LEE, CHI HWAN

University Faculty Scholar
Leslie A. Geddes Professor of Biomedical Engineering and Mechanical Engineering, and by Courtesy, of Materials Engineering, Electrical and Computer Engineering, and Speech, Language, & Hearing Sciences
Purdue University

Fellow of the American Institute for Medical and Biological Engineering (AIMBE)

Adjunct Professor of Optometry at Indiana University
Adjunct Professor of Mechanical Engineering at Hanyang University, South Korea

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Updated on January 12, 2026

EDUCATION & TRAINING

BE (Dual Degree)	2006	Industrial Engineering	Ajou University, South Korea
BS	2006	Mechanical Engineering	Illinois Institute of Technology, Chicago, IL
MS	2007	Mechanical Engineering	Stanford University, Stanford, CA
PhD	2013	Mechanical Engineering	Stanford University, Stanford, CA
Postdoc	2015	Materials Engineering	University of Illinois, Urbana, IL

[*] *MS/PhD Advisor: Professor Xiaolin Zheng at Stanford University*
[**] *Postdoc Advisor: Professor John A. Rogers at University of Illinois (Now at Northwestern University)*

CHRONOLOGICAL RECORD OF POSITIONS AT PURDUE UNIVERSITY

Assistant Professor	Aug. 2015 – July 2021
Leslie A. Geddes Assistant Professor	Dec. 2020 – July 2021
Leslie A. Geddes Associate Professor	Aug. 2021 – July 2024
Leslie A. Geddes Professor	Aug. 2024 – Present
University Faculty Scholar	Aug. 2025 – Present

OTHER AFFILIATIONS AT PURDUE UNIVERSITY

Faculty of Center for Implantable Bioelectronics (CID)	Aug. 2015 – Present
Faculty of Center for Scalable Manufacturing	Aug. 2015 – Present
Faculty of Birck Nanotechnology Center (BNC)	Aug. 2015 – Present
Faculty of Mi-Bio Center	Jun. 2018 – Present
Faculty of Interdisciplinary Biomedical Sciences Program (IBSC)	Dec. 2019 – Present
Faculty of Inflammation, Immunology and Infectious Disease Center (PI4D)	May 2020 – Present
Faculty of Wear-X	Dec. 2020 – Present
Faculty of Center of Operation and Research for Industry Advancement (CORIA)	Aug. 2024 – Present
Faculty of Manufacturing and Materials Research Laboratories (MMRL)	Apr. 2025 – Present
Faculty of Women's Global Health Institute (WGHI)	Nov. 2025 – Present

CO-FOUNDER & ENTREPRENEURIAL ACTIVITIES

Scientific Advisor of Omniply Technologies, Inc. (Flexible Electronics)	Sep. 2018 – Present

Chief Technical Officer of Rescue Biomedical, LLC. (Opioid Overdose Care) Aug. 2019 – Present
Chief Scientific Officer of BVS Sight, Inc. (Glaucoma Care) Dec. 2022 – Present
Chief Technical Officer of Curasis, LLC. (Dysphagia Care) Dec. 2018 – Oct. 2021 (Dissolved)

OTHER PROFESSIONAL APPOINTMENTS

Guest Editor of IEEE Transactions on Nanotechnology (TNANO) Sep. 2017 – Sep. 2018
Visiting Professor at Los Alamos National Laboratory, Los Alamos, NM Apr. 2018 – May 2018
Visiting Professor of Chemical Engineering at Korea University, Seoul, Korea July 2018 – Dec. 2018
Visiting Professor of Mechanical Engineering at Hanyang University, Seoul, Korea Jan. 2021 – Dec. 2023
Editorial Board Member of Biomedical Sensors Section, Sensors Sep. 2019 – Present
Adjunct Professor of Optometry at Indiana University, Bloomington, IN Apr. 2020 – Present
Industry Advisory Board (IAB) Professor at Hanyang University, Seoul, Korea Oct. 2021 – Present
Adjunct Professor of Mechanical Engineering at Hanyang University, Seoul, Korea Jan. 2024 – Present
Advisory Board Member of NPG Asia Materials by Springer-Nature Feb. 2024 – Present

AREAS OF EXPERT KNOWLEDGE

Wearable Healthcare Technologies | Tele-Medicine | Functional Soft Biomaterials | Stretchable Bioelectronics | Drug Delivery Systems | Microfabrication

LICENSE

Licensed Professional Engineer, Illinois Society of Professional Engineer, USA

MILITARY SERVICE

Republic of Korea Marine Corps (ROKMC), Sergeant Discharged from the 6th Marine Brigade, Baek-Ryeong Island (Northern Limit Line of West Coast), South Korea, Apr. 2001 – Jun. 2003

HONORS & AWARDS

2006 Tau Beta Pi, Engineering Honor Society
2013 Graduate Student Silver Award, Materials Research Society (MRS)
2013 Selected Research for FY 2012-13, Stanford University
2013 Top Innovation Award, Technology Connect World National Innovation Summit
2014 Best Talk Award, Postdoctoral Research Symposium, Beckman Institute
2017 Faculty Award of Excellence, Preeminent Team Award, Purdue University
2017 Faculty Summer Grant Award, Purdue University
2018 Ralph W. and Grace M. Showalter Research Trust Award
2018 Hanwha Advanced Materials Non-Tenure Faculty Award, Hanhwa Corp., South Korea
2018 Seed for Success Acorn Award (Multimillion Funding in FY2017-18), Purdue University
2018 Outstanding Engineering Teacher, Purdue University, Fall Semester
2018 Purdue Engineering Faculty Conversation Research Award in Healthcare/Medicine
2018 Highlighted Research Group for the Year of 2018, Purdue University
2018 Selected for the Top 100 Science Spinoffs (Representing 2% Out of 8,000 Global Sciences)
2019 National Institutes of Health (NIH) Trailblazer Award for New and Early Stage Investigators
2019 Korean-American Scientists and Engineers Association (KSEA) Young Investigator Award
2019 Ajouin Outstanding Professional Award, Ajou University, South Korea
2019 Trask Innovation Fund Award, Purdue Office of Technology Commercialization (OTC)
2020 Faculty Award of Excellence for Early Career Research, Purdue University
2020 University Named Professorship, Leslie A. Geddes Endowment, Purdue University
2020 Consumer Electronic Show (CES) Eureka Park Climate Change Innovator Award
2020 Focus Award (For Dedication to Disability Accessibility and Diversity), Purdue University
2020 Named One of the Most Impactful Faculty Inventors in FY2019-20, Purdue University and OTC

2020 Ajou Leaders Honor Club Award, Ajou University, South Korea
2020 Won a Start a SUD Startup Challenge, NIH National Institute of Drug Abuse (NIDA)
2020 Vebleo Scientist Award, Materials Science, Engineering and Technology
2021 Outstanding Engineering Teacher, Purdue University, Fall Semester
2021 Sensors Young Investigator Award, Sensors
2021 Editor's Award, Journal of Speech, Language, and Hearing Research, ASHA Journal Academy
2021 Ross-Lynn Summer Grant Award, Purdue University
2021 Top 1% of Scholars and Experts in Printing Area, Expertscape PubMed
2022 Selected for the Editors' Highlights in Nature Communications – 50 Best Recent Papers in Area
2023 Named Most Impactful Faculty Inventor in FY2023 (Issued, Non-US Patents), Purdue University
2023 Named Most Impactful Faculty Inventor in FY2023 (New Faculty Startups), Purdue University
2023 Named Most Impactful Faculty Inventor in FY2023 (New License Signed), Purdue University
2023 Best Reviewer Award, International Journal of Extreme Manufacturing, IOP Science
2024 Seed for Success Acorn Award (Multimillion Funding in FY2023-24), Purdue University
2025 Inducted as a Fellow of the American Institute for Medical and Biological Engineering (AIMBE)
2025 College of Engineering Faculty Excellence Award for Research, Purdue University
2025 Selected for a University Faculty Scholar, Purdue University
2025 Seed for Success Acorn Award (Multimillion Funding in FY2024-25), Purdue University
2025 Named One of the Most Impactful Faculty Inventors in FY2024-25, Purdue University and OTC

ONGOING RESEARCH GRANTS (TOTALING ~$22.2M)

NIH NEI R01 (PI; 2021–26) | NIH NEI R01 (PI; 2024–29) | Global Industrial Technology Cooperation Center (GITCC) R&D Funding (PI; 2024–28) | Northwestern University Medicine Seed Grant (PI; 2024–25) | NIH NIDA SBIR (PI; 2025–28) | NIH NIBIB (Co-I; 2024–27) | NIH NIDA SBIR (Co-I; 2022–27) | Korea Institute of Industrial Technology (KITECH) (Co-I; 2024–25) | Korea Institute for Advancement of Technology (KIAT) Center Grant (Co-I; 2024–29) | VCS Faculty Pilot Research Fund (Co-I; 2024–25) | BrainLink Program with KIST (Co-PI; 2025–27)

COMPLETED RESEARCH GRANTS (TOTALING ~$27M)

AFOSR (PI; 2016–17) | AFOSR (PI; 2018–21) | AFRL (PI; 2017–18) | Eli Lilly and Company (PI; 2016–17) | Jackson Laboratory (PI; 2016–17) | Jackson Laboratory (PI; 2017–18) | Showalter Research Trust (PI; 2018–19) | Hanwha Advanced Materials (PI; 2018–19) | Korean–American Scientists and Engineers Association (KSEA) (PI; 2019–20) | Purdue SMART Printing Film (PI; 2016–17) | Eli Lilly and Company (Co-I; 2018–22) | AFOSR DURIP (Co-I; Equipment Award; 2021) | Purdue Engineering Faculty Conversation in Healthcare/Medicine (Co-PI; 2018–19) | Purdue CRS Conference Competition Winner (Co-PI; 2019–20) | Purdue Laboratory & University Core Facility Research Equipment Program (Co-PI; 2020) | Purdue Semester Abroad in Intercultural Learning Exploratory Grant (Co-PI; 2021) | Purdue Research Foundation Trask Innovation Fund (Co-PI; 2019–20) | Purdue SMART Printing Film (Co-PI; 2019–21) | Advanced Detection Technologies (Co-PI; 2020–21) | Study Away Intercultural Learning (SAIL) Grant (Summer 2022) | NIH NIBIB Trailblazer Grant (PI; 2019–22) | NSF CMMI (PI; 2019–22) | LANL CINT User Grant (Co-PI; 2022–23) | Study Away Intercultural Learning (SAIL) Grant (Spring 2023) | Eli Lilly and Company (Co-I; 2022–23) | AFRL/UES (PI; 2018–23) | NSF CBET (PI; 2021–24)

TEACHING AT PURDUE

Spr. 2016	BME 495: Soft Bioelectronics (Developed)	Enrollment: 8	Evaluation: 4.9/5.0
Fall 2016	BME 305–01: Bioinst. Circ. & Meas. Princ.	Enrollment: 17	Evaluation: 4.7/5.0
Fall 2016	BME 305–02: Bioinst. Circ. & Meas. Princ.	Enrollment: 22	Evaluation: 4.7/5.0
Fall 2016	BME 305–03: Bioinst. Circ. & Meas. Princ.	Enrollment: 22	Evaluation: 4.6/5.0
Fall 2016	BME 305–04: Bioinst. Circ. & Meas. Princ.	Enrollment: 22	Evaluation: 4.7/5.0

Spr. 2017	BME 395: Prof. Dev. & Des. in BME	Enrollment: 78	Evaluation: 3.8/5.0
Fall 2017	BME 489: Senior Design Project Lab	Enrollment: 35	Evaluation: 3.7/5.0
Fall 2017	BME 490: Professional Element of Design	Enrollment: 75	Evaluation: 3.3/5.0
Fall 2017	BME 695: Inst. For Meas. (Team Teaching)	Enrollment: 7	Evaluation: 3.7/5.0
Fall 2018	ME 597/BME 581/ECE 526: BioMEMS	Enrollment: 22	Evaluation: 4.6/5.0
Spr. 2019	ME 263–104: Intro. ME Design, Inn., Entrep.	Enrollment: 24	Evaluation: 4.0/5.0
Spr. 2019	ME 263–109: Intro. ME Design, Inn., Entrep.	Enrollment: 15	Evaluation: 3.7/5.0
Spr. 2020	ME 597/BME 581/ECE 526: BioMEMS	Enrollment: 15	Evaluation: 4.8/5.0
Spr. 2020	ME 597/BME 581/ECE 526: BioMEMS (Online)	Enrollment: 8	Evaluation: 4.8/5.0
Fall 2020	BME 489: Senior Design Project Lab	Enrollment: 22	Evaluation: 4.5/5.0
Spr. 2021	BME 495: Soft Bioelectronics (Developed)	Enrollment: 17	Evaluation: 4.3/5.0
Fall 2021	BME 489: Senior Design Project Lab	Enrollment: 32	Evaluation: 4.5/5.0
Spr. 2022	ME 597/BME 581/ECE 526: BioMEMS	Enrollment: 16	Evaluation: 4.8/5.0
Spr. 2022	ME 597/BME 581/ECE 526: BioMEMS (Online)	Enrollment: 6	Evaluation: 4.5/5.0
Fall 2022	BME 489: Senior Design Project Lab	Enrollment: 38	Evaluation: 4.4/5.0
Spr. 2023	ME 597/BME 581/ECE 526: BioMEMS	Enrollment: 40	Evaluation: 4.9/5.0
Spr. 2023	ME 597/BME 581/ECE 526: BioMEMS (Online)	Enrollment: 11	Evaluation: 4.7/5.0
Fall 2023	BME 489: Senior Design Project Lab	Enrollment: 38	Evaluation: 4.4/5.0
Spr. 2024	ME 597/BME 581/ECE 526: BioMEMS	Enrollment: 58	Evaluation: 4.9/5.0
Spr. 2024	ME 597/BME 581/ECE 526: BioMEMS (Online)	Enrollment: 13	Evaluation: 4.9/5.0
Fall 2024	BME 489: Senior Design Project Lab	Enrollment: 41	Evaluation: 4.5/5.0
Spr. 2025	ME 597/BME 581/ECE 526: BioMEMS	Enrollment: 94	Evaluation: 4.8/5.0
Spr. 2025	ME 597/BME 581/ECE 526: BioMEMS (Online)	Enrollment: 7	Evaluation: 4.6/5.0
Fall 2025	BME 489: Senior Design Project Lab	Enrollment: 32	Evaluation: 4.6/5.0
Spr. 2026	ME 597/BME 581/ECE 526: BioMEMS	Enrollment: 35	Evaluation: TBD
Spr. 2026	ME 597/BME 581/ECE 526: BioMEMS (Online)	Enrollment: 17	Evaluation: TBD

TEACHING ABROAD

Sum. 2018, CBE 613: Electrochemical Engineering, Korea University, South Korea
Win. 2020, ME 6017: Flexible Mechanoelectronics, Hanyang University, South Korea
Sum. 2021, ME 6017: Advanced Manufacturing, Hanyang University, South Korea
Sum. 2022, ME 6017: Biomechanical Devices, Hanyang University, South Korea
Spr. 2023, BME 495: Study Abroad to South Korea, Purdue University
Sum. 2023, ME 6017: Biomedical Devices for Human Healthcare, Hanyang University, South Korea
Sum. 2023, ME 6017: AI in Biomedical Applications, Hanyang University, South Korea

INTERNATIONAL ENGAGEMENT & EDUCATION

1. Co-developed and led a Dual MS Degree Program in the Weldon School of Biomedical Engineering at Purdue University with Hanyang University in South Korea, 2022 – Present
2. Co-developed and led a Dual MS Degree Program in the School of Mechanical Engineering at Purdue University with Hanyang University in South Korea, 2022 – Present
3. Co-led a Study Abroad Program to bring a total of 12 undergraduate students to Seoul in South Korea, hosted by Hanyang University, for cultural experience and learning, Spring 2023
4. Co-led a Study Abroad Program to bring undergraduate students to Suwon in South Korea, hosted by Ajou University, for cultural experience and learning, May 2024

JUNIOR FACULTY MENTORING

Professor Matthew P. Ward in the Weldon School of Biomedical Engineering at Purdue (2022–)

CURRENT GROUP MEMBERS

Yumin Dai (PhD MSE; 2021–)
Tianhao Yu (PhD ME; 2021–)
Jinheon Jeong (PhD BME; 2023–)
Weiyi Zhang (PhD BME; 2025–)
Seungkyu Lee (Postdoc BME; 2025–)
Taewoong Park (PhD BME; 2021–)
Ziheng Wang (PhD ME; 2022–)
Feiyang Li (PhD BME; 2024–)
Hyeonseo Joo (Postdoc BME; 2024–)

FORMER GROUP MEMBERS | CURRENT POSITIONS

Dae Seung Wie (MS ME; 2015–17) | Research Scientist at Samsung Electronics
Min Ku Kim (MS ME & PhD BME; 2015–21) | Assistant Professor at Hanyang University
Musbiha Wali (MS BME; 2016–18) | TD Device Design Engineer at Intel
Hyungjun Kim (Postdoc; 2016–19) | Assistant Professor at Kumoh National Institute of Technology
Kaiming Fu (MS BME; 2017–18) | PhD Candidate at UC Davis
Bongjoong Kim (PhD ME; 2017–21) | Assistant Professor at Hongik University
Eun Kwang Lee (Postdoc; 2018–19) | Assistant Professor at Pukyong National University
Linus Park (PhD ME; 2018–23) | Research Staff at Lam Research
Kyunghun Kim (Postdoc; 2019–20) | Research Scientist at Samsung SAIT
Heun Park (Postdoc; 2019–20; NRF Fellow Program) | Research Scientist at LG Innotek
Taehoo Chang (PhD MSE; 2019–23) | Assistant Professor at Incheon National University
Seul Ah Lee (PhD BME; 2020–23) | Research Staff at Intel
Hanmin Jang (Postdoc; 2020–21) | Research Scientist at Samsung Electronics Semiconductor R&D
Sena Hur (Lab Staff; 2020–21) | Health Administration Program at University of Illinois at Chicago
Jinyuan Zhang (Postdoc; 2020–22) | Health Technologies R&D Engineer at Apple
Byeong Guk Jeong (Postdoc; 2021–22) | Assistant Professor at Busan National University
Seungse Cho (Postdoc; 2021–23) | Research Staff at Samsung Electronics
Jehwan Hwang (Postdoc; 2021–23) | Research Staff at Korea Photonics Technology Institute
Youngoh Lee (Postdoc; 2022–23) | Research Staff at Samsung Display
Junsang Lee (Postdoc; 2022–25) | Research Staff at Samsung Electronics in San Jose, CA
Seokkyoon Hong (PhD BME; 2020–25) | Postdoctoral Researcher at Purdue University

UNDERGRADUATE STUDENT MENTORING

Yueming Liu (BS ME, 2015–16)
Sriram Boppana (BS BME, 2016–17)
Ryan Matthew Preston (BS BME, 2016–17)
Adam Rubinchik (2020 Summer Scholarship)
Joseph Bang (BS Bio, 2022–23)
Sunland Gong (MD IU, 2022–23)
Deniz Eksioglu (BS BME, 2024–)
Kai Boyer (BS ME, 2025–)
Shichen Xu (BS ME, 2015–16)
Ryan Matthew Preston (BS BME, SURF 2016–17)
Soo Han Soon (BS BME, 2018–19)
Noah Mehringer (BS BME, 2021–22)
Kaitlyn Christensen (BS BME, 2022–23)
Cristian Marcos Barinaga (BS ECE, 2024–)
Patricia Hung (BS BME, 2025–)

INTERNATIONAL STUDENTS MENTORING OR CO-ADVISING

Hanmin Jang at Hanyang University, Korea (PhD ME | 2016–20) | Now at Samsung Electronics
Heungsoo Lee at Hanyang University, Korea (PhD ME | 2017–18) | Now at KAERI
Yale Jeon at Hanyang University, Korea (PhD ME | 2018–20) | Now at Hyundai Motors
Jonghun Yi at Hanyang University, Korea (PhD ME | 2020–21) | Now at Hanyang University
Sunland Gong (Indiana University Medicine; 2021–23) | MD Candidate at Indiana University Medicine
Angelique Niyonagize at the University of Rwanda, Rwanda (MS BME | 2022–23)
Dieudonne Munana at the University of Rwanda, Rwanda (MS BME | 2022–23)
Esteban T. Jaramillo at the Universidad de Calda, Colombia (Externship | 2023–24)
Hayoung Jeong at Daegu Gyeongbuk Institute of Science and Technology, Korea (Externship | 2023–24)
Sunghwan Cho at Hanyang University, Korea (Dual MS Program | 2023–25)

LOCAL HIGHSCHOOL STUDENT MENTORING

Joshua Kim (West Lafayette Highschool, Sum 2022 & 2023) – Admitted to Northwestern University
Katie Won (West Lafayette Highschool, Sum 2024)

GROUP VISITING SCHOLARS

1. Dong Rip Kim, Professor of Mechanical Engineering at Hanyang University in South Korea, June 2017 & July 2018 & Oct. 2019 & Jan. 2024
2. Taeghwan (Tag) Hyeon, Distinguished Professor of Seoul National University and the Director of Institute for Basic Science (IBS) Nanoparticle Research in South Korea, Aug.−Oct. 2021 & May−June 2022
3. Kyu-Tae Lee, Professor of Physics at Inha University in South Korea, Jan. 2024−Jan. 2025
4. Jeonghyun Kim, Professor of Electronic Convergence Engineering at Kwangwoon University in South Korea, Jan. 2024−Jan. 2025
5. Seokwon Kang, Professor of Automotive Engineering at Yeungnam University in South Korea, Sep. 2024−Oct. 2025
6. Cheol Woo Ha, Senior Researcher at the Korea Additive Manufacturing Innovation Center, Korea Institute of Industrial Technology (KITECH) in South Korea, Oct. 2024−Nov. 2025
7. Ki Hun Kim, Senior Researcher at the Korea Institute of Science and Technology (KIST) in South Korea, Sep. 2025−May 2026
8. Gilbert Seo, Senior Research Staff of Cellico, Inc. in South Korea, July−Oct. 2025
9. Insun Cho, Professor of Materials Engineering at Ajou University in South Korea, Aug. 2025−July 2026
10. Yeon Ji Oh, Research Staff of Cellico, Inc. in South Korea, Oct. 2025−Aug. 2026

MENTEE AWARDS

2020 Geddes-Laufman-Greatbatch Outstanding Research Award, Min Ku Kim (PhD BME)
2020 Bottorff Graduate Fellowship Award, Linus Park (PhD ME)
2020 Materials Research Society (MRS) Best Oral Presentation Award, Min Ku Kim (PhD BME)
2020 Purdue University Focus Award, Min Ku Kim (PhD BME)
2020 Purdue University Focus Award, Bongjoong Kim (PhD ME)
2020 Purdue University Focus Award, Yeonsoo Park (MS ME)
2021 US KSEA-KUSCO Graduate Student Scholarship, Bongjoong Kim (PhD ME)
2021 Purdue Engineering Ross Fellowship Award, Hyunjin Lee, (PhD BME)
2021 Purdue Engineering Graduate Student Research Award, Bongjoong Kim (PhD ME)
2021 Purdue Engineering Graduate Student Research Award, Min Ku Kim (PhD BME)
2021 Indiana University Medical School Scholarship (IMPRS), Sunland Gong (IU Medicine)
2021 Korea NRF Global Frontier Scholarship, Byeong Guk Jeong (Postdoc BME)
2021 US Navy Armed Forces Health Professions Scholarship, Preston Tsang (UR BME)
2021 Editor's Award, Journal of Speech, Language, and Hearing Research, Min Ku Kim (PhD BME)
2021 Editor's Award, Journal of Speech, Language, and Hearing Research, Tae Hoo Chang (PhD MSE)
2021 Bottorff Graduate Fellowship Award, Seokkyoon Hong (PhD BME)
2021 Asan Graduate Scholarship, Hyunjin Lee (PhD BME)
2021 Art of Research Exhibit Best Microscopy Award, Hyunjin Lee (PhD BME)
2021 Art of Research Exhibit Best Microscopy Award, Linus Park (PhD ME)
2021 Moonshot Pitch Competition, Khanh Vy Hong Le (Purdue BME; CEO of Rescue Biomedical)
2021 Purdue Undergraduate Research Scholarship, Noah J Mehringer (UR BME)
2022 Purdue CoE Graduate Conference Travel Grant Award, Linus Park (PhD ME)
2022 IBSC Inaugural Symposium Award, Seul Ah Lee (PhD IBSC)
2022 Best Abstract Award in Purdue Undergrad Research Conference, Noah Mehringer (UR BME)

2022 Best Poster Awards, MRS Spring Meeting, Tae Hoo Chang (PhD MSE)
2022 Korea NRF Global Frontier Scholarship, Junsang Lee (Postdoc BME)
2023 A. H. Ismail Interdisciplinary Doctoral Research Travel Grant Award, Seul Ah Lee (PhD BME)
2023 Asan Graduate Scholarship, Linus Park (PhD ME)
2023 Ronald W. Dollens Graduate Scholarship in Life Sciences, Seokkyoon Hong (PhD BME)
2023 1st Place Winner at the DEBUT Challenge by NIH NIBIB, Senior Design Team (UG BME)
2024 Purdue CoE Recognition Award, Seokkyoon Hong (PhD BME)
2024 Asan Graduate Scholarship, Taewoong Park (PhD BME)
2024 Purdue Outstanding Graduate Research Award, Seokkyoon Hong (PhD BME)
2024 Korea NRF Global Frontier Scholarship, Hyeonseo Joo (Postdoc BME)
2024 Ronald W. Dollens Graduate Scholarship in Life Sciences, Taewoong Park (PhD BME)
2025 Asan Graduate Scholarship, Seokkyoon Hong (PhD BME)
2025 Purdue Engineering Ross Fellowship Award, Kyeonghee Lim (PhD MSE)
2025 Barry Goldwater Scholarship, Deniz Eksioglu (UG BME)
2025 US KSEA-KUSCO Graduate Scholarship, Seokkyoon Hong (PhD BME)
2025 Bottorff Graduate Fellowship Award, Feiyang Li (PhD BME)
2025 UKC Conference Travel Grant Award, Taewoong Park (PhD BME)
2025 Collegiate Inventors Competition Finalist, Senior Design Team (UG BME)
2025 Purdue College of Engineering Conference Travel Grant Award, Taewoong Park (PhD BME)
2025 Purdue School of Mechanical Engineering Student Award, Ziheng Wang (PhD ME)
2025 Purdue Women's Global Health Institute Travel Grant Award, Ziheng Wang (PhD ME)
2025 Purdue BME Senior Design Expo – 1st Place Award, FlowBra Team (UG BME)
2025 Purdue BME Senior Design Expo – Best Aesthetic Design Award, Pill Dispenser Team (UG BME)
2026 Asan Graduate Scholarship, Kyeonghee Lim (PhD MSE)

THESIS COMMITTEES SERVED

Dae Seung Wie (MS ME, Graduated on May 2018) | Musbiha Wali (MS BME, Graduated on May 2018) | Jesse Somann (PhD BME, Graduated on Aug. 2018) | Kaiming Fu (MS ME, Graduate on May 2019) | Rachael Swenson (MS BME, Graduated on May 2019) | Lingbin Meng (PhD BME, Graduated on May 2019) | Cagla Kantarcigil (PhD SLHS, Graduated on May 2019) | Spencer Bunn (MS BME, Graduated on Aug. 2019) | Arvin Soepriatna (PhD BME, Graduated on Dec. 2019) | Hyunsu Park (PhD BME, Graduated on May 2020) | Behanam Sadri (PhD IE, Graduated on Oct. 2020) | Bongjoong Kim (PhD ME, Graduated on May 2021) | Min Ku Kim (PhD BME, Graduated on May 2021) | Ranajay Mandal (PhD BME, Graduated on Feb 2021) | Mandira Marambe (MS BME, Graduated on Aug. 2021) | Hojoong Roy Kim (PhD ChemE, Graduated on Dec. 2022) | Semih Akin (PhD ME, Graduated on Dec. 2022) | Linus Park (PhD ME, Graduated on May 2023) | Taehoo Chang (PhD MSE, Graduated on May 2023) | Angel Enriquez (PhD BME, Graduated on May 2023) | Jongcheon Lim (PhD BME, Graduated on Aug. 2023) | Jim Nolan (PhD BME, Graduated on Aug. 2023) | Hyun Jung Min (PhD ME, Graduated on Dec 2023) | Ya-Chiang Yu (PhD MSE, Graduated on May 2025) | Theodore Gabor (PhD ME, Expected on Aug. 2025) | Jaeyoung Park (PhD BME, Graduated on Aug. 2025) | Seokkyoon Hong (PhD BME, Graduated on Aug. 2025) | Gabriel Aguirre Cruz (PhD MSE, Expected on May 2026) | Ke Chen (PhD Chem, Expected on May 2026) | Shengjie Gao (PhD MSE, Expected on May 2026) | Nolan Kirby Nolan III (PhD BME, Expected on May 2026) | Qian Qian (PhD ME, Expected on May 2026) | Liyuan Tan (PhD ME, Expected on May 2026) | Vineet Mohanty (PhD ME, Expected on May 2026) | Jue Wang (PhD ME, Expected on May 2026) | Abbey Koneru (PhD MSE, Expected on May 2026) | Juan Camilo Mesa Agudelo (PhD BME, Expected on May 2026) | Talha Ibn Mahmud (PhD ECE, Expected on May 2026) | Antonio Alvarez Valdivia (PhD ME, Expected on May 2026) | Yashwanth Ramesh (PhD MSE, Expected on May 2026) | Sergio Ruiz Vega (PhD BME, Expected on May 2026) | Julia Walsh (PhD BME, Expected on May 2027) | Ankit Shah (PhD BME, Expected on May 2027) | Zhijian Wang (PhD MSE, Expected on May 2028)

EXTERNAL THESIS COMMITTEES SERVED

Hanmin Jang (PhD ME, Hanyang University, Graduated on Feb. 2019) | Heung Soo Lee (PhD ME, Hanyang University, Graduated on Feb. 2020) | Yale Jeon (PhD ME, Hanyang University, Graduated on Aug. 2021) | Jonghun Yi (PhD ME, Hanyang University, Graduated on Aug. 2022) | Junsung Bang (PhD, MSE, Korea University, Graduated on Aug. 2023)

ISSUED PATENTS

1. C. H. Lee, D. Kim, X. Zheng, Environmentally-assisted technique for transferring devices onto non-conventional substrates, US 8,815,707 & US 9,337,169 – Optioned to Tandem Launch Ventures
2. C. H. Lee, J. A. Rogers, L. Yin, X. Huang, C. Leal, D. Harburg, Materials, electronic systems and modes for active and passive transience, US 10,154,592 & JP 6,561,368 & USP 2,984,912 & HK 1221597 – Available for License
3. C. H. Lee, Novel technique for therapeutic contact lens systems, US 12,145,336 (67323) – Optioned to Boomerang Ventures
4. C. H. Lee, Three-dimensional electronic devices and methods of producing the same, US 12,372,812 – Available for License
5. C. H. Lee, M. Kim, Humanlike smart electronic gloves for prosthetic and robotic controls, US 11,000,082 (67752) – Available for License
6. C. H. Lee, B. Kim, Z. Ku, A. Urbas, Nanoassembly methods for producing quasi-three-dimensional nanoarrays, US 11,518,675 (68567) – Available for License
7. C. H. Lee, Y. Yeo, D. Kim, Drug delivery devices and methods of fabrication and use therefor, US 11,793,982 (68893) – Available for License
8. C. H. Lee, Systems and methods for monitoring behavior of cells and/or tissues in culturing media, US 11,946,027 (68615) – Available for License
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66. J. Bang, J. Ahn, J. Zhang, T. Ko, B. Park, Y. Lee, B. Jung, S. Lee, J. Ok, B. Kim, T. Kim, J. Choi, **C. H. Lee***, S. Oh*, Stretchable and directly patternable double-layer structure electrodes with complete coverage, *ACS Nano,* 16, 8, 12134 (2022)
67. Y. Hwang*, M. Kim*, Z. Ze, B. Kim, T. Chang, T. Fan, M. Ibrahim, J. Song, S. Suresh*, **C. H. Lee***, N. Cho*, Plant-based substrate materials for flexible green electronics, *Advanced Materials Technologies,* 7, 12, 2200446 (2022)
68. W. Cho, J. Hwang, S. Lee, J. Park, N. Han, **C. H. Lee**, S. Kang, A. Urbas, J. Kim, Z. Ku, and J. Wie, Highly sensitive and cost-effective polymeric sulfur based mid-wavelength infrared linear polarizers with tailored Fabry-Pérot resonance, *Advanced Materials,* 35, 7, 2209377 (2022)
69. S. Li, Y. Zhu, R. Haghniaz, S. Kawakita, S. Guan, J. Chen, K. Mandal, J. Guo, H. Kang, W. Sun, H. Kim, V. Jucaud, M. Dokmeci, P. Kollbaum, **C. H. Lee**, A. Khademhosseini, A microchambers containing contact lens for the non-invasive detection of tear exosomes, *Advanced Functional Materials,* 35, 44, 2206620 (2022)
70. V. Nguyen, J. Zhe, U. Ahmed, J. Hu, **C. H. Lee***, Y. Paulus*, Advanced nanopharmacotherapies for ocular diseases, *American Pharmaceutical Review*, 8, 5, 1294 (2023)
71. T. Chang*, S. Akin*, S. Cho, J. Lee, S. Lee, T. Park, S. Hong, T. Yu, Y. Ji, J. Yi, S. Gong, D. Kim, Y. Kim, M. Jun*, **C. H. Lee***, In-situ spray polymerization of conductive polymers for customized e-textiles, *ACS Nano*, 17, 22, 22733 (2023)
72. L. Park*, E. Kim*, Y. Jeon*, J. Yi, B. Kim, D. Kim*, H. Kong*, **C. H. Lee***, Transparent intracellular sensing platform with nanowires for real-time live imaging, *ACS Nano*, 17, 24, 25014 (2023)
73. Y. Dai*, J. Nolan*, E. Madsen*, M. Fratus*, J. Lee, J. Zhang, J. Lim, S. Hong, M. Alam*, J. Linnes*, H. Lee*, **C. H. Lee***, Wearable sensor patch with hydrogel microneedles for in-situ analysis of interstitial fluid, *Applied Materials & Interfaces*, 15, 49, 56760 (2023) – Journal Cover Feature
74. S. Hong, T. Park, J. Lee, Y. Ji, J. Kim, D. Kim, **C. H. Lee**, Tough conductive organohydrogel for wearable sensing in challenging environmental conditions, *Advanced Materials Technologies*, 9, 2, 2301398 (2023)
75. M. Fratus, J. Lim, J. Nolan, E. Madsen, Y. Dai, **C. H. Lee**, J. Linnes, H. Lee, M. Alam, Geometry-defined response time and sensitivity for microneedle-based amperometric sensors, *IEEE Sensors*, 23, 13, 14285-14294 (2023)
76. M. Döllinger, B. Jakuba, H. Cheng, S. Carter, S. Kniesburges, **C. H. Lee**, B. Aidoo, R. Patel, Computational fluid dynamics of upper airway aerodynamics for exercise-induced laryngeal obstruction, Laryngoscope Investigative Otolaryngology, 8, 5, 1294-1303 (2023)

77. S. Cho*, T. Chang*, T. Yu, S. Gong, **C. H. Lee**, Multicolor electroluminescent threads for machine embroidery of light-emitting textiles, *Science Advances*, 10, eadk4295 (2024)
78. J. Hwang*, Y. Zhang*, B. Kim*, J. Jeong, J. Yi, D. Kim, Y. Kim, A. Urbas, G. Ariyawansa, B. Xu*, Z. Ku*, **C. H. Lee***, Wafer-scale replication of plasmonic nanostructures via microbubbles for nanophotonics, *Advanced Science*, 11, 40, 2404870 (2024)
79. S. Hong, T. Park, J. Lee, Y. Ji, J. Walsh, H. Lee, Y. Kim, D. Kim, **C. H. Lee**, Rapid self-healing hydrogel with ultralow electrical hysteresis for wearable sensing, *ACS Sensors*, 9,2, 662 (2024)
80. T. Park*, T. Mahmud*, J. Lee, S. Hong, J. Park, Y. Ji, T. Chang, J. Yi, M. Kim, D. Kim, Y. Kim, H. Lee, F. Zhu*, **C. H. Lee***, A machine learning-enabled smart neckband for monitoring dietary intake, *Proceedings of the National Academy of Sciences (PNAS) Nexus*, 3, 5, 156 (2024)
81. J. Mesa, M. MacLean, M. MS, A. Nguyen, R. Patel, T. Diemer, J. Lim, **C. H. Lee**, H. Lee, A wearable device towards automatic detection and treatment of opioid overdose, *IEEE Transactions on Biomedical Circuits and Systems*, 18, 2, 396 (2024) – Selected by NIH NIDA as the Technology Development Initiative – Paper of the Month for August 2024
82. S. Hong*, H. Zhang*, J. Lee*, T. Yu, S. Cho, T. Park, J. Walsh, B. Jeong, J. Kim, H. Lee, D. Kim*, B. Xu*, **C. H. Lee***, Spongy Ag foam for wearable strain gauges, *ACS Applied Materials & Interfaces*, 16, 20, 26613 (2024)
83. S. Hong*, T. Yu*, Z. Wang*, **C. H. Lee**, Biomaterials for reliable wearable health monitoring, *Biomaterials*, 314, 122862 (2024)
84. S. Akin*, T. Chang*, Y. Kim, S. Xu, J. Lim, C. Nath, J. Tsai, J. Lee, H. Lee, W. Wu, **C. H. Lee***, M. Jun*, One-step manufacturing of functionalized electrodes on 3-D printed polymers for triboelectric nanogenerators, *Nano Energy*, 129, 110082 (2024)
85. J. Xu, M. Fratus, J. Nolan, J. Lim, **C. H. Lee**, M. Alam, H. Lee, Impact of microelectrode geometry and surface finish on enzymatic biosensor performance, *Electrochimica Acta*, 509, 145270 (2024)
86. T. Park*, J. Leem*, Y. Kim*, and **C. H. Lee***, Photonic nanomaterials for wearable healthcare solutions, *Advanced Materials*, 2418705 (2025)
87. T. Yu*, A. Cornejo*, T. Park, J. Lee, Z. Wang, S. Duarte, S. Hong, E. Bolívar-Nieto*, **C. H. Lee***, Ultrawide-range wearable pressure sensors for high-load prosthetic interfaces, *ACS Nano*, DOI: 10.1021/acsnano.5c18106 (2025)
88. S. Hong, J. Lee, T. Park, J. Jeong, J. Mesa, C. Alston, Y. Ji, S. Ruiz, C. Barinaga, J. Yi, K. Won, Y. Kim, L. Solorio, H. Lee, D. Kim*, **C. H. Lee***, Spider silk-inspired conductive hydrogels for enhanced toughness and environmental resilience, *Advanced Science*, 2500397 (2025)
89. T. Park, S. Hong, L. Murray, J. Lee, A. Shah, H. Lee, L. Couetil*, **C. H. Lee***, Wearable smart textile band for continuous equine health monitoring, *Biosensors and Bioelectronics*, 292, 118073 (2025)
90. T. Yu*, S. Cho*, J. Lee, Z. Wang, **C. H. Lee**, Direct-write printing of multicolor electroluminescent films for stretchable display, *Advanced Materials Technologies*, 2401925 (2025)
91. Z. Wang*, Y. Ahn*, S. Kwon*, T. Yu, Y. Dai, J. Walsh, J. Lee, S. Park, S. Lee, M. Peerbhai, C. Sen, H. Lee, Y. Kim*, H. Kong*, **C. H. Lee***, Roll-to-roll printing of smart dressings for wound monitoring, *Advanced Healthcare Materials*, 14, e01998 (2025)
92. J. Lee*, J. Jeong*, V. Nguyen*, S. Hong, Y. Paulus*, **C. H. Lee***, Microneedles for controlled and sustained intraocular drug delivery, *NPG Asia Materials*, 17, 33 (2025)
93. Z. Wang, A., Shah, H. Lee*, **C. H. Lee***, Microfluidic technologies for wearable and implantable biomedical devices, *Lab on a Chip*, 25, 4542-4576 (2025)
94. J. Park, J. Lim, C. Russell, P. Chen, D. Eksioglu, S. Hong, M. Ward, **C. H. Lee**, and H. Lee, Hydrogel adhesive integrated-microstructured electrodes for cuff-free, less-invasive, and stable interface for vagus nerve stimulation, *Advanced Healthcare Materials*, 2404189 (2025)
95. M. Jeon*, J. Yi*, S. Hong*, J. Lee*, H. Jang, B. Kim, H. Lee, **C. H. Lee***, D. Kim*, Self-adhesive

and dry epidermal electrodes with subsurface pores for long-term electrophysiological recording, *Small*, e07416 (2025)

96. V. P. Nguyen, J, Jeong, M. Zheng, J. Lee, J. Zhe, Z, Wei, **C. H. Lee**[*], Y. Paulus[*], Long-term diabetic retinopathy treatment using silicon nanoneedles, *Small*, 2410166 (2025)
97. S. Hong, J. Lee, T. Park, J. Jeong, H. Joo, J. Mesa, C. Alston, Y. Ji, J. Yi, Y. Lee, K. Won, L. Solorio, Y. Kim, H. Lee, D. Kim[*], **C. H. Lee**[*], Enhanced thermal conductivity in tough and environmentally resilient hydrogels, *Advanced Materials Interfaces*, e00752 (2025)
98. S. Kang, M. Kim, **C. H. Lee**, H. Kong, Automation of electrothermal cell sheet manipulator for seamless tissue assembly and handling, *Biomedical Microdevices*, 21-27(4):52 (2025)
99. T. Park, **C. H. Lee**[*], Wearables that learn to read gestures on the move, *Nature Sensors*, DOI: 10.1038/s44460-025-00014-y (2026)
100. E. Kim, Y. Ahn, J. Wang, J. Hwang, K. Huang, S. Kim, R. Dar, Y. Kim, H. Shin, **C. H. Lee**[*], H. Kong[*], Matrix-guided embryo-like invasion enables 3D heart organoids with atrioventricular synchrony-like contraction, *Biomaterials*, In press (2026)
101. Y. Dai[*], T. Long[*], O. Oladele[*], Y. Lee[*], F. Li, Z. Wang, J. Lee, T. Park, T. Yu, S. Hong, K. Lim, J. Jeong, D. Schneider, H. Ra, H. Jeong, S. Park[*], P. Kollbaum[*], **C. H. Lee**[*], Nocturnal intraocular pressure monitoring using a soft contact lens sensor, Submitted (2026)
102. Z. Wang, S. Kwon, T. Yu, Y. Dai, Y. Kim, **C. H. Lee**, Roll-to-roll printing of colorimetric sensors in sanitary pad for women health monitoring, Submitted (2026)
103. H. Joo[*], T. Yu[*], Y. Dai[*], S. Hong, A. Cornejo, D. Schneider, T. Long, P. Kollbaum, E. Bolívar-Nieto, D. Kim[*], **C. H. Lee**[*], Ion-pair-tuned ionogels for broad-range linear pressure sensing, Submitted (2026)
104. T. Yu[*], A. Cornejo[*], H. Joo, Z. Wang, Y. Dai, E. Bolívar-Nieto[*], **C. H. Lee**[*], Wearable textile sensors for real-time monitoring of multiaxial forces at the prosthetic interface, Submitted (2026)
105. S. Hong[*], T. Park[*], Y. Lee[*], J. Mesa, T. Yu, Y. Ji, J. Lee, J. Jeong, S. Kang, D. Kim, Y. Kim, H. Lee, R. Surowiec[*], L. Santos[*], **C. H. Lee**[*], Smart garment for continuous respiration monitoring in canines, Submitted (2026)
106. Z. Wang[*], S. Park[*], S. Lee[*], D. Meyer[*], Y. Dai, F. Li, T. Yu, O. Oladele, G. Shaw, S. Park, P. Kollbaum[*], Y. Kim[*], **C. H. Lee**[*], Smart scleral lenses for at-home visual monitoring of dry eye disease, Submitted (2026)
107. V. Nguyen, J. Jeong, J. Zhe, M. Zheng, J. Lee, K. Tran, Z. Wei, **C. H. Lee**[*], Y. Paulus[*], Long-term treatment of macular degeneration using silicon nanoneedles, Submitted (2026)
108. Y. Lee[*], S. Hong[*], J. Jeong, **C. H. Lee**[*], R. Surowiec[*], A sensor-to-algorithm framework for respiration monitoring: stretchable strain sensors coupled with machine learning feature optimization, Submitted (2026)

INVITED PUBLICATIONS

1. **C. H. Lee**, Smart assembly for soft bioelectronics, *IEEE Potentials*, 35, 4, 9 (2016)
2. E. Lee, **C. H. Lee**, Skin-mountable flexible needle patch for minimally invasive controlled drug delivery, *OnDrugDelivery*, 97, 22-25 (2019)
3. E. Lee[*], M. Kim[*], **C. H. Lee**, Skin-wearable biosensors and therapeutics: a review, *Annual Review of Biomedical Engineering*, 21, 299-323 (2019)
4. K. Kim[*], B. Kim[*], **C. H. Lee**, Printing flexible and hybrid electronics for human skin and eye-interfaced health monitoring systems, *Advanced Materials*, 32, 1902051 (2020)
5. H. Park[*], W. Park[*], **C. H. Lee**, Electrochemically active materials and wearable biosensors for in-situ analysis of body fluids for human healthcare, *NPG Asia Materials*, 13:23 (2021)
6. J. Zhang[*], J. Lee[*], J. Nolan, H. Lee[*], **C. H. Lee**[*], Wearable and implantable medical devices for diagnosis and therapy of diabetes, *Advanced Healthcare Materials*, 2100194 (2021)
7. W. Park, **C. H. Lee**[*], Controlled buckling for scalable intracellular bioprobes, *Nature Nanotechnology*, 17, 222 (2022)

8. S. Cho*, T. Chang*, T. Yu, **C. H. Lee***, Smart electronic textiles for wearable sensing and display, *Biosensors*, 12, 4, 222 (2022)
9. S. Hong*, T. Yu*, Z. Wang*, **C. H. Lee**, Biomaterials for reliable wearable health monitoring, *Biomaterials*, 314, 122862 (2024)
10. T. Park, J. Leem, Y. Kim*, **C. H. Lee***, Integrating photonic nanomaterials into wearable healthcare devices, *Advanced Materials*, 2418705 (2025)
11. J. Lee*, J. Jeong*, V. Nguyen*, S. Hong, Y. Paulus*, **C. H. Lee***, Microneedles for controlled and sustained intraocular drug delivery, *NPG Asia Materials*, 17, 33 (2025)
12. Z. Wang, A., Shah, H. Lee*, **C. H. Lee***, Microfluidic technologies for wearable and implantable biomedical devices, *Lab on a Chip*, 25, 4542-4576 (2025)
13. T. Park, **C. H. Lee***, Wearables that learn to read gestures on the move, *Nature Sensors*, In press (2025)

INVITED & KEYNOTE LECTURES

1. University of Illinois at Urbana-Champaign (UIUC), Beckman Institute, Champaign, IL, Jan. 2014
2. Korea Advanced Institute of Science and Technology (KAIST), Department of Mechanical Engineering, Daejeon, South Korea, Oct. 2014
3. Korea Institute of Science and Technology (KIST), Seoul, South Korea, Oct. 2014
4. Korea University, Department of Materials Science and Engineering, Seoul, South Korea, Oct. 2014
5. Ulsan National Institute of Science and Technology (UNIST), Department of Chemical Engineering, Ulsan, South Korea, Oct. 2014
6. Korea University, Department of Environmental Engineering, Seoul, South Korea, Oct. 2014
7. Inha University, Department of Mechanical Engineering, Incheon, South Korea, Oct. 2014
8. University of Illinois at Urbana-Champaign (UIUC), Department of Mechanical Engineering, Champaign, IL, Nov. 2014
9. Nanyang Technological University (NTU), Department of Mechanical Engineering, Nanyang, Singapore, Feb. 2015
10. Georgia Institute of Technology, Department of Mechanical Engineering, Atlanta, GA, Feb. 2015
11. Arizona State University, Engineering of Matter, Transport and Energy, Phoenix, AZ, Mar. 2015
12. Purdue University, Birck Nanotechnology Center, West Lafayette, IN, Mar. 2015
13. University of Connecticut, Department of Mechanical Engineering, Storrs, CT, Apr. 2015
14. Purdue University, Department of Biomedical Engineering, West Lafayette, IN, Apr. 2015
15. Seoul National University, Department of Mechanical Engineering, Seoul, South Korea, July 2015
16. Yonsei University, Department of Mechanical Engineering, Seoul, South Korea, July 2015
17. Ajou University, Department of Molecular Science and Technology, Suwon, South Korea, July 2015
18. Electronics and Telecommunications Research Institute (ETRI), Daejeon, South Korea, July 2015
19. Chemical Heritage Foundation (CHF), 12th Annual Innovation Day, Philadelphia, PA, Oct. 2015
20. Purdue University, Department of Electrical Engineering, West Lafayette, IN, Dec. 2015
21. Purdue University, Honors College, West Lafayette, IN, Jan. 2016
22. University of Illinois at Urbana-Champaign (UIUC), Department of Mechanical Engineering, Urbana, IL, Oct. 2016
23. Worcester Polytechnic Institute (WPI), Department of Mechanical Engineering, Worcester, MA, Dec. 2016
24. Northwestern University, Department of Biomedical Engineering, Evanston, IL, Jan. 2017
25. Purdue University, Department of Biomedical Engineering, West Lafayette, IN, Feb. 2017
26. Seoul National University, Department of Chemical Engineering, Seoul, South Korea, July 2017

27. Yonsei University, Department of Materials Sciences and Engineering, Seoul, South Korea, July 2017
28. Korea University, Department of Materials Sciences and Engineering, Seoul, South Korea, July 2017
29. Hanyang University, Institute of Nano Science & Technology, Seoul, South Korea, July 2017
30. Ajou University, Department of Mechanical Engineering, Suwon, South Korea, July 2017
31. Korea Institute of Industrial Technology (KITECH), Songdo, South Korea, July 2017
32. Air Force Research Laboratory (AFRL), Dayton, OH, July 2017
33. Purdue University, Institute for Drug Discovery, West Lafayette, IN, Oct. 2017
34. Purdue University, College of Pharmacy, West Lafayette, IN, Oct. 2017
35. Office of Technology Commercialization (OTC), West Lafayette, IN, Dec. 2017
36. University of Notre Dame, Department of Electrical Engineering, Notre Dame, IN, Apr. 2018
37. Los Alamos National Laboratory (LANL), Center for Integrated Nanotechnologies (CINT), Los Alamos, NM, May 2018
38. University of Washington, Institute of Nano-engineered Systems, Seattle, WA, May 2018
39. Hanwha Corporation, Hanwha Advanced Materials, Osong, South Korea, Jun. 2018
40. Korea University, Department of Materials Science and Engineering, Seoul, South Korea, July 2018
41. Kyung Hee University, Department of Chemical Engineering, Yongin, South Korea, July 2018
42. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, July 2018
43. Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea, July 2018
44. Korea Institute of Science and Technology (KIST), Biomedical Institute, Seoul, South Korea, July 2018
45. Indiana University, Department of Optometry, Bloomington, IN, Aug. 2018
46. Purdue University, Department of Health Sciences, West Lafayette, IN, Sep. 2018
47. Samsung Advanced Institute of Technology (SAIT), Suwon, South Korea, Dec. 2018
48. Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea, Dec. 2018
49. University of Michigan Ann Arbor, Department of Materials Science and Engineering, Ann Arbor, MI, Apr. 2019
50. Office of Technology Commercialization (OTC), West Lafayette, IN, Apr. 2019
51. Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea, Jun. 2019
52. Hanwha Advanced Materials, Osong, South Korea, Jun. 2019
53. Nanyang Technological University (NTU), Department of Materials Sciences and Engineering, Singapore, Jun. 2019
54. Samsung Advanced Institute of Technology (SAIT), Suwon, South Korea, Jun. 2019
55. Yonsei University, Department of Electrical and Electronic Engineering, Seoul, South Korea, Jun. 2019
56. Korea Electronics Technology Institute (KITE), Seongnam-Si, South Korea, Jun. 2019.
57. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, Jun. 2019
58. Purdue University, The 2019 Mi-Bio Summit on Flexible and Stretchable Bioelectronics, West Lafayette, IN, July 2019
59. Purdue University, Department of Materials Engineering, West Lafayette, IN, Aug. 2019
60. Purdue University, Department of Biomedical Engineering, Guest Lecture on the Topic of "Technology Translation: Academic Research and Development with a Target Toward Clinical Use", West Lafayette, IN, Aug. 2019
61. Michigan State University, Department of Biomedical Engineering, East Lansing, MI, Oct. 2019
62. Ohio State University, Department of Mechanical and Aerospace Engineering, Columbus, OH,

Nov. 2019

63. Samyang Biopharmaceuticals Corp., Medical Device Research, Seongnam-Si, South Korea, Dec. 2019
64. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, Dec. 2019
65. Ajou University, Department of Materials Engineering, Suwon, South Korea, Jan. 2020
66. Indiana Clinical and Translational Sciences Institutes (CTSI) Retreat at Purdue University, Breakout Session of Wearable Technologies, West Lafayette, IN, Jan. 2020
67. Purdue University, Department of Materials Engineering, Guest Lecture on the Topic of "Introduction to Biomaterials", West Lafayette, IN, Mar. 2020
68. NIH Director's Pioneer Award Program (DP1) Finalist Invited Seminar (Virtual Meeting), Apr. 2020.
69. Nano Korea, Sensor and Actuator Session, Kintex, Ilsan, South Korea (Virtual Meeting), July 2020.
70. Microsystems and Nanoengineering (Springer Nature) Young Scientists Forum (Virtual Meeting), July 2020
71. Hanyang University, Global Talent Development Model, Seoul, South Korea (Virtual Meeting), July 2020
72. The US Air Force Office of Scientific Research (AFOSR) and the Korea National Research Foundation (NRF) Joint Workshop (Virtual Meeting), July 2020
73. International Science, Engineering and Technology Conferences & Webinars on Materials Science, Engineering and Technology by VEBLEO (Virtual Meeting), Sep. 2020
74. Purdue University, Birck Nanotechnology Center, West Lafayette, IN (Virtual Meeting), Oct. 2020
75. Ajou University, School of Business, Suwon, South Korea (Virtual Meeting), Apr. 2021
76. King's College London, Nanomaterials and Biointerfaces, London, United Kingdom (Virtual Meeting), May 2021
77. The US Air Force Office of Scientific Research (AFOSR) and the Korea National Research Foundation (NRF) Joint Workshop (Virtual Meeting), June 2021
78. Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea (Virtual Meeting), July 2021
79. Ajou University, Department of Materials Engineering, Suwon, South Korea (Virtual Meeting), July 2021
80. Ajou University, College of Pharmacy, Suwon, South Korea (Virtual Meeting), July 2021
81. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea (Virtual Meeting), July 2021
82. (Keynote Lecture) The 3rd Edition of Webinar on Nanotechnology (Virtual Meeting), Aug. 2021
83. Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea (Virtual Meeting), Aug. 2021
84. Soongsil University, Department of Organic Materials and Fiber Engineering, Seoul, South Korea (Virtual Meeting), Aug. 2021
85. Dankook University, Department of Polymer Science and Engineering, Yongin, South Korea (Virtual Meeting), Aug. 2021
86. Kyung Hee University, Department of Information Display, Yongin, South Korea (Virtual Meeting), Aug. 2021
87. International Standardization Forum on Wearable Smart Devices, Korean Agency for Technology and Standards (KATS), Seoul, South Korea (Virtual Meeting), Nov. 2021
88. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea (Virtual Meeting), Dec. 2021
89. Chonnam National University & Hanyang University Joint Symposium, Seoul, South Korea (Virtual Meeting), Jan. 2022
90. Georgia Institute of Technology, Monie A. Ferst Medal Award Symposium, Atlanta, GA, Mar.

2022

91. Sensors, Young Investigator Awardee Seminar, Basel, Switzerland (Virtual Meeting), Mar. 2022
92. Boomerang Ventures, Indianapolis (Virtual Meeting), IN, Mar. 2022
93. Pediatric Symposium with Riley Children's Health at Indiana University Medicine, Purdue University, IN, Apr. 2022
94. K-BioX Global Class Seminar, Topic of Stem Cell, Microbiota Cancer, Bioengineering, Global Seminar (Virtual Meeting), June 2022
95. The State University of New York (SUNY), Department of Mechanical Engineering, Songdo, South Korea, June 2022
96. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, June 2022
97. Seoul National University, IBS Center for Nanoparticle Research, Seoul, South Korea, June 2022
98. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, June 202
99. Sungkyunkwan University, Department of Chemical Engineering, Suwon, South Korea, June 2022
100. Hanyang University, Department of Bioengineering, Seoul, South Korea, June 2022
101. Korea University, KU-KIST Graduate School of Converging Science and Technology, Seoul, South Korea, July 2022
102. Ajou University, Department of Molecular Science and Technology, Suwon, South Korea, July 2022
103. Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea, July 2022
104. Nano Korea, Nanofabrication platform section, Kintex, Ilsan, South Korea, July 2022
105. Yonsei University, Department of Biomedical Engineering, Wonju, South Korea, July 2022
106. Chonnam National University, Advanced Medical Device Research Center for Cardiovascular Disease (RLRC Center), Gwangju, South Korea, July 2022
107. Expert International Workshop, Hanyang University, Seoul, South Korea (Virtual Meeting), Aug. 2022
108. 16 Tech: Indy's Innovation District, Indianapolis, IN, Oct. 2022
109. Daegu Gyeongbuk Institute of Science and Technology (DGIST), Department of Robotics & Mechatronics Engineering, Series I, Daegu, South Korea (Virtual Meeting), Oct. 2022
110. Daegu Gyeongbuk Institute of Science and Technology (DGIST), Department of Robotics & Mechatronics Engineering, Series II, Daegu, South Korea (Virtual Meeting), Nov. 2022
111. (Distinguished Seminar Series) George Washington University, Department of Biomedical Engineering, Washington, DC, Nov. 2022
112. (Keynote Lecture) 4th International Conference on Flexible Electronics (ICFE 2022), Hangzhou, China (Virtual Meeting), Dec. 2022
113. Purdue University, Westwood (President's House) Lecture Series, West Lafayette, IN, Jan. 2023
114. Korea Advanced Institute of Science and Technology (KAIST), Department of Mechanical Engineering, Daejeon, South Korea (Virtual Meeting), Feb. 2023
115. Hanyang University & Chonnam National University Joint Symposium, Seoul, South Korea (Virtual Meeting), Feb. 2023
116. Chonnam National University, Advanced Medical Device Research Center for Cardiovascular Disease (RLRC Center), Gwangju, South Korea (Virtual Meeting), Feb. 2023
117. Purdue University, Industrial Engineering, West Lafayette, IN, Feb. 2023
118. Goodman Campbell Brain & Spine and the Weldon School of Biomedical Engineering Joint Workshop, West Lafayette, IN, Apr. 2023
119. SMART Industry Day Consortium, Birck Nanotechnology Center, West Lafayette, IN, May 2023
120. Samsung Display R&D Center, Yongin-Si, Korea, June 2023
121. Ajou University, Department of Molecular Science and Technology, Suwon, South Korea, June 2023
122. Ajou University, Department of Materials Engineering, Suwon, South Korea, June 2023

123. Seoul National University Medicine, Seoul, South Korea, June 2023
124. Daegu Gyeongbuk Institute of Science and Technology (DGIST), Graduate School of Robotics and Mechatronics Engineering, Daegu, South Korea, June 2023
125. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, July 2023
126. Pohang University of Science and Technology, Department of Convergence IT Engineering, Pohang, South Korea, July 2023
127. Gwangju Institute of Science and Technology (GIST), Department of Biomedical Science & Engineering, Gwangju, South Korea, July 2023
128. Korea University, Department of Materials Engineering, Seoul, South Korea, July 2023
129. Yonsei University, Department of Electrical and Computer Engineering, Seoul, South Korea, July 2023
130. Korea University, Department of Chemical and Biological Engineering, Seoul, South Korea, July 2023
131. Korea Institute of Industrial Technology (KITECH), Korea Additive Manufacturing Innovation Center (KAMIC), Siheung, South Korea (Virtual Meeting), Aug. 2023
132. (Keynote Lecture) University of Illinois Urbana-Champaign (UIUC), Departments of Kinesiology and Community Health and Industrial and Enterprise Systems Engineering, Chittenden Symposium, Urbana, IL, Oct. 2023
133. Purdue University, Department of Chemistry, Excellence on Campus Materials Chemistry Seminar Series, West Lafayette, IN, Feb. 2024
134. Johnson & Johnson MedTech R&D, External Innovation Speaker Series, Raritan, NJ, Mar. 2024
135. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, July 2024
136. Korea Institute of Industrial Technology (KITECH), Korea Additive Manufacturing Innovation Center (KAMIC), Siheung, South Korea, July 2024
137. Korea Institute of Science and Technology (KIST), Biomedical Institute, Seoul, South Korea, July 2024
138. Ajou University, Department of Materials Engineering, Suwon, South Korea, July 2024
139. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, July 2024
140. Korea American BioMedical Engineering Society (KBMES) Webinar Series (Virtual Meeting), Sep. 2024
141. University of Nebraska-Lincoln, Department of Biomedical Engineering, Lincoln, NE, Oct. 2024
142. Electronics and Telecommunications Research Institute (ETRI), Daejeon (Virtual Meeting), South Korea, Oct. 2024
143. Washington University in Saint Louis, Department of Mechanical Engineering and Materials Science, Saint Louis, MI, Nov. 2024
144. (Distinguished Seminar Series) City University of Hong Kong, Department of Biomedical Engineering, Hong Kong, Dec. 2024
145. Seoul National University, Department of Materials Science and Engineering, Seoul, South Korea, Dec. 2024
146. Chonnam National University, Next-Generation Sensor Research and Development Center Symposium, Gwangju, South Korea (Virtual Meeting), Jan. 2025
147. (Distinguished Seminar Series - Celebrating the 20th Anniversary) University of Illinois at Urbana-Champaign, Department of Bioengineering, Urbana, IL, Feb. 2025
148. Baylor College of Medicine, Department of Ophthalmology, 2025 Retina Research Foundation (RRF) Vision Research Seminar Series, Houston, TX, May 2025
149. Hanyang University, Department of Mechanical Engineering, Seoul, South Korea, June 2025
150. (Keynote Lecture) Oak Ridge Associated Universities (ORAU)-Supported Webinar entitled "Materials and Technologies for Wearable Sensors," by North Carolina State University, Aug. 2025
151. INM-Leibniz Institute of New Materials, Mini-symposium on Smart Contact Lenses, Saarbrücken,

Germany, Sep. 2025

152. 11th International Winter school on Bioelectronics (BioEl26), Kirchberg in Tirol, Austria, Mar. 2026

CONTRIBUTED CONFERENCE PRESENTATIONS

1. Materials Research Society (MRS), Title: Transfer printing method for flexible nanowire electronics, San Francisco, CA, Apr. 2011
2. Materials Research Society (MRS), Title: Fabricating nanowire electronics on nonconventional substrates using water-assisted transfer printing, Boston, MA, Nov. 2011
3. Materials Research Society (MRS), Title: Applications and mechanism study of peel-and-stick process for flexible/transparent thin film electronic devices, San Francisco, CA, Apr. 2013
4. National Innovation Summit and Showcase, Title: Fabricating of thin film electronics on nonconventional substrates, Washington, DC, May 2013
5. Materials Research Society (MRS), Title: Fabricating thin film solar cells on cheap and light weight substrates, Boston, MA, Dec. 2013
6. Materials Research Society (MRS), Title: Bioresorbable electronic implant for controlled drug delivery, Phoenix, AZ, Mar. 2016
7. IEEE Engineering in Medicine and Biology Society (EMBS), Title: Development of skin-like patch for thermotherapeutic treatment of joint pain, Orlando, FL, Aug. 2016
8. Society of Engineering Science (SES), 53rd Annual Technical Meeting, Title: Large-scale assembly of functional one-dimensional nanowires into skin electronics, University of Maryland, College Park, MD, Oct. 2016
9. The American Society of Mechanical Engineers (ASME), International Mechanical Engineering Congress & Exposition, Title: Development of bioresorbable electronics for biomedical applications, Phoenix, AZ, Nov. 2016
10. Collaborative Conference on Materials Research (CCMR), Title: Advanced biomedical devices enabled by transfer printing techniques, Jeju Island, South Korea, Jun. 2017
11. The 233rd Electrochemical Society (ECS) Meeting, Wearable and Flexible Technologies for Electronics and Photonics Symposium, Title: Wearable and flexible bio-electronics enabled by crack-driven transfer printing methods, Seattle, WA, May 2018
12. The 7th International Conference on Microelectronics and Plasma Technology (ICMAP), Title: Transfer printing processing technologies for fabricating flexible thin film electronics on arbitrary substrate, Incheon, South Korea, July 2018
13. The 12th Institute of Electrical and Electronics Engineers (IEEE) International Conference on Nano/Molecular Medicine and Engineering (NanoMed), Title: Transfer-printed biosensors for wearable biomedical applications, Honolulu, Hawaii, Dec. 2018
14. IEEE International Flexible Electronics Technology Conference (IFETC), Title: Sticker-like electronics (Sticktronics) for wearable biomedical devices, Vancouver, Canada, Aug. 2019
15. US-Korea Conference on Science, Technology, and Entrepreneurship (UKC), Session: Smart Science, Engineering and Health for Livable Communities, Title: Mechanically reinforced flexible sensors for wearable applications, Chicago, IL, Aug. 2019
16. Materials Research Society (MRS), Title: Transfer printing of flexible, stretchable materials for sticker-like electronics in bio-integrated applications, Boston, MA (Virtual Meeting), Nov. 2020
17. Materials Research Society (MRS), Title: Defect-free assembly of quasi-three-dimensional plasmonic nanoarrays with arbitrary substrate materials and structures, Boston, MA (Virtual Meeting), Nov. 2020
18. Materials Research Society (MRS), Title: Skin-mountable submental sensor patch for remote management of patients with oropharyngeal swallowing disorders, Boston, MA (Virtual Meeting), Nov. 2020
19. The American Society of Mechanical Engineers (ASME), International Mechanical Engineering

Congress & Exposition (IMECE), Track: Advanced Manufacturing, Title: Multiple replication of quasi-three-dimensional plasmonic nanoantennas with tailored optical properties, Nov. 2021 (Virtual Meeting)

20. The American Society of Mechanical Engineers (ASME), International Mechanical Engineering Congress & Exposition (IMECE), Track: Nanomaterials for Biomedical Electronic Devices and Medications in Healthcare, Title: Nanomaterials for ocular healthcare, Nov. 2021 (Virtual Meeting)
21. Materials Research Society (MRS) Spring Meeting, Title: Dual regime spray of functional nanomaterials for electronic textiles, Honolulu, HI, May 2022
22. Materials Research Society (MRS) Spring Meeting, Title: Biodegradable silicon nanoneedles for ocular drug delivery, Honolulu, HI, May 2022
23. US-Korea Conference on Science, Technology, and Entrepreneurship (UKC), Session: Biosensors & Medical Devices, Title: Biodegradable silicon nanoneedles for ocular drug delivery, Washington DC, Aug. 2022
24. Biomedical Engineering Society (BMES), Title: Monitoring dry eye disease and ocular surface inflammation with colorimetric scleral lens sensor, Seattle, WA, Oct. 2023
25. Consumer Electronics Society (CES), Showcasing smart soft contact lenses for glaucoma care in Eureka Park, Las Vegas, NV, Jan. 2024
26. Glaucoma 360 New Horizons Forum, Title: Smart soft contact lenses for glaucoma care, San Francisco, CA, Feb. 2024
27. Association for Research in Vision and Ophthalmology (ARVO), Title: Silicon nanoneedles for sustained treatment of choroidal neovascularization, Seattle, WA, May 2024
28. Biomedical Engineering Society (BMES), Title: Smart neckband with integrated machine learning for monitoring dietary intake, Baltimore, MA, Oct. 2024
29. 10th Nanotech & Nanomaterials Research Conference (Nano London-2024), Title: Silicon nanoneedles for sustained treatment of ocular angiogenesis, London, UK, Nov. 2024
30. 2024 IEEE Bionanotechnology and BioMEMS (BNM), Title: Integration of hydrogel adhesive and ultra-thin microstructured trace for neural interface, Hong Kong, Dec. 2024
31. 2024 IEEE Bionanotechnology and BioMEMS (BNM), Title: Direct writing of microsensors for smart medical device fabrication, Hong Kong, Dec. 2024
32. 2024 IEEE Bionanotechnology and BioMEMS (BNM), Title: Effects of anti-biofouling coatings on dopamine μ-sensor, Hong Kong, Dec. 2024
33. Association for Research in Vision and Ophthalmology (ARVO), Title: Retinal neovascularization sustained removal using silicon nanoneedles, Salt Lake City, UT, May 2025
34. Controlled Release Society Conference, Title: Silicon nanoneedles: A breakthrough platform for controlled, sustained macular degeneration treatment, Philadelphia, PA, July 2025
35. 2025 IEEE Nano, Title: Miniature silicon nanoneedles for prolonged and sustained treatment of diabetic retinopathy, Washington, DC, July 2025
36. US-Korea Conference on Science, Technology, and Entrepreneurship (UKC), Session: Biosensors & Medical Devices, Title: A machine learning-enabled smart neckband for monitoring dietary intake, Atlanta, GA, Aug. 2025
37. Materials Research Society (MRS) Fall Meeting, Title: Smart neckband for dietary monitoring: advancing wearable electronics and personalized medicine, Boston, MA, Nov. 2025
38. Association for Research in Vision and Ophthalmology (ARVO), Title: Bioresorbable silicon nanoneedle drug-delivery patch for treatment of wet macular degeneration, Denver, CO, May 2026
39. 19th International "Stress Workshop," Title: Crack-driven transfer printing for flexible electronics, Purdue University, West Lafayette, IN, Sep. 2026

SELECTED CONFERENCE PAPERS

1. C. Kantarcigil, **C. H. Lee,** M. Kim, B. Craig, G. Malandraki, First validation of a novel ultra-thin wearable electromyography sensors patch for monitoring submental muscle activity during

swallowing, Dysphagia Research Society (DRS), San Diego, CA, Mar. 2019
2. S. Akin, T. Gabor, S. Jo, Y. Park, J. Tsai, **C. H. Lee,** M. Park, M. Jun, Dual regime spray deposition-based laser direct writing of metal patterns on polymer substrates, The 3rd World Congress on Micro and Nano Manufacturing, Raleigh NC, Sep. 2019
3. M. Zheng, V. Phuc, **C. H. Lee,** Y. Paulus, Silicon nanoneedles for long-term, sustained antibody treatment of ocular angiogenesis, The IEEE 25th International Conference on Nanotechnology (NANO), 240-244, Washington, DC, Mar. 2025

SERVICES TO PURDUE

1. BME Graduate Admission Committee (Fall 2015 – Fall 2016)
2. Purdue Summer Undergraduate Research Fellowship (SURF) Program (Summer 2016)
3. Birck Nanotechnology Center (BNC) Research Operations Committee (Fall 2016)
4. BME Image Facilities Committee (Fall 2016 – Spring 2020)
5. BME Graduate Committee (Fall 2016 – Spring 2020)
6. Purdue Korean Faculty Association (PKFA), Vice-Chairman (Fall 2016 – Spring 2021)
7. BME Faculty Search Committee (Fall 2017 – Spring 2018)
8. BME Awards Committee (Fall 2019)
9. ME Faculty Search Committee (Fall 2019 – Spring 2020)
10. Purdue Summer Stay Scholarship Program for Undergraduate Students (Summer 2020)
11. BME Self-Study Committee (Fall 2020)
12. BME Research Committee for Departmental Review (Fall 2020)
13. BME Head Search Committee (Fall 2020 – Spring 2021)
14. BME Undergraduate Committee (Fall 2020)
15. BME Instrumentation Area Co-Chair (Fall 2020 – Spring 2022)
16. BME Faculty Search Committee (Fall 2021 – Spring 2022)
17. IU Medical Scientist Training Program (MSTP) Admission Committee (Fall 2021 – Spring 2022)
18. BME Working Group for Courtesy Appointment (Spring 2022)
19. CoE Dean Search Committee (Fall 2022 – Spring 2023)
20. BME Faculty Search Committee (Fall 2022 – Spring 2023)
21. IUPUI-PWL Faculty Alignment Committee (Fall 2022)
22. BME Working Group for Teaching Assignment (Spring 2024)
23. BME Head Search Committee (Fall 2023 – Spring 2024)
24. BME Award Committee Chair (Fall 2021 – Spring 2024)

-- *Current Service Roles* --

25. BME Instrumentation Area Chair (Spring 2022 – Present)
26. BME Research Committee (Fall 2024 – Present)
27. Purdue Korean Faculty Association (PKFA), Chairman (Fall 2021 – Present)

SERVICES TO PROFESSIONAL ORGANIZATIONS

1. **Editorial/Advisory Board Member:** Sensors (Journal Impact Factor: 3.9) (Editorial Board Member, 2019 – Present) | IEEE Transactions on Nanotechnology (Journal Impact Factor: 2.875) (Guest Lead Editor, 2017-2018) | Biosensors and Bioelectronics (Journal Impact Factor: 12.6) (Guest Editor, 2023-24) | NPG Asia Materials (Journal Impact Factor: 9.7) (Advisory Board Member, 2024 – Present)
2. **Board Member:** Korean American Biomedical Engineering Society (KBMES) (2023 – Present)
3. **Grant Review Panelist:** Agency for Science, Singapore Technology and Research (A*STAR)'s Individual Research Grants and Young Individual Research Grants (2017) | American Chemical Society (ACS) Petroleum Research Fund (2018) | Los Alamos National Laboratory (LANL)

Center for Integrated Nanotechnologies (CINT) Distinguished External Proposal Review Board (2018-24) | NSF CMMI Advanced Manufacturing Program Unsolicited Proposal Review Panel (2019) | Peer Reviewed Medical Research Program (PRMRP) for the Department of Defense Congressionally Directed Medical Research Programs (CDMRP) (2020) | SARS-COVID-19 Diagnostics & Therapeutics Initiative by Purdue Institute for Drug Discovery (PIDD) and Purdue Institute of Immunology, Inflammation, and Infectious Disease (PI4D) (2020) | Singapore National Research Foundation (NRF) (2021) | Brain Korea 21 (BK21) Program for Leading Universities & Students in the School of Mechanical Engineering at Hanyang University, External Reviewer in Annual Evaluation (2021) | NSF CAREER Award Proposal Review Panel (2021) | Singapore National Research Foundation (NRF) (2021) | NextFlex PC 7.0 Proposal Review Panel (2022) | NIH Bioengineering, Technology, and Surgical Sciences (BTSS) Study Section (2022) | Division of Engineering in National Research Foundation of Korea (NRF) Research Leader Program (2023) | Division of Life Sciences in National Research Foundation of Korea (NRF) Global Leader Grants (2024) | Singapore Agency for Science, Technology and Research (A*STAR) MedTech Grant (2024) | Puerto Rico Advanced Research Grant (ARG) Program (2025) | Singapore Agency for Science, Technology and Research (A*STAR) Bilateral Digital Health/MedTech & Green Hydrogen Grant (2025) | NIH Imaging and Bioengineering Technology for Visual Systems (IBV) Study Section (2025) | Indiana Clinical and Translational Sciences Institute (CTSI) – CTSA External Reviewers Exchange Consortium (CEREC) Proposal Review (2025) | King Abdullah University of Science and Technology (KAUST) Competitive Research Grants (CRG) Program Proposal Review (2025) | Sight Research UK – External Peer Reviewer for Translational Vision Research Grant (2026).

4. **Purdue Conference Co-Organizer:** The 2019 Mi-Bio Summit on Flexible and Stretchable Bioelectronics at Purdue University with the invited plenary speakers, including Prof. Michael Cima (MIT), Prof. Younan Xia (Georgia Institute of Technology), Prof. Anne Andrew (UCLA), Prof. Elen Klein (University of Washington), Prof. Michael McAlpine (University of Minnesota), Prof. Yan Feng (Hong Kong Polytechnic University), Prof. Jong-Hyun Ahn (Yonsei University), Prof. Marvin Slepian (University of Arizona), Prof. Pete Kollbaum (Indiana University), Dr. Cephas Small (Nature Communication Editor), and Dr. Ilaria Cianchetta (Cell Press Editor).
5. **Purdue Workshop Co-Organizer:** The Purdue Korean Faculty Associate (PKFA) Distinguished Seminar Series at Purdue University with the invited plenary speakers, including Prof. Kinam Park (Purdue BME, Fall 2018), Prof. Yung Shin (Purdue ME, Spring 2019), Prof. Sangtae Kim (Purdue ChemE, Fall 2019), Prof. Hyeon Taeghwan (Guest Lecturer and University Distinguished Professor of Seoul National University and Director of Institute for Basic Science (IBS) Nanoparticle Research in South Korea, Fall 2021), Prof. Shawn Jang (Purdue HTM, Spring 2023), and Prof. You-Yeon Won (Purdue ChemE, Spring 2024).
6. **International Joint Symposium Co-Organizer:** The 1st International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University at Hanyang University (July 2018) | The 2nd International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University, Michigan State University, and Nanyang Technological University at Hanyang University (Dec. 2019) | The 3rd International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University, University of Illinois at Urbana-Champaign, Rensselaer Polytechnic Institute, University of Texas at Dallas, Nanyang Technological University, and Chonnam National University at Hanyang University (Aug. 2021) | The 4th International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University, Washington University in St. Louis, Texas A&M University, University of Alberta, Nanyang Technological University, and Chonnam National University at Hanyang University (Dec. 2021) | The 5th International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue

University, Michigan State University, University of Massachusetts Amherst, University of Wisconsin–Madison, Washington University in St. Louis, and Nanyang Technological University at Hanyang University (June 2022) | Purdue–Seoul National University Joint Symposium with the Institute for Basic Science (IBS) Nanoparticle Research (June 2022) | The 6th International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University, University of Illinois at Urbana-Champaign, University of Wisconsin–Madison, Texas A&M University, and Chonnam National University at Hanyang University (July 2022) | Purdue–Korea University (KU–KIST Graduate School of Converging Science and Technology) Joint Symposium (July 2022) | Purdue–Ajou University Joint Symposium on Molecular Science and Technology (July 2022) | Purdue–SUNY Korea Joint Symposium on Mechanical Engineering (July 2022) | Purdue–Korea University Joint Symposium on Chemical and Biological Engineering (July 2022) | Purdue–Hanyang University Joint Symposium on Bioengineering (July 2022) | Purdue–Chonnam National University Joint Symposium on Advanced Medical Devices (July 2022) | Purdue–Seoul National University Joint Symposium with the Center for Nanoparticle Research (July 2022) | Purdue–Ajou University Joint Symposium on Molecular Engineering (June 2023) | Purdue–Daegu Gyeongbuk Institute of Science & Technology (DGIST) Joint Symposium on Robotics (June 2023) | The 7th International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University, Ohio State University, Washington University in St. Louis, University of Wisconsin–Madison, and Chonnam National University at Hanyang University (July 2023) | Purdue–Seoul National University Joint Symposium on Biomedical Engineering (July 2023) | Purdue–POSTECH Joint Symposium on Biomedical Engineering (July 2023) | Purdue–GIST Joint Symposium on Biomedical Engineering (July 2023) | Purdue–Korea University Joint Symposium on Materials Engineering (July 2023) | Purdue–Yonsei University Joint Symposium on Electrical and Computer Engineering (July 2023) | Purdue–Korea University Joint Symposium on Chemical and Bioengineering (July 2023) | The 8th International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University, Ohio State University, University of Wisconsin–Madison, Texas A&M University, and Chonnam National University at Hanyang University (July 2024) | Purdue–Korea Institute of Industrial Technology (KITECH) Joint Symposium (July 2024) | Purdue–Hanyang University Joint Symposium on Mechanical Engineering (July 2024) | Purdue–Korea Institute of Science and Technology (KIST) Joint Symposium (July 2024) | Purdue–City University of Hong Kong Joint Symposium on Biomedical Engineering (Dec. 2024) | The 9th International Joint Symposium on Technological Convergence, Manufacturing, & Nano/Biosystems with invitees from Purdue University, University of Virginia, Washington University in St. Louis, University of Nebraska–Lincoln, and Chonnam National University at Hanyang University (June 2025) | Purdue–Korea Institute of Science and Technology (KIST) Joint Symposium at Purdue University (Nov. 2025) | Purdue–Ajou University Joint Symposium on Precision Therapeutics at Purdue University (Nov. 2025) | Purdue–Korea Institute of Science and Technology (KIST) Joint Symposium at Purdue University (Dec. 2025)

7. **International Conference Session Organizer / Committee Member:** The 2016 ASME International Mechanical Engineering Congress & Exposition (IMECE) in the areas of "Large-scale Manufacturing of 2D Materials" & "Mechanical Assembly and Characterization of 2D Materials", Phoenix, AZ (2016) | The 2017 ASME International Mechanical Engineering Congress & Exposition (IMECE) in the areas of "Mechanics of Two-Dimensional Materials" & "Large-Scale Manufacturing of Two-Dimensional Materials", Tampa, FL (2017); The 2018 Materials Research Society (MRS) Spring Meeting in the area of "Deformable Atomically-Thin Materials: Mechanics, Materials, and Devices", Phoenix, AZ (2018) | The 2018 ASME International Mechanical Engineering Congress & Exposition (IMECE) in the area of "Manufacturing of Atomically-Thin, Two-Dimensional Materials", Pittsburg, PA (2018) | The 11th World Biomaterials Congress (WBC) in the area of "Smart Photonic Biomaterials for Healthcare

Applications", Glasgow, Scotland (2020) | Nano Korea, Healthcare Division (2025)

8. **International Conference Session Chair:** The 7th International Conference on Microelectronics and Plasma Technology (ICMAP) in the area of "Flexible/Stretchable Display Technology", Incheon, South Korea (2018) | The 12th IEEE International Conference on Nano/Molecular Medicine and Engineering (NanoMed), Honolulu, Hawaii (2018) | The 2019 Biomedical Engineering Society (BMES), Philadelphia, PA (2019) | The Indiana CTSI Retreat at Purdue University: "Engineering Giant Leaps in Medicine" in the session of Wearable Technologies, West Lafayette, IN (2020) | The 2020 Materials Research Society (MRS) Spring Meeting in the area of "Stretchable Electrodes and Electronics for bio-Integrated Applications", Phoenix, AZ (2020) | The 11th World Biomaterials Congress (WBC) in the area of "Smart Photonic Biomaterials for Healthcare Applications", Glasgow, Scotland (2020)
9. **Reviewer for Scientific Journals:** Science (AAAS) | Science Advances (AAAS) | Research (AAAS) | Proceedings of the National Academy of Sciences (PNAS) | Nature Nanotechnology (NPG) | Nature Biomedical Engineering (NPG) | Nature Biotechnology (NPG) | Nature Electronics (NPG) | Nature Sensors (NPG) | Nature Communications (NPG) | Nature Reviews Electrical Engineering (NPG) | NPG Asia Materials (NPG) | Microsystems & NanoEngineering (NPG) | Nano-Micro Letters (NPG) | npj Flexible Electronics (NPG) | npj Biosensing (NPG) | NPG Digital Medicine (NPG) | Matter (Cell Press) | Chemical Reviews (ACS) | ACS Nano (ACS) | Nano Letters (ACS) | Journal of the American Chemical Society (ACS) | ACS Applied Materials & Interfaces (ACS) | Accounts of Chemical Research (ACS) | ACS Omega (ACS) | ACS Applied Polymer Materials (ACS) | ACS Sensors (ACS) | ACS Applied Polymer Materials (ACS) | Journal of Controlled Release (Elsevier) | Extreme Mechanics Letters (Elsevier) | Materials Today (Elsevier) | Acta Biomaterialia (Elsevier) | Desalination (Elsevier) | Energy and Buildings (Elsevier) | Sensors and Actuators A: Physical (Elsevier) | Advanced Materials (Wiley) | Advanced Functional Materials (Wiley) | Advanced Healthcare Materials (Wiley) | Advanced Science (Wiley) | Small (Wiley) | Advanced Optical Materials (Wiley) | Medical Devices and Sensors (Wiley) | Advanced Electronic Materials (Wiley) | Advanced Materials Technologies (Wiley) | Small Methods (Wiley) | Advanced Intelligent Systems (Wiley) | Bioengineering & Translational Medicine (Wiley) | Nano Research (Springer) | Nano Convergence (Springer) | MRS Bulletin (Springer) | Nanoscale (RSC) | Analyst (RSC) | Journal of Materials Chemistry B (RSC) | Molecular Systems Design & Engineering (RSC) | IEEE Transactions on Biomedical Engineering (IEEE) | IEEE Transactions on Nanotechnology (IEEE) | IEEE on Automation Science and Engineering (IEEE) | IEEE Internet of Things Journal (IEEE) | Carbon (Elsevier) | Biosensors and Bioelectronics (Elsevier) | Sensors & Actuators: A. Physical (Elsevier) | Biocybernetics and Biomedical Engineering (Elsevier) | Applied Surface Science Advances (Elsevier) | Journal of Applied Mechanics (ASME) | Plos One (PLOS) | National Science Review (Oxford University Press) | International Journal of Extreme Manufacturing (IOP Science) |Nanomaterials (MDPI) | Applied Sciences (MDPI) | Micromachines (MDPI) | Materials (MDPI) | Sensors (MDPI) | Electronics (MDPI) | Sci (MDPI) | Applied Sciences (MDPI) | Rapid Reviews: COVID-19 (The MIT Press) | Clinical Ophthalmology (Dove Medical Press)
10. **Reviewer for Conference Abstracts:** The 2017 Biomedical Engineering Society (BMES) Annual Meeting in the area of "Device Technologies and Biomedical Robotics", Phoenix, AZ (2017)

OTHER ENGAGEMENT & OUTREACH ACTIVITIES

1. The Career Forum Mock Interviewer for the 2016 Materials Research Society (MRS) Spring Meeting, Phoenix, AZ (2016)
2. The Career Forum Panelist for the Korean-American Scientists and Engineers Association (KSEA) Meeting, Indiana Chapter, West Lafayette, IN (2016)
3. Stanford Undergraduate Admission Interviewer for the Stanford Alumni Outreach Service, Stanford, CA (2017)

4. The Career Forum Panelist for the Symposium of Materials and Mechanics in the Midwest, Chicago, IL (2017)
5. The Career Forum Panelist for the Korean-American Scientists and Engineers Association (KSEA) Young Generation (YG), Indiana Chapter (2018)
6. Career Forum (Named "ProfeSSUL") Panelist for the Korean-American Scientists and Engineers Association (KSEA) Young Generation (YG) at Purdue University, Indiana Chapter (Feb. 2020, Jan. 2021, Sep. 2021, Oct. 2022, Jan. 2023, Nov. 2025)
7. Mentor of the K-BioX Global Mentoring Project (2020 – Present)
8. Organizer for the Special Seminar entitled "How can we become an excellent researcher?" by Prof. Taeghwan (Tag) Hyeon, the University Distinguished Professor of Seoul National University and the Director of Institute for Basic Science (IBS) Nanoparticle Research in South Korea, for the Graduate Students, Postdoctoral Researchers, and Junior Faculty at Purdue University, Sep. 2021
9. Co-Leader of the Study Abroad Program at Purdue University which brings a total of 20 undergraduate students to South Korea for cultural experiences (Spring 2023).
10. Panelist for Brainstorming Session with Presidents Paul Alivisatos of the University of Chicago and Mung Chiang at Purdue University, along with College Deans, School Heads, and other faculty members, to brainstorm on opportunities for institutional collaborations within the themes of biomedical devices, medical imaging, cancer research, and semiconductors.
11. Invited mentor at the 2023 Scientists and Engineers Early Career Development (SEED) workshop, Dallas, TX (8/1/23-8/2/23)
12. Invited mentor at the 2024 Scientists and Engineers Early Career Development (SEED) workshop, San Francisco, CA (8/20/24-8/21/24)
13. Invited mentor for the Career Development Forum of the 2024 US-Korea Joint Webinar Series on Biomedical Engineering, organized by the Korean-American Biomedical Engineering Society (KBMES), Virtual Meeting (9/5/24)
14. Co-organizer for a gathering of approximately 30 Korean students, postdocs, and faculty members in the Weldon School of Biomedical Engineering at Purdue University to provide career counseling, address concerns, and foster a supportive community, West Lafayette, IN (11/22/24).
15. Served as a Subject Matter Expert (SME) for a Purdue University team participating in the National Aeronautics and Space Administration (NASA) Workforce Development Program (2/14/25-)
16. Invited mentor at the 2024 Scientists and Engineers Early Career Development (SEED) workshop, Atlanta, GA (8/5/25-8/7/25)
17. Served as an Awards Committee for the Korean-American Biomedical Engineering Society (KBMES) (2025)
18. Served as a mentor for AIRS under the 2025 DIPS 1000+ Biohealth (Medical Device/Digital Healthcare) Global Mentoring Program, providing technical and commercialization guidance for wireless bio-health monitoring device development in collaboration with Purdue and Indiana University School of Medicine (6/1/25–11/30/25).
19. Served as a Mentoring Panelist for the 2025 Purdue Korean Association (PKA) Career Networking Night jointly organized with the Purdue Korean Faculty Association, West Lafayette, IN (10/30/25)
20. Organized a career counseling and networking session between researchers from the Korea Institute of Science and Technology (KIST) and graduate students and postdoctoral researchers in the Weldon School of Biomedical Engineering at Purdue University, West Lafayette, IN (11/5/25).
21. Selected as a mentor for the 2026 Korea Institute for Advancement of Technology (KIAT) – Korean-American Scientists and Engineers Association (KSEA) Advanced Fields Youth Exchange Online Mentoring Program (Spring 2026)

SCIENTIFIC & PROFESSIONAL SOCIETIES

1. Member of Republic of Korea Marine Corps (ROKMC) Veterans Association
2. Fellow of American Institute for Medical and Biological Engineering (AIMBE)
3. Board Member of Korean American Biomedical Engineering Society (KBMES)
4. Member of Tau Beta Pi Honor Society
5. Member of Women's Global Health Institute (WGHI)
6. Member of Materials Research Society (MRS)
7. Member of American Society of Mechanical Engineers (ASME)
8. Member of Biomedical Engineering Society (BMES)
9. Member of Korean-American Scientists and Engineers Association (KSEA)
10. Member of Korean-American University Professors Association (KAUPA)
11. Member of Institute of Electrical and Electronics Engineers (IEEE)
12. Member of Ajou Leaders Honor Club (Ajou University, South Korea)
13. Member of American Heart Association (AHA)