

HYEONGYUN CHA

Assistant Professor
Department of Mechanical and Aerospace Engineering
University at Buffalo, The State University of New York

314 Jarvis Hall
Buffalo, NY 14260
(716) 645-1793
chah@buffalo.edu

<https://ubwp.buffalo.edu/energy/>

EDUCATION

Ph.D., Mechanical Engineering, University of Illinois Urbana-Champaign April 2020
Thesis: Condensation driven solid-liquid interfacial phenomenon on functional surfaces
Advisor: Prof. Nenad Miljkovic

M.S., Mechanical Engineering, University of Illinois Urbana-Champaign May 2016
Thesis: Coalescence-induced nanodroplet jumping
Advisor: Prof. Nenad Miljkovic

B.S., Mechanical Engineering, University of Illinois Urbana-Champaign May 2014
Minor: Electrical Engineering

PROFESSIONAL EXPERIENCE

Assistant Professor, Dept. of Mechanical and Aerospace Engineering Jan 2024 – Present
University at Buffalo, Buffalo, NY

Faculty Affiliate, Research and Education in Energy, Environment and Water (RENEW) Institute Aug 2025 – Present
University at Buffalo, Buffalo, NY

Postdoctoral Associate, Dept. of Mechanical Engineering Apr 2020 – Dec 2023
Massachusetts Institute of Technology, Cambridge, MA
Advisor: Prof. Evelyn Wang

Visiting Research Scholar Jul 2017 – Aug 2017
International Institute for Carbon-Neutral Energy Research, Kyushu University, Japan
Advisor: Prof. Yasuyuki Takata

Research Assistant, Dept. of Mechanical Science and Engineering May 2015 – Apr 2020
University of Illinois Urbana-Champaign, Urbana, IL
Advisor: Prof. Nenad Miljkovic

Engineering Intern May 2014 – Dec 2014
Littelfuse, Inc., Champaign, IL

HONORS AND AWARDS

Best Presentation Award, ASME Summer Heat Transfer Conference (with Osama Al-Kayyali)	2026
1 st Place, Best Poster Award, Mechanical Engineering Research Exhibition, MIT	2023
Outstanding UROP Mentor Nominated by Their Students, MIT	2022
2 nd Place, MechSE Art of Science Competition, UIUC	2019
PPG-MRL Graduate Research Fellowship Award, UIUC	2017
Mavis Future Faculty Fellow Award, UIUC	2017
Graduate College Conference Travel Award, UIUC	Fall 2017
Campus List of Teachers Ranked as Excellent by Their Students, UIUC	Fall 2015

PUBLICATIONS AND TECHNICAL PRESENTATIONS

Citations: 2415. h-index: 23, i10-index: 25

Google Scholar: <https://scholar.google.com/citations?user=kPjnRgwAAAAJ&hl=en>

ORCID: <https://orcid.org/0000-0001-7157-7315>

ResearcherID: HPF-7217-2023

Books and Book Chapters

1. Cha, H., Sett, S., Birbarah, P., Gebrael, T., Oh, J. and Miljkovic, N., [Recent Advances in Structured-Surface-Enhanced Condensation Heat Transfer](#), *Nanoscale Energy Transport: Emerging phenomena, methods and applications*, Chapter 13, IOP Publishing, 2020

Refereed Journal Articles (* denotes corresponding author, + denotes equal contribution)

Published

1. Cha, H., Kim, M.-K., Chang, H. C., Zhang, L., and Miljkovic, N.*, [Pinning-Induced Microdroplet Self-Propulsion](#), *ACS Nano*, 19, 11, 11049–11057, 2025.
2. Wilson, C. T., Cha, H., Zhong, Y., Li, A., Lin, E., and El Fil, B.*, [Design Considerations for Next-Generation Sorbent-Based Atmospheric Water Harvesting Devices](#), *Device*, 1 (2), 10052, 2023.
3. Hoque, M.J., Li, L., Ma, J., Cha, H., Sett, S., Yan, X., Rabbi, K. F., Ho, J. Y., Khodakarami, S., Suwala, J., Mohammadmoradi, O., Ince, G. O., and Miljkovic, N.*, [Ultra-resilient multi-layer fluorinated diamond like carbon hydrophobic surfaces](#), *Nature Communications*, 14, 4902, 2023.
4. Díaz-Marín, C. D., Li, D., Vázquez-Cosme, F. J., Pajovic, S., Cha, H., Song, Y., Kilpatrick, C., Vaartstra, G., Wilson, C. T., Boriskina, S., and Wang, E. N.*, [Capillary Transfer of Self-Assembled Colloidal Crystals](#), *Nano Letters*, 23 (5) 1888-1896, 2023.
5. Song, Y., Díaz-Marín, C. D., Zhang, L., Cha, H., Zhao, Y., and Wang, E. N.*, [Three-Tier Hierarchical Structures for Extreme Pool Boiling Heat Transfer Performance](#), *Advanced Materials*, 2200899, 2022.

6. Song, Y., Wang, C., Preston, D. J., Su, G., Rahman, M. M., Cha, H., Seong, J. H., Philips, B., Bucci, M., and Wang, E. N.*, [Enhancement of Boiling with Scalable Sandblasted Surfaces](#), *ACS Applied Materials & Interfaces*, **14** (7), 9788-9794, 2022.
7. Oh, J., Orejon, D., Park, W., Cha, H., Sett, S., Yokoyama, Y., Thoréton, V., Takata, Y., and Miljkovic, N.*, [“The Apparent Surface Free Energy of Rare Earth Oxides is Governed by Hydrocarbon Adsorption,”](#) *iScience*, **25** (1), 103691, 2022.
8. Song, Y., Cha, H., Liu, Z., Seong, J. H., Zhang, L., Preston, D. J., and Wang, E. N.*, [“Alteration of Pool Boiling Heat Transfer on Metallic Surfaces by In Situ Oxidation,”](#) *International Journal of Heat and Mass Transfer*, **185**, 122320, 2021.
9. Sett, S., Oh, J., Cha, H., Veriotti, T., Bruno, A., Yan, X., Barac, G., Bolton, L., and Miljkovic, N.*, [“Lubricant-Infused Surfaces for Low Surface Tension Fluids: Extent of Lubricant Miscibility,”](#) *ACS Applied Materials & Interfaces*, **13** (19), 23121-23133, 2021.
10. Oh, I., Cha, H., Chen, J., Chavan, S., Awad, A., Darwish, O., Miljkovic, N., and Hu, Y.*, [Enhanced Condensation on Liquid-Infused Nanoporous Surfaces by Vibration-Assisted Droplet Sweeping](#), *ACS Nano*, **14** (10), 13367–13379, 2020.
11. Kim, B. S., Kim, M. K., Cho, Y., Hamed, E. E., Gillette, M. U., Cha, H., Miljkovic, N., Aakalu, V. K., Kang, K., Son, K. N., Schachtschneider, K. M., Schook, L. B., Hu, C., Popescu, G., Balance, W. C., Yu, S., Im, S. G., Lee, J., Lee, C. H., and Kong, H.*, [Electrothermal Soft Manipulator Enabling Rapid Transport and Handling of Thin Biological Sheets and Electronic Devices](#), *Science Advances*, **6** (42), eabc5630, 2020.
12. Peng, Q., Yan, X., Li, J., Li, L., Cha, H., Ding, Y., Dang, C., Li, J., and Miljkovic, N.*, [Breaking Droplet Jumping Energy Conversion Limits with Superhydrophobic Microgrooves](#), *Langmuir*, **36** (21), 9510-9522, 2020.
13. Ma, J., Sett, S., Cha, H., Yang, X., and Miljkovic, N.*, [Recent Developments, Challenges, and Pathways to Stable Dropwise Condensation: A Perspective](#), *Applied Physics Letters*, **116**, 260501, 2020. *APL's Most Cited Research*
14. Yan, X., Chen, F., Zhang, X., Qin, Y., Zhao, C., Sett, S., Cha, H., Hoque, M. J., Zhao, F., Huang, Z., and Miljkovic, N.*, [Atmosphere-Dediated Scalable and Durable Biphilicity on Rationally Designed Structured Surfaces](#), *Advanced Materials Interfaces*, **7** (13), 2000475, 2020.
15. Hoque, M. J., Yan, X., Keum, H., Li, L., Cha, H., Park, J. K., Kim, S., and Miljkovic, N.*, [High-Throughput Stamping of Hybrid Functional Surfaces](#), *Langmuir*, **36** (21), 2020.
16. Cha, H.⁺, Vahabi, H.⁺, Wu, A., Chavan, S., Kim, M.-K., Wang, W., Kota, A. K., and Miljkovic, N.*, [Dropwise condensation on Solid Hydrophilic Surfaces](#), *Science Advances*, **6** (2), eaax0746, 2020.
17. Cha, H., Ma, J., Kim, Y.S., Li, L., Sun, L., Tong, J., and Miljkovic, N., [In Situ Droplet Microgoniometry Using Optical Microscopy](#), *ACS Nano*, **13** (11), 113343-113353, 2019.

18. Ma, J., Cha, H., Kim, M.-K., Cahill, D. G., and Miljkovic, N.*, [Condensation Induced Delamination of Nanoscale Hydrophobic Films](#), *Advanced Functional Materials*, **29** (43), 1905222, 2019.
19. Reed, J., Gonsalves, A. E., Román, J. K., Oh, J., Cha, H., Dana, C. E., Toc, M. A., Hong, S., Hoffman, J. B., Andrade, J. E., Jo, K. D., Alleyne, M., Miljkovic, N., and Cropek, D. M.*, [Ultra-scalable multifunctional nanoengineered copper and aluminum for anti-adhesion and bactericidal applications](#), *ACS Applied Bio Materials*, **2** (7), 2726-2737, 2019.
20. Yan, X., Huang, Z., Sett, S., Oh, J., Cha, H., Li, L., Feng, L., and Miljkovic, N.*, [Atmospheric-Mediated Superhydrophobicity of Rationally Designed Micro/Nanostructured Surfaces](#), *ACS Nano*, **13** (4), 4160-4173, 2019.
21. Cha, H., Wu, A., Kim, M.-K., Saigusa, K., Liu, A., and Miljkovic, N.*, [Nanoscale-Agglomerate-Mediated Heterogeneous Nucleation](#), *Nano Letters*, **17** (12), 7544-7551, 2017.
22. Cha, H., Chun, J. M., Xu, Y., and Miljkovic, N.*, [Focal Plane Shift Imaging for the Analysis of Multi-Droplet Jumping](#), *Journal of Heat Transfer*, **139** (2), 020903, 2017.
23. Cha, H., Xu, C., Sotelo, J., Chun, J. M., Yokoyama, Y., Enright, R., and Miljkovic, N.*, [Coalescence-induced nanodroplet jumping](#), *Physical Review Fluids*, **1** (6), 064102, 2016.
24. Cha, H., Chun, J. M., Sotelo, J., and Miljkovic, N.*, [Focal Plane Shift Imaging for the Analysis of Dynamic Wetting Processes](#), *ACS Nano*, **10** (9), 8223-8232, 2016.
25. Chavan, S., Cha, H., Orejon, D., Nawaz, K., Singla, N., Yeung, Y.-F., Park, D., Kang, D. H., Chang, Y., Takata, Y., and Miljkovic, N.*, [Heat Transfer through a Condensate Droplet on Hydrophobic and Nanostructured Superhydrophobic Surfaces](#), *Langmuir*, **32** (31), 7774-7787, 2016.
26. Kim, M.-K., Cha, H., Birbarah, P., Chavan, S., Zhong, C., Xu, Y., and Miljkovic, N.*, [Enhanced Jumping-Droplet Departure](#), *Langmuir*, **31** (49), 13452-13466, 2015.
27. Do, J., Chang, N. N., Estrada, D., Lian, F., Cha, H., Duan, X. J., Haasch, R. T., Pop, E., Girolami, G. S., and Lyding, J. W.*, [Solution-Mediated Selective Nanosoldering of Carbon Nanotube Junctions for Improved Device Performance](#), *ACS Nano*, **9** (5), 4806-4813, 2015.

Refereed Proceedings Articles (presenter underlined)

1. Metta, S. and Cha, H., A Priori Deep Learning Framework to Predict Pool Boiling Heat Transfer, *ASME Summer Heat Transfer Conference*, Bellevue, Washington, July 26 – 29, 2026.
2. Metta, S. and Cha, H., Investigation of Active Nucleation Site Density to Predict Pool Boiling Heat Transfer, *ASME Summer Heat Transfer Conference*, Bellevue, Washington, July 26 – 29, 2026.
3. Guo, M., Ely, J., and Cha, H., Heat and Mass Transfer of Pinning-Induced Self-Propelling Droplets, *ASME Summer Heat Transfer Conference*, Bellevue, Washington, July 26 – 29, 2026.

4. Al-Kayyali, O. and Cha, H., Electric-Field-Enhanced Control of Ionic Transport and Crystallization in Evaporating Sessile Electrolyte Microdroplets, *ASME Summer Heat Transfer Conference*, Bellevue, Washington, July 26 – 29, 2026. **Best Presentation Award.**
5. Metta, S. and Cha, H., Investigation of Active Nucleation Site Density to Predict Pool Boiling Heat Transfer, *12th International Conference on Boiling and Condensation Heat Transfer*, Cambridge, Massachusetts, June 14 – 17, 2026.
6. Song, Y., Wang, C., Preston, D. J., Su, G., Rahman, M. M., Cha, H., Seong, J. H., and Bucci, M., Scalable Surface Engineering via Sandblasting for Improved Pool Boiling Heat Transfer, *21st International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-21)*, Busan, Republic of Korea, August 31 – September 5, 2025.
7. Cha, H., Zhang, Y., Zhong, Y., Lu, Z., Song, Y., Wytenbach, M. Z., White, A. J., and Leonard, J., Machine Learning Assisted Models for Predicting and Optimizing Boiling Heat Transfer on Scalable Random Surfaces, *ASME International Mechanical Engineering Congress and Exposition*, Portland, Oregon, November 17 – 21, 2024. Invited Talk.
8. Song, Y., Zhang, L., Diaz-Marin, C., Cha, H., and Wang, E. N., Scaling for Critical Heat Flux During Pool Boiling of Micropillared and Sandblasted Surfaces, *ASME Summer Heat Transfer Conference*, Anaheim, California, July 15 – 17, 2024.
9. El Fil, B., Li, X., Diaz-Martin, C., Cole, L., Mooney, J., Keisar, D., Cha, H., and Graeber, G., Design and Demonstration of a High Energy Density Hydrogel-Based Thermal Energy Storage Device, *AIChE Annual Meeting*, San Diego, California, October 27 – 31, 2024.
10. Cha, H., Kim, M.-K., Chang, H. C., Zhang, L., and Miljkovic, N., Pinning-Induced Microdroplet Self-Propulsion, *Micro Flow and Interfacial Phenomena Conference*, Evanston, Illinois, June 18 – 21, 2023.
11. Cha, H., Song, Y., Zhong, Y., Deshpande, S., Stephenson, W., Zhang, Y., Leonard, J., Broderick, T., and Wang, E. N., Machine Learning Assisted Models for Understanding and Optimizing Boiling Heat Transfer on Scalable Random Surfaces, *Materials Research Society Fall Meeting & Exhibition*, Boston, Massachusetts, November 27 – December 2, 2022.
12. Cha, H., Kim, M.-K., Chang, H. C., Zhang, L., Wang, E. N., and Miljkovic, N., Pinning-Induced Evaporating Droplet Self-Propulsion, *75th Annual Meeting of the American Physical Society's Division of Fluid Dynamics (APS DFD)*, Indianapolis, Indiana, November 20 – 22, 2022.
13. Cha, H., Song, Y., Zhong, Y., Deshpande, S., Stephenson, W., Zhang, Y., Leonard, J., Broderick, T., and Wang, E. N., Machine Learning Assisted Models for Understanding and Optimizing Boiling Heat Transfer on Scalable Random Surfaces, *ARPA-E Energy Innovation Summit*, Denver, Colorado, May 23 – 25, 2022.

14. Song, Y., Cha, H., Liu, Z., Seong, J. H., Zhang, L., Preston, D. J., and Wang, E. N., Alteration in Pool Boiling Heat Transfer of Metallic Surfaces by Oxidation during Boiling, *7th Thermal and Fluids Engineering Conference*, Las Vegas, Nevada, May 15 – 18, 2022, 2022.
15. Song, Y., Diaz-Martin, C. D., Cha, H., Zhang, L., and E. N. Wang, Hierarchical microtube structures for pool boiling heat transfer enhancement, *Materials Research Society Fall Meeting & Exhibit*, Virtual, December 6 – 8, 2021.
16. Cha, H., Song, Y., Zhong, Y., Wyttenbach, M. Z., Deshpande, S., Stephenson, W., Zhang, Y., Leonard, J., Broderick, T., and Wang, E. N., Machine Learning Assisted Models for Understanding and Optimizing Boiling Heat Transfer on Scalable Random Surfaces, *MIT Mechanical Engineering Research Exhibition*, Cambridge, Massachusetts, October 8, 2021.
17. Song, Y., Gong, S., Vaartstra, G., Cha, H., and Wang, E. N., Separation of Liquid and Vapor Paths During Pool Boiling on Hemi-Wicking Surfaces, *ASME Summer Heat Transfer Conference*, Virtual, June 16 – 18, 2021.
18. Cha, H., Song, Y., Zhong, Y., Deshpande, S., Stephenson, W., Zhang, Y., Leonard, J., Broderick, T., and Wang, E. N., Machine Learning Assisted Models for Understanding and Optimizing Boiling Heat Transfer on Scalable Random Surfaces, *ARPA-E Energy Innovation Summit*, Virtual, May 24 – 27, 2021.
19. Cha, H., Kim, M.-K., Chang, H. C., and Miljkovic, N., Spontaneous Evaporation-Driven Droplet Sliding on Hydrophobic Surfaces, *Micro and Nanoscale Phase Change Heat Transfer Gordon Research Conference – The Effects of Hydrodynamic, Interfacial and Intermolecular Forces on Phase Change Processes*, Lucca, Italy, February 3 – 8, 2019.
20. Ma, J., Cha, H., Kim, M.-K., Cahill, D., and Miljkovic, N., The origins of condensation-driven degradation of hydrophobic thin films, *Micro and Nanoscale Phase Change Heat Transfer Gordon Research Conference – The Effects of Hydrodynamic, Interfacial and Intermolecular Forces on Phase Change Processes*, Lucca, Italy, February 3 – 8, 2019.
21. Cha, H., Vahabi, H., Wu, A., Chavan, S., Kota, A. K., and Miljkovic, N., The Role of Surface Wettability on Dropwise Condensation, *6th Micro and Nano Flows Conference*, Atlanta, Georgia, September 9 – 12, 2018.
22. Kim, M.-K., Kim, E. C., Ahn, J., Kim, Y. S., Cha, H., and Miljkovic, N., Condensation Limits on Bipilic Surfaces, *6th Micro and Nano Flows Conference*, Atlanta, Georgia, September 9 – 12, 2018.
23. Yan, X., Chen, F., Sett, S., Feng, L., Oh, J., Cha, H., Li, L., Huang, Z., and Miljkovic, N., Coalescence-Induced Droplet Jumping on Hydrophilic Nanoengineered Surfaces” *16th International Heat Transfer Conference*, Beijing, China, August 10 – 15, 2018.
24. Wu, A., Vahabi, H., Cha, H., Chavan, S., Kota, A. K., and Miljkovic, N., Dropwise Condensation on Hydrophilic Surfaces, *10th International Conference on Boiling and Condensation Heat Transfer*, Nagasaki, Japan, March 12 – 15, 2018.

25. Cha, H., Wu, A., Kim, M.-K., Saigusa, K., Liu, A., Orejon, D., and Miljkovic, N., Nanoscale-Agglomerate-Mediated Heterogeneous Nucleation, *10th International Conference on Boiling and Condensation Heat Transfer*, Nagasaki, Japan, March 12 – 15, 2018.
26. Cha, H., Kim, M.-K., Yang, J., Wu, A., and Miljkovic, N., Spontaneous Evaporating Microdroplet Sliding on Hydrophobic Surfaces, *ASME Summer Heat Transfer Conference*, Bellevue, Washington, July 9 – 14, 2017.
27. Cha, H., Kim, M.-K., Lee, S., Wu, A., and Miljkovic, N., Agglomerate-Deposition-Mediated Heterogeneous Nucleation during Atmospheric Water Vapor Condensation, *ASME Summer Heat Transfer Conference*, Bellevue, Washington, July 9 – 14, 2017.
28. Cha, H., Lee, S., Chun, J. M., and Miljkovic, N., Focal Plane Shift Imaging for the Measurement of Contact Angles, *ASME Summer Heat Transfer Conference*, Bellevue, Washington, July 9 – 14, 2017.
29. Wu, A., Cha, H., and Miljkovic, N., Droplet Impact Induced Degradation of Hydrophobic Coatings, *ASME Summer Heat Transfer Conference*, Bellevue, Washington, July 9 – 14, 2017.
30. Cha, H., Xu, C., Sotelo, J., Chun, J. M., Yokoyama, Y., Enright, R., and Miljkovic, N., Nanodroplet Jumping on Superhydrophobic Surfaces, *Micro and Nanoscale Phase Change Heat Transfer Gordon Research Conference – Fundamental Mechanisms to Applications of Phase Change Heat Transfer*, Galveston, Texas, January 8 – 13, 2017.
31. Cha, H., Chun, J. M., and Miljkovic, N., Focal Plane Shift Imaging for the Analysis of Jumping-Droplet Condensation, *ASME Summer Heat Transfer Conference*, Washington, DC, July 10 – 14, 2016.
32. Cha, H., Xu, C., Chun, J. M., Ye, M. Y., and Miljkovic, N., Coalescence-Induced Water Nanodroplet Jumping on Superhydrophobic Surfaces, *ASME Summer Heat Transfer Conference*, Washington, DC, July 10 – 14, 2016.
33. Cha, H., Chun, J. M., Xu, Y., and Miljkovic, N., Multi-Droplet Coalescence-Induced Droplet-Jumping on Superhydrophobic Surfaces, *ASME Summer Heat Transfer Conference*, Washington, DC, July 10 – 14, 2016.
34. Cha, H., Chun, J. M., Sotelo, J., and Miljkovic, N., Focal Plane Shift Imaging for the Analysis of Jumping Droplet Condensation, *17th International Symposium on Flow Visualization*, Gatlinburg, Tennessee, June 19 – 22, 2016.
35. Kim, M.-K., Cha, H., Xu, Y., Zhong, C., and Miljkovic, N., Enhancing the Coalescence-Induced Jumping Droplet Velocity via Multi-Droplet Coalescence, *International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems Conference (InterPACK2015)*, San Francisco, California, July 6 – 9, 2015.

Invited Talks

1. “Opportunities in Leveraging Machine Learning for Predicting and Optimizing Boiling Heat Transfer”, Panel on Fundamentals of Machine Learning for Heat Transfer, *ASME Summer Heat Transfer Conference*, Westminster, CO, July 8, 2025
2. “Machine Learning Assisted Models for Predicting and Optimizing Boiling Heat Transfer on Scalable Random Surfaces”, *ASME International Mechanical Engineering Congress and Exposition*, Portland, OR, November 18, 2024.
3. “Advancing Energy and Water Technologies via Micro/nanoengineered Materials and Machine Learning”, University at Buffalo, Buffalo, NY, February 1, 2024.
4. “Nanoengineered materials and machine learning for advanced phase change heat transfer”, University at Buffalo, Buffalo, NY, December 19, 2022.
5. “Next Generation Durable Hydrophobic Surface”, Industrial Advisory Board Meeting, Air Conditioning & Refrigeration Center, University of Illinois Urbana-Champaign, Urbana, IL, October 11, 2019.
6. “Durable Hydrophobic Surface,” Industrial Advisory Board Meeting, Air Conditioning & Refrigeration Center, University of Illinois Urbana-Champaign, Urbana, IL, October 5, 2017.
7. [“Nucleation Dynamics during Atmospheric Water Vapor Condensation on Hydrophobic Surfaces”](#), Institute Interest Seminar Series, International Institute for Carbon-Neutral Energy Research, Kyushu University, Fukuoka, Japan, August 24, 2017.
8. “Durable Hydrophobic Surface”, Industrial Advisory Board Meeting, Air Conditioning & Refrigeration Center, University of Illinois Urbana-Champaign, Urbana, IL, October 5, 2016.

STUDENTS ADVISED

(ME: Mechanical Engineering; AE: Aerospace Engineering)

Dissertations/Theses/Projects Progress

1. Mahima Pareek, M.E. ME, September 2025 – Present, degree expected May 2027
2. Osama Al-Kayyali, M.S. ME, September 2024 – Present, degree expected May 2026
 - ASME SHTC Best Presentation Award, 2026
 - ASME SHTC Student Registration Fee Scholarship Award, 2026
3. Sriram Metta, Ph.D. ME, August 2024 – Present, degree expected May 2029
 - ASME SHTC Student Registration Fee Scholarship Award, 2026
 - NSF TTP Program SHTC Travel Support Award, 2026
 - Elbridge N. and Stephana R. Townsend Scholarship, Spring 2025
4. Mason Guo, Ph.D. AE, August 2024 – Present, degree expected May 2029
 - ASME SHTC Student Registration Fee Scholarship Award, 2026
 - NSF TTP Program SHTC Travel Support Award, 2026
 - Elbridge N. and Stephana R. Townsend Scholarship, Fall 2024

Undergraduate Students

1. Piyush Ohri, B.S. ME, March 2026 – Present, degree expected May 2029
2. Benjamin Caskie, B.S. ME, February 2026 – Present, degree expected May 2028
3. Anton Jayakodiarachchige, B.S. ME & AE, January 2026 – Present, degree expected May 2028
 - Summer 2026 SEAS Undergraduate Research Experience Scholarship, 2026
4. Gilly Davies, B.S. Applied Math, minor in Computer Science, August 2025 – Present, degree expected May 2028
5. Shaurya Jain, B.S. ME, March 2025 – Present, degree expected May 2027
6. Quang Danh Nguyen, B.S. ME, January 2025 – Present, degree expected May 2028
 - Summer 2026 SEAS Undergraduate Research Experience Scholarship, 2026
 - Grace W. Capen Academic Scholarship Award, Spring 2026

Undergraduate Students Directed

1. Nicholas Schuck, B.S. ME, March 2025 – May 2026
 - Adarsh Bhagat Memorial Scholarship Award, Spring 2026
2. Jack Ely, B.S. ME, February 2025 – May 2026
3. Benjamin Song, B.S. ME, July 2025 – December 2025
4. Sinclair Cardieri, B.S. Material Science and Engineering, February 2025 – May 2025
5. Toluwani Adebayo, B.S. AE, August 2024 – December 2025
 - Test & Certification Engineer at Roxtec upon graduation.
 - Gustav and Grete Zimmer Memorial Scholarship, Spring 2025

Dissertation/Thesis Committee Member

1. Olanrewaju Akintunde Akinawo, Dept. of Mechanical and Aerospace Engineering, Ph.D., degree expected May 2028
2. Ali Nikkhah, Dept. of Mechanical and Aerospace Engineering, Ph.D., degree expected May 2027
3. Kaushali Aich, Dept. of Mechanical and Aerospace Engineering, M.S., May 2025

PROFESSIONAL ACTIVITIES

Reviewer

Applied Sciences

ASME Journal of Heat and Mass Transfer

Energies

Experimental Thermal and Fluid Science

International Journal of Heat and Mass Transfer

Joule

Langmuir

Nature

Nature Communications

Nature Water

Newton

Physical Review Letters

Proceedings of the National Academy of Sciences of the USA

Science Advances

ASME International Mechanical Engineering Congress and Exposition

ASME Summer Heat Transfer Conference

Micro Flow and Interfacial Phenomena Conference

Membership in Professional and Honor Societies

American Society of Mechanical Engineers

American Physical Society

Materials Research Society

Committee Member

ASME Heat Transfer Division K-8: Theory and Fundamental Research

UNIVERSITY SERVICE

Departmental Service

Poster session judge	MAE Graduate Poster Competition	January 30, 2024
Member	Ph.D. qualifying examination committee	May 2024

School Service

Volunteer	STEM Exploration Field Trips	January 6-10, 2025
Faculty advisor	STEM Research Opportunity Fair	October 29, 2024
Poster session judge	14th Annual Postdoc Research Symposium	September 18, 2024

University Service

Poster session judge	Collegiate Science & Technology Entry Program (CSTEP) 18th Annual Summer Research Poster Symposium	July 25, 2024
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TEACHING AND COURSES TAUGHT

University at Buffalo, Buffalo, NY

MAE 336: Heat Transfer, 86 undergraduate students	Spring 2026
MAE 431: Energy Systems, ~20-40 undergraduate students	Fall 2024, 2025
MAE 545: Heat Transfer, ~20 graduate students	Spring 2024, 2025

Massachusetts institute of Technology, Cambridge, MA

ME 2.55: Advanced Heat and Mass Transfer, lecture on phase change heat transfer to graduate students	Spring 2023
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ME 2.674/2.675: Introduction to Micro/Nano Engineering Laboratory, guest laboratory assistant, developed laboratory equipment and experimental protocols	Fall 2022 – Spring 2023
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University of Illinois Urbana-Champaign, Urbana, IL

ME 521: Convective Heat Transfer, teaching assistant	Spring 2017
ME 310: Fundamentals of Fluid Dynamics, teaching assistant, Campus List of Teachers Ranked as Excellent by Their Students	Fall 2015
ME 371: Mechanical Design II, teaching assistant	Spring 2015

SELECTED MEDIA COVERAGE

“UB undergraduates address real-world issues through SUNY-funded program,” P. Murphy, [UB Now](#), [SEAS News](#), February 21, 2025.

“MIT engineers design surfaces that make water boil more efficiently,” D. L. Chandler, [MIT News](#), [New Atlas](#), July 12, 2022.

“New understanding of condensation could lead to better power plant condenser, de-icing materials,” L. Yoksouljian, [Illinois News Bureau](#), [UIUC MechSE News](#), [EurekAlert!](#), [Science Daily](#), [Phys.org](#), [Bioengineer.org](#), [AZoM](#), [NCYT](#), January 23, 2020.

“PPG-MRL Graduate Research Assistantships Awarded to 3 Students,” C. McCoy, [MRL News](#), [UIUC MechSE News](#), November 28, 2017.

“[Four MechSE students selected for Mavis Future Faculty Fellowship](#),” V. Holloway, [UIUC MechSE News](#), September 22, 2017.

“[Miljkovic group develops improved technique to optically image dynamic droplet processes](#),” J. Cation, [UIUC MechSE News](#), November 1, 2016.

“Electronic device performance enhanced with new transistor encasing method,” A. Keating, [Illinois News Bureau](#), [UIUC ECE News](#), [Communications of the ACM](#), [Research & Development](#), [Nanowork](#), April 21, 2015.