05.21.2026

VIVIANA MONJE

Assistant Professor
Chemical and Biological Engineering Department
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WORK ADDRESS
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The State University of New York at Buffalo
Buffalo, NY 14260
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EDUCATION

University of Maryland, College Park, MD

- PhD. in Chemical Engineering March, 2017
  Dissertation: "Computational Studies of Membrane Models and Their Interaction with a Peripheral Protein in Yeast, and Disruption of the Water-Oil Interface by a Hydrotrope"
  Advisor: Jeffery B. Klauda
- M.S. in Chemical Engineering November, 2014
  Thesis: "Computational Studies on Organelle-Specific Yeast Membrane Models"
  Advisor: Jeffery B. Klauda
- B.S. in Chemical Engineering May, 2012
  Minor in Project Management

PROFESSIONAL EXPERIENCE

- **University at Buffalo, the State University of New York (SUNY).** Jan. 2021 – present
  Department of Chemical and Biological Engineering
  Assistant Professor
- **The University of Chicago.** Sept. 2017 – Jan. 2021
  Department of Chemistry
  Postdoctoral Scholar
  PI: Gregory A. Voth
- **University of Maryland - College Park, MD.** Sept. 2012 – Aug. 2017
  Chemical and Biomolecular Engineering
  Graduate Research Assistant
  Advisor: Jeffery B. Klauda
- **University of Alabama, Tuscaloosa, AL.** Summer 2011
  Chemical and Biological Engineering
  Undergraduate Research Assistant (REU participant. Mentor: Dr. Heath Turner)
- **University of Maryland - College Park, MD.** Summer 2010
  Center for Minorities in Science and Engineering
  Student Assistant (Supervisor: Lawanda Kamalidiin)

HONORS & AWARDS

- UB Exceptional Scholar: Young Investigator Award, University at Buffalo, 2025
- SoBLA Prize for Outstanding Service and Volunteering. Society of Biophysicists in Latin America. February, 2023 & 2024
- IDEAL Award from the American Institute of Chemical Engineering to the LatinXinChE leadership team. November, 2023
- SUNY PRODiG (Promoting Recruiting Opportunity, Diversity, Inclusion and Growth). 2020-2021 cohort

GRANTS

Current Funding

- National Science Foundation DMREF
  Award: CMMI-2522615
  Role: co-PI (*lead for atomistic modeling studies*)
  Total Amount: $2,000,000; Monje share: $312,359 (15.6% share)
  Period: 10/2025-09/2029
  "*DMREF: Collaborative Research: Engineering Selective Membranes from Lipid-Polyelectrolyte Complexes*"

- Human Frontier Science Program (HFSP) Research Grant
  Award: RGEC28/2025
  Role: co-PI (*computational lead*)
  Total Amount: $1,200,000; Monje share: $400,000 (33% share)
  Period: 09/2025-08/2028
  "*MetaCrystal: Metabolic principles of intracellular crystallization"*

- National Science Foundation RIEF
  Award: EEC-2407487
  Role: PI
  Total Amount: $199,810; Monje share: $116,906 (58.5% share)
  Period: 09/2024-08/2026
  "*Research Initiation: Computational notebooks as scaffolds to consolidate threshold concepts in an undergraduate introductory statistics course in chemical engineering*"

Computational Awards

- *BIO260027*. 750,000 ACCESS Credits. **ACCESS Allocations** computing and data resource program supported by NSF. (January 2026 – January 2027).

- *BIO240088*. 750,000 ACCESS Credits. **ACCESS Allocations** computing and data resource program supported by NSF. (March 2024 – March 2025).

- *MCB200093P*. 345,000 MD simulation units (6 computer days). **Anton2** at Pittsburgh Supercomputing Center (PSC), dedicated supercomputer for the simulation of biological systems. (2023-2024)

- *MCB200093P*. 230,000 MD simulation units (4 computer days). **Anton2** at Pittsburgh Supercomputing Center (PSC), dedicated supercomputer for the simulation of biological systems. (2022-2023)

- *BIO220003*. 50,000 GPU hours on ***Bridges-2*** computer at PSC & 2,500 core-hours ***Bridges-RM*** at PSC. XSEDE Educational allocation (2022-2023). Allocation used during the Spring 2022 semester, CE 410/530 course (enrollment: 10).
- *MCB200093P*. 230,000 MD simulation units (4 computer days). **Anton2** at Pittsburgh Supercomputing Center, dedicated supercomputer for the simulation of biological systems. (2020-2021)

Prior to UB

- *MCB180125*. 2,500 GPU hours on ***Bridges*** computer at PSC & 50,000 CPU node-hours on ***Comet*** at PSC. XSEDE Educational allocation (2018-2019). Allocation used during a two-week introductory workshop on molecular dynamics (enrollment: 9).

PUBLICATIONS

Total citations: 3910, h-index: 17, i10-index: 22 (by 01/18/2026)
Google Scholar: https://scholar.google.com/citations?user=dT0xvfgykn0C&hl=en
ORCID: https://orcid.org/0000-0002-9202-782X
[*] *indicates graduate student mentored by VM,*
[+] *indicates undergraduate student mentored by VM,*
[cl] *indicates VM as the computational lead in collaborative projects.*
[=] *indicates the corresponding author.*

Invited Book Chapters

Publications at UB

3. Campbell, O.[*], Allsopp, R.; Klauda, J.B., Monje, V. [=] "Atomistic simulations and analysis of peripheral membrane proteins with model lipid bilayers" in Methods in Molecular Biology Series, vol 2888. Intracellular Lipid Transport, 2nd Ed. Guillaume Drin, Ed. Springer, (2025) **Citations:** 2

Graduate work

2. Monje-Galvan, V. [=]; Warburton, L[+]; Klauda, J.B. "Setting-up all-atom molecular dynamics simulations to study the interactions of peripheral membrane proteins with model lipid bilayers" in Methods in Molecular Biology Series. Intracellular Lipid Transport. Guillaume Drin, Ed. Springer, (2019) **Citations:** 23
1. Khakbaz, P; Monje-Galvan, V.; Zhuang, X.; Klauda, J.B. [=] "Modeling Lipid Membranes" in Handbook of Hydrocarbon and Lipid Microbiology Series. Biogenesis of Fatty Acids, Lipids and Membranes. Otto Geiger, Ed. Springer, (2016) **Citations**: 7

Refereed Journal Articles

Publications at UB

30. Campbell, O. [*]; Leal, C; Monje, V. [=] "Cholesteryl esters modulate lipid droplet rigidity and monolayer organization during liver cancer progression." (*preprint:* https://doi.org/10.64898/2026.05.01.722229)
29. Dervishi, M.; Gnther, J.; Li, J[*]; Uzun, H.D.; Brunn Hansen, C.B.; Pomorski, T.; Fuglsang, A.T.; Monje, V.[cl]; Bak, S. "Sterols divergence across eukaryotic kingdoms determines membrane susceptibility to saponins, a class of plant defense compounds." *PNAS*, 123(19): e2523859123 (2026)

28. Li. J.[*]; Thomson, S.[+]; Monje, V.[=] "Impact of system size on the biophysical properties of multicomponent lipid bilayers: A systematic study using molecular dynamics simulations." *J. Chem. Ing. Model*, 65(22): 12464-12474 (2025)
27. Campbell, O. [*]; Dahhan, D.[+]; Monje, V. [=] "Lipid-driven alignment and binding of p7 dimers in early oligomer assembly." *PLOS Comp Biol*, 21(11): e1013736 (2025)
26. Ramirez, R.X. [*]; Bosch, A.M.; Perez, R.; Guzman, H.V.; Monje, V. [=] "2Danalysis: A toolbox for analysis of lipid membranes and biopolymers in two-dimensional space." *Biophys J*, 124(22): 3966-3977 (2025) **Citations:** 2
25. Jaramillo-Granada, A.M.; Li, J. [*]; Flores Villareal, A.; Lozano, O.; Ruiz-Suarez, J.C.; Monje-Galvan, V. [*cl*]; Sierra-Valdez, F.J.[=] "Modulation of phospholipase A_2 membrane activity by anti-inflammatory drugs." *Langmuir*, 40(13): 7038-7048 (2024) **Citations:** 3
24. Pradhan, A.J; Chitkara, S.; Ramirez, R.X. [*]; Monje-Galvan, V. [*cl*]; Sancak, Y.; Atilla-Gokcumen, G.E. [=] "Acylation of MLKL impacts its function in necroptosis." *ACS Chem. Biol*., 19(2): 407-418 (2024) **Citations:** 9
23. Campbell, O. [*]; Monje-Galvan, V. [=] "Lipid composition modulates interactions of p7 viroporin during membrane insertion." *J. Struct. Biol.* 215(3):108013 (2023) **Citations:** 6
22. Li. J. [*]; Monje-Galvan, V.[=] "In Vitro and In Silico Studies of Antimicrobial Saponins: A Review." *Processes,* 11(10): 2856 (2023). **Citations:** 39
21. Campbell, O. [*]; Le, V.[+]; Aguirre, A.[+]; Monje-Galvan, V. [=] "Realistic membrane modeling: using complex lipid mixtures in simulation studies." *J. Vis. Exp*., 199: e65712 (2023) **Citations:** 1
20. Li, J. [*]; Monje-Galvan, V. [=] "Effect of glycone diversity on the interaction of triterpenoid saponins and lipid bilayers." *ACS Applied Bio. Mat*, 7(2): 553-563 (2023) **Citations:** 19
19. Ramirez, R.X. [*]; Campbell, O. [*]; Pradhan, A.; Atilla-Gokcumen, G.E.; Monje-Galvan, V[=] "Modeling the molecular fingerprint of protein-lipid interactions of MLKL on complex bilayers." *Frontier in Chem*, 10: 1088058 (2023) **Citations:** 15
18. Campbell, O.[*]; Monje-Galvan, V. [=] "Protein-driven membrane remodeling: Molecular perspectives from Flaviviridae infections." *Biophys. J*, 122: 1890-1899 (2023) **Citations:** 11
17. Li, J. [*]; Kalyanram, P; Monje-Galvan, V. [*cl*]; Gupta, A. [=] "Interaction of Cyanine-D112 with binary lipid mixtures: molecular dynamics simulation and differential calorimetry study." *ACS Omega*, 7 (11): 9765-9774 (2022) **Citations:** 6
16. Pradhan, A.J; Lu, D.; Parisi, L.R.; Shen, S.; Berhane, I.A.; Galster, S.L.; Bynum, K.; Monje-Galvan, V.[*cl*]; Gokcumen, O.; Chemler, S.R.; Qu, J. ; Kay, J.G.; Atilla-Gokcumen, G.E. [=] "Protein acylation by saturated very long chain fatty acids and endocytosis are involved in necroptosis." *Cell Chem. Biol*., 28 (9): 1298-1309 (2021) **Citations:** 47

Postdoctoral work

15. Banerjee, P.; Monje-Galvan, V.; Voth, G.A. [=] "Cooperative membrane binding of HIV-1 matrix protein trimers." *J. Phys. Chem. B.,* 128(11): 2595-2606 (2024) **Citations:** 6
14. Monje-Galvan, V; Voth, G.A. [=] "Molecular Interactions of the M and E integral membrane proteins of SARS-CoV-2." *Faraday Disc.,* 232: 49-67 (2021) **Citations:** 29
13. Yu, A.; Pak, A.J.; He, P.; Monje-Galvan, V.; Casalino, L.; Gaieb, Z.; Dommer, A.C.; Amaro, R.E.; Voth, G.A. [=] "A multiscale coarse-grained model of the SARS-CoV-2 virion." *Biophys. J.,* 120(6): 1097-1104 (2021) **Citations:** 194
12. Monje-Galvan, V; Voth, G.A. [=] "Binding mechanism of the matrix domain of HIV-1 Gag on lipid membranes." *eLife,* 9:e58621 (2020) **Citations:** 43

Graduate work

11. Monje-Galvan, V.; Klauda, J.B. [=] "Interfacial properties of aqueous solutions of butanol isomers and cyclohexane." *Fluid Phase Equilib*., 513: 112551 (2020) **Citations**: 11
10. Leonard, A.N.; Wang, E.; Monje-Galvan, V.; Klauda, J.B[=]. "Developing and testing of lipid force fields with applications to modeling cellular membranes." *Chem. Rev.,* 119(9): 6227-6269 (2019) **Citations:** 116
9. Wildermuth, K.; Monje-Galvan, V.; Klauda, J.B. [=] "Effect of membrane lipid packing on stable binding of the ALPS peptide." *J. Chem. Theo. Comp*., 15(2):1418-1429 (2019) **Citations:** 34
8. Monje-Galvan, V.; Klauda, J.B. [=] "Preferred binding mechanism of Osh4's amphipathic lipid-packing sensor motif, insights from molecular dynamics." *J. Phys. Chem. B.,* 122(42): 9713-9723 (2018) **Citations:** 28
7. Novikov, A; Semenov, A.; Monje-Galvan, V; Kuryakov, V.; Klauda, J.B; Anisimov, M. [=] "Dual action of hydrotropes at the water/oil interface." *J. Phys. Chem. C*, 121(30): 16423-16431. (2017) **Citations:** 46
6. Boughter, C.T.; Monje-Galvan, V.; Im, W.; Klauda, J.B. [=] "Influence of Cholesterol on Phospholipid Bilayer Structure and Dynamics." *J. Phys. Chem. B.,* 120(45): 11761-11772. (2016). **Citations:** 74
5. Monje-Galvan, V.; Klauda, J.B.[=] "Peripheral Membrane Proteins: Tying the Knot between Experiment and Computation." *BBA: Biomembranes*, 1858: 1584-1593 (2016). **Citations:** 77
4. Monje-Galvan, V.; Klauda, J.B. [=] "Modelling Yeast Organelle Membranes and How Lipid Diversity Influences Bilayer Properties." *Biochemistry*. 54(45), 6852-6861 (2015). **Citations:** 80
3. Wu, E.L.; Cheng, X.; Jo, S.; Rui, H.; Song, K.C.; Davila-Contreras, E.M.; Qi, Y.; Lee, J.; Monje-Galvan, V.; Venable, R.M.; Klauda, J.B.; Im, W. [=] "CHARMM_GUI Membrane Builder toward Realistic Biological Membrane Simulations." *J. Comput. Chem*. 35(27), 1997-2004 (2014). **Citations:** 2733
2. Jeong, J.C.; Jo, S.; Wu, E.L.; Qi, Y.; Monje-Galvan, V.; Yeom, M.S.; Gorenstein, L.; Chen, F.; Klauda, J.B.; Im, W. [=] "ST-Analyzer: A web-based user interface for simulation trajectory analysis." *J. Comput. Chem*. 35(12), 957-963 (2014). **Citations:** 18

Undergraduate work

1. Klauda, J.B.[=]; Monje, V.; Kim, T.; Im W[=]. "Improving the CHARMM force field for polyunsaturated fatty acid chains" *J. Phys. Chem. B*. 116(31): 9424-9431. **Citations**: 195

<u>Refereed Proceeding Articles</u>

Publications at UB

2. Monje, V [=]; Li, J[*]; Ford Versypt, A.N.; Sanchez-Pena, M.L. "Work-in-progress: Evidence-based scope and selection of threshold concepts for the design of computational notebooks in undergraduate statistics courses for chemical engineering." *2025 ASEE Annual Conference & Exposition*, Montreal, CA. 10.18260/1-2--55841

Graduate work

1. Monje-Galvan, V.; Klauda, J.B. [=] "Two sterols, two bilayers: Insights on Membrane Structure from Molecular Dynamics." *Molecular Simulation: Proceedings of the 4th*

International Conference on Molecular Simulation. 43(13-16): 1179-1188. (2017)
Citations: 11

TECHNICAL PRESENTATIONS (since starting first independent position)
Invited seminar speaker:

7. "Lipid-mediated interactions at the cell membrane interface." Department of Physiology and Biophysics Seminar Series. Jacobs School of Medicine and Biomedical Sciences, University at Buffalo. December 11, 2025.
6. "Fingerprinting biomolecular interactions at the cell membrane interface, predictions from simulations." Center for Computational Biology Seminar. Simons Foundation Flatiron Institute, New York City, NY. April 16, 2025
5. "Molecular interactions at the cell membrane interface, predictions from simulations." Chemical and Biological Engineering Seminar Series. Iowa State University, Ames, IA. February 20, 2025.
4. "Biomolecular fingerprints at the cell membrane interface." Chemical Engineering Department Seminar Series. Rochester Institute of Technology (RIT), Rochester, NY. April 18, 2024.
3. "An atomistic view of protein-lipid interactions at the cell membrane interface." Larry Mays Seminar Series in Bioinformatics. Department of Bioinformatics and Genomics (BIG), The University of North Carolina at Charlotte. virtual. October 6, 2023.
2. "Molecular modeling of protein-lipid interactions at the cell membrane interface." Department of Biochemistry Seminar Series. Jacobs School of Medicine and Biomedical Sciences, University at Buffalo. August 29, 2023.
1. "Fingerprinting protein-lipid interactions with molecular dynamics simulations." Buffalo Protein Science Group Seminar Series. Department of Structural Biology, University at Buffalo. April 19, 2023.

Invited talks

8. "Molecular interactions at the cell membrane interface, predictions from simulations." Molecular Engineering of Soft Matter: Spanning Small Molecules to Macromolecules. Telluride Science & Innovation Center. Telluride, CO, May 27-31, 2025
7. "Lipid sorting and the signature of protein-lipid interactions at the membrane interface." 34th International Conference in Science and Technology of Complex Fluids. San Luis Potosi, MX, June 29, 2023
6. "Glycone diversity in small molecules and their interaction with lipid bilayers." Congreso de Bio-simulaciones del Cono Sur. Brazilian & Argentinian Biophysical Societies. Porto Alegre, Brasil, June 2, 2023
5. "Diversidad lipídica en modelos de membranas celulares, estudios con dinámica molecular." VIII Encuentro Nacional de Químicos Teóricos y Computacionales & IV Escuela Colombiana de Teoría y Computación. Universidad Nacional de Colombia. virtual, May 2023
4. "Molecular interactions at the cell membrane interface." II Simposio del Grupo de Investigación de Ciencias Básicas, Ibero Puebla & CIMAT-Monterrey, México. virtual, November 2022
3. "Modelando la huella lipídica en enfermedades infecciosas." XX Curso Boliviano de Sistemas Complejos, Facultad de Física, Universidad Mayor de San Andrés, La Paz, Bolivia. virtual, September 2022

2. "Modeling protein-lipid interactions in mechanisms of cell death." Biological Membranes and Membrane Proteins. Santa Fe, NM, June 2022
1. "Modelaje de membranas lipídicas y su role n mecanismos de enfermedad." III International Congress in Biotechnology: Bolivia Innova, Universidad Católica Boliviana, Santa Cruz, Bolivia. virtual, June 2021

Conference Presentations

*Presenter name underlined; * graduate student; + undergraduate student*

1. Monje, V; Guzman, H.V. "BPS2026-Characterizing interactions between glycoproteins and RNA at the lipid membrane interface." Biophysical Journal, 125423a. Biophysical Society, San Francisco, CA, February 2026
2. Ramirez, RX *; Monje, V. "BPS2026-Molecular dynamics characterization of the allosteric pathways for exposure of the four-helix bundle of MLKL." Biophysical Journal 12348a. Biophysical Society, San Francisco, CA, February 2026
3. Ramirez, RX *; Monje, V. "2Danalysis: an open-source project to study complex lipid membranes and their interactions with biopolymers." Biophysical Society, The Consequences of Membrane Complexity in Living Systems, Copenhagen, Denmark, July 2025
4. Ramirez, RX *; Monje-Galvan, V. "BPS2025-Molecular dynamics simulations of conformations changes in MLKL induced by phosphorylation." Biophysical Journal 124 (3), 156a. Biophysical Society, Los Angeles, CA, February 2025
5. Li, J *; Thomson, S +; Monje-Galvan, V. "BPS2025-Effect of membrane patch size on the simulation of complex lipid bilayer." Biophysical Journal 124 (3), 154a. Biophysical Society, Los Angeles, CA, February 2025
6. Li, J *; Monje-Galvan, V. "BPS2025-Permeation of triterpenoid glycosides through lipid bilayers." Biophysical Journal 124 (3), 160a. Biophysical Society, Los Angeles, CA, February 2025
7. Campbell, O *; Monje-Galvan, V. "Lipid-mediated protein-protein interactions: modeling the formation of hepatitis C virus p7 dimers." AIChE, San Deigo, CA. October 2024
8. Campbell, O *; Monje-Galvan, V. "Modeling the effect of surface tension on neutral lipid mixtures on the Surface of lipid monolayer interfaces." AIChE, San Deigo, CA. October 2024
9. Campbell, O *; Monje-Galvan, V. "Mechanisms of protein and lipid interplay during molecular pathogenesis of Hepatitis C and Liver cancer." NOBCChE, Orlando, FL, September 2024
10. Thomson, S.+; Monje-Galvan, V. "Realistic lipid membrane modeling using all-atom molecular dynamics simulation." UB Celebration of Academic Excellence, Buffalo, NY, May 2, 2024
11. Li, J.*; Monje-Galvan, V. "Effects of anti-inflammatory drugs on lipid bilayers." UB Celebration of Academic Excellence, Buffalo, NY, May 2, 2024
12. Campbell, O *; Li, L; Leal, C; Monje-Galvan, V. "Structural studies on lipid droplets using molecular dynamics simulations: effects of surface tension and lipid composition." Biophysical Journal 123 (3), 239a. Biophysical Society, Philadelphia, PA, February 2024
13. Jaramillo-Granada, AM; Li, J *; Suarez, JCR; Lozano-Garcia, O; Monje-Galvan, V; Sierra Valdez, FJ. "Anti-inflammatory drugs modulate phospholipase A2 activity through a membrane-based mechanism." Biophysical Journal 123 (3), 91a. Biophysical Society, Philadelphia, PA, February 2024

14. Ramirez, RX [*]; Monje-Galvan, V. "Structural characterization of phosphorylation sites of the MLKL protein using molecular dynamics." Biophysical Journal 123 (3), 341a. Biophysical Society, Philadelphia, PA, February 2024
15. Monje-Galvan, V; Ramirez, RX [*]; Kanduc, M; Guzman, HV. "RNA adsorption dynamics onto membrane models for lipid nanoparticles." Biophysical Journal 123 (3), 323a. Biophysical Society, Philadelphia, PA, February 2024
16. Li, J [*]; Jaramillo-Granada, AM; Sierra Valdez, FJ; Monje-Galvan, V. "Effects of anti-inflammatory drugs on lipid bilayers – insights from thermodynamics and molecular modeling." Biophysical Journal 123 (3), 94a. Biophysical Society, Philadelphia, PA, February 2024
17. Ramirez, RX [*]; Monje-Galvan, V. "Exploring the effect of MLKL protein at the membrane interface: a molecular dynamics study." AIChE, Orlando, FL. November 2023
18. Li, J [*]; Monje-Galvan, V. "Interaction of amphiphilic molecules with lipid membrane models." AIChE, Orlando, FL. November 2023
19. Rivera-Jimenez, SM; Rodriguez, G; Chapa Villareal, F; Monje-Galvan, V; Ramirez Velez, I; Chacin Ruiz, EA; Gochez, R; Forigua Coronado, A. "From advocacy to action: MAC's efforts to serve underrepresented groups in chemical engineering through LatinXinChE affinity group." AIChE, Orlando, FL. November 2023
20. Li, J [*]; Monje-Galvan, V. "Realistic lipid membrane modeling with all-atom molecular dynamics simulations." AIChE, Orlando, FL. November 2023
21. Li, J [*]; Monje-Galvan, V. "Permeation of glycoside molecules through lipid bilayers." AIChE, Orlando, FL. November 2023
22. Campbell, O.[*]; Monje-Galvan, V. "Molecular dynamics simulations of Hepatitis C viroporin and lipid membranes." Biophysical Journal 112 (3), 501a. Biophysical Society, San Diego, CA, February 2023
23. Li, J.[*]; Monje-Galvan, V. "Clustering and binding of oleanolic acid saponins with bacterial membranes." Biophysical Journal 112 (3), 367a. Biophysical Society, San Diego, CA, February 2023
24. Ramirez, R.X.[*]; Monje-Galvan, V. "Modeling the molecular fingerprint of protein-lipid interactions of MLKL on complex bilayers." Biophysical Society, San Diego, CA, February 2023
25. Campbell, O.[*]; Monje-Galvan, V. "Lipid fingerprint in chronic viral infections: learning from simulations of the viroporin protein of Hepatitis C virus." 3rd Women in Bioinformatics & Data Science (3WBDS) LA Conference. virtual, September 2022
26. Campbell, O.[*]; Monje-Galvan, V. "Modeling protein-lipid interactions in Hepatitis C viral infection." NOBCChE, Orlando, FL, September 2022
27. Varner, S.[+]; Monje-Galvan, V. "Molecular dynamics simulations of GM3 in the plasma membrane." UB Undergraduate Research Day, Buffalo, NY, August 2022
28. Mendez, J.[+]; Monje-Galvan, V. "Structural properties of viral protein H in bacteriophage φX174." UB Undergraduate Research Day, Buffalo, NY, August 2022
29. Li, J.[*]; Monje-Galvan, V. "Interactions of antibiotic organic molecules with lipid bilayers." Biophysical Journal 121 (3), 219a-220a. Biophysical Society, San Francisco, CA, February 2022
30. Campbell, O.[*]; Monje-Galvan, V. "Modeling protein-lipid interactions in mechanisms of cell death." Biophysical Journal 121 (3), 224a. Biophysical Society, San Francisco, CA, February 2022

31. Li, J. [*]; Monje-Galvan, V. "Interactions of antibacterial compounds and lipid membranes." Cell Bio 2021 of the American Society for Cell Biology. virtual, December 2021
32. Monje-Galvan, V. "Membrane permeabilization during necroptosis: Insights from molecular dynamics studies." Gibbs Society of Biological Thermodynamics, 35th conference. virtual, September 2021

Postdoctoral work

33. Monje-Galvan, V.; Pak, A.J.; Voth, G.A. "Modeling protein-lipid interactions during viral assembly of SARS-CoV-2." Biophysical Journal 120 (3), 49a. Biophysical Society, virtual, February 2021
34. Monje-Galvan, V.; Voth, G.A. "The role of lipids on transmembrane protein interactions in viral infections." AIChE National Meeting, virtual, November 2020
35. Monje-Galvan, V.; Swanson, J.; Lippincott-Schwartz, J.; Sengupta, P.; Voth, G.A. "Modeling protein-lipid sorting at the HIV-1 viral assembly site." AIChE National Meeting, Orlando, FL, November 2019
36. Monje-Galvan, V. "Molecular simulations of interfacial dynamics in biological systems." AIChE National Meeting, Orlando, FL, November 2019
37. Monje-Galvan, V.; Voth, G.A. "Lipid-lipid and lipid-protein interactions of the matric domain of HIV-1 Gag at the viral assembly site." Biophysical Journal 116 (3), 518a. Biophysical Society, Baltimore, MD, 2019
38. Monje-Galvan, V.; Pak, A.; Voth, G.A. "Computational modeling of protein interactions of the matrix domain of HIV-1 Gag." AIChE National Meeting, Pittsburgh, PA, 2018
39. Monje-Galvan, V. & Voth, G.A. "Protein aggregation and protein-membrane interactions of the matrix domain of HIV1- Gag." EuriSciCon, Structural Biology Conference, Barcelona, Spain, 2018
40. Monje-Galvan, V. & Voth, G.A. "Molecular interactions of the Matrix domain of HIV-1 Gag protein at the membrane interface." Biophysical Journal 114 (3), 33a. Biophysical Society, San Francisco, CA, 2018

Graduate work

41. Monje-Galvan, V. & Klauda, J.B. "Asymmetric models for the trans-Golgi Network and plasma membranes of S. cerevisiae, insights from molecular dynamics." American Chemical Society, Washington, DC, 2017
42. Novikov, A; Semenov, A.; Monje-Galvan, V.; Kuryakov, V.; Klauda, J.B.; Anisimov, M. "Interfacial behavior of hydrotropes in aqueous solutions." American Chemical Society, Washington, DC, 2017
43. Monje-Galvan, V. & Klauda, J.B. "Asymmetric membrane models for the PM and TGN of yeast, an all-atom molecular dynamics study." Biophysical Journal 112 (3), 137a. Biophysical Society, New Orleans, LA, 2017
44. Monje-Galvan, V. & Klauda, J.B. "Lo/Ld Phase Coexistence and Interaction in Model Membranes with IPC Lipids." Biophysical Journal 110 (3), 86a. Biophysical Society, Los Angeles, CA, 2016
45. Monje-Galvan, V. & Klauda, J.B. "Membrane binding of the Osh4 curvature-sensing peptide." Biophysical Journal 108 (2), 466a. Biophysical Society, Baltimore, MD, 2015
46. Monje-Galvan, V. & Klauda, J.B. "Binding studies of a Saccharomyces Cerevisiae peripheral protein Osh4" American Chemical Society, Denver, CO, 2015

47. Monje-Galvan, V. & Klauda, J.B. "Membrane binding of a curvature-sensing peptide of a lipid transport protein in yeast." XL Congress of Theoretical Chemists of the Latin Expression QUITEL, Galapagos, Ecuador, 2014
48. Monje-Galvan, V. & Klauda, J.B. "Molecular dynamic studies on organelle-specific yeast membrane models and amphipathic lipid packing sensor motif binding mechanism." Biophysical Journal 106 (2), 407a. Biophysical Society, San Francisco, CA, 2014
49. Monje-Galvan, V. & Klauda, J.B. "Simulation studies on organelle-specific yeast membrane models and amphipathic lipid packing sensor motif binding mechanism." AIChE National Meeting, San Francisco, CA, 2013
50. Monje-Galvan, V. & Klauda, J.B. "Improved CHARMM Force Field for Polyunsaturated Fatty Acid Chains, a Study on DAPC Membranes." Biophysical Journal 104 (2), 590a. Biophysical Society, Philadelphia, PA, 2013

GRADUATE STUDENTS

Focus areas: computational biophysics; interfacial structure and thermodynamics; statistical thermodynamics; molecular modeling; lipid membrane modeling. Group Website

Dissertations/Theses Directed

Ph.D. degrees

1. Jinhui Li, PhD, January 2021-December 2025, "Characterizing the interaction of small molecules with membranes through molecular dynamics simulations." Working as Postdoctoral Research at Shenzhen Univ. Affiliated South China Hospital.
2. Oluwatoyin Campbell, PhD, August 2020-May 2025. "Molecular dynamics studies of protein-lipid interactions in molecular mechanisms of liver-related diseases."

M.S. degrees (theses/projects)

1. Laura Sweezy, ME, August 2020-December 2021. Working at Thermo Fisher Scientific, Grand Island, NY

Dissertations/Theses in Progress

1. Ricardo X. Ramirez, PhD, September 2021 – present, degree expected May 2026
2. Mahtab Firoozi, PhD, September 2024 – present, degree expected May 2029
3. Mehmet Hozaat, PhD, May 2025 – present, degree expected May 2030

Undergraduate Students Mentored

1. Dina Dahhan, B.S. Biological Sciences. 2025. Medical Student at New York Institute of Technology, NY
2. Seth Thomson, B.S. Chemical and Biological Engineering. 2025. Working at Andritz, Glens Falls, NY
3. Dylan Po (Summer 2025, CLIMB UP alumni), Texas A&M University undergraduate.
4. Trey Lewis (Summer 2024, CLIMB UP alumni), UB Neuroscience undergraduate.
5. Angela Aguirre, B.S. Chemical and Biological Engineering. 2025. Graduate Student at Purdue University
6. Shane Varner, B.S. Chemical and Biological Engineering. 2025. Working at Linde, Tonawanda, NY
7. Van Le, B.A. Computational and Applied Mathematics. 2023.
8. Jocelyn Mendez, B.S. Chemical and Biological Engineering. 2023.

Special Achievements of Graduate Students

1. Oluwatoyin Campbell, Recipient of Graduate Women in Science fellowship, September 2023 – May 2024.
2. Oluwatoyin Campbell, Recipient of UB Presidential Fellowship, September 2020 – May 2025.
3. Oluwatoyin Campbell, Recipient of UB CLIMB HI Impact Scholar, September 2020 – June 2022.

Dissertations/Theses Committee Member

1. Peter Zhang, Dept of Chemistry, PhD degree expected May 2028
2. Sadman Fakid, Dept of Chemical and Biological Engineering, PhD degree expected May 2029
3. Eduardo A. Chacin Ruiz, Dept of Chemical and Biological Engineering, PhD, Dec 2025
4. Daniel Guiggey, Dept of Chemical and Biological Engineering, PhD, August 2025
5. Charitha Billa, Dept of Chemical and Biological Engineering, MS, August 2025
6. Prithvi Manek, Dept of Chemical and Biological Engineering, MS, August 2025
7. Samia Noor, Dept of Chemistry, MS, July 2025
8. Ritik R. Konduskar, Dept of Chemical and Biological Engineering, MS, August 2024
9. Carley Cook, Dept of Chemical and Biological Engineering, PhD, May 2024
10. Mahasweta Bhattacharya, Dept of Chemical and Biological Engineering, PhD, Jan 2023

PROFESSIONAL ACTIVITIES

Leadership

American Institute of Chemical Engineers (AIChE)

Chair, MAC affinity group LatinXinChE, January 2026 – present
Chair Elect, MAC affinity group LatinXinChE, January 2025 – December 2025
Secretary, MAC affinity group LatinXinChE, September 2022 – December 2024
Liaison Director, Computational Molecular Science and Engineering Forum (CoMSEF), November 2022 – November 2024

Biophysical Society

Secretary/Treasurer, Theory and Computation Subgroup, February 2024 – February 2026
Member, Early Careers Committee, July 2023 – June 2026

University of Maryland-College Park

Member, Advisory Board to the CMSE, January 2023 – December 2026

Frontiers Publisher

Review Editor, Bioengineering and Biotechnology in Biochemical Engineering, January 2022 – December 2024

Other Service

Journal Reviewer

ACS Omega
ACS Journal of Physical Chemistry B
ACS Journal of Physical Chemistry Letters
ACS Journal of Chemical Information and Modeling

Biophysical Journal
Nature Communications
MDPI Membranes
MDPI Pharmaceutics
Molecular Simulation
Journal of Structural Biology
Springer Nature Communications Biology
Structure
Journal of Molecular Graphics and Modelling
Nature Computational Science
Frontiers in Chemical Engineering
Chemical Engineering Education
Royal Society of Chemistry Molecular Systems Design & Engineering

Proposal Reviewer

NIH mail reviewer for RM1 (10/2024)
NIH Biochemistry and Biophysics of Membranes (BBM) study section as temporary reviewer (06/2024)
NIH BBM study section as Early Career Reviewer (ECR) (10/2022)
NSF Review Panel, 2022 (2), 2023 (1), 2025 (2)
ACS Petroleum Research Fund, August 2021
EngineeringGirl Writing Contest & Ambassadors Program, NAE Initiatives, 2014 – 2025

Membership in Professional and Honor Societies

American Institute of Chemical Engineers (AIChE), Member
Biophysical Society (BPS), Member
American Chemical Society (ACS), Member
Society of Latin-American Biophysicist (SoBLA), Member

Professional Development

UB SEAS Faculty Launch & Mentoring Program (FLMP) Fellow, 2024 cohort
2024 NSF Engineering CAREER Proposal Virtual Workshop, May 15-17, 2024
Community of Practice in Action (CoPA): Addressing Social Responsibility in the Curriculum, 2022-2023 cohort
ASEE / AIChE Faculty Summer School. Colorado School of Mines, July 25-29, 2022
"Write Winning NIH Grant Proposals Workshop" by Grant Writer's Seminars & Workshops, Jan 13-14, 2022.

UNIVERSITY SERVICE

Department Committees

Member, Empire Innovation Professor Search Committee, December 2025 – present
Member, Graduate Committee, January 2022 – present
Faculty Advisor, CBE undergraduate students, Fall 2021 – present
Co-organizer, CBE Graduate Research Symposium, November 2021 – present

Coordinator, CBE Seminar Series, Spring 2022 – Fall 2025
Co-host, Virtual CBE Graduate Recruitment/Open House, November 2022
Co-host, AIChE CBE Graduate Student Recruitment Fair, November 2020, November 2022

School Committees

Reviewer, Women in Science and Engineering (WiSE) Gresky Award & Arnold Family Scholarships, 2022 – present

University Committees

Member, Faculty Senate IT Committee, 2022 – present
Member, JEDI for Faculty Mentoring Subcommittee, 2023 – 2025
Member, Faculty Search Committee for the Institute for Artificial Intelligence and Data Science (multiple positions), December 2022 – Spring 2024
Member, Faculty Search Committee for the Dept. of Chemistry, October 2022 – March 2023

OUTREACH ACTIVITIES

University at Buffalo

Mentor, first-year undergraduate seminar EAS 202, January 2022 – present
Research Mentor, CLIMB UP undergraduate program, 2024 & 2025
Host, WiSE Open Lab Sessions, 2022 – 2025
Poster Judge, UB SEAS Graduate Poster Competition, 2022 & 2023
Poster Judge, CSTEP Annual Research Symposium, 2021 & 2025
Volunteer, WiSE STEM Outreach Program sponsored by Amazon, Fall 2022
Volunteer, WiSE early move-in events, Fall 2021 & Fall 2022
Panelist, *WiSE & Shine* breakfast, March 2022
Research Mentor, Louise Stokes Alliance for Minority Participation program, 2021 – 2023

Conference Sessions

Chair, "Modeling of lipid membranes and membrane proteins" at the AIChE annual meeting, Minneapolis, MN, November 2026
Co-chair, "*LatinX Voices in ChE*" at the AIChE annual meeting, Boston, MA, November 2025
Co-chair, "*Protein-Lipid Interactions*" at the Biophysical Society annual meeting, San Francisco, CA, February 2022
Co-chair, "*Physical, Chemical & Systems Cell Biology*" poster session at the ASCB Cell Bio Virtual Conference, December 2021

Virtual Sessions

Co-organizer, "*Building Bridges in Computational Biophysics*" virtual symposium, Society for Latin American Biophysicists (SoBLA), annually since October 2022
Co-organizer, "*Foro de Estudiantes en Biofísica,*" for Biophysics Week, March 20, 2023

Poster Judge

Student Research Achievement Award (SRAA) Competition at the Biophysical Society meeting, 2022 & 2023

Panelist

LatinXinChE Resume building Workshop, virtual, February 2025
LatinXinChE Graduate School Applications, virtual, Fall 2023 and Fall 2025
LSAMP, Bridge to the Doctorate, Women in Engineering Programs at the University at Maryland-College Park, Maryland, 2009 – 2021
ACCESS scholarship at Montgomery College, Maryland, 2009 – 2017

TEACHING ACTIVITIES

Formal courses at UB

CE 305: Probability, Statistics, and Data Analysis (undergraduate course, 3 credit hrs.)
Fall 2021 (44), 2022 (53), 2023 (57), 2024 (47), 2025 (62 students)

CE 410 / CE 530: Molecular Modeling (cross-listed graduate & undergraduate, 3 credit hrs.)
Spring 2022 (10), 2023 (2), 2024 (21), 2025 (14), 2026 (7 students)

Other courses taught at UB

CE498 Undergraduate Research

CE501, CE502, CE 503, CE 504 (MS level research credits)

CE601, CE602, CE 659, CE 660 (PhD level research credits)

These courses constitute several additional credit hours per semester and are offered on a rolling basis to satisfy CBE elective credits for undergraduates, or research credits for graduate students to satisfy their degree requirements. The following students have registered for these credits under my supervision: 4 PhD; 1 MEng; 5 Undergraduates.

Other courses taught

Universidad Nacional de Quilmes, Argentina (joint instructor, virtual 9-week course with Dr. Juliana Palma): "Alcances y limitaciones de las simulaciones de dinámica molecular." Lectures available online. Fall 2021. Enrollment: 33

Universidad Mayor de San Andres, La Paz-Bolivia. (Keynote lecturer): "Modern Topics in Biophysics." XVIII Curso Boliviano de Sistemas Complejos. Lectures & workshops available online. Dec. 2-4, 2020). Enrollment: 55

Formal courses at the University of Chicago

Biophysical Research Immersion (modular course offered to 1st year graduate students)

- Module 1: Hands-on workshop on molecular dynamics simulations (Sept. 2018)
- Module 2: Journal club & Communications in Biophysics (Autumn Quarter 2018)