)
2009 – 2011	Director's Postdoctoral Fellowship
2007 – 2009	Postdoctoral Intramural Research Training Award
2005 – 2007	NIH Molecular Biophysics Training Grant
2004 – 2005	Aguoron Kamen and Kaplan Fellowship
2000 – 2003	UC Berkeley Chancellor's Scholarship
2000 – 2003	National Merit Scholarship

Research

Publications

* publication in which I am a corresponding author.
† undergraduate coauthor.

Pre-Acceptance Articles

1. Nguyen, T. H. & **Minh**, **D. D. L.***. (n.d.). Implicit ligand theory for relative binding free energies: II. An estimator based on control variates, submitted.

Peer-Reviewed Articles

http://www.researcherid.com/rid/A-4655-2009
https://orcid.org/0000-0002-4802-2618

1. Menzer, W. M.†, Xie, B. & **Minh**, **D. D. L.***. (2020). On Restraints in End-Point Protein-Ligand Binding Free Energy Calculations. *Journal of Computational Chemistry*, *41*, 573–586.
2. **Minh**, **D. D. L.***. (2020). Alchemical Grid Dock (AlGDock): Binding Free Energy Calculations between Flexible Ligands and Rigid Receptors. *Journal of Computational Chemistry*, *41*, 715–730.
3. Spiridon, L., Sulea, T. A., **Minh**, **D. D. L.** & Petrescu, A. J. (2020). Robosample: Rigid-body molecular simulation based on robot mechanics. *BBA - General Subjects*, *1864*, 129616.
4. Willow, S. Y., Bing, X., Lawrence, J.†, Eisenberg, R. S. & **Minh**, **D. D. L.***. (2020). On the Polarization of Ligands by Proteins. *Physical Chemistry Chemical Physics*, *22*, 12044–12057.
5. Xie, B., Yao, Q., Xiang, J. & **Minh**, **D. D. L.***. (2020). A Structural Model for BaxΔ2-Mediated Activation of Caspase 8-Dependent Apoptosis. *International Journal of Molecular Sciences*, *21*, 5476.
6. Fang, X., Osipiuk, J., Chakravarthy, S., Yuan, M., Menzer, W.†, Nissen, D., Liang, P., Raba, D. A., Tuz, K., Howard, A. J., Joachimiak, A., **Minh**, **D. D. L.** & Juárez, O. (2019). Conserved residue His-257 of Vibrio cholerae flavin transferase ApbE plays a critical role in substrate binding and catalysis. *Journal of Biological Chemistry*, *294*, 13800–13810.
7. Nguyen, T. H., Ngo, V., Castro Zerba, J.†, Noskov, S. Y. & **Minh**, **D. D. L.***. (2019). Nonequilibrium path-ensemble averages for symmetric protocols. *Journal of Chemical Physics*, *151*, 194103.
8. Raba, D. A., Yuan, M., Fang, X., Menzer, W.†, Liang, P., Tuz, K., **Minh**, **D. D. L.** & Juárez, O. (2019). Role of subunit D in the ubiquinone binding site of Vibrio cholerae NQR: Pocket flexibility and inhibitor resistance. *ACS Omega*, *4*, 19324–19331.
9. Xie, B. & **Minh**, **D. D. L.***. (2019). Alchemical Grid Dock (AlGDock) calculations in the D3R Grand Challenge 3. *Journal of Computer-Aided Molecular Design*, *33*, 61–69.
10. Menzer, W.†, Li, C., Sun, W., Xie, B. & **Minh**, **D. D. L.***. (2018). Simple Entropy Terms for End-Point Binding Free Energy Calculations. *Journal of Chemical Theory and Computation*, *14*, 6035–6049.

11. **Minh**, **D. D. L.***. (2018). Power transformations improve interpolation of grids for molecular mechanics interaction energies. *Journal of Computational Chemistry*, *39*, 1200–1207.

12. Nguyen, T. H. & **Minh**, **D. D. L.***. (2018). Implicit ligand theory for relative binding free energies. *Journal of Chemical Physics*, *148*, 104114.

13. Nguyen, T. H., Rustenburg, A. S., Krimmer, S. G., Zhang, H., Clark, J. D.†, Novick, P. A., Branson, K., Pande, V. S., Chodera, J. D. & **Minh**, **D. D. L.***. (2018). Bayesian analysis of isothermal titration calorimetry for binding thermodynamics. *PloS One*, *13*, e0203224.

14. Nguyen, T. H., Zhou, H.-X. & **Minh**, **D. D. L.***. (2018). Using the Fast Fourier Transform in Binding Free Energy Calculations. *Journal of Computational Chemistry*, *39*, 621–636.

15. Raba, D. A., Rosas-Lemus, M., Menzer, W. M.†, Li, C., Fang, X., Liang, P., Tuz, K., **Minh**, **D. D. L.** & Juárez, O. (2018). Characterization of the Pseudomonas aeruginosa NQR Complex, a Bacterial Proton Pump with Roles in Autopoisoning Resistance. *Journal of Biological Chemistry*, *293*, 15664–15677.

16. Ren, S., Sun, X., Wang, H., Nguyen, T. H., Sadeghipour, N., Xu, X., Kang, C. S., Liu, Y., Xu, H., Wu, N., Chen, Y., Tichauer, K., **Minh**, **D. D. L.** & Chong, H.-S. (2018). Design, Synthesis, and Biological Evaluation of Novel Polyaminocarboxylate Ligand-Based Theranostic Conjugate for Antibody-Targeted Cancer Therapy and Near-Infrared Optical Imaging. *ChemMedChem*, *13*, 2606–2617.

17. Xie, B., Clark, J. D.† & **Minh**, **D. D. L.***. (2018). Efficiency of stratification for ensemble docking using reduced ensembles. *Journal of Chemical Information and Modeling*, *58*, 1915–1925.

18. Onuk, E., Badger, J., Wang, Y. J., Bardhan, J., Chishti, Y., Akcakaya, M., Brooks, D. H., Erdogmus, D., **Minh**, **D. D. L.** & Makowski, L. (2017). Effects of Catalytic Action and Ligand Binding on Conformational Ensembles of Adenylate Kinase. *Biochemistry*, *56*, 4559–4567.

19. Spiridon, L. & **Minh**, **D. D. L.***. (2017). Hamiltonian Monte Carlo with Constrained Molecular Dynamics as Gibbs Sampling. *Journal of Chemical Theory and Computation*, *13*, 4649–4659.

20. Tuz, K., Li, C., Fang, X., Raba, D. A., Liang, P., **Minh**, **D. D. L.** & Juárez, O. (2017). Identification of the Catalytic Ubiquinone-binding Site of Vibrio cholerae Sodium-dependent NADH Dehydrogenase. *Journal of Biological Chemistry*, *292*, 3039–3048.

21. Xie, B., Nguyen, T. H. & **Minh**, **D. D. L.***. (2017). Absolute Binding Free Energies between T4 Lysozyme and 141 Small Molecules: Calculations Based on Multiple Rigid Receptor Configurations. *Journal of Chemical Theory and Computation*, *13*, 2930–2944.

22. **Minh**, **D. D. L.**, Minh, D. L. & Nguyen, A. L. (2016). Layer Sampling. *Communications in Statistics - Simulation and Computation*, *45*, 73–100.

23. Nguyen, T. H. & **Minh**, **D. D. L.***. (2016). Intermediate Thermodynamic States Contribute Equally to Free Energy Convergence: A Demonstration with Replica Exchange. *Journal of Chemical Theory and Computation*, *12*, 2154–2161.

24. **Minh**, **D. D. L.** & Makowski, L. (2013). Wide-angle X-ray solution scattering for protein-ligand binding: Multivariate curve resolution with bayesian confidence intervals. *Biophysical Journal*, *104*, 873–883.

25 **Minh**, **D. D. L.***. (2012a). Comment on “Transient-state fluctuationlike relation for the driving force on a biomolecule”. *Physical Review E*, *85*, 053103.

26 **Minh**, **D. D. L.***. (2012b). Implicit ligand theory: Rigorous binding free energies and thermodynamic expectations from molecular docking. *Journal of Chemical Physics*, *137*, 104106.

27 Minh, D. L., **Minh**, **D. D. L.** & Nguyen, A. L. (2012). Regenerative Markov chain Monte Carlo for any distribution. *Communications in Statistics - Simulation and Computation*, *41*, 1745–1760.

28 Makowski, L., Gore, D. B., Mandava, S., **Minh**, **D. D. L.**, Park, S., Rodi, D. J. & Fischetti, R. F. (2011). X-ray Solution Scattering Studies of the Structural Diversity Intrinsic to Protein Ensembles. *Biopolymers*, *95*, 531–542.

29 **Minh**, **D. D. L.*** & Chodera, J. D. (2011). Estimating equilibrium ensemble averages using multiple time slices from driven nonequilibrium processes: Theory and application to free energies, moments, and thermodynamic length in single-molecule pulling experiments. *Journal of Chemical Physics*, *134*, 024111.

30 **Minh**, **D. D. L.*** & Vaikuntanathan, S. (2011). Density-dependent analysis of nonequilibrium paths improves free energy estimates II. A Feynman–Kac formalism. *Journal of Chemical Physics*, *134*, 034117.

31 Nilmeier, J. P., Crooks, G. E., **Minh**, **D. D. L.** & Chodera, J. D. (2011). PNAS Plus: Nonequilibrium candidate Monte Carlo is an efficient tool for equilibrium simulation. *Proceedings of the National Academy of Sciences of the United States of America*, *108*, E1009–E1018.

32 **Minh**, **D. D. L.***. (2010). Optimized replica gas estimation of absolute integrals and partition functions. *Physical Review E*, *82*, 31132.

33 Qin, S. B., **Minh**, **D. D. L.**, McCammon, J. A. & Zhou, H.-X. X. (2010). Method to Predict Crowding Effects by Postprocessing Molecular Dynamics Trajectories: Application to the Flap Dynamics of HIV-1 Protease. *Journal of Physical Chemistry Letters*, *1*, 107–110.

34 **Minh**, **D. D. L.***. (2009). Density-dependent analysis of nonequilibrium paths improves free energy estimates. *Journal of Chemical Physics*, *130*, 204102.

35 **Minh**, **D. D. L.** & Adib, A. B. (2009). Path integral analysis of Jarzynski’s equality: Analytical results. *Physical Review E*, *79*, 021122.

36 **Minh**, **D. D. L.*** & Chodera, J. D. (2009). Optimal estimators and asymptotic variances for nonequilibrium path-ensemble averages. *Journal of Chemical Physics*, *131*, 134110.

37 Makowski, L., Rodi, D. J., Mandava, S., **Minh**, **D. D. L.**, Gore, D. B. & Fischetti, R. F. (2008). Molecular crowding inhibits intramolecular breathing motions in proteins. *Journal of Molecular Biology*, *375*, 529–546.

38 **Minh**, **D. D. L.** & Adib, A. B. (2008). Optimized free energies from bidirectional single-molecule force spectroscopy. *Physical Review Letters*, *100*, 180602.

39 **Minh**, **D. D. L.*** & McCammon, J. A. (2008). Springs and speeds in free energy reconstruction from irreversible single-molecule pulling experiments. *Journal of Physical Chemistry B*, *112*, 5892–5897.

40 Amaro, R. E., **Minh**, **D. D. L.**, Cheng, L. S., Lindstrom William M, J., Olson, A. J., Lin, J.-H. H., Li, W. W. & McCammon, J. A. (2007). Remarkable loop flexibility in avian influenza N1 and its implications for antiviral drug design. *Journal of the American Chemical Society*, *129*, 7764–7765.

41 **Minh**, **D. D. L.***. (2007). Multidimensional Potentials of Mean Force from Biased Experiments along a Single Coordinate. *Journal of Physical Chemistry B*, *111*, 4137–4140.

42 **Minh**, **D. D. L.***, Hamelberg, D. & McCammon, J. A. (2007). Accelerated entropy estimates with accelerated dynamics. *Journal of Chemical Physics*, *127*, 154105.

43 **Minh**, **D. D. L.***. (2006). Free-energy reconstruction from experiments performed under different biasing programs. *Physical Review E*, *74*, 61120.

44 **Minh**, **D. D. L.***, Chang, C.-e. A., Trylska, J., Tozzini, V. & McCammon, J. A. (2006). The influence of macromolecular crowding on HIV-1 protease internal dynamics. *Journal of the American Chemical Society*, *128*, 6006–6007.

45 **Minh**, **D. D. L.***, Bui, J. M., Chang, C.-e. A., Jain, T., Swanson, J. M. J. & McCammon, J. A. (2005). The entropic cost of protein-protein association: A case study on acetylcholinesterase binding to fasciculin-2. *Biophysical Journal*, *89*, L25–7.

Oral Presentations at National and International Conferences

† an invited talk. ‡ financial support from the conference.

2020 TBA. *Free Energy Methods in Drug Design (postponed)*. Boston, MA. †

Large-scale Free Energy Calculations with Implicit Ligand Theory. *OpenEye CUP XX*. Santa Fe, NM. †‡

2019 New Computational Tools for Discovering Drugs and Chemical Probes. *Annual Conference of the Romanian Society of Biochemistry and Molecular Biology*. Iasi, Romania. †‡

Fast Binding Free Energy Methods. *Free Energy Calculations: Entering the Fourth Decade of Adventure in Chemistry and Biophysics*. Sante Fe, NM. †

2018 Insights from molecular simulations of the ion-pumping NADH-ubiquinone oxidoreductase (NQR). *256th American Chemical Society National Meeting*, in "Membrane Protein Simulations & Free Energy Approaches". Boston, MA. †

2017 Hamiltonian Monte Carlo with Constrained Molecular Dynamics as Gibbs Sampling. *Recent Advances in Modeling Rare Events (RARE 2017)*. Agra, India. †‡

1. Enhanced sampling with constrained dynamics 2. Protein-ligand binding free energies using multiple rigid receptor structures. *Free Energy Calculations: Three Decades of Adventure in Chemistry and Biophysics.* Telluride, CO. †

Protein-Ligand Binding Free Energy Calculations based on Multiple Rigid Receptor Conformations. *Beyond Kds: New computational methods to address challenges in drug discovery.* Lausanne, Switzerland. †‡

Enhanced sampling of molecular conformations with rigid body dynamics. *From Computational Biophysics to Systems Biology (CBSB 2017)*, Cincinnati, OH.

Oral Presentations at National and International Conferences (continued)

2016 Emerging methods for second-stage virtual screening. *Free Energy Methods in Drug Design*. Boston, MA. †

2015 Predicting the Mechanism of Anthocyanin-Induced Insulin Sensitization with Molecular Modeling. *250th American Chemical Society National Meeting*, in "Phytonutrients: Thinking Beyond the 'Essential' Nutrient Box". Boston, MA. †‡

Absolute Binding Free Energies between Ligands and Rigid Protein Conformations: Precise Estimation and Improved Activity Classification. *Computational Chemical Biology*. Cairns, Australia. †‡

Developing efficient free energy methods on Open Science Grid. *Open Science Grid All Hands Meeting.* Evanston, IL. †

2014 Finding Needles in Haystacks: Enzyme Activity Classification based on Implicit Ligand Theory. *Midwest Enzyme Chemistry Conference.* Evanston, IL.

From molecular docking to standard binding free energies: clearing the trail marked by implicit ligand theory. *Molecular Recognition.* Telluride, CO. †

Nonequilibrium Driven Processes for Rare Event Sampling/Traversing Thermodynamic State Space. *Recent Advances in Modeling Rare Events (RARE 2014)*. Kerala, India. †‡

Implicit Ligand Theory: Protein-Ligand Binding Free Energies for the Masses? *Free Energy Methods in Drug Design*. Boston MA. †

2013 Molecular Docking Scores Based on Implicit Ligand Theory, a Rigorous Formalism for Binding Free Energies. *245th American Chemical Society National Meeting*, in Thomas Kuhn Paradigm Shift Award Symposium. New Orleans, LA.

2010 Lag and the Convergence of Nonequilibrium Free Energy Estimates. Free Energy Methods in Drug Design, Vertex Pharmaceuticals, Boston MA. May 17, 2010. †

2009 Two Ways are Better Than One: Optimized Free Energies from Bidirectional Single-Molecule Force Spectroscopy. *Condensed Matter Summer School: Nonequilibrium Statistical Mechanics* Boulder, CO. ‡

Contributions to Open-Source Software

- Led development of AlGDock, an open-source computational chemistry program for performing binding free energy calculations.
- Contributed to development of bitc, data analysis software for isothermal titration calorimetry measurements.

Research Funding

2019 – 2020 The Redox-Coupled Conformational Mechanism of Na + -NQR. *National Research Council at the National Academies of Science.* MCB190085P. 115,000 Molecular Dynamics Simulation Units on Anton 2, a supercomputer specialized for biomolecular simulation. PI. Co-PI Oscar Juarez.

2019 – 2022 Collaborative Research: CDS&E: Elucidating Binding using Bayesian Inference to Integrate Multiple Data Sources. *National Science Foundation.* CHE 1905324. $495K over 3 years. PI. Co-Is John Chodera and Lulu Kang.

Research Funding (continued)

2018 – 2022 Entropy for End-Point and FFT-Based Binding Free Energy Calculations. *National Institutes of Health* 1 R01 GM127712-01. $1.33M over 4 years. PI. Co-I Oscar Juarez.

2015 – 2018 Sound-stage Virtual Screening Based on Implicit Ligand Theory. *National Institutes of Health* 1 R15 GM114781-01. $337K over 3 years. PI.

2014 Elucidating the Mechanism of Anthocyanin-Induced Insulin Sensitization. *IIT Educational and Research Initiative Fund.* $25K for 1 year. Co-PI with Britt Burton-Freeman and Indika Edirisinghe.

Teaching

Trainee Awards

2018 Illinois Tech Biology/Chemistry/Physics Poster Day, Second Prize. To graduate student Bing Xie.

2017 CBSB2017 Outstanding Young Researcher Award. To graduate student Chen Li.

2017 Illinois Tech Biology/Chemistry/Physics Poster Day, Second Prize. To graduate student Bing Xie.

2017 Kilpatrick Lecture Poster Day, Second Prize. To graduate student Bing Xie.

2016 Illinois Tech Biology/Chemistry/Physics Poster Day, Best Chemistry Poster. To senior research associate Trung Hai Nguyen.

Trainees

Visiting Scholars

2018 M. Reza Gangalikhany, Assistant Professor, Department of Biology, Faculty of Sciences, Isfahan University, Isfahan, Iran

Senior Research Associates

2019 – present Soohaeng Yoo

2019 Chamila Dharawardhana

2019 Bing Xie. Subsequently, postdoctoral researcher at the National Institutes of Health.

2014 – 2018 Trung Hai Nguyen. Subsequently, postdoctoral researcher at the University of Illinois, Chicago.

2013 – 2016 Laurentiu Spiridon. Subsequently, staff scientist at the Institute of Biochemistry of the Romanian Academy.

Graduate Thesis Students

2016 – 2019 Xuan Fang, Ph.D. in Biology. Secondary advisor, co-advised with Oscar Juarez.

2016 – 2019 William Menzer, B.S./M.S. in Molecular Biochemistry and Biophysics. Primary advisor, co-advised with Oscar Juarez. Subsequently, Ph.D. student at LMU Munich.

2016 – 2018 Hexi Zhang, M.S. in Chemistry. Subsequently, Ph.D. student with Andrey Rogachev.

Trainees (continued)

2014 – 2018	Bing Xie, Ph.D. in Chemistry. Subsequently, postdoctoral researcher in group.
2014 – 2017	Chen Li, M.S. in Chemistry. Subsequently, businessman.

Undergraduate Honors Thesis Students

2014 – 2015	Rachael Youngworth, B.S. in Chemistry. Subsequently, Ph.D. student at the University of Chicago.
2013 – 2015	John Clark, B.S. in Chemistry. Subsequently, Proctor and Gamble.

Research Project Students (involved for one or more semesters)

2018 – 2019	Natalie “Blaine” Jumonville, B.S. in Physics
2017	Erica Cusnariov, B.S. in Computer Science
2017	Robert “Wes” Ludwig, B.S. in Bioinformatics
2016 – 2017	Kenneth Ford, M.S. in Molecular Biochemistry and Biophysics
2016	Wenji Sun, M.S. in Biology
2014	Kyle Burke, Ph.D. in Chemistry
2014 – 2015	Shubin Zhang, M.S. in Physics
2014 – 2015	Yang-Yang Xie, M.S. in Computer Science
2014 – 2015	Yu-Ting Yu, Master of Chemistry

Additionally, I have hosted 23 undergraduate and 9 high school summer interns.

Courses Taught

Chem 100	Introduction to the Profession. Spring 2019.
Chem 124	Principles of Chemistry I. Spring 2018.
Chem 343	Physical Chemistry I. Spring 2014, Spring 2016, Fall 2016, Fall 2017, Fall 2018, Spring 2019, Fall 2020.
Chem 485/585/685	Chemistry Colloquium. Spring 2016, Fall 2020.
Chem 456	Computational Biochemistry and Drug Design. Spring 2020
Chem 550	Chemical Bonding. Fall 2013, Fall 2014, Fall 2015.
Chem 553	Chemical Thermodynamics. Spring 2015, Spring 2017.
IPRO 497	Interprofessional Projects. Fall 2015: User interfaces for novel computer-aided drug design tools; Spring 2016: From physical ball-and-stick to computer models of chemical systems; Summer 2016: An open-source web interface for computer-aided drug design; Spring 2017: Simulating and visualizing moving molecules in biological nanosensors.

Academic Service

Internal

Chemistry Department

2019 – present **Member, Graduate Studies Committee**. The committee manages the M.S. and Ph.D. programs, including admissions.

2016 – present **Member, Undergraduate Programs Committee**. The committee developed and successfully proposed five new B.S. degree programs: Bioanalytical Chemistry, Computational Chemistry and Biochemistry, Environmental Chemistry, Forensic Chemistry, and Medicinal Chemistry. I was most involved in developing the Computational Chemistry and Biochemistry program. The committee continues to promote and update the new programs.

2016 **Member, Faculty Search Committee**. The committee led the search that culminated in hiring Jean-Luc Ayitou as an assistant professor.

2015 – 2018 **Chair, Ph.D. Qualifying Exam Committee**. Before the exam revision, I coordinated the written exams for M.S. and Ph.D. students. Subsequently, I oversaw the committee that assigns faculty to Ph.D. qualifying exams and addresses exam-related issues.

2015 – 2016 **Chair, Graduate Curriculum Revision Committee**. The committee developed and successfully proposed a transition from written exams for M.S. and Ph.D. students to oral exams for Ph.D students. We also added professional development courses to the non-thesis M.S. program to better prepare students for industry.

2014 – 2015 **Member, Undergraduate Curriculum Revision Committee**. The committee reviewed the B.S. curriculum and successfully proposed changes to increase flexibility. We also updated course descriptions and developed documents to improve standardization of classes and laboratories across instructors. I chaired a subcommittee in physical chemistry.

2014 **Member, Lecturer Search Committee**. The committee led the search that culminated in hiring Courtney Sobers and Dan Mueller as lecturers.

2014 – 2019 **Undergraduate Advising**. I am/have been the academic advisor for 8 chemistry B.S. students. During an associate chair vacancy between Fall 2014 and Spring 2015, I was the lead advisor for the chemistry department.

2013 – 2015 **Coordinator, Undergraduate Recruiting**. I worked with the undergraduate admissions office and coordinated faculty participation in recruitment events.

University

2019 **Member, Kaplan Institute Faculty Innovation Studio.** I represented the chemistry department in a cohort of faculty charged with proposing revisions to the IPRO program and piloting a new type of IPRO offering. The cohort met during the Spring semester.

2018 – 2019 **Member, University Research Council.** I represented the chemistry department in matters related to support for research.

Internal (continued)

2018 – present **Associate Director, Center for Interdisciplinary Scientific Computation**. I work with the director to coordinate center activities including seminars and use of a computing cluster.

2016 ... **Judge, Illinois Tech Biology/Chemistry/Physics Poster Day**. I was a judge at events in 2016, 2017, and 2018.

2016 ... **Judge, Illinois Tech Research Day**. I was a judge at a poster session in 2016.

2014 ... **Interviewer, Camras Scholarship**. I interviewed scholarship finalists in 2014, 2015, and 2017.

External

Event Organization and Judging

2018 ... **Judge, Chicago Public Schools High School Student Science Fair.** I judged at an event in 2018.

2015 **Local Chair, Midwest Enzyme Chemistry Conference.** I coordinated logistics for the annual one-day event with about 200 attendees. It was held at Illinois Tech for the first time.

2015 **Organizer, "Choose Your Own Adventure: Solving Real-World Problems with Spectroscopy"**. Along with two other faculty, I developed materials for and coordinated a one-day continuing education workshop for high school science teachers.

Grant Review

2019 **Ad Hoc Reviewer, National Science Centre (Poland).** I reviewed a proposal in 2019 (1).

2016 ... **Panelist, National Science Foundation Scientific Review.** I served on one panel in 2016 and one in 2017.

2015 ... **Panelist, National Institutes of Health Scientific Review.** I served on one panel in 2015 and one in 2017.

2015 ... **Ad Hoc Reviewer, National Science Foundation.** I reviewed proposals in 2015 (1), 2017 (1), and 2019 (1).

Journal Article Review

I have performed over 70 journal article peer reviews. For a verified count of reviews and list of journals, see https://publons.com/researcher/1429074/david-minh/peer-review/.