

Erik Nordquist

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Education

Expected Spring 2023	PhD Chemistry , University of Massachusetts Amherst
2018	BS Chemistry and Physics , The College of Idaho. Gipson Fellowship. Summa Cum Laude.

Fellowships

2022	UMass CNS Teaching Fellowship , funding to teach 2 sections of self-designed FYS (info)
2020 – 2022	Chemistry-Biology Interface , NIH/UMass graduate traineeship (info)

Publications

7. **Nordquist E**, Guohui Z, Jiamin C, Chen J. Functional effects of novel mutations of big potassium channel predicted via physics-based and statistical modeling. (forthcoming, April 2022)
6. **Nordquist E**, Zhiguang J, Chen J. Big potassium channel activator modulates dewetting of the inner pore. (forthcoming, March 2022)
5. **Nordquist E**, Zhiguang J, Chen J. Inner pore hydration free energy controls activations of the big potassium channel and its mutants. Biophys. J. (submitted)
4. **Nordquist E**, Clerico E, Chen J, Gierasch L. Computationally-aided modeling of Hsp70-client interactions: past, present, and future. J. Phys. Chem. B 2022. [DOI](#)
3. **Nordquist E**[#], Schultz S[#], Chen J. Using metadynamics to explore the free energy of dewetting in biologically-relevant nanopores. J. Phys. Chem. B 2022. [DOI](#)
2. **Nordquist E**, English C, Clerico E, Sherman W, Gierasch L, Chen J. Physics-based modeling provides predictive understanding of selectively promiscuous substrate binding by Hsp70 chaperones. PLOS Comp Bio (2021). [DOI](#)
1. Gong X, Chiricotto M, Liu X, **Nordquist E**, Feig M, Brooks C, Chen J. Accelerating the GBMV/SA implicit solvent model using GPUs. J Comput Chem (2020). [DOI](#)

Presentations

2022	Talk , University of Massachusetts Amherst ResearchFest; P.H. Terry Endowment Award . “Predicting protein function with physics, experiments and machine learning.” Poster , Biophysical Society Annual Meeting; “Free energy of hydrophobic dewetting in gating of BK channels”
2020	Talk , Northeastern Structural Symposium, “Physical origins of selective promiscuity to Hsp70s revealed through physics-based modeling” Poster , University of Massachusetts Amherst ResearchFest; W.E. McEwen Poster Award ; “Physical origins of selective promiscuity to Hsp70s revealed through physics-based modeling”
2019	Talk , Biophysics at University of Massachusetts Amherst, “Understanding the origins of DnaK’s

selective promiscuity with physics-based modeling”

Poster, Molecular Biophysics in the Northeast, “Understanding the origins of DnaK’s selective promiscuity with physics-based modeling”

Teaching and Mentoring

Instructor of record	First-year seminar (self-designed, 2 sections)
TA/Guest Lectures	General Chemistry I Lab TA, 2018 Graduate Statistical Mechanics, Molecular mechanics and empirical force fields
Mentoring	Undergraduates , Samantha Schultz (2020-2021); Callie Jillson (2019-2020)

Service and Outreach

Committees	Annual Research symposium for UMass Chem (2019-2022) CBI Alumni Networking Symposium and Research symposium (2020, 2022) Search committee , Grad Program Manager for Chemistry Dept. University of Massachusetts Amherst
Journal Referee	Biophys. J , 1 article reviewed
Scientific Outreach	Reviewer for Journal of Emerging Investigators , 15 articles authored by middle- and high-school students (info) Girls summer science camp , Eureka! at University of Massachusetts Amherst (info)

Professional Development

2022	CITRL associate certification (info)
2021	Evidence-based Undergraduate STEM Teaching , online course (info) Inclusive STEM Teaching , online course (info)