

Quyen V. Vu, PhD

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🌐 <https://vuqv.github.io/>

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"Everything happens for a reason"



Employment History

- 2024 – Now 📌 **Penn State University.** Postdoctoral Scholar at Eberly College of Science - Chemistry - O'Brien Lab (Edward O'Brien)
- 2022 – 2023 📌 **Institute of Physics, Polish Academy of Sciences.** Physicist

Personal Details

- DoB 📌 28 August, 1993.
- PoB 📌 VIETNAM.
- Languages 📌 English, Vietnamese, Python, Julia. Basic: C/C++.
- Possessions 📌 A joyful family and a bicycle.
- 📌 Most important publication: Pham, T. T. T., and Vu, Q. V. (2024). Cai

Education

- 2018 – 2023 📌 **Ph.D., Institute of Physics, Polish Academy of Sciences** in Physics.
Thesis title: *"Influence of the ribosome on protein ejection and folding"*.
Supervisors: **Prof. Edward P. O'Brien** (Penn State University) and **Prof. Dr. hab. Mai Suan Li**.
- 2015 – 2017 📌 **M.Sc., Vietnam National University-University of Science** in Physics.
Supervisor: **Prof. Toan T. Nguyen**.
- 2011 – 2015 📌 **B.Sc., Vietnam National University-University of Science** in Physics.
Talented Program of Physics
Supervisor: **Prof. Toan T. Nguyen**.

Honors and Awards

- 2024 📌 The Annual Director's Awards for Best PhD Thesis 2023, Institute of Physics, Polish Academy of Sciences.
- 2021 📌 "Creative Youth" Award of Vietnam Association of Science and Technology in Poland.
- 2015 📌 The second prize "Student - Scientific Researching" Conference of Faculty of Physics, VNU-US.
- 📌 PetroVietnam Scholarship.

Research Publications

Journal Articles

- 1 Sitarik, I., **Vu, Q. V.**, Petucci, J., Frutos, P., Song, H., & O'Brien, E. P. (2025). A widespread protein misfolding mechanism is differentially rescued in vitro by chaperones based on gene essentiality. *Nature Communications*, 16, 10870. <https://doi.org/10.1038/s41467-025-66236-3>
- 2 **Vu, Q. V.**, Sitarik, I., Jiang, Y., Xia, Y., Sharma, P., Yadav, D., Song, H., Li, M. S., Fried, S. D., & O'Brien, E. P. (2025). Non-native entanglement protein misfolding observed in all-atom simulations and supported by experimental structural ensembles. *Science Advances*, 11. <https://doi.org/10.1126/sciadv.adt8974>
- 3 **Vu, Q. V.**, Sitarik, I., Li, M. S., & O'Brien, E. P. (2025). Noncovalent lasso entanglements are common in experimentally derived intrinsically disordered protein ensembles and strongly influenced by protein length and charge. *The Journal of Physical Chemistry B*. <https://doi.org/10.1021/acs.jpcc.5c01260>
- 4 Lan, P. D., Nissley, D. A., Sitarik, I., **Vu, Q. V.**, Jiang, Y., To, P., Xia, Y., Fried, S. D., Li, M. S., & O'Brien, E. P. (2024). Synonymous Mutations Can Alter Protein Dimerization Through Localized Interface Misfolding Involving Self-entanglements. *Journal of Molecular Biology*, 436(6), 168487. <https://doi.org/10.1016/j.jmb.2024.168487>
- 5 Halder, R., Nissley, D. A., Sitarik, I., Jiang, Y., Rao, Y., **Vu, Q. V.**, Li, M. S., Pritchard, J., & O'Brien, E. P. (2023). How soluble misfolded proteins bypass chaperones at the molecular level. *Nature Communications*, 14(1), 3689. <https://doi.org/10.1038/s41467-023-38962-z>
- 6 **Vu, Q. V.**, Nissley, D. A., Jiang, Y., O'Brien, E. P., & Li, M. S. (2023). Is Posttranslational Folding More Efficient Than Refolding from a Denatured State: A Computational Study. *The Journal of Physical Chemistry B*, 127(21), 4761–4774. <https://doi.org/10.1021/acs.jpcc.3c01694>
- 7 Leininger, S. E., Rodriguez, J., **Vu, Q. V.**, Jiang, Y., Li, M. S., Deutsch, C., & O'Brien, E. P. (2021). Ribosome Elongation Kinetics of Consecutively Charged Residues Are Coupled to Electrostatic Force. *Biochemistry*, 60(43), 3223–3235. <https://doi.org/10.1021/acs.biochem.1c00507>
- 8 **Vu, Q. V.**, Jiang, Y., Li, M. S., & O'Brien, E. P. (2021). The driving force for co-translational protein folding is weaker in the ribosome vestibule due to greater water ordering. *Chemical Science*, 12(35), 11851–11857. <https://doi.org/10.1039/d1sc01008e>
- 9 Nissley, D. A., **Vu, Q. V.**, Trovato, F., Ahmed, N., Jiang, Y., Li, M. S., & O'Brien, E. P. (2020). Electrostatic Interactions Govern Extreme Nascent Protein Ejection Times from Ribosomes and Can Delay Ribosome Recycling. *Journal of the American Chemical Society*, 142(13), 6103–6110. <https://doi.org/10.1021/jacs.9b12264>