Nami Ha

Contact Information

Email: nha37@gatech.edu **Google Scholar**: Nami Ha

Education

08/2022 – 05/2027 (Expected)	**Georgia Institute of Technology** *Ph.D. in Bioengineering* *Advisor: M. Saad Bhamla*	Atlanta, GA
02/2018 – 02/2022	**Pohang University of Science and Technology** *M.S. in Mechanical Engineering* *Advisor: Sang Joon Lee*	Pohang, Korea
02/2014 – 02/2018	**Sogang University** *B.S. in Mechanical Engineering with Honors* *Advisor: Wonjung Kim*	Seoul, Korea

Honors and Awards

2026	APS Global Physics Summit DBIO Travel Award
2024	GT ME Fall Topping Fellowship
2024	IUTAM Symposium on Capillarity and Elastocapillarity in Biology Travel Award
2024	APS Braslau Family Travel Award
2021	Korean Society of Visualization, Best Paper Award
2020	Korean Synchrotron Radiation User's Association, Best Poster Award
2020	National Congress on Fluids Engineering, Best Paper Award
2019	Korean Society of Visualization, Best Paper Award
2016	Merit-based Scholarship at Sogang University
2014	Half-tuition, merit-based Scholarship at Sogang University

Peer-reviewed Publications * Co-first authors, † Corresponding author

[1] **N. Ha**, E. J. Challita, J. S. Harrison, E. Clark, K. E. Larson, M. Cooperband, and S. Bhamla†. A developmental switch from capillary rectification to elastic catapult enables honeydew ejection in the spotted lanternfly. *PNAS Nexus*, in press. [*Selected for Press Release*]

[2] S. Kim*, H. Tuazon*, **N. Ha**, I. Tiwari, S. Bhamla†, and D. Hu†. Floatation of California blackworms. *Interface Focus*, 2025. [*Invited Paper*]

[3] S. D. Stupski*, L. C. Ferrer*, J. S. Harrison*, J. Jackson, C. P. Mansilla, L. L.-B. Livano, A. Narla, C. M. Chai, E. G. Clark, **N. Ha**, J. Q. Nina, E. Wold, J. R.-Quinteros, G. Gallice, and S. Bhamla†. A field biology guide for the curious physicist. *Newton*, 2025. [*Perspective*]

[4] **N. Ha** and S. J. Lee†. Enhanced fog collection of hydrogel-coated wires inspired by water film-trapping characteristics of *Tillandsia. Chemical Engineering Journal*, 2023.

[5] **N. Ha**, J. Park, S. H. Park, E. Seo, J. H. Lim, and S. J. Lee†. Domino-like water transport on *Tillandsia* through flexible trichome wings. *New Phytologist*, 2021.

[6] **N. Ha**, E. Seo, S. Kim, and S. J. Lee†. Adsorption of nanoparticles in a drop on a leaf surface of *Perilla frutescens* and their infiltration through stomatal pathway. *Scientific Reports*, 2021.

[7] E. Seo, S. Kim, J. Park, H. Lim, **N. Ha**, J. Lim, J. H. Lim, H. J. Park, K. Kim, and S. J. Lee†. Foliar uptake of the potentially toxic elements in garlic chive leaves. *Frontiers in Environmental Science*, 2021.

[8] S. J. Lee†, **N. Ha**, and H. Kim. Superhydrophilic-superhydrophobic Water Harvester Inspired by Wetting Property of Cactus Stem. *ACS Sustainable Chemistry & Engineering*, 2019.

Manuscripts In Preparation

[P1] **N. Ha***, S. Wei*, L. F. Casas*, B. T. Poon, E. G. Clark, M. E. Martinez, Y. Geng, B. Brettmann†, and S. Bhamla†. Programmable beta-keratin coils inspired by sandgrouse feather barbules. In preparation.

[P2] **N. Ha**, M. E. Martinez, and S. Bhamla†. Dynamics of capillary bridges of sandgrouse birds during take-off from the waterhole. In preparation.

Funding Sources and Proposals

2025-2027 California Department of Food and Agriculture Pierce's Disease and Glassy-winged Sharpshooter Board (400K USD, PD/GWSS Board funded grant 25-0371-000-SA, PI: Saad Bhamla, co-PI: Miriam Cooperband, Role: conceptualization, proposal writing, and project leader)

2026 Advanced Photon Source in Argonne National Laboratory General User Proposal (High-speed droplet ejection of sharpshooter insects, PI: Jake Socha, co-PI: Jacob Harrison, Nami Ha, Saad Bhamla, Role: proposal writing, and project co-leader)

2023-2024 GT Institute of Electronics and Nanotechnology Core Facilities Seed Grant (7.5K USD, Material Characterization of Keratin-based Barbules with Hygroscopic Coiling-uncoiling Behaviors and Biomimetic Fabrication of Artificial Hygromorphic Barbules, PI: Saad Bhamla, Role: conceptualization, proposal writing, and project leader)

2019-2021 POSTECH Rural Development Administration (100K USD, Studies on Adsorption and Desorption of Particulate Matter on Crops, PI: Sang Joon Lee, Role: proposal writing, and project co-leader)

Research Experience

05/ 2026 - Present **University of Colorado Boulder** Boulder, CO
Affiliate Researcher | Chemical and Biological Engineering, BioFrontiers Institute

10/ 2026 **Advanced Photon Source – Argonne National Lab** Lemont, IL
Visiting Graduate Researcher | Collaborator: J. Jake Socha
Topic: Synchrotron X-ray high-speed imaging of droplet excretion by sap-feeding insects

2023-2024 **Institute of Electronics and Nanotechnology at GT** Atlanta, GA
Visiting Graduate Researcher | Collaborator: Shiqi Wei
Topic: Material characterization of feather barbules of sandgrouse birds

11/ 2023 **Advanced Light Source – Lawrence Berkeley National Lab** Berkeley, CA
Visiting Graduate Researcher | Collaborator: Elizabeth G. Clark
Topic: Synchrotron micro-computed tomography of sap-feeding insects

07/ 2023 **Li Group at Virginia Tech** Blacksburg, VA
Visiting Graduate Researcher | Collaborator: Yang Geng
Topic: Chemical characterization of feather barbules of sandgrouse birds

05/ 2023, 08/2023 **Forest Pest Methods Laboratory - S&T-PPQ-APHIS, USDA** Buzzards Bay, MA
Visiting Graduate Researcher | Collaborator: Miriam F. Cooperband
Topic: High-speed imaging of honeydew droplet excretion by spotted lanternflies

08/2022 – Present **Bhamla Lab at GT** Atlanta, GA
Graduate Research Assistant | Advisor: M. Saad Bhamla
Topic: Mechanics of liquid waste droplet excretion of sap-feeding insects
Co-project: Elastocapillary springs: Coiling-uncoiling actuation in barbules of feathers

01/2018 – 12/2021	**Pohang Accelerator Laboratory** Visiting Graduate Researcher | Collaborator: Jae Hong Lim *Topic: Synchrotron X-ray high-speed imaging and micro/nano CT of plants and fluidic devices*	Pohang, Korea
01/2018 – 12/2021	**Biofluid and Biomimetic Research Center at POSTECH** Graduate Research Assistant | Advisor: Sang Joon Lee *Topic: Hydrodynamics of plants and bioinspired water transport devices*	Pohang, Korea
08/2016 – 02/2017	**Biomimetic and Precision Device Lab at Sogang University** Undergraduate Researcher | Advisor: Seoung-Yop Lee *Topic: Fabrication of microparticles for photonic crystal*	Seoul, Korea
02/2015 – 06/2016	**BioNano Technology Lab at Sogang University** Undergraduate Researcher | Advisor: Bong Geun Chung *Topic: Design of microchip for separating fungi*	Seoul, Korea

Invited Talks

06/2026	**Japan-Korea Fluid Mechanics Online Workshop** Seminar on Ultrafast Fluid Ejection in Biological Systems
03/2025	**Women in Georgia Tech Korean Society Association** Spring Seminar on Growing as an Independent Scientist
08/2024	**University Brunei Darussalam** Institute for Biodiversity and Environmental Research
11/2023	**University of California, Berkeley** Almeida Lab, Environmental Science, Policy and Management
09/2023	**Finca Las Piedras in the Amazon Rainforest, Peru** Jungle Biomechanics Laboratory Program
07/2023	**Virginia Polytechnic Institute and State University** Li Group – The Laboratory of Biological and Bio-inspired Materials

Professional Activities and Service

Scientific Community and Seminar

2023-2024	President of Women in Georgia Tech Korean Society Association (GTKSA)
2023-2025	Jungle Biomechanics Lab Community
2022-Present	Physics of Living Systems (PoLS) Community at GT & CU Boulder
2022-Present	Woodruff School of Mechanical Engineering Group at GT
2022-Present	Parker H. Petit Institute for Bioengineering and Biosciences (IBB) Community at GT
2023-Present	Korean-American Scientists and Engineers Association (KSEA)

Workshop

2026-2027	PACE Workshop Series: Application of Machine Learning, Python 101, Linux 101
2026-2027	Impactful Research Mentorship Series Workshops at Georgia Tech
2026	Future Faculty Workshop at Auburn University
2026	Teaching with Technology Workshop

2025 Interdisciplinary Collaboration for Graduate Students Workshop (ICOGS)
2024 Career, Research, and Innovation Development Conference (CRIDC)
2024 KSEA Grant Writing Workshop: NIH

Conference

2025-2026 Joint March Meeting and April Meeting: APS Global Physics Summit
2024 The American Physical Society March Meeting (APS MM)
2024-2026 The Society for Integrative and Comparative Biology Annual Meeting (SICB)
2024 The IUTAM Symposium on Capillarity and Elastocapillarity in Biology
2024/23/20/19 The American Physical Society's Division of Fluid Dynamics (APS DFD)
2021 The International Symposium on Flow Visualization (ISFV)
2020-2021 The Korean Synchrotron Radiation User's Association Workshop (KOSUA)
2019-2021 The Korean Society of Visualization (KSV)
2018-2020 The National Congress of Fluids Engineering (NCFE)
2018-2021 The Korean Society of Mechanical Engineers (KSME)

Reviewer

2022 Georgia Tech President's Undergraduate Research Awards (PURA)

Volunteer

2026 Zoo Biomechanics Day in Atlanta: Animals in Motion *as an outreach educator*
2025 Spring seminar for Women in GTKSA *as a presenter*
2024 Spring seminar for Women in GTKSA *as an organizer*
2024 Lunch with Speaker & ChBE Students at GT's 125th Anniversary *as an organizer*
2024 Lambert iGEM Team-out High-school Students Workshop *as a presenter*
2023-2026 GT Mentorship Program *as a mentor*
2023 Jungle Biomechanics Lab in Amazon rainforest *as an outreach educator*

Teaching Experience

Guest Lecturer

Spring 2026 ME 2202 Dynamics of Rigid Bodies at GT

Teaching Assistant at POSTECH

Fall 2020 Graduate course: Thermal-fluid Experiment
Spring 2019 Undergraduate course: Fluid Mechanics

Mentor/Supervisor

2026 Lily Cheng (GT ME undergraduate)
2023-2026 Maria E Martinez (GT ChBE undergraduate)
2023-2025 Kendall E Larson (GT ChBE undergraduate)
2023-2024 Riya Dua (High school student)
2023 Carolina P Mansilla (Pontifical Catholic University of Peru undergraduate)
2020 Yeongdo Kim (POSTECH ME undergraduate, currently Ph.D. student at UIUC)