

Dongwoo 'Jason' Yeom, Ph.D., LEED GA, Assoc. AIA

Assistant Professor
Architecture | The Design School
Arizona State University
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APPOINTMENTS

▪ *Academic Appointments*

- 2020 – Present **Assistant Professor**, Architecture, The Design School (TDS), Arizona State University (ASU), AZ, USA
- 2018 – 2020 **Assistant Professor**, Department of Architecture, Lawrence Technological University (LTU), MI, USA
- 2016 – 2017 **Postdoctoral Researcher**, Building Science, School of Architecture, University of Southern California (USC), CA, USA
- 2015 **Postdoctoral Researcher**, Department of Architecture, California State Polytechnic University Pomona (CPP), CA, USA
- 2014 **Researcher**, Engineering Research Institute, Ajou University, Korea
- 2006 – 2013 **Research Assistant**, Department of Architecture, Ajou University, Korea

▪ *Professional Appointments*

- 2013 – 2014 **Architectural designer** (Self-employed), Korea
- Sustainable home design; Construction approved
- 2010 – 2011 **Founding Associate**, GIP Architecture, Korea
- Start-up architecture firm for green home & building design and construction
 - Conducted green home design, client meeting, and patent preparation

EDUCATION

- 2014 **Ph.D. in Architecture**, Ajou University, Korea
Dissertation: *A Study on the Sustainability Improvement Model for G-SEED*
(Green Standard for Energy and Environmental Design / Korean Green Building Certification System)
- 2008 **M.S. in Architecture**, Ajou University, Korea
Thesis: *A Study on the Establishment of Weight for Sustainability Assessment Indicators and Test Scoring for Super High-rise Residential Complexes*
- 2006 **B.S. in Architecture**, Ajou University, Korea

PUBLICATIONS (Citations: 426, H-Index: 12 as of Jul. 2022)

Google Scholar link: <https://scholar.google.com/citations?user=B1FPbuYAAAAJ&hl=en&authuser=1>

Peer-reviewed Journals (*: Corresponding author)

▪ *Published*

- 2021 Yeom, D.* & Delogu, F. "Physiological signal-driven thermal sensation prediction model for the occupant's productivity and environment control", *Building and Environment* (Impact Factor: 6.456), 204, <https://doi.org/10.1016/j.buildenv.2021.108196>
- 2020 La Roche, P. & Yeom, D. "Passive Cooling Design in Extreme Climate: Performance Evaluation and Application in Practice", *Energy and Buildings*, (Impact Factor: 5.879), 224, pp.110-243, <https://doi.org/10.1016/j.enbuild.2020.110243>
- 2020 Choi, J., Loftness, V., Nou, D., Tinianov, B. & Yeom, D. "Multi-Season Assessment of Occupant Responses to Manual Shading and Dynamic Glass in a Workplace Environment", *Energies* (Impact Factor: 3.004), *Cover*, 13(1), pp.60, <https://doi.org/10.3390/en13010060>
- 2019 Yeom, D., Choi, J., & Kang, S. "Investigation of the Physiological Differences in the Immersive Virtual Reality Environment and Real Indoor Environment: Focused on Skin Temperature and Thermal Sensation", *Building and Environment* (Impact Factor: 6.456), 154, pp.44-54, <https://doi.org/10.1016/j.buildenv.2019.03.013>
- 2019 Yeom, D., Choi, J. & Zhu, Y. "Investigation of Physiological differences between Immersive Virtual Environment and Indoor Built Environment in a building", *Indoor and Built Environment* (Impact Factor: 3.015), 28(1), pp.46-62, <https://doi.org/10.1177/1420326X17731945>
- 2019 Choi, J. & Yeom, D. "Development of the data-driven thermal comfort prediction model as a function of human physiological responses in a built environment", *Building and Environment* (Impact Factor: 6.456), 150, pp.206-218, <https://doi.org/10.1016/j.buildenv.2019.01.007>
- 2018 Yin, C., Yeom, D. & Lee, K. "Study on the Indoor Environmental Performance of Complex Insulation Material: Carbonized rice hull and glass wool", *Indoor and Built Environment* (Impact Factor: 3.015), 27 (1), pp. 109-120, <https://doi.org/10.1177/1420326X16670450>
- 2017 Yeom, D. & La Roche, P. "Investigation on the Cooling Performance of Green Roof with a Radiant Cooling System", *Energy and Buildings* (Impact Factor: 5.879), 149, pp.26-37, <https://doi.org/10.1016/j.enbuild.2017.05.035>
- 2017 Choi, J. & Yeom, D. "Study of Data-driven Thermal Sensation Prediction Model as a Function of Local Body Skin Temperatures in a Built Environment", *Building and Environment* (Impact Factor: 6.456), 121, pp.130-147, <https://doi.org/10.1016/j.buildenv.2017.05.004>
- 2017 Choi, J. & Yeom, D. "Investigation of the Relationship between Thermal Sensation of Local Body Areas and the Whole Body in an Indoor Built Environment", *Energy and Buildings* (Impact Factor: 5.879), 149, pp.204-215, <https://doi.org/10.1016/j.enbuild.2017.05.062>
- 2017 Ahn, E., Yeom, D. & Lee, K. "Experimental Research on the Indoor Environment Performance of Complex Natural Insulation Material: Carbonized Rice Hull and Rice Hull", *Journal of Asian Architecture and Building Engineering* (Impact Factor: 0.692), 16(1), pp.239-246, <https://doi.org/10.3130/jaabe.16.239>

- 2016 Yeom, D. & Lee, K. "Study on the Assessment Indicators for the Sustainability Improvement of G-SEED", *Journal of Architectural Institute of Korea*, 32(9), pp.49-57, https://doi.org/10.5659/JAIK_PD.2016.32.9.49
- 2015 Yeom, D. & Lee, K. "Study on the Improvement of Korean Green Building Certification Criteria", *Journal of Asian Architecture and Building Engineering* (Impact Factor: 0.692), 14(1), pp.129-136, <https://doi.org/10.3130/jaabe.14.129>
- 2015 Lee, K. & Yeom, D. "Experimental Research on Temperature and Humidity Control Performance of Hwang-toh Finishing", *Indoor and Built Environment* (Impact Factor: 3.015), 24(1), pp.63-72, <https://doi.org/10.1177/1420326X13502215>
- 2015 Park, K., Yeom, D. & Lee, K. "Experimental Research on the Temperature and Humidity Control Performance of Cellulose", *Journal of Architectural Institute of Korea*, 31(7), pp.13-20, https://doi.org/10.5659/JAIK_PD.2015.31.7.13
- 2015 Lee, H., Yeom, D. & Lee, K. "The Research on the Indoor Temperature control of Green Roof by Solid Vegetation Epiphytic Board", *Journal of Korea Institute of Ecological Architecture and Environment*, 15(3), pp.93-99, <https://doi.org/10.12813/kieae.2015.15.3.093>
- 2015 Yeom, D. & Lee, K. "A Study on the Improvement of G-SEED Management System", *Journal of Architectural Institute of Korea*, 31(3), pp.13-22, https://doi.org/10.5659/JAIK_PD.2015.31.3.13
- 2014 Lee, K. & Yeom, D. "Experimental Research on the Indoor environment Control of Natural Insulation Materials: Carbonized Rice Hull and Straw bales", *Indoor and Built Environment* (Impact Factor: 3.015), 24(6), pp.729-739, <https://doi.org/10.1177/1420326X14534866>
- 2013 Lee, K., Yeom, D. Kim, E., "Experimental Research in the Correlation of Temperature, Humidity, and CO₂ Level of a Rice Hull Insulated Indoor Environment", *Journal of Asian Architecture and Building Engineering* (Impact Factor: 0.692), 12(2), pp.221-228, <https://doi.org/10.3130/jaabe.12.221>
- 2012 Lee, K. & Yeom, D. "Comparative Research of Residents' satisfaction Level in KGBCC-Certified Apartments in Korea", *Journal of Asian Architecture and Building Engineering* (Impact Factor: 0.692), 11(1), pp.55-62, <https://doi.org/10.3130/jaabe.11.55>
- 2012 Lee, K., Yeom, D. Lee, B., "Study on the Temperature and Humidity Control Performance of Hwang-toh Finish", *Applied Mechanics and Materials*, Vol. 204-208, pp.3652-3659, <https://doi.org/10.4028/www.scientific.net/AMM.204-208.3652>
- 2012 Kim, E., Yeom, D. & Lee, K. "An Experimental Study on the Thermal Performance of Rice Hull Insulation for Rural Green Home", *Journal of Architectural Institute of Korea*, 28(8), pp.45-54, https://doi.org/10.5659/JAIK_PD.2012.28.8.45
- 2012 Lee, K. & Yeom, D. "Study on the Temperature and Humidity Control Performance of Hwang-toh Finish", *Journal of Korea Institute of Ecological Architecture and Environment*, 12(6), pp.99-106, <https://doi.org/10.4028/www.scientific.net/AMM.204-208.3652>
- 2011 Lee, K. & Yeom, D. "Comparative Study for Satisfaction Level of Green Apartment Residents", *Building and Environment* (Impact Factor: 6.456), 46, pp.1765-1773, <https://doi.org/10.1016/j.buildenv.2011.02.004>

- 2011 Kwon, H., Yeom, D. & Lee, K. "A Study on the Effect and Improvement Directions of KGBCC based on the Comparison of Green Residents Satisfaction", *Journal of Korea Institute of Ecological Architecture and Environment*, 11(5), pp.79-90, <https://koreascience.kr/article/JAKO201130360544543.page>
- 2009 Lee, K. & Yeom, D. "Comparative Research of Residents' Satisfaction Level between Green Building-Certified Apartment Complexes and General Apartment Complexes in Korea", *Journal of Asian Architecture and Building Engineering* (Impact Factor: 0.692), 8(2), pp.423-430, <https://doi.org/10.3130/jaabe.8.423>
- 2009 Lee, K. & Yeom, D. "The Research on the Improvement Direction of KGBCC by Residents' Satisfaction Level in KGBCC Certified Apartment", *Journal of Architectural Institute of Korea*, 25(12), pp.41-51, <https://www.dbpia.co.kr/Journal/articleDetail?nodeId=NODE01318541>
- 2008 Lee, K. & Yeom, D. "A Study on the Establishment of Weight for Sustainability Assessment Indicators and Test Scoring for Super High-rise Residential Complexes", *Journal of Architectural Institute of Korea*, 24(3), pp.23-32, <https://www.dbpia.co.kr/Journal/articleDetail?nodeId=NODE00973191>

Peer-reviewed Conferences (*: Corresponding author)

▪ Published

- 2022 Yeom, D.*, **Kim, T.** & Yoon, S. "Productivity prediction via human physiological signals for an optimum thermal environment", *CLIMA 2022 Conference*, May 22 - 25, 2022, Rotterdam, Netherland
- 2020 Shall, S.* & Yeom, D. "Empowering Space: Using Socially Responsive Design to Address Need with Local Communities in South Africa", 2020 MASAL Conference, Sep 26, Lawrence Technological University, Southfield, MI, USA
- 2019 Yeom, D. & Delogu, F. "Towards an Optimal Thermal Comfort Prediction Model: Thermal Preferences and Cognitive Performance Estimation as a Function of Occupant's Physiological Responses", *ARCC 2019*, May 29 - June 1, Toronto, Canada
- 2019 La Roche, P., Ponce, A. & Yeom, D. "Passive Cooling for Comfort in Extreme Climates", *Proceedings of Conference on CATE2019 - Comfort at the Extreme: Energy, Economy and Climate*, April 10-11, Dubai, UAE
- 2018 La Roche, P., Rodriguez, L. & Yeom, D. "Green Roofs for Cooling in Different Climates", *Proceedings of 13th Conference on Advanced Building Skins*, October 1-2, Bern, Switzerland
- 2017 Choi, J., Yeom, D. "Local body skin temperature-driven thermal sensation prediction model for a building environmental control", *Proceedings of Healthy Building 2017 Asia*, September 2-5, Tainan City, Taiwan
- 2017 Almodovar, J., La Roche, P. & Yeom, D. "Thermal assessment of different configurations of roof ponds for passive cooling", *Proceedings of PLEA2017 Edinburgh, Edinburgh, U.K.*, pp.3483-3490
- 2016 Yeom, D. & La Roche, P. "Experimental Research on the Cooling Performance of Green Roof with Radiant Cooling System", *Proceedings of PLEA2016 Los Angeles, Los Angeles, U.S.*, pp.806-812

- 2016 Almodovar, J., La Roche, P. & Yeom, D. "Experimental Investigation of the Cooling Effects of a Water to Air Heat Exchanger Combined with a Green Roof", *Proceedings of PLEA2016 Los Angeles*, Los Angeles, U.S., pp.479-485
- 2016 La Roche, P., Almodovar, J. & Yeom, D. "Cooling with Water and Green Roofs: Passive systems to improve thermal comfort", *Proceedings of Façade Tectonics 2016 World Congress*, Los Angeles, USA
- 2016 Lee, D., Yeom, D. & Lee, K. "Experimental Research on the Indoor Environment of the Traditional and Low-Energy Han-ok in Summer", *Proceedings of Autumn Conference of Architectural Institute of Korea*, 36(2), pp.1176-1177
- 2016 Kim, D., Yeom, D. & Lee, K. "Study on the Passive Window Application for the Green Remodeling", *Proceedings of Spring Conference of Korea Institute of Ecological Architecture and Environment*, 16(1), pp.76-77
- 2013 Ahn, E., Yeom, D. & Lee, K. "The Research on the Indoor Environment Performance Evaluation of the Mock-up with Rich Hull and Charred Rice Hull Mix Insulated Wall", *Proceeding of Autumn Conference of Architectural Institute of Korea*, 33(2), pp.13-14
- 2012 Lee, K., Yeom, D. & Lee, B. "Study on the Temperature and Humidity Control Performance of Hwang-toh Finish", *Proceedings of International Conference on Civil, Architectural and Hydraulic Engineering (ICCAHE)*, Zhangjiajie, China
- 2012 Lee, K., Baek, Y. & Yeom, D. "The Research on the Humidity Control Performance Evaluation of the Mock-up with Ecological and General Finishes", *Proceeding of Spring Conference of Architectural Institute of Korea*, 32(1), pp.57-58
- 2012 Lee, K., Lee, H. & Yeom, D. "The Research on the Humidity Control Performance Evaluation of the Mock-up with Strawbale and Charred Rice Hull Insulation", *Proceeding of Spring Conference of Architectural Institute of Korea*, 32(1), pp.59-60
- 2011 Kim, E., Yeom, D. & Lee, K. "An Energy Simulation and Efficiency of rural Green Home Mock-Up", *Proceeding of Autumn Conference of Architectural Institute of Korea*, 31(2), pp.13-14
- 2009 Lee, K. & Yeom, D. "Comparative Study for Satisfaction Level of Green Apartment Residents", *Proceedings of Green Tech, Eco Life & Sustainable Architecture for Cities of Tomorrow (GEST2009)*, Seoul, Korea, pp.603-610
- 2008 Lee, K. & Yeom, D. "A Study on the Characteristics of Residential Complexes certified with Korea Green Building Certification Criteria", *Proceedings of Sustainable Building 2008 Melbourne*, pp.1932-1939
- 2007 Yeom, D. & Lee, K. "A Study on the Assessment Indicator and the Improvement Level Analysis for the Assessment of Super High-Rise Residential Complexes", *Proceedings of Sustainable Building 2007 Seoul*, pp.119-124

Peer-reviewed Conference - Poster Presentations (*: Corresponding author)

▪ Presented

- 2020 Verhoef, I., Yeom, D.* & Delogu, F. "Investigation of the Relationship between Thermal Sensation, Sleep Deprivation, and Human Physiological Signals", *Indoor Air 2020*, Nov 1-5, Seoul, Korea
- 2019 Karetnik, S. & Yeom, D.* "Investigation on the Difference of Physiological Responses and Thermal Perception by Ethnicity in the Built Environment", *2019 LTU Research Day*, Apr 5, Lawrence Technological University, Southfield, MI
- 2019 Hijazi, A. & Yeom, D.* "Investigation on the Effects of the Circadian Rhythm on Thermal Comfort", *2019 LTU Research Day*, Apr 5, Lawrence Technological University, Southfield, MI

Book Chapter

▪ Published

- 2020 Yeom, D., Chapter 3.3 "Maker-space in Port Elizabeth, South Africa", In Yoon, J., Jang, M. & Kim, Y. *Introduction to City Repair: DIT (Do It Together) Urban Regeneration* (pp.90-102), Korea: Architecture and Urban Research Institute (AURI), ISBN: 979-11-5659-260-0
- 2020 Yeom, D., Chapter 3.4 "Cerro-Azul Community Center in Mexico", In Yoon, J., Jang, M. & Kim, Y. *Introduction to City Repair: DIT (Do It Together) Urban Regeneration* (pp.103-113), Korea: Architecture and Urban Research Institute (AURI), ISBN: 979-11-5659-260-0

GRANT and CONTRACT

Arizona State University

- 2022 – Present *Effects of dynamic lighting on improving sleep and mood in older adults with dementia*
- Role: **Co-Investigator** with David Coon (PI, ASU) / Co-PIs at ASU: Nastaran Shishegar, Heather Bimonte-Nelson, David Brafman, Timothy Karr, Judith Klein-Seetharaman, Diego Mastroeni, Edward Ofori, Benjamin Readhead, Sydney Schaefer, Michael Sierks, Sarah Stabenfeldt, Jessica Verpeut, Yalin Wang / Co-Investigators at ASU: Shawn Youngstedt, Molly Maxfield
 - Award: \$350,000 / Allocation: \$3,500 (1%)
 - Funding source: **Arizona Alzheimer's Consortium (AAC)**
 - Conduct the monitoring experiment to evaluate the effect of a dynamic lighting condition on circadian activity rhythms and selected sleep parameters in older adults with dementia
- 2021 – Present *MRI: Acquisition of a High Heat Compatible Sweating Thermal Manikin for Interdisciplinary Research and Education on Human Thermal Exposure and Safety in Hot Climates*
- Role: Senior Personnel with Konrad Rykaczewski (PI, ASU) / Co-PIs at ASU: Ariane Middel, Jennifer Vanos, David Sailor, Stavros Kavouras / Senior Personnel at ASU: Patrick Phelan, Dennita Sewell, Jason Siegler, Floris Wardenaar, Sangram Redkar
 - Award: \$413,875 / Allocation: \$33,110 (8%)

- Funding source: Major Research Instrumentation (MRI), **National Science Foundation (NSF)**
- Conduct the experiments to estimate thermal comfort via thermal manikin in extreme outdoor environment

2021 – Present *Music and Indoor Environment Quality: Using human physiological signals to identify the optimum indoor lighting and thermal environment for the music listening*

- Role: **Principal Investigator** with Kristina Knowles (Co-PI, ASU)
- Award: \$15,000 / Allocation: \$7,500 (50%)
- Funding source: Herberger Institute Research-Building Investment (HIRBI) at ASU
- Conduct human experiments to verify the relationship between indoor lighting environment, human physiological responses, and music perception

2021 – 2022
(Completed) *Machine learning-based building environment control system development via human physiological signal: Focusing on building energy efficiency and the occupant's productivity*

- US-Korea Joint research development program
- Role: **Co-PI** with Sung-Guk Yoon (PI, Soongsil University (SSU), Korea)
- Award: \$156,000 / Allocation: \$48,000 (30%)
- Funding source: High-potential individuals global training program, Institute of Information & Communication Technology Planning & Evaluation (IITP), Korea
- Conducted human experiments to verify the relationship between lighting/thermal environment, physiological responses, and the occupants' productivity

2020 – 2022
(Completed) *Achieving a gender-specific indoor lighting environment via trainee's physiological signals for optimum physical training*

- Role: **Principal Investigator**
- Award: \$19,000
- Funding source: Faculty SEED Grant, Global Sports Institute (GSI) at ASU
- Conducted human experiments to verify the relationship between indoor lighting environment and human physiological responses in physical training

Lawrence Technological University

2019 *Human sensing-implemented indoor heating and cooling system control*

- Role: **Principal Investigator**
- Award: \$5,000
- Funding source: ASHRAE Undergraduate Equipment grants
- Integrated human-building integration research with the undergraduate building system course contents and assignment

MRI: Acquisition of Eye Tracking Equipment to Support Behavioral Research at LTU

- Role: Co-PI with Franco Delogu (PI, LTU), Lior Shamir (Co-PI, LTU), Eric Meyer (Co-PI, LTU), Joongsub Kim (Co-PI, LTU), Jianjun Zhu (Co-PI, LTU), Senior personnel onward: Sibrina Collins (LTU), Paul Jaussen (LTU), Steve Rost (LTU), Radovan Miucic (Chang An US R&D Center), Marcus Collins (Doner Advertising)
- Award: \$72,000

- Funding source: Major Research Instrumentation (MRI), **National Science Foundation (NSF)**
- Conducted human experiments to estimate visual comfort via human pupil size tracking

WAFES2019 Travel Grant

- Role: Program Committee
- WAFES2019 (Workshop on Architectural Faculty in Environmental Sustainability Research)
- Sponsor: U.S. **National Science Foundation (NSF)**

2018

Investigation on the Indoor Environment Control by Physiological Human Signals

- Role: **Principal Investigator**
- Award: \$5,000
- Funding source: Faculty SEED Grant, Lawrence Technological University
- Conducted human experiments to verify the relationship between indoor thermal environment and human physiological responses

User's Behavior and Emotional Responses in the office with the electrochromic Window

- Role: Sub-contractor
- Award: \$3,000
- Funding Source: View. Inc. via Human Building Integration Lab, USC
- Conducted comparative POE on the office with the electrochromic window

University of Southern California

2017

Human-Building Integration: Occupant Eye Pupil Size-Driven Lighting Control as a Sustainable Indoor Environmental Control Strategy in a Built Environment

- Role: Research Collaborator
- Sponsor: U.S. Environmental Protection Agency (EPA)'s P3 (People, Prosperity and the Planet) student design competition
- Participated in the research methodology development and documentation

SEED2017 Travel Grant

- Role: Participant
- Sponsor: KSEA (Korean-American Scientists and Engineers Association)
- Scientists and Engineers Early Career Development program

Energy modeling and analysis for the Los Angeles county public works – Development of sustainable infrastructure guidelines

- Role: Researcher
- Funding Source: AECOM
- Developed sustainable design strategies for four building types

2016

SEED2016 Travel Grant

- Role: Participant
- Sponsor: KSEA (Korean-American Scientists and Engineers Association)
- Scientists and Engineers Early Career Development program

Investigation on the indoor environment control by physiological human Signals: Immersive virtual environment and indoor environment

- Role: Postdoctoral researcher
- Funding source: ESSA Lab, Ajou University
- Conducted human subject experiments, analyzed the physiological and survey data, and published journal papers

California State Polytechnic University Pomona

2015 – 2016 *Investigation on the cooling performance of the Green Roof with Radiant system*

- Role: Postdoctoral researcher
- Funding source: ESSA Lab, Ajou University
- Developed hybrid green roof with radiant cooling system, built and monitored green roof test cells, and published journal paper

Ajou University (selective)

2006 – 2017 *A research on the environmental performance evaluation model for green remodeling building*

- Role: Researcher
- Funding source: National Research Foundation of Korea (NRF), 2015 - 2017
- Developed research methodology and analyzed the experiment results

A research on the establishment of green spec and green code for green home

- Role: Research Assistant
- Funding source: NRF, 2011 – 2014
- Established research methodology and managed overall grant submission
- Developed, built, and monitored full-scale mockups and published the results

Development of standard model for rural green home

- Role: Research Assistant
- Funding source: Ministry of Agriculture, Food and Rural Affairs (MAFRA), 2010 – 2013
- Developed a rural green home prototype, and verified its performance in the mockups

Development of eco envelope for low carbon home

- Role: Research Assistant
- Funding source: Ministry of Education and Science Technology (MEST), 2009 – 2010
- Developed automated shading system and performed monitoring experiments

Development for 3Z (Zero)-House (Living Machine)

- Role: Research Assistant
- Funding source: NRF, 2008 – 2011
- Developed design concept and strategies, participated in the construction of full-scale mock-up, and performed monitoring experiment

Development of performance Assessment and monitoring technology for multi residential complex

- Role: Research Assistant
- Funding source: MLTM, 2006 – 2011
- Developed performance assessment indicators for residential complex

PATENT

2010 Inventors: Hong, J., Lee, J., Yeom, D. & Kim, M. "**Unit Panel by Eco Material and Eco House thereof**", Registration #: 10-0994783-0000

AWARDS and SCHOLARSHIPS

- 2022 **Certificate of Recognition**
- HYSA's Mentorship program
 - Sponsor: Herberger Young Scholars Academy (HYSA)
- 2020 **Certificate for Scholarship of Teaching and Learning**
Sponsor: Center for Teaching and Learning, Lawrence Technological University
- 2019 **Best Research Development Hackathon Award**
- WAFES2019 (Workshop on Architectural Faculty in Environmental Sustainability Research)
 - Sponsor: National Science Foundation (NSF)
- 2016 **Superior Presentation Winner**
Spring Conference of Korea Institute of Ecological Architecture and Environment (KIEAE), Korea
- 2013 **Best Paper Award Winner**
Journal of Asian Architecture and Building Engineering (JAABE), Japan
- 2013 **Superior Presentation Winner**
Autumn Conference of Architectural Institute of Korea (AIK), Korea
- 2008 – 2011 **Ph.D. Graduate Scholarship**, Ajou University, Korea
- 2006 – 2008 **M.S. Graduate Scholarship**, Ajou University, Korea
- 2003 – 2005 **Ajou Scholarship**, Ajou University, Korea

DESIGN and BUILD PROJECTS

Community Outreach

- 2019 **Maker's Space**
- Project location: **Port Elizabeth, South Africa**
 - Community Recycling hub/workspace design by using **recycled materials (90%)**
 - Participated in the design and construction as a faculty collaborator
- 2015 – 2016 **Cerro Azul Community Center**
- Project location: **Tecate, Mexico**
 - Developed **affordable passive heating & cooling system** for the community center and participated in the construction

Research and Build

- 2015 – 2016 **Passive Cooling System Test-cells**
- Project location: John T. Lyle Center for Regenerative Studies, Pomona, CA, USA
 - Developed **hybrid green roof design for cooling** and built multiple test-cells
 - Conducted monitoring experiments and published multiple papers
- 2011 – 2012 **Experimental Buildings and Monitoring Center**
- Project location: Moon-gyoung, Gyeongsangbuk-do, Korea
 - **Natural construction material** research projects
 - Developed sustainable design features and supervised the constructions of **8** full-scale experimental buildings as a **field construction manager**
 - Conducted monitoring experiments and published multiple papers
- 2011 – 2012 **Ecological Home Construction Field Practice**
- Project location: Moon-gyoung, Gyeongsangbuk-do, Korea
 - **Field Instructor**; ARCH315, Ecological architecture lecture, Ajou University, Korea
 - Supervised 30 undergraduate students to build a **rammed earth** experiment unit
- 2011 **Green Home Construction Field Practice**
- Project location: Moon-gyoung, Gyeongsangbuk-do, Korea
 - Land and Environment Sustainability Forum (LES Forum) summer workshop
 - **Field Instructor**; Supervised 40 forum members to build an experiment house structure

MEDIA MENTIONS

- 2022 Great Cities Interview for APH414, The Design School, ASU
<https://www.youtube.com/watch?v=9YulDF4600Q3>
- 2021 Discipline: ASU Architecture Journal 07, The Design School, ASU, pp.60-64
https://issuu.com/thedesignschoolasu/docs/connections_issue_7_1_/s/12148695
- 2020 Global Alumni Message, Ajou University Quarterly Magazine, 2020 091011 Vol. 33
<https://blog.naver.com/greatajou/222174480899>
<https://blog.naver.com/greatajou/222177513425>

TEACHING

Arizona State University

- *Courses*
- 2020 – Present **ARC 421 Architecture Technology I** (*In-person & Online; Fall 2021 - Present*)
- Co-Instructor with Michael Underhill; Graduate lecture course
 - Focusing on the building science for architectural designers

ARC 422 Architecture Technology II (*In-person & Online; Spring 2022 - Present*)

- Co-Instructor with Michael Underhill; Graduate lecture course
- Focusing on the green building design and practice

ATE 553 Architectural Technology IV (*Fall 2020 & 2021*)

- Instructor; Graduate lecture course
- Focusing on the electrical, water, acoustics, and fire safety systems

ATE 556 Architectural Technology V (*Spring 2021 & 2022*)

- Co-Instructor with Tom Hartman; Graduate lecture course
- Focusing on the integrations between building systems and design

ATE 562 Experiment Evaluation (*Spring 2021*)

- Instructor; Graduate course with a hands-on building science experiment
- Focusing on the physical building environmental systems experiments

- *Advising Dissertation / Thesis / Applied project*

2020 – Present **Ph.D. Advisor**

- SungHyuk Son (2022 - Present)
- Ibrahim Lasfer (2022 - Present), Co-Advisor with John Takamura
- Mohammed Nasser Alrahyani (2021 - Present)
- Mansour Mohammed A Alhazmi (2020 - Present), “*Building performance optimization toward sustainability and net-zero energy building*”

Ph.D. Committee

- Jyothis Anand P J (2020 - 2022), “*The importance of spectral radiative properties of building envelope materials in affecting building thermal performance and the resulting impact on urban climates*”, Passed his Ph.D. defense on Jul 29, 2022

Applied Project Advisor

- Vini Jacob (2021), “*Analyzing Blind Angles on Daylight Sufficiency and Building Load Impact for Office buildings*”

Lawrence Technological University

2018 – 2020 **ARC 5423 Ecological Issues** (*Spring 2019 & 2020*)

- Instructor; Graduate seminar course (Online)
- Taught theoretical and practical issues related to **ecological building design**

ARC 4126 Comprehensive Design – Lab (*Spring 2019 & 2020*)

- Instructor; Undergraduate architectural design studio (Senior)
- Focused on the **passive/Active design**, HVAC **system integration**, building **envelope** including **material** selection and **wall/roof assembly**, technical documentation, etc.

ARC 4116 Integrated Design Studio 5 (*Fall 2018 & 2019*)

- Instructor; Undergraduate architectural design studio (Senior)
- Focused on the **system integration** with architectural design, **passive and active system**, building **envelope** with wall and roof assembly

ARC 3423/5413 HVAC and Water Systems (Spring 2018 - 2020)

- Instructor; Lecture + Lab course (Senior & Online 3+ program)
- Taught fundamental principles and applications of **HVAC and water systems**, and the **system-design integration**, **simulation program practice**, **thermal comfort human experiments**, and **net-zero housing retrofit**

ARC 4443/5443 Acoustics, Electrical and Illuminations Systems (Spring 2018 - 2020)

- Instructor; Lecture + Lab course (Senior & Online 3+ program)
- Taught fundamental principles and applications of **acoustics, electrical and illumination systems**, and the **system-design integration**, **simulation program practice**, and **shading system design & build + monitoring experiments**

Ajou University

2017 ***ARCH 422 Green Residential Complex Design (Fall 2017)***

- Instructor; Undergraduate lecture course (Junior & Senior)
- Taught design strategies and practice for the **green residential complex**

California State Polytechnic University Pomona

2015 ***ARC 203 Architectural Design studio (Fall 2015)***

- Guest-Instructor; Undergraduate architectural design studio (Junior)
- Conducted desk critique, focusing on the **passive cooling system design**, participated in the final review as a reviewer, and co-evaluated students' final project

ARC 402 Architectural Design studio (Spring 2015)

- Guest-Instructor; Undergraduate architectural design studio (Senior)
- Conducted desk critique, focusing on the **sustainable building design**, participated in the final review as a reviewer, and evaluated students' final project

Ajou University

2013 ***ARCH 422 Green Residential Complex Design (Fall 2013)***

- Instructor; Undergraduate lecture course (Junior & Senior)
- Taught green building design strategies and practice for the **green residential complex**

2006 - 2011 **Graduate Teaching Assistant**

- Multiple undergraduate architectural design studios, green residential complex design courses, and ecological architecture courses

Invited / Guest Lecture

- *International event*

2021 **Guest Lecturer G-NET KBTS**

Human-Building Integration

- Location: Online, Oct 21, 2021
 - Guest lecturer for the Global Network of Korean Building Technologists and Scientists
- 2020 **Invited Speaker**
Ajou Global: The Moment of Choices
- Location: Online, hosted by Innovation Center for Engineering Education, Ajou University, Nov 23, 2020, Suwon, Korea
 - Invited speaker for the students' global career development
- 2020 **Invited Speaker**
Sustainable Architecture and Technology
- Location: Online, hosted by Bharath Institute of Higher Education and Research (BIHER), Nov 12, 2020, Chennai, India
 - Invited speaker for an online technical seminar
- 2020 **Invited Speaker**
Relationship between human physiological responses and cognitive performance in indoor thermal environment
- Location: Indoor Air 2020 Conference, Nov 2, 2020, Seoul, Korea
 - Invited speaker for the workshop 12, titled "Human-Building Integration as an Innovative Principle to Control Indoor Environmental Quality"
- 2017 **Guest Lecturer**
Sustainable building design and human building integration
- Location: Department of Architecture, Ajou University, Korea
 - Graduate lecture course (ARCH635); Advanced Architectural Environment & Psychology
- 2017 **Guest Lecturer**
Zero energy building - Concept, design strategies and case studies
- Location: Department of Electrical Engineering, Soongsil University, Korea
 - Graduate lecture course (EE6730); Topics in Renewable Energy
- 2014 **Invited Speaker**
Korean Green Building Certification system: The Possibility of Sustainability Assessment
- Location: DA Group (Architecture firm), Seoul, Korea
 - LES Forum (Land & Environment Sustainability) and Future Space Research Group Joint Seminar
- *National event (USA)*
- 2022 **Invited Panel**
Career development panel discussion
- Location: Online, hosted by the KobSEA, Feb 27, 2022
 - Invited panel for junior faculty career development: Applying for a tenure-track position
- 2020 **Invited Speaker**
Cultures of Online Teaching and Learning
- Location: [ACSA Webinar](#)
 - Group presentation and discussion about re-contextualizing on-ground classes, leveraging online technology, and empowering peer-to-peer learning

- *Institutional event*

- 2022 **Invited Speaker**
Human-Building Integration: Indoor thermal and lighting environment and human
- Location: Online, hosted by the Lawrence Technological University, Feb 22, 2022, Southfield, Michigan
 - Invited speaker for ARI 4123: Environmental Psychology (Instructor: Prof. Len DiLaura)
- 2021 **Invited Speaker**
Sustainable construction material, design, and technology
- Location: Online, hosted by the University of Texas San Antonio, Oct 19, 2021, San Antonio, Texas
 - Invited speaker for ARC 5733: Advanced Building Technology and Sustainability (Instructor: Dr. Jae-Yong Suk)
- 2021 **Guest Lecturer**
Career path
- Location: Neeb Hall in Tempe campus, ASU, Oct 8, 2021 and Online
 - Guest lecturer for the course: ARC 111, Architecture of Architecture I (Instructor: Dr. Marc Neveu)
- 2021 **Guest Lecturer**
Sustainable Architecture and Technologies
- Location: Novus 228, Sep 30, 2021, The Design School, ASU
 - Guest lecturer for the course: EPD 710, Current Research in Design (Instructor: Dr. Mauricio Mejia)
- 2020 **Guest Lecturer**
Sustainable Architecture and Technologies
- Location: Online course, Oct 14, 2020, The Design School, ASU
 - Guest lecturer for the course: EPD 710, Current Research in Design (Instructor: Dr. Mauricio Mejia)
- 2020 **Invited Speaker**
A Technological Experiment-based Learning Experience and Enhancing Students' Interactions in the Team Project
- Location: Buell Management Building, Building 5, LTU, Southfield, MI
 - Center for Teaching and Learning lecture series: Lifelong Learners by Example
- 2019 **Guest Lecturer**
Human-sensing Implemented Building System Design
- Location: Department of Art and Design, LTU, Southfield, MI
 - Graduate industrial design studio
- 2018 **Invited Lecturer**
Human-sensing Implemented Building System Control
- Location: Detroit Center for Design + Technology (DCDT), Detroit, MI
 - Faculty Brown Bag Series

- 2017 **Guest Lecturer**
Building energy simulation practice (Design Builder program)
- Location: University of Southern California, Los Angeles, CA
 - Graduate lecture course (ARCH615); Advanced Topics in Environmental Controls
- 2016 **Guest Lecturer**
Advanced research methodology
- Location: University of Southern California, Los Angeles, CA
 - Graduate lecture course (ARCH515); Advanced Environmental System
- 2016 **Guest Lecturer**
Sustainable building design strategies
- Location: University of Southern California, Los Angeles, CA
 - Graduate lecture course (ARCH576); Sustainable Design for Healthy Indoor Environments Contents

SERVICES

Academic Services

- *University level*

- 2021 - 2022 **K-12 Mentor**, HYSA (Herberger Young Scholars Academy) Mentorship program
- 2020 **Interim Faculty Council**, representing the College of Architecture and Design
- 2019 - 2020 **Faculty Sponsor**, for the Presidential Undergraduate Research Award recipient
- 2018 **Campus Affairs Committee**
- 2018 **Intelligent Connected System Institute**

- *School/College level*

- 2020 - 2021 **Advisory Committee**, Director Search for The Design School, HIDA
- 2020 - 2021 **Wellness and Support Committee**, The Design Justice Initiative
- 2020 **Curriculum Committee**, the College of Architecture and Design
- 2019 **Associate Assessment Coordinator**, the Department of Architecture
- 2018 **Search Committee** for the Interior Design faculty

- *Program/Department level*

- 2021 - Present **Adhoc Committee**, NAAB-Canvas integration
- 2021 - 2022 **Search Committee**, Faculty Search for the Architecture program
- 2020 **Adhoc Committee**, MS Arch curriculum update
- 2020 **Adhoc Committee**, M Arch curriculum update
- 2020 **Assessment Committee**, the Department of Architecture
- 2019 **Adhoc Committee**, for the Department core curriculum course change

Professional service

- 2022 – Present **Technical committee**, IAQVEC (Indoor Air Quality, Ventilation and Energy Conservation in Buildings) technical program, IAQVEC Association
- 2021 – Present **Guest editor**, Special issue “Human-Building Integration Research”, Journal: Sustainability, MDPI
- 2021 **Vice-chair**, Global NET – KBTS (Global Network of Korean Building Technologists and Scientists)
- 2021 **Peer reviewer**, Journal: Engineering (Elsevier)
- 2018 – Present **Peer reviewer**, Journal: Energy and Building (Elsevier)
- 2013 – Present **Peer reviewer**, Journal: Building and Environment (Elsevier)
- 2020 **Peer reviewer**, Journal: Journal of Building Engineering (Elsevier)
- 2019 – 2020 **International Scientific Committee**, Indoor Air 2020, Seoul, Korea
- 2019 – 2020 **Scientific Committee**, ARCC-EAAE 2020 International Conference, Valencia, Spain
- 2019 **Technical Referee Committee**, SMC magazine (Sustainable Mediterranean Construction), Italy
- 2019 **Housing Energy Audit**, for Architect Houm, Detroit, MI, USA
- 2019 **Program Committee**, WAFES 2019, Toronto, Canada
- 2018 – 2019 **Scientific Committee**, ARCC 2019 Conference, Toronto, Canada
- 2018 **Scientific Committee**, PLEA2018 Conference, Hong Kong, China
- 2017 – 2018 **Scientific Committee**, ARCC-EAAE 2018 International Conference, Philadelphia, U.S.
- 2016 – 2017 **Scientific Committee**, ARCC 2017 Conference, Salt Lake City, U.S.
- 2016 **Peer reviewer**, Journal: Architectural Science Review (Taylor & Francis)
- 2015 – 2016 **Organizing Committee & Scientific Committee**, PLEA2016 Los Angeles Conference, U.S.
- 2013 **Community Planning Tutor**, Suwon Community Renaissance Project, Korea

Professional Development / Training

- 2022 **NSF Virtual Grant Conference**
- *Organizer: National Science Foundation (NSF)*
 - Location: Online workshop, Jun 6-9, 2022
 - “Proposal preparation”, “Merit review process”, ‘NSF proposal and award policy update”, and “Proposal submission modernization update”
- 2022 (Cont.) **BES ECN - 2022 Early Career Grant Writing Webinar**
- *Organizer: Department of Energy (DOE)*
 - Location: Online webinar, Apr 12, 2022

Healing Our Nation: The Power of Authentic Allyship

- *Organizer: ASU Staff Council DEI Committee*
- Location: Online workshop, Apr 8, 2022

General Education Workshop: Global Sustainability

- *Organizer: ASU General Education*
- Location: Online workshop, Feb 24, 2022

General Education Workshop: Scientific and Engineering Thinking and Practice

- *Organizer: ASU General Education*
- Location: Online workshop, Feb 21, 2022

ASU Online: Course Design Standards for Quality, Equity, and Inclusion

- *Organizer: ASU EdPlus*
- Location: Online workshop, Feb 2, 2022

2021

Creating a Responsive Proposal

- *Organizer: ASU Knowledge Enterprise*
- Location: Online workshop, Nov 9, 2021

NSF Virtual Grant Conference

- *Organizer: National Science Foundation (NSF)*
- Location: Online workshop, Oct 4-8, 2021
- “Proposal preparation”, “Directorate for Engineering (Eng)”, and “CAREER” Award

NSF CAREER Program Webinar

- *Organizer: National Science Foundation (NSF)*
- Location: Online workshop, May 20, 2021
- “FY21 Foundation-wide CAREER Program Overview”

FWA Leadership Summit 2021 Embracing Our Charter

- *Organizer: ASU Faculty Women’s Association*
- Location: Online workshop, Mar 4, 2021
- “Leading Inclusion at ASU and Beyond”

The Promotion and Tenure Process

- *Organizer: Vice Provost for Academic Personnel*
- Location: Online workshop, Mar 24, 2021

2020

NSF Fall 2020 Virtual Grants Conference

- *Organizer: National Science Foundation (NSF)*
- Location: Online workshop, Nov 16 - Dec 3, 2020
- “Crosscutting Programs: CAREER”, “Merit Review”, and “Proposal Preparation”

Proposal Writing II

- *Organizer: ASU Knowledge Enterprise Development*
- Location: Online workshop, Nov 10, 2020
- Introductory proposal workshop

Addressing Academic Integrity in the Sync Environment

- *Organizer: ASU Learning Experience Integration at Arizona State University*
- Location: Online workshop, Nov 4, 2020
- Teaching experience conversation series (2/5)

Success in the Early Years: Strategies for Junior Faculty

- *Organizer: ASU Faculty Women's Association*
- Location: Online workshop, Nov 4, 2020
- Insight and advice on succeeding as a new professor

GRASP 2020 (Grant Research and Sponsored Projects)

- *Organizer: ASU Knowledge Enterprise Development*
- Location: Online workshop, Sep 1, 2020
- Grant opportunity, proposal preparation, and research resources at ASU

Faculty Grant Writing Workshop Series

- *Organizer: The Provost's Office*
- Location: Lawrence Technological University, Southfield, MI
- 4 Day-sessions: How to prepare the proposal and search funding opportunities

2019

KSEA 'Ignite Your Potential' Academic Career Seminar

- *Organizer: KSEA Michigan chapter (Korean-American Scientists and Engineers Association)*
- Location: University of Michigan, Ann Arbor, MI, USA
- Training session: How to prepare the tenure review

Faculty Grant Writing Workshop Series

- *Organizer: The Provost's Office*
- Location: Lawrence Technological University, Southfield, MI
- 3 Day sessions: How to prepare the proposal and search funding opportunities

WAFES 2019 (Workshop on Architectural Faculty in Environmental Sustainability Research)

- *Sponsor: National Science Foundation (NSF)*
- Location: Ryerson University, Toronto, Canada
- Workshop sessions: How to prepare the grant proposal and search funding opportunities + Key note speeches from the former NSF program director

2018

Faculty Grant Writing Workshop Series

- *Organizer: The Provost's Office*
- Location: Lawrence Technological University, Southfield, MI
- 3 Day-training sessions: How to prepare the grant proposal and search funding opportunities

Faculty Teaching Development Workshop Series

- *Organizer: The Center for Teaching and Learning (CTL)*
- Location: Lawrence Technological University, Southfield, MI
- Training sessions about teaching methodology, course design, communication with students, and other teaching-related issues

2017

Scientist and Engineers Early-Career Development; SEED 2017 Workshop

- *Organizer: KSEA (Korean-American Scientists and Engineers Association)*
- Location: KSEA Headquarter, Vienna, VA, USA
- Training session about how to prepare grant proposal and search funding opportunities

- 2016 – 2017 **Faculty Teaching Development Workshop Series**
- *Organizer: The Center for Excellent in Teaching (CET)*
 - Location: University of Southern California, Los Angeles, CA
 - Training sessions about teaching methodology, course design, communication with students, and other teaching-related issues
- 2016 **Scientist and Engineers Early-Career Development; SEED-WEST 2016 Spring Workshop**
- *Organizer: KSEA (Korean-American Scientists and Engineers Association)*
 - Location: KSEA Silicon Valley chapter, San Jose, CA
 - Training sessions about job searching, grant proposal, funding opportunities, and career development

Membership / Certification

- 2022 – Present **Affiliated Faculty**, Center of Building Innovation (CoBI), ASU
- 2021 – Present **G-Net KBTS**, Global Network of Korean Building Technologists and Scientists
- 2021 – Present **KoBSEA**, Korean Building Scientists and Engineers Association in US
- 2020 – Present **Affiliated Faculty**, Urban Climate Research Center (UCRC), ASU
- 2020 – Present **ISIAQ**, International Society of Indoor Air Quality and Climate
- 2019 – Present **Associate AIA**, The American Institute of Architects
- 2018 – Present **SBSE**, Society of Building Science Educators
- 2016 – Present **KSEA**, Korean-American Scientists and Engineers Association
- 2014 – Present **LEED GA**, U.S. Green Building Council (USGBC)