

Md Mahamudur Rahman, Ph.D.

Associate Professor
Aerospace Center
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Education and Training

Postdoctoral Associate	Massachusetts Institute of Technology (MIT), Cambridge, MA Sponsors: Matteo Bucci, PhD; Jacopo Buongiorno, PhD; Evelyn Wang, PhD	Nuclear Science and Engineering	2016 - 2018
Shapiro Fellow Instructor	Massachusetts Institute of Technology (MIT), Cambridge, MA	Mechanical Engineering	2016 - 2017
Doctor of Philosophy	Drexel University (DU), Philadelphia, PA Dissertation: Boiling Enhancement on Engineered Surfaces Advisor: Matthew McCarthy, PhD	Mechanical Engineering	2011 - 2016
Master of Science	The University of Texas at El Paso (UTEP) El Paso, TX Thesis: An experimental study on the effect of particle geometry on drag and flow behaviors in a packed fluidized bed Advisors: Ahsan Choudhuri, PhD; Norman Love, PhD	Mechanical Engineering	2010 - 2011
Bachelor of Science	Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh	Mechanical Engineering	2003 - 2008

Appointments and Positions

Associate Professor (tenured)	The University of Texas at El Paso (UTEP), El Paso, TX	Department of Aerospace & Mechanical Engineering	2024 - present
Assistant Professor (tenure-track)	The University of Texas at El Paso (UTEP), El Paso, TX	Department of Aerospace & Mechanical Engineering	2018 – 2024

Teaching Experience

Aerospace Engineering- Undergraduate Courses

AERO 4331 - Aerodynamics II, Spring 2025, Spring 2024 (Evaluation: 4.82/5.0), Spring 2023 (Evaluation: 5.0/5.0).

AERO 3312 - Aerodynamics I, Fall 2023 (Evaluation: 4.6/5.0), Fall 2022 (Evaluation: 4.71/5.0).

Mechanical Engineering- Graduate Courses

MECH 6304 - Heat Transfer II, Spring 2021 (Evaluation: 5.0/5.0), Spring 2019 (Evaluation: 5.0/5.0).

MECH 5390 - Special Topics Mechanical Engineering: Compressible Flows, Spring 2024 (Evaluation: 4.82/5.0).

MECH 5303 - Heat Transfer I, Spring 2022 (Evaluation: 4.0/5.0), Fall 2020 (Evaluation: 4.79/5.0), Fall 2019 (Evaluation: 4.71/5.0), Fall 2018 (Evaluation: 3.8/5.0).

MECH 5306 - Fluid Dynamics, Fall 2024 (Evaluation: 4.45/5.0), Fall 2023 (Evaluation: 4.54/5.0), Fall 2022 (Evaluation: 4.35/5.0).

Mechanical Engineering- Undergraduate Courses

MECH 4316 - Thermal System Design, Spring 2019 (Evaluation: 4.28/5.0).

MECH 4315 - Heat Transfer, Spring 2025.

MECH 3312 - Thermodynamics, Fall 2024 (Evaluation: 4.6/5.0), Spring 2022 (Evaluation: 4.68/5.0), Spring 2021 (Evaluation: 4.97/5.0), Fall 2020 (Evaluation: 4.89/5.0), Spring 2020 (Section A-Evaluation: 5.0/5.0, Section B-Evaluation: 4.89/5.0).

Research Interests

- Thermal Management of Hypersonic Air Vehicles
- Lunar In-Situ Resource Utilization (ISRU)
- Regenerative Cooling of Rocket Engines
- Surface Engineering and Interfacial Phenomena
- Phase Change Heat Transfer
- Nuclear Energy Systems
- Multi-Scale Energy Systems

Sponsored Research (\$13,914,140)

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| 07/2024 - 06/2026 | <p>Project Title: High Temperature Applications using Additive Manufacturing, Phase 3</p> <p>Funding Agency: Air Force Research Laboratory (AFRL) through National Center for Defense Manufacturing and Machining (NCDMM)</p> <p>Amount: \$1,500,000</p> <p>Investigator(s): PI: Md Mahamudur Rahman</p> |
| 04/2023 - 09/2025 | <p>Project Title: High Temperature Applications using Additive Manufacturing, Phase 2</p> <p>Funding Agency: Air Force Research Laboratory (AFRL) through National Center for Defense Manufacturing and Machining (NCDMM)</p> <p>Amount: \$2,964,500</p> <p>Investigator(s): PI: Md Mahamudur Rahman; Co-PI: Ahsan Choudhuri</p> |
| 06/2023 - 06/2024 | <p>Project Title: Digital Engineering Aerospace and Defense Systems Design Center [DEDC] @ El Paso and @ Youngstown @ Huntsville</p> <p>Funding Agency: Air Force Research Laboratory (AFRL) through National Center for Defense Manufacturing and Machining (NCDMM)</p> <p>Amount: \$5,300,000</p> <p>Investigator(s): PI: Ahsan Choudhuri; Co-PI: Md Mahamudur Rahman, and Joel Quintana</p> |
| 07/2022 – 12/2023 | <p>Project Title: Collaborative Conference: Thermal Transport Café - A Virtual Gathering for the Thermal Transport Community</p> <p>Funding Agency: National Science Foundation (NSF)</p> <p>Amount: \$9,662</p> <p>Investigator(s): PI: Md Mahamudur Rahman</p> |
| 05/2021 – 11/2023 | <p>Project Title: Advanced Thermal Mining Approach for Extraction, Transportation, and Condensation of Lunar Ice</p> <p>Funding Agency: National Aeronautics and Space Administration (NASA)</p> <p>Amount: \$2,000,000</p> <p>Investigator(s): PI: Ahsan Choudhuri, co-PI: Md Mahamudur Rahman, Evgeny Shafirovich, and Amelia D Greig</p> |
| 09/2020 – 08/2023 | <p>Project Title: Collaborative Research: Scale-free continuum percolation of bubbles as a universal mechanism of the boiling crisis</p> <p>Funding Agency: National Science Foundation (NSF)</p> <p>Amount: \$160,000</p> <p>Investigator(s): PI: Md Mahamudur Rahman</p> |
| 10/2020 – 09/2022 | <p>Project Title: MIRO Center for Space Exploration and Technology Research</p> <p>Funding Agency: National Aeronautics and Space Administration (NASA)</p> <p>Amount: \$1,402,287</p> |

Investigator(s): PI: Ahsan Choudhuri, co-PI: Md Mahamudur Rahman, John Chessa, Amelia D Greig, Joel Quintana, Angel Flores Abad

- 10/2019 – 06/2021 Project Title: NASA JSC and UTEP cSETR Alliance for Lunar Resource Development
Funding Agency: National Aeronautics and Space Administration (NASA)
Amount: \$200,000
Investigator(s): PI: Ahsan Choudhuri, co-PI: Md Mahamudur Rahman, and Amelia D Greig
- 06/2019 – 11/2021 Project Title: Film coefficient data at high heat flux and high Reynolds numbers across a wide range of fluid qualities for cryogenic Nitrogen and Methane using the UTEP high heat flux
Funding Agency: NASA Marshall Space Flight Center
Amount: \$120,000
Investigator(s): PI: Ahsan Choudhuri, co-PI: Md Mahamudur Rahman
- 01/2020 – 08/2020 Project Title: Pool Boiling Critical Heat Flux Enhancement on External Tube Surfaces using Micro- and Nano-Scale Engineered Structures
Funding Agency: University Research Institute (URI)
Amount: \$4,969
Investigator(s): PI: Md Mahamudur Rahman
- 09/2018 – 08/2020 Project Title: Research Start-up
Funding Agency: The University of Texas at El Paso
Amount: \$252,722
Investigator(s): PI: Md Mahamudur Rahman

Publications

Journal Articles

1. M. Hasan, M. Valdiviez, M. Ahmad, A. Choudhuri, and M. M. Rahman, “Liquid Nitrogen Thin-Film Evaporation on Metal Micropillar Arrays”, Journal of Thermophysics and Heat Transfer, 2024 (in-press).
2. C. Wang, G. Su, O. Akinsulire, L. Zhang, M. M. Rahman, and M. Bucci, M. “Investigation of critical heat flux enhancement on nanoengineered surfaces in pressurized subcooled flow boiling using infrared thermometry” Heat Transfer Engineering, 45(4–5), 417–432, 2024.
3. D. Ortega, A. Amador, M. Ahmad, A. Choudhuri, and M. M. Rahman, “Liquid Nitrogen Flow Boiling Critical Heat Flux in Additively Manufactured Cooling Channels”, Aerospace, 10, 499, 2023.

4. L. Zhang, C. Wang, G. Su, A. Kossolapov, G. M. Aguiar, J. H. Seong, F. Chavagnat, B. Phillips, M. M. Rahman, and M. Bucci, "A unifying criterion of the boiling crisis", *Nature Communications*, 14, 2321, 2023.
5. C. Wang, M. M. Rahman, and M. Bucci, "Decrypting the Mechanisms of Wicking and Evaporation Heat Transfer on Micro-pillars during the Pool Boiling of Water Using High-resolution Infrared Thermometry", *Physics of Fluids*, 35 (3): 037112, 2023.
6. C. Wang, G., Su, A. Olorunsola, L. Zhang, M. M. Rahman, M. Bucci, "Investigation of Critical Heat Flux Enhancement on Nanoengineered Surfaces in Pressurized Subcooled Flow Boiling using Infrared Thermometry", *Heat Transfer Engineering*, 1-25, 2023.
7. Y. Song, C. Wang, D. J. Preston, G. Su, M. M. Rahman, H. Cha, J. H. Seong, B. Philips, M. Bucci, and E. N. Wang, "Enhancement of boiling with scalable sandblasted surfaces", *ACS Applied Materials and Interfaces*, 2022.
8. M. Ravichandran, G. Su, C. Wang, J. H. Seong, A. Kossolapov, B. Phillips, M. M. Rahman, and M. Bucci, "Decrypting the boiling crisis through data-driven exploration of high-resolution infrared thermometry measurements", *Applied Physics Letters*, 118, 253903, 2021.
9. M. M. Rahman, S. Ridwan, D. Fehlinger, and M. McCarthy, "Wicking Enhanced Critical Heat Flux for Highly Wetting Fluids on Structured Surfaces", *Langmuir*, 36, 32, 9643–9648, 2020.
10. M. M. Rahman, and M. McCarthy, "Effect of Length Scales on the Boiling Enhancement of Structured Copper Surfaces", *ASME Journal of Heat Transfer*, 139 (11), 111508, 2017.
11. M. M. Rahman, and M. McCarthy, "Boiling Enhancement on Nanostructured Surfaces with Engineered Variations in Wettability and Thermal Conductivity", *Heat Transfer Engineering*, 38 (14-15), pp. 1285-1295, 2017.
12. M. M. Rahman, H. Hu, H. Shabgard, P. Boettcher, Y. Sun, and M. McCarthy, "Experimental Characterization of Inward Freezing and Melting of Additive-Enhanced PCM within Millimeter-scale Cylindrical Enclosures", *ASME Journal of Heat Transfer*, 138(7), pp. 072301-072301-13, 2016.
13. M. M. Rahman, J. Pollack, and M. McCarthy, "Increasing Heat Transfer Using Low Conductivity Materials", *Scientific Reports*, 5, 13145, 2015.
14. M. M. Rahman, H. Hu, H. Shabgard, P. Boettcher, Y. Sun, and M. McCarthy, "Dendrite Growth During Freezing of Millimeter-Scale Eicosane Droplets", *ASME Journal of Heat Transfer*, 137 (8), 080905, 2015.
15. M. M. Rahman, E. Ölçeroğlu, and M. McCarthy, "The Role of Wickability on the Critical Heat Flux of Structured Superhydrophilic Surfaces", *Langmuir*, 30 (37), pp 11225–11234, 2014.
16. E. Ölçeroğlu, C.Y. Hsieh, M.M. Rahman, K.K.S Lau, and M. McCarthy, "Full-Field Dynamic Characterization of Superhydrophobic Condensation on Biotemplated Nanostructured Surfaces", *Langmuir*, 30 (25), pp 7556–7566, 2014.

17. M. M. Rahman, E. Ölçeroğlu, and M. McCarthy, "Scalable Nanomanufacturing of Virus-templated Coatings for Enhanced Boiling", *Advanced Materials Interfaces*, vol. 1, no. 2, 1300107, 2014.

Conference Publications and Presentations

18. D. Ortega, D. Blazer, A. Meza, A. Choudhuri, and M. M. Rahman, "Effect of Mass Flux on Minimum Film Boiling Heat Flux of Liquid Nitrogen on Additively Manufactured Cooling Channels," AIAA 2025-1225, proceedings of the AIAA Science and Technology Forum and Exposition (AIAA SciTech 2025 Forum), Orlando, FL, 6-10 January 2025.
19. O. H. Rodriguez, L. A. Loera, I. Garcia and M. M. Rahman, "Effect of Micro/Nano-Structures on Cylindrical Surfaces During Saturated Pool Boiling of Water," AIAA 2025-0834, proceedings of the AIAA Science and Technology Forum and Exposition (AIAA SciTech 2025 Forum), Orlando, FL, 6-10 January 2025.
20. M. Hasan, M. Hernandez, N. Veytia, M. Ahmad and M. M. Rahman, "Investigation of Water Vapor Sublimation Rates Using Capture Tent Simulator," AIAA 2025-2044, proceedings of the AIAA Science and Technology Forum and Exposition (AIAA SciTech 2025 Forum), Orlando, FL, 6-10 January 2025.
21. M. Hasan, M. Valdiviez, M. Ahmad, A. Choudhuri, and M. M. Rahman. "Condensation of Nitrogen Gas on Metal Micro-Pillar Arrays," AIAA 2024-2172, proceedings of the AIAA Science and Technology Forum and Exposition (AIAA SciTech 2024 Forum), Orlando, FL, 8-12 January 2024.
22. M. Hasan, M. Hernandez, M. Ahmad, A. Choudhuri, M. M. Rahman, "Liquid Nitrogen Thin Film Evaporation on Stainless-Steel Micro-Pillar Arrays", AIAA 2024-0659, proceedings of the AIAA Science and Technology Forum and Exposition (AIAA SciTech 2024 Forum), January 8 - January 12, 2024, Orlando, FL.
23. J. E. Montemayor, A. Fabila-Mireles, M. Ahmad, J. R. Michel, C. Sladek, T. T. Chen, A. Shirin, A. Choudhuri, J. Collins, and M. M. Rahman, "Digital Twin of an Industrial Condenser for Lunar In-Situ Resource Utilization", TFAWS23-AT-6, proceedings of the Thermal and Fluids Analysis Workshop (TFAWS), College Park, MD, August 21 - August 25, 2023.
24. M. Hernandez, M. Hasan, M. Ahmad, A. Lupo, A. Choudhuri, M. M. Rahman, "Ionization of Sublimated Water Vapor for Lunar Cold Trap", TFAWS23-ID-8, proceedings of the Thermal and Fluids Analysis Workshop (TFAWS), College Park, MD, August 21 - August 25, 2023.
25. M. Hasan, M. Valdiviez, M. Hernandez, M. Ahmad, A. R. Choudhuri, M. M. Rahman, "Experimental Characterization of Cryogenic Heat Pipe Evaporator for Lunar Ice Collection", TFAWS23-PT-41, proceedings of the Thermal and Fluids Analysis Workshop (TFAWS), College Park, MD, August 21 - August 25, 2023.

26. C. Wang, M. M. Rahman, and M. Bucci, "Experimental Characterization of Heat Transfer Mechanisms in the Flow Boiling of Water on Surfaces with Engineered Micropillars", 2682-2691, proceedings of the 20th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-20), Washington, District of Columbia, August 20 - 25, 2023.
27. M. Hasan, E. Cook, N. Regalado, M. Ahmad, A. R. Choudhuri, and M. M. Rahman, "Increasing Thin Film Evaporation of Liquid Nitrogen using Additively Manufactured Micro-Pillar Arrays for Lunar Ice Collection", AIAA 2023-1415, proceedings of the AIAA Science and Technology Forum and Exposition (SciTech 2023), Washington, District of Columbia, January 15 - 20, 2023.
28. M. Hasan, N. I. Jurado, N. Veytia, A. R. Choudhuri and M. M. Rahman, "Increasing Sublimated Water Vapor Collection Rates on an Engineered Cold Plate from Icy Lunar Regolith," AIAA 2023-1417, Proceedings of the AIAA Science and Technology Forum and Exposition (SciTech 2023), Washington District of Columbia, January 15 - 20, 2023.
29. D. J. Ortega, A. Amador, A. Silva, A. R. Choudhuri, and M. M. Rahman, "Effect of Pressure on Liquid Nitrogen Flow Boiling in Additively Manufactured Rocket Engine Cooling Channels", AIAA 2023-0070, proceedings of the AIAA Science and Technology Forum and Exposition (SciTech 2023), Washington, District of Columbia, January 15 - 20, 2023.
30. E. Rios, A. Amador, A. Silva, A. R. Choudhuri and M. M. Rahman, "Micro/Nano-Engineered Hierarchical Arrays for Enhanced Thin Film Evaporation of Water," AIAA 2023-1916, proceedings of the AIAA Science and Technology Forum and Exposition (SciTech 2023), Washington, District of Columbia, January 15 - 20, 2023.
31. O.H. Rodriguez, and M.M. Rahman, "High Pressure Saturated Pool Boiling of Water on Engineered Cylindrical Tubes", AIAA 2023-0594, proceeding of the AIAA Science and Technology Forum and Exposition (SciTech 2023), Washington, District of Columbia, January 15 - 20, 2023.
32. B. Caraveo, F. Rivera, A. D. Greig, A. R. Choudhuri and M. M. Rahman. "Rarefied Water Vapor Ionization and Transportation to the Lunar Ice Collector," AIAA 2023-1416, proceedings of the AIAA Science and Technology Forum and Exposition (SciTech 2023), Washington, District of Columbia, January 15 - 20, 2023.
33. E. Rios, A. Amador, A. Silva Au, A. R. Choudhuri, and M. M. Rahman, "Micro/Nano Engineered Hierarchical Arrays for Enhanced Thin Film Evaporation of Water", Southwest Emerging Technology Symposium (SETS) 2023, El Paso, Texas, April 24-25, 2023.
34. M. Hasan, M. Valvidiez, and M. M. Rahman, "Comparison between Additively Manufactured and Conventional CNC Machined Stainless Steel (SS-304) Micro-Structure Surface by Thin Film Evaporation of Liquid Nitrogen", Southwest Emerging Technology Symposium (SETS) 2023, El Paso, Texas, April 24-25, 2023.
35. M. Hasan, D. Ortega, A. R. Choudhuri, and M. M. Rahman, "Thin Film Evaporation of Liquid Nitrogen on Additively Manufactured Micro-Structured Surfaces for Lunar Ice

- Collection”, AIAA 2022-437, proceedings of the Accelerating Space Commerce, Exploration, and New Discovery (ASCEND 2022), Las Vegas, NV, October 24-26, 2022.
36. M. Hasan, N. Jurado, D. Ortega, A. R. Choudhuri, and M. M. Rahman, “Sublimated Water Vapor Collection on an Engineered Cold Plate from Icy Lunar Regolith”, AIAA 2022-4347, proceedings of the Accelerating Space Commerce, Exploration, and New Discovery (ASCEND 2022), Las Vegas, NV, October 24-26, 2022.
 37. A. Amador, M. Perez, A. Silva Au, A. R. Choudhuri, and M. M. Rahman, “Engineered Micropillar Wicks for Heat Pipe Evaporator”, AIAA 2022-421, proceedings of the Accelerating Space Commerce, Exploration, and New Discovery (ASCEND 2022), Las Vegas, NV, October 24-26, 2022.
 38. O.H. Rodriguez, and M. M. Rahman, “Critical Heat Flux Enhancement on Cylindrical Tubes with Circumferential Micro-Channels During Saturated Pool Boiling of Water”, IMECE2022-95846, proceedings of the ASME 2022 International Mechanical Engineering Congress and Exposition (IMECE2022), Greater Columbus Convention Center, Columbus, OH, October 30 – November 3, 2022.
 39. D. Ortega, A. Amador, A. R. Choudhuri, and M. M. Rahman, “Experimental Characterization of Critical Heat Flux and Minimum Film Boiling Heat Flux for Additively Manufactured Cooling Channels for Liquid Nitrogen Saturated Flow Boiling”, IMECE2022-95562, proceedings of the ASME 2022 International Mechanical Engineering Congress and Exposition (IMECE2022), Greater Columbus Convention Center, Columbus, OH, October 30 – November 3, 2022.
 40. M. Hasan, N. Jurado, M. Valdiviez, N. Veytia, W. Tucker, M. M. Rahman, and A. Choudhuri, “Prototype Low-Pressure Advanced Thermal Mining System with Vapor Extraction, Ionization and Electrostatic Transportation, and Deposition of Ice in an Engineered Cold Trap”, Lunar Surface Innovation Consortium, Fall Meeting, University of Texas at El Paso, El Paso, Texas, Wednesday, November 2, 2022 -Thursday, November 3, 2022.
 41. M. M. Rahman, “Demonstrate Technical Solutions for Thermally Managed Structural Heat Pipes”, The Technical Review and Exchange (TRX), Huntsville, Alabama, October 18 – 19, 2022.
 42. O. H. Rodriguez and M. M. Rahman, “Increasing Critical Heat Flux on Engineered Cylindrical Tube During Saturated Pool Boiling of Water”, Southwest Emerging Technology Symposium (SETS) 2022, El Paso, Texas, April 12-13, 2022.
 43. O. H. Rodriguez and M. M. Rahman, “A High-Pressure Flow Boiling Test Facility to Characterize the Boiling Enhancement on Engineered Surfaces”, Southwest Emerging Technology Symposium (SETS) 2022, El Paso, Texas, April 12-13, 2022.
 44. M. Hasan, D. Ortega, N. Jurado, J. Hernandez, L. Vera, J. Zavala, M. M. Rahman, and A. Choudhuri, “A Cryogenic Thin Film Evaporation Test Facility for Lunar Ice Collection”,

- Southwest Emerging Technology Symposium (SETS) 2022, El Paso, Texas, April 12-13, 2022.
45. N. I. Jurado, M. Hasan, D. J. Ortega, J. Hernandez, J. G. Zavala, M. M. Rahman, and A. R. Choudhuri, "Engineered Cold Plate for Lunar Ice Collection", Southwest Emerging Technology Symposium (SETS) 2022, El Paso, Texas, April 12-13, 2022.
 46. D. J. Ortega, A. Amador, G. Olvera, J. Adams, L. Bugarin, M. M. Rahman, and A. R. Choudhuri, "Investigation of Flow Boiling Heat Transfer on Additively Manufactured Rocket Engine Cooling Channels", Southwest Emerging Technology Symposium (SETS) 2022, El Paso, Texas, April 12-13, 2022.
 47. N. I. Jurado, H. Mahadi, P. Mendoza, Z. Oropeza, D. Austen, A. Shirin, J. Hernandez, L. Vera, M. M. Rahman, A. Greig, E. Shafirovich, A. Choudhuri, "Prototype Low-Pressure Advanced Thermal Mining System with Vapor Extraction, Ionization and Electrostatic Transportation, and Deposition of Ice in an Engineered Cold Trap", Lunar Surface Innovation Consortium, Fall Meeting, Bowie State University, Bowie, Maryland, Wednesday, November 3, 2021 -Thursday, November 4, 2021.
 48. N. I. Jurado, A. D. Amato, P. A. Mendoza, E. Negron, I. Torres, A. Amador, M. M. Rahman, A. D. Greig, and A. R. Choudhuri, "Increasing Ice Collection Rates on Engineered Cold Plate under Cryogenic Vacuum Conditions", AIAA 2021-4045, proceedings of the Accelerating Space Commerce, Exploration, and New Discovery (ASCEND 2021), Las Vegas, Nevada, November 15-17, 2021.
 49. A. D. Greig, N. I. Jurado, P. A. Mendoza, E. Negron-Ortiz, Z. Oropeza, Y. Sanchez, M. M. Rahman, and A. Choudhuri. "Increasing Water Vapor Transportation Rates from Lunar Regolith by Utilizing an Ionization Method," AIAA 2021-4046, proceedings of the Accelerating Space Commerce, Exploration, and New Discovery (ASCEND 2021), Las Vegas, Nevada, November 15-17, 2021.
 50. D. Ortega, R. E. Palacios, G. Olvera, L. Hernandez, J. R. Adams, M. M. Rahman, and A. R. Choudhuri, "Roughness Augmented High Pressure Flow Boiling Heat Transfer Enhancement using LN₂ and LCH₄ on Additively Manufactured Rocket Engine Regenerative Cooling Channels, proceeding of the AIAA Propulsion and Energy Forum and Exposition, August 24-28, 2020, Virtual Event.
 51. L. Hernandez, R. Palacios, D. Ortega, J. Adams, L. Bugarin, M. M. Rahman, and A. Choudhuri, "The Effect of Surface Roughness on LCH₄ Boiling Heat Transfer Performance of Conventionally and Additively Manufactured Rocket Engine Regenerative Cooling Channels," proceedings of the AIAA Propulsion and Energy Forum and Exposition, August 19-21, 2019, Indianapolis, Indiana.
 52. J. Avendano, M. Hasan, M. M. Rahman, "High Pressure Experimental Boiling Test Facility Design to Increase CHF and HTC on External Tube Surfaces using Micro/Nano-Scale Engineered Structures", Southwest Emerging Technology Symposium and Regional Small Business Summit 2019 (SETS 2019), 2019, El Paso, Texas.

53. M. M. Rahman, A. Kossolapov, J. H. Seong, J. Buongiorno, and M. Bucci, "Investigation of Pool Boiling Heat Transfer and CHF Enhancement on Nano-Engineered Surfaces using Advanced Diagnostics", proceedings of the 10th International Conference on Boiling & Condensation Heat Transfer (ICBCHT 2018), March 12 – 15, 2018, Nagasaki, Japan.
54. M. M. Rahman, A. Kossolapov, J. H. Seong, J. Buongiorno, and M. Bucci, "Revealing the mechanisms of CHF Enhancement on Nano-Engineered Surfaces using High-Speed Infrared Thermometry", Proceedings of the 16th International Heat Transfer Conference (IHTC 16), August 10-15, 2018, Beijing, China.
55. M. M. Rahman, C. Wang, Y. Song, G. Saccone, E. Wang, M. Bucci, J. Buongiorno, "Role of Micro-Engineered Pillar Height on Coupled Surface Wickability and Pool Boiling CHF", ASME 2017 International Conference on Nanochannels, Microchannels, and Minichannels, ICNMM2017, August 27-31, 2017, Cambridge, Massachusetts, USA.
56. M. M. Rahman, A. Kossolapov, J. H. Seong, E. Wang, J. Buongiorno, M. Bucci, "Using Advanced Diagnostics to Shed Light on CHF Enhancement on Structured Surfaces", ASME 2017 International Conference on Nanochannels, Microchannels, and Minichannels, ICNMM2017, August 27-31, 2017, Cambridge, Massachusetts, USA.
57. M. M. Rahman, C. Wang, G. Saccone, M. Bucci, J. Buongiorno, "Mechanistic prediction of wickability and CHF enhancement in micro- and nano-engineered surface", Proceedings of the 17th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-17), Xi'an, China, September 3 - 8, 2017.
58. M. M. Rahman, and M. McCarthy, "Wicking-Enhanced Critical Heat Flux for Highly Wetting Fluids", ASME Heat Transfer, Fluids Engineering, & Nanochannels, Microchannels, and Minichannels Conferences, Washington, DC, USA, July 10-14, 2016.
59. J. Pollack, S. Ridwan, M. M. Rahman, and M. McCarthy, "Fouling and Degradation of Engineered Surfaces during Enhanced Boiling", ASME Heat Transfer, Fluids Engineering, & Nanochannels, Microchannels, and Minichannels Conferences, Washington, DC, USA, July 10-14, 2016.
60. M. M. Rahman, Emre Ölçeroğlu, and M. McCarthy, "Boiling Heat Transfer Enhancement on Structured Surfaces with Engineered Thermal Gradients and Nucleation Sites", TFESC-12980, Proceedings of the 1st Thermal and Fluid Engineering Summer Conference (TFESC 2015), New York City, USA, August 9-12, 2015.
61. M. M. Rahman, H. Shabgard, H. Hu, P. Boettcher, Y. Sun, and M. McCarthy, "Inward Melting and Freezing of Additive-Enhanced Phase Change Materials in Small Diameter Cylinders", TFESC-12912, Proceedings of the 1st Thermal and Fluid Engineering Summer Conference, (TFESC 2015), New York City, USA, August 9-12, 2015.
62. M. M Rahman and M. McCarthy, "Pool Boiling Heat Transfer Enhancement using Surfaces with Mixed Thermal Conductivity", ASME 2015 International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems and

ASME 2015 13th International Conference on Nanochannels, Microchannels, and Minichannels (InterPACKICNMM 2015), July 6-9, 2015, San Francisco, California, USA.

63. M. M Rahman and M. McCarthy, "Biotemplated Nanostructures for Enhancing CHF and HTC during Pool Boiling", 9th International Conference on Boiling and Condensation Heat Transfer, Boulder, Colorado, April 26-30, 2015.
64. M. M Rahman, J. Pollack, D. Fehlinger, E. Ölçeroğlu, and M. McCarthy, "Increased Pool Boiling Heat Transfer Based on Hierarchical Micro-channeled Copper Surfaces", ASME 2014 International Mechanical Engineering Congress and Exposition (IMECE 2014), Montreal, QC, Canada, November 14-20, 2014.
65. E. Ölçeroğlu, M. M Rahman, and M. McCarthy, "Factors Affecting the In-Structure Motion of Condensate Droplets on Superhydrophobic Surfaces", ASME 2014 International Mechanical Engineering Congress and Exposition (IMECE 2014), Montreal, QC, Canada, November 14-20, 2014.
66. D. Fehlinger, M. M. Rahman, E. Ölçeroğlu, and M. McCarthy, "Creating Biotemplated Nanostructured Filtration Membranes using the Tobacco mosaic virus", ASME 2014 International Mechanical Engineering Congress and Exposition (IMECE 2014), Montreal, QC, Canada, November 14-20, 2014.
67. M. M. Rahman, and M. McCarthy, "The Effect of Wickability on Pool Boiling Critical Heat Flux on Micro/Nanostructured Surfaces", proceedings of The 9th International Conference on Two-Phase Systems for Ground and Space Applications (ITTW 2014), Baltimore, MD, USA, September 22-26, 2014.
68. M. M. Rahman, E. Ölçeroğlu, and M. McCarthy, "Increased Pool Boiling HTC using Engineered Nucleation Sites on Biotemplated Nanostructured Surfaces", 12th International Conference on Nanochannels, Microchannels, and Minichannels (ICNMM 2014), Chicago, IL, USA, August 3-7, 2014.
69. E. Ölçeroğlu, M.M Rahman, and M. McCarthy, "Spatial Control of Condensate Droplets on Superhydrophobic Surfaces", 12th International Conference on Nanochannels, Microchannels, and Minichannels (ICNMM 2014), Chicago, IL, USA, August 3-7, 2014.
70. M. M. Rahman, E. Olceroglu, M. McCarthy, "Viral Nano-Templates for Investigating the Mechanisms of Pool Boiling Enhancement", ASME 2013 Summer Heat Transfer Conference (SHTC 2013), Minneapolis, MN, USA, July 14-19, 2013.
71. E. Olceroglu, M. M. Rahman, M. McCarthy, "Nucleation and Wetting of Biotemplated Surfaces for Enhanced Dropwise Condensation", ASME 2013 Summer Heat Transfer Conference (SHTC 2013), Minneapolis, MN, USA, July 14-19, 2013.
72. D. Fehlinger, E. Ölçeroğlu, M. M. Rahman, M. McCarthy, "Additive Nanomanufacturing using the Tobacco Mosaic Virus as a Nanoscale Biological Template", ASME 2013 Summer Heat Transfer Conference (SHTC 2013), Minneapolis, MN, USA, July 14-19, 2013.

73. M. M. Rahman, E. Olceroglu, M. McCarthy, "Pool Boiling Heat Flux Enhancement using Biotemplated Nanostructures", proceedings of the 12th International Workshop on Micro and Nanotechnology for Power Generation and Energy Conversion Applications (PowerMEMS '12), Atlanta, GA, USA, December 2-5, 2012.
74. M. M. Rahman, S. King, E. Olceroglu, and M. McCarthy, "Nucleate Boiling on Biotemplated Nanostructured Surfaces", proceedings of the ASME 2012 International Mechanical Engineering Congress and Exposition (IMECE 2012), Houston, TX, USA, November 9-15, 2012.
75. E. Olceroglu, S. King, M. M. Rahman, and M. McCarthy, "Biotemplated Superhydrophobic Surfaces for Enhanced Dropwise Condensation", proceedings of the ASME 2012 International Mechanical Engineering Congress and Exposition (IMECE 2012), Houston, TX, USA, November 9-15, 2012.
76. S. King, M. M. Rahman, A. Krick, L. Branco, E. Olceroglu, and M. McCarthy, "Biotemplated Nanostructured Surfaces for Enhanced Phase Change Heat Transfer", proceedings of the ASME 2012 10th International Conference on Nanochannels, Microchannels, and Minichannels (ICNMM 2012), Rio Grande, Puerto Rico, July 8-12, 2012.
77. S. King, E. Ölçeroğlu, M. M. Rahman, and M. McCarthy, "Delayed Leidenfrost Phenomena on Biotemplated Nanostructured Surfaces", proceedings of the 2012 Solid-State Sensor, Actuator, and Microsystems Workshop (Hilton Head 2012), Hilton Head Island, SC, June 3-7, 2012.
78. M. Sarker, M. M. Rahman, N. Love, and A. Choudhuri, "Effect of Bed Height, Bed Diameter, and Particle Shape on Minimum Fluidization in a Gas-Solid Fluidized Bed", proceedings of the 50th Aerospace Sciences Meeting and Exhibit, AIAA, Nashville, TN, January 6 – 9, 2012.
79. M. Ruvalcaba, M. M. Rahman, N. Love, and A. Choudhuri, "Analysis of Drag on Non-Spherical Particles in a Fluidized Bed", proceedings of 9th International Energy Conversion Engineering Conference and Exhibit, AIAA, San Diego, CA, July 31-August 3, 2011.
80. M. M. Rahman, M. Ruvalcaba, N. Love, and A. Choudhuri, "Investigation of Gas-Solid Fluidized Bed Dynamics with Spherical and Non-Spherical Particles", proceedings of the 49th Aerospace Sciences Meeting and Exhibit, AIAA, Orlando, FL, January 4 – 7, 2011.
81. M. M. Rahman, N. Love, and A. Choudhuri, "Hydrodynamic Analysis of a Fluidized Bed Operating with Spherical and Non-Spherical Particles", 1st Southwest Energy Science and Engineering Symposium, University of Texas El Paso, El Paso, TX, April 16, 2011.

Poster Presentations

82. M., Valdiviez, M. Hasan, N. Veytia, A. Lupo, M. Ahmad, and M. M. Rahman, “Radiative Sublimation Method for Icy Regolith”, Southwest Emerging Technology Symposium (SETS) 2023, El Paso, Texas, April 24-25, 2023.
83. M. Hasan, N. Jurado, M. Valdiviez, N. Veytia, W. Tucker, M. M. Rahman, and A. Choudhuri, “Prototype Low-Pressure Advanced Thermal Mining System with Vapor Extraction, Ionization and Electrostatic Transportation, and Deposition of Ice in an Engineered Cold Trap”, Lunar Surface Innovation Consortium, Fall Meeting, University of Texas at El Paso, El Paso, Texas, Wednesday, November 2, 2022 -Thursday, November 3, 2022.
84. N. I. Jurado, H. Mahadi, P. Mendoza, Z. Oropeza, D. Austen, A. Shirin, J. Hernandez, L. Vera, M. M. Rahman, A. Greig, E. Shafirovich, A. Choudhuri, “Prototype Low-Pressure Advanced Thermal Mining System with Vapor Extraction, Ionization and Electrostatic Transportation, and Deposition of Ice in an Engineered Cold Trap”, Lunar Surface Innovation Consortium, Fall Meeting, Bowie State University, Bowie, Maryland, Wednesday, November 3, 2021 -Thursday, November 4, 2021.
85. N. Jurado, I. Torres, A. Amato, E. Negron-Ortiz, A. Greig, M. M. Rahman, and A. Choudhuri, “Feasibility Study of a Novel Electrostatic Transportation of Sublimated Vapor and High Capacity Cold Trap with Engineered Cryogenic Heat Pipe to Re-Capture Ice In a Low-Pressure Condition”, Lunar Surface Innovation Consortium (LSIC), Fall Meeting Program, Virtual Event, October 14–15, 2020
86. M. T  treault-Friend, N. S. Dhillon, R. Azizian, C. Wang, G. Saccone, M. M. Rahman, J. Moran, T. McKrell, M. Bucci, K. Varanasi, J. Buongiorno, “Enhancement of Boiling Critical Heat Flux on Micro- and Nanotextured Surfaces”, Gordon Research Conference: Micro & Nanoscale Phase Change Heat Transfer, Galveston, TX, USA, January 8-13, 2017.
87. M. M. Rahman, E.     ero  lu, and M. McCarthy, “The Effect of Length Scales during Pool Boiling on Hierarchical Copper Surfaces”, Research Day 2015, Drexel University, Philadelphia, PA, USA, May 1, 2015.
88. M. M. Rahman, J. Pollack, M. McCarthy, “Bi-Conductive Surfaces for the Enhancement of Pool Boiling Heat Transfer”, ASME 2014 International Mechanical Engineering Congress and Exposition (IMECE 2014), Montreal, QC, Canada, November 14-20, 2014.
89. M. M. Rahman, E.     ero  lu, and M. McCarthy, “The Role of Wickability in Critical Heat Flux Enhancement during Pool Boiling”, Research Day 2014, Drexel University, Philadelphia, PA, USA, April 10, 2014.
90. E.     ero  lu, M. M. Rahman, and M. McCarthy, “Biotemplated Super-Bi-Philic Surfaces for the Spatial Control of Microscale Droplets during Condensation”, Research Day 2014, Drexel University, Philadelphia, PA, USA, April 10, 2014.

91. D. Fehlinger, M. M. Rahman, E. Ölçeroğlu, and M. McCarthy, “Nanoporous Membranes based on Biological Templates”, Research Day 2014, Drexel University, Philadelphia, PA, USA, April 10, 2014.
92. M. M. Rahman, E. Ölçeroğlu, and M. McCarthy, “Viral Nano-Templates for Investigating the Mechanisms of Pool Boiling Heat Transfer Enhancement”, Research Day 2013, Drexel University, Philadelphia, PA, USA, April 18, 2013
93. E. Ölçeroğlu, M. M. Rahman, and M. McCarthy, “Nucleation and Wetting of Biotemplated Surfaces for Enhanced Dropwise Condensation”, Research Day 2013, Drexel University, Philadelphia, PA, USA, April 18, 2013.
94. D. Fehlinger, M. M. Rahman, E. Ölçeroğlu, and M. McCarthy, “Additive Nanomanufacturing using the Tobacco Mosaic Virus as a Nanoscale Biological Template”, Research Day 2013, Drexel University, Philadelphia, PA, USA, April 18, 2013.
95. M. M. Rahman, S. King, E. Ölçeroğlu, and M. McCarthy, “Phase Change Heat Transfer Enhancement with Biotemplated Nanostructured”, Research Day 2012, Drexel University,
96. M. M. Rahman, E. Ölçeroğlu, S. King, and M. McCarthy, "Nucleate Boiling on Biotemplated Nanostructured Surfaces", ASME 2012 International Mechanical Engineering Congress and Exposition (IMECE 2012), IMECE2012-93782, Houston, TX, USA, November 9-15, 2012.
97. E. Ölçeroğlu, M. M. Rahman, S. King, and M. McCarthy, “Biotemplated Superhydrophobic Surfaces for Enhanced Dropwise Condensation”, ASME 2012 International Mechanical Engineering Congress and Exposition (IMECE 2012), IMECE2012-93781, Houston, TX, USA, November 9-15, 2012.

Patents

US Provisional Patent Application No. US16/993207, Critical heat flux (CHF) enhancing surface treatment, by Evelyn Wang, Matteo Bucci, Olorunsola Akinsulire, Bren Phillips, Youngsup Song, Chi Wang, Guanyu Su, and Md Mahamudur Rahman, Filed August 13, 2019.

Student Supervision (Total# 80)

PhD Dissertation

1. Dawn S Blazer
Current, Fall 2024
2. Debra Jazmin Ortega
Title: Cryogenic Flow Boiling Heat Transfer on Additively Manufactured Liquid Rocket Engine Cooling Channels
NASA pathway intern, NASA Marshall Space Flight Center. Currently Test Engineer at Blue Origin.

3. Omar Hernandez Rodriguez
Title: High Pressure Boiling Enhancement using Micro/Nano Structures
Currently a Thermal Engineer at Ferretet Inc.- a Computer Hardware Manufacturing company.
4. Mahadi Hasan
Title: Additively Manufactured Cryogenic Engineered Heat Pipe for Lunar Ice Collection

MS Thesis

1. Ivan A. Flores,
Current, Fall 2024
2. Isidro S Garcia
Current, Fall 2024
3. Elias Ramos - Ibarra
Title: Experimental Characterization of Electron Heat Flux From Thermionic Emission
Currently Mechanical Engineer I at Kansas City National Security Campus (KCNSC)
4. Alejandro Amador
Title: Thin Film Evaporation Through Engineered Copper Micropillar Arrays
Currently Electro-Optical Systems Engineer at Lockheed Martin Aeronautics
5. Nathaniel Ian Jurado
Title: Rarified Water Vapor Deposition from Icy Lunar Regolith on an Engineered Cold Plate
Currently Test Engineer II - Test and Flight Ops at Blue Origin
6. Omar Hernandez Rodriguez
Title: High Pressure High Heat Flux Pool Boiling Test Facility Design to Investigate Nucleation Boiling Heat Transfer Enhancement Using Micro/nanoscale Engineered Structures
Currently a Thermal Engineer at Ferretet Inc.

Graduate Research Assistants

1. Aaron Beltran
2. Eliana Lozano
3. Esteban Cook
4. Gerardo Olvera
5. Issac Jacquez
6. Itzel Torres
7. Linda Hernandez
8. Mario Perez
9. Reynaldo Flores
10. Sebastian Castillo

Undergraduate Research Assistants

1. Aaron Amato
2. Aaron Mayes
3. Adrian Quinones
4. Alan Vazquez
5. Alexis Lupo
6. Alix Martin
7. Aliyah McDaniel
8. Allison Kendrick
9. Amna Ansari
10. Andrea Mireles
11. Angel J. Arias
12. Ansh Baxi
13. Anthony Spear
14. Anysha Choudhuri
15. Ariana Arias
16. Brenda Caraveo
17. Cole Wales
18. Daniel Cruz
19. Dora Munoz
20. Drake Mathews
21. Edith Shear
22. Emmanuel N. Ortiz
23. Esteban Rios
24. Fernando Rivera
25. Gabriel Escandon
26. Gabriel Turbay
27. Hausson Mitchell
28. Hector Jauregui
29. Iram D Hernandez
30. Jaime A. Nevarez
31. Jaime Herrera
32. Jesus Navarro
33. Josue Montemayor
34. Kevin McCafferty
35. Luis Loera
36. Luke Childrey V
37. Manuel Valdiviez
38. Marco Ortega
39. Mia Alvarez
40. Miguel Mireles
41. Montserrat Hernandez

42. Muhammad T. Riaz
43. Nathan Wetherington
44. Nathaniel Regalado
45. Nicolas Veytia
46. Nigel Johnson
47. Oswaldo Zepeda
48. Perla A Leyva
49. Raul Palacios
50. Ricardo Barrio
51. Roberto Martinez
52. Rodrigo Escobedo
53. Sabina Arroyo
54. Sara Chowdhury
55. Sidney Michaud
56. Stanely Sims
57. Wali Hossain
58. Wesley Hanson
59. William Kyle
60. Willian Tucker
61. Zuhayer Kalam

Awards and Honors

- **LSIC Member Spotlight** (2022)
Lunar Surface Innovation Consortium (LSIC) December 2022 Newsletter
- **Best Paper Award in NURETH 17** (2017)
17th International Topical Meeting on Nuclear Reactor Thermal Hydraulics
Xi'an, Shaanxi, China, Sept. 3-8, 2017
Mechanistic Prediction of Wickability and CHF Enhancement on Micro- and Nano-Engineered Surfaces
Nureth17- 20350
- **MIT Shapiro Fellowship** for outstanding postdoctoral associates (2016)
Department of Mechanical Engineering, Massachusetts Institute of Technology
- **The George Hill, Jr. Endowed Fellowship Award** for demonstrated excellence (2015)
in graduate career
The College of Engineering, Drexel University
- **Live Science, Drexel NOW, and The Guardian** news highlight for research on (2015)
nano-coatings for boiling enhancement
- **IMECE 2014 Poster Award** (2014)
ASME 2014 International Mechanical Engineering Congress and Exposition

Bi-Conductive Surfaces for the Enhancement of Pool Boiling Heat Transfer
IMECE2014-40798

- **Work highlighted as a frontispiece in the April issue of Advanced Materials Interfaces titled as Biotemplates:** Scalable Nanomanufacturing of Virus-templated Coatings for Enhanced Boiling (Adv. Mater. Interfaces 2/2014) (2014)
- **Work highlighted in the Drexel University Mechanical Engineering and Mechanics (MEM) Department News titled as MEM Research Highlighted In** Advanced Materials and Interfaces (2014)
- **NSF CBET Innovation Poster Award** (2012)
ASME 2012 International Mechanical Engineering Congress and Exposition
Biotemplated Superhydrophobic Surfaces for Enhanced Dropwise Condensation
IMECE2012-93781

Professional Service

Service within UTEP

- Chair: Thermo- Fluid Curriculum Committee 2024 - 2025
Aerospace and Mechanical Engineering
- Alternate Senator: UTEP Faculty Senate 2024 - 2025
- Member: Tenure and Promotion Committee 2024 - 2025
Aerospace and Mechanical Engineering
- Member: Faculty search committee 2024 - 2025
Tenure track Assistant Professor level, 2024-COE AME-Aerospace Engineering
- Member: Faculty search committee 2023 - 2024
Tenure track Assistant Professor level, COEN 23-04 Assistant Professor of Aerospace Engineering
- Chair: Faculty search committee 2022 - 2023
Tenure track Assistant Professor level, 2022-COE AME-Aerospace Engineering-Aerodynamics
- Member: Faculty search committee 2022 - 2023
Tenure track Assistant Professor level, 2022-COE AME-Aerospace Engineering- Propulsion
- Chair: Faculty search committee 2021 - 2022

Tenure track Assistant Professor level, 2021-COE ME-Aerospace Engineering- Advanced Structures

- Chair: Faculty search committee
Tenure track Assistant Professor level, 2021-COE ME-Aerospace Engineering- Vehicle Design 2021 - 2022
- Chair: Faculty search committee
Tenure track Assistant Professor level, 2021-COE ME-Aerospace Engineering- Hypersonics 2021 - 2022
- Chair: Southwest Emerging Technology Symposium (SETS) 2022
- Chair: Southwest Emerging Technology Symposium (SETS) 2021
- Chair: Faculty search committee
Tenure track Assistant Professor level, COE ME-Aerospace Engineering 20-05 2020 - 2021
- Organizing committee
Southwest Emerging Technology Symposium (SETS) 2021
- Poster Judge
UTEP Campus Office of Undergraduate Research initiatives (COURI) 2020
- Poster Judge
UTEP Campus Office of Undergraduate Research initiatives (COURI) 2019
- Chair: Southwest Emerging Technology Symposium (SETS) 2019
- Poster Judge
UTEP 2018 Graduate Student Research EXPO 2018

External Professional Activities

- Co-founder: Thermal Transport Café 2020 - present
A virtual webinar series for junior and senior faculties around the world.
YouTube Link: <https://www.youtube.com/@thermaltransportcafe4260>
- Review editor: Heat Transfer Mechanisms and Applications of Frontiers in Thermal Engineering and Frontiers in Mechanical Engineering 2022 - present
- Proposal Reviewer: National Science Foundation (NSF) 2024
- Panelist: Lunar Surface Innovation Consortium Spring 2023 Meeting 2023

- Proposal Reviewer: National Science Foundation (NSF) 2023
- Proposal Reviewer: National Science Foundation (NSF) 2021
- Lead: Thermal/Illumination subgroup 2020 – 2022
Lunar Surface Innovation Consortium (LSIC)
- Proposal Reviewer: National Aeronautics and Space Administration (NASA) 2020
- Journal Manuscript Reviewer
 - Aerospace
 - Applied Thermal Engineering
 - Desalination
 - Experimental Thermal and Fluid Science
 - Energies
 - International Journal of Heat and Mass Transfer
 - International Journal of Thermal Sciences
- Conference Manuscript Reviewer
 - AIAA Science and Technology Forum and Exposition
 - Lunar Surface Innovation Consortium
- Membership in Professional Societies
 - American Institute for Aeronautics and Astronautics (AIAA)
 - American Society for Mechanical Engineering (ASME)
 - Lunar Surface Innovation Consortium (LSIC)
 - University Consortium for Applied Hypersonics (UCAH)
- Professional Development Activity
 - Mentoring Matters: Putting Programs into Action (NCFDD)