

## Curriculum Vitae

### Jong Bum Kim, Ph.D.

Assistant Professor  
iLab Director  
Department of Architectural Studies  
College of Arts and Sciences  
University of Missouri  
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573-882-1132  
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## EDUCATION

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- Ph.D.      **Texas A&M University**, College Station, TX, 2014.  
Doctor of Philosophy in Architecture  
Dissertation: "Parametric Urban Regulation Models to Predict Development Performances"  
Advisor: Dr. Mark J. Clayton  
Committee Members: Prof. Geoffrey J. Booth, Dr. Valerian Miranda, and Dr. Wei Yan
- MS        **The University of Texas at Austin**, Austin, TX, 2008.  
Master of Science in Urban Design  
Master thesis project: "South Dallas Revitalization"  
Committee: Prof. Dean J. Almy (Chair) and Dr. Simon Atkinson
- MS        **Yonsei University**, Seoul, Korea, 2000.  
Master of Science in Architectural Engineering  
Master thesis: "A Study on the Material Color Coding of the Office Building"  
Committee: Drs. Kyoungchoi Lee (Chair), Sungwoo Kim, Youngki Park, Sangho Lee,
- BA        **Yonsei University**, Seoul, Korea, 1998.  
Bachelor of Science in Architectural Engineering

## ACADEMIC EMPLOYMENT

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- 2017 8.~      **Assistant Professor**, Department of Architectural Studies, University of Missouri, Columbia, MO. *iLab director (2022~present); iLab Faculty Associate (2017~2021); Studio Coordinator (2020~present)*
- 2016~2017      **Lecturer**, Department of Architecture, Texas A&M University, College Station, TX.  
Teach the sophomore design studio ARCH 205.
- 2015            **Postdoctoral Research Associate**, Department of Architecture, Texas A&M University, College Station, TX.  
Research projects of Unreal Projects: Using immersive visualization to learn about distant and historical locales (Supervisor: Dr. Stephen Caffey).
- 2014            **Instructor (Professor in Record)**, Department of Architecture, Texas A&M University, College Station, TX.  
Teach the Design Communication course ENDS 115.

- 2010-2013 **Voluntary Teaching Assistant.** Department of Architecture, Texas A&M University, College Station, TX.  
Review students' design, teach design software, and create studio portfolios in Dr. Clayton's undergraduate studio ARCH 205 (2010 Spring, 2010 Fall, 2011 Fall, 2012 Spring, and 2013 Fall).
- 1999 **Teaching Assistant.** Department of Architecture, Yonsei University, Seoul, Korea.  
Review students' designs and teach design software in the undergraduate design studio.

## PROFESSIONAL EMPLOYMENT

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Managed the entire architectural process from over 8-year professional practices in the United States and Korea, including schematic design, design development, construction document, and construction administration. Specialized in high-rise residential, mixed-use, and community master planning. Participated in international and domestic design competitions. See my portfolio for additional project details, including my role in the projects.

- 2006-2008 **FTC Architects**, Georgetown, TX.  
As a chief designer, designed site plans, floor plans, and elevations in the SD and the DD phase for two projects. Designed floor plans and elevations for interior layout in the CD and the CA phases.

**Completed Projects:**

2007. TAMIRO Plaza, Georgetown, TX. (Mixed-use, 130,000 sq. ft.)  
2008. VINA Plaza, Austin, TX. (Retail, 220,000 sq. ft.)

**Proposed Projects:**

2008. TAMIRO Plaza II, Georgetown, TX. (Mixed-use)

- 2000-2006 **Mooyoung Architect & Engineers**, Seoul, Korea.  
As a project manager, carried out many international design competitions and turnkey-based projects for public housing, high-rise mixed-use, retails, and office buildings. Led the building permit process for three residential developments and managed the CD and CA phases.

**Completed Projects:**

2006. Sewoon District #4 Urban Redevelopment, Seoul, Korea. (Mixed-use, 25,500 sq. ft.)  
2005. Gao Housing, Daejeon, Korea. (Residential, 650 units)  
2003. Simone Head Office, Uiwang, Korea. (Office, 74,200 sq. ft.)  
2003. Dongbak Miraedo Housing, Youngin, Korea. (Residential, 1174 units)  
2002. Jangwal District Public Housing, Seoul, Korea. (Residential, 230 units)

**Winning Design Competition:**

2004. Sewoon District #4 Urban Redevelopment, Seoul, Korea. (Mixed-use, 25,500 sq. ft.)  
2003. Central District Development, Hwasung, Korea. (Mixed-use, 1,033,000 sq. ft.)  
2001. World Meridian Housing, Suwon, Korea. (Residential, 2,063 units)  
2000. New Urban Master Plan, Hwaseong, Korea. (Mixed-use, 9,479,000 sq. ft.)  
2000. Daelim Acrovile High-rise Residence, Seoul, Korea. (Mixed-use, 365,000 sq. ft.)

**Schematic Design:**

2004. Van Tri Master Plan, Vietnam  
2003. Saidong Housing Complex Master Plan, Vietnam.  
2002. Youngsan Urban Revitalization Project Master Plan, Korea.

## RESEARCH EXPERIENCE

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- 2015 **Postdoctoral Research Associate.** Texas A&M University, College Station, TX.  
Research projects of Unreal Projects: Using immersive visualization to learn about distant and historical locales (Supervisor: Dr. Stephen Caffey).
- 2013-2014 **Research Assistant.** Texas A&M University, College Station, TX.  
Research projects of the Quadruple Net Value Analysis using Building Information Modeling and Immersive Visualization Project (Supervisor: Dr. Mark J. Clayton).
- 2010-2013 **Research Assistant.** Texas A&M University, College Station, TX.  
Research projects of NSF 0967446, Physical Building Information Modeling for Solar Building Design and Simulation (Supervisor: Dr. Wei Yan).
- 2010-2011 **Voluntary Research Assistant.** Texas A&M University, College Station, TX.  
Research projects of ASHRAE RP-1468, Development of a Reference Building Information Model (BIM) for Thermal Model Compliance Testing (Supervisor: Dr. Mark J. Clayton).
- 2007 **Research Assistant.** University of Texas at Austin, Austin, TX.  
Curate the Dallas Urban Laboratory Exhibition, "Across the divide," in AIA Dallas, October 16, 2007.
- 1998-1999 **Research Assistant.** Yonsei University, Seoul, Korea.  
Inchon International Airport Energy Performance Analysis.

## TEACHING

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My professional design experience and design computing knowledge greatly inform the courses I teach. I have taught architecture design studios, computing courses centered on BIM and visualization, and independent studies for undergraduate and graduate students. I taught the below courses as a primary instructor unless noted otherwise.

### University of Missouri

- ARCHST3182 Studio 2
- ARCHST4824 Studio 4 (Computational Design Studio)
- ARCHST4990 Thesis Studio
- ARCHST3230 Advanced Design Communication Using BIM
- ARCHST4085 Problems in Architectural Studies
- ARCHST8840 Graduate Design Studio
- Graduate Student Individual Studies
- Graduate Student Summer Workshop

### Prior to MU

- ARCH205 Architectural Design I, Texas A&M University
- ARCH206 Architectural Design II, Texas A&M University

- ENDS115      Design Communications, Texas A&M University
- ENDS108      Design and Visual Communication Foundation II, Texas A&M University
- Architectural Design II, Yonsei University, Teaching Assistant

## GRANTS FUNDED

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**Total awarded funds since arriving MU: \$10,406,257**

### External Grant Total: \$10,185,331

- 2023      Funded, **Co-Investigator** (PI: Dr. Sanjeev Khanna), Department of Energy, Midwest Industrial Assessment Center. (\$1,749,999 for 2023-2026, 15% Shared Credit) Project No. 00083049
- 2022      Funded, **Co-Principal Investigator** (PI: Dr. Laura Zangori), National Science Foundation (#2201204), NSF Discovery Research PreK-12 (DRK-12), Build it Green!: Energy Education through Energy Efficient Building Design. Co-PI. (\$2,950,334 for 2022-2026, 20% Shared Credit) Project No. 2201204
- 2021      Funded, **Principal Investigator**, AT&T Connected Climate Initiative, Impact of 5G on the Reduction of Greenhouse Gas Emissions, (\$100,000 for 2021-2023, 60% Shared Credit) Project No. 2021762695
- 2021      Funded, **Co-Principal Investigator** (PI: Julie A. Brinkhoff), U.S. Administration for Community Living & National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR) (under U.S. Dept. of Health and Human Services) grant for Disability and Rehabilitation Research Projects (DRRP) Program: A Great Plains Regional ADA Network Services Initiative (\$5,000,000 for 2021-2026, 28% Shared Credit) Project No. 90DPAD0007
- 2020      Funded, **Senior Personnel** (PI: Dr. Ye Duan), National Science Foundation, MRI: Acquisition of a Virtual Reality System for Expert Decision Making and Immersive Learning (\$270,018 for 2020-2023, 17% Shared Credit) Project No. 2018850
- 2019      Funded, **Co-Principal Investigator** (PI: Dr. Bimal Balakrishnan), Steelcase Active Learning Center Grant Program (Gift-in-kind valued at \$67,000, 25% Shared Credit)
- 2019      Funded, **Co-Principal Investigator** (PI: Dr. Bimal Balakrishnan), Eaton Industry Sponsorship for Smart Lighting implementation (Valued at Approx. \$40,000)
- 2017      Funded, **Co-Principal Investigator** (PI: Dr. Bimal Balakrishnan), Facebook Oculus NextGen Program (Valued at \$7,980)

### Internal Grant Total: \$220,926

- 2021      Funded, **Co-Principal Investigator** (PI: Dr. Laura Cole), College of Human Environmental Sciences (HES) program for Proposal Enhancement Support. DTI: The Net Zero Game: Integrating Role-Playing and Model-Based Reasoning in a Serious Game for a Green Building Unit (\$10,000 for 2021)

- 2019 Funded, **Co-Principal Investigator** (PI: Dr. Song-yi Youn), HES Seeding Interdisciplinary Research Collaboration (SIRC) Program, The data privacy paradox: Exploring inclusive web-design and virtual environments for fashion e-consumers (\$1,000 for 2020)
- 2019 Funded, **Co-Investigator** (PI: Dr. Bill Buttlar), UM System Research and Creative Works Strategic Investment Program (Tier 2 Grant), Building a Convergent Research Community for Smart City Center Procurement (\$187,000 for 2019-2021)
- 2019 Funded, **Principal Investigator**, University of Missouri Research Council, Envisioning an Unbuilt Environment: A pilot study of an urban information modeling for visualization and performance analysis of land development (\$12,926 for 2019-2020)
- 2019 Funded, **Principal Investigator**, Richard Wallace Faculty Incentive Grant Award, Envisioning Smart Growth development with immersive modeling and visualization (\$4,000 for 2019-2020)
- 2019 Funded, **Faculty Mentor** (PI: Victoria Workman), University of Missouri Program for Undergraduate Research Experiences (PURE), Testing and Modeling of Ecotherapy for Healthcare Facility Design (\$1,500 for 2019-2020)
- 2018 Funded, **Principal Investigator**, University of Missouri Mangel Faculty Research Catalyst Fund, Visualizing Smart Growth: A Case Study of Columbia Unified Development Plan (\$3,000 for 2018-2019)
- 2018 Funded, **Faculty Mentor** (PI: Dalila Kahvedzic), University of Missouri Program for Undergraduate Research Experiences (PURE), A Case Study of MU Campus ADA design for users' emotions and physical comforts (\$1,500 for 2018-2019)

## GRANTS NOT FUNDED

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- 2023 **Co-Investigator** (PI: Dr. Daniel Oprean), NSF Innovative Technology Experiences for Students and Teachers (ITEST) (2023) Collaborative Research: DTI: Energy Smart Building Design: Development of a Middle School Serious Game and Supporting Unit for Identity Exploration (\$394,908 for 2024-2027, 20% Shared Credit)
- 2023 **Co-Investigator** (PI: Dr. Sanjeev Khanna), Department of Energy, Bipartisan Infrastructure Law: Industrial Assessment Center (IAC) Program – IACs at Trade Schools, Community Colleges, and Union Training Programs; and Building Training and Assessment Centers (BTAC) Program. (\$1,099,973 for 2024-2026, 20% Shared Credit)
- 2022 **Co-Principal Investigator** (PI: Dr. Danielle Oprean), Spencer Foundation, Illumi's World: A serious game to enhance rural youth energy education through green building design. (\$50,000 for 2023-2025)
- 2021 **Co-Principal Investigator** (PI: Dr. Laura Cole), Spencer Foundation Small Grant Request, Illumi's World: A serious game to enhance middle school energy education through green building design. (\$49,992 for 2022-2024)
- 2021 **Co-Principal Investigator** (PI: Dr. Laura Zangori), NSF Discovery Research PreK-12 (DRK-12), Build it Green!: Energy Education through Energy Efficient Building Design. (\$299,998 for 2022-2026)

- 2021 **Co-Principal Investigator** (PI: Dr. Laura Zangori), NSF Innovative Technology Experiences for Students and Teachers (ITEST) (2020) DTI: The Net Zero Game: Integrating Role-Playing and Model-Based Reasoning in a Serious Game for a Green Building Unit. (\$1,500,000)
- 2021 **Co-Principal Investigator** (PI: Dr. Sanjeev Khanna), Midwest Industrial assessment Center, Office of Energy Efficiency and Renewable Energy (EERE), Department of Energy. (\$2,270,717 for 2021-2026)
- 2020 **Co-Principal Investigator** (PI: Dr. Bill Buttler), National Science Foundation, Gen-4 Engineering Research Centers (ERC) Program, Engineering Research Center for Missouri Hyperloop
- 2020 **Co-Principal Investigator** (PI: Dr. Laura Zangori), NSF Innovative Technology Experiences for Students and Teachers (ITEST) (2020) DTI: The Net Zero Game: Integrating Role-Playing and Model-Based Reasoning in a Serious Game for a Green Building Unit. (\$1,500,000)
- 2018 **Key Personnel** (PI: Dr. Ye Duan), National Science Foundation, MRI: Acquisition of an Immersive Virtual Reality Environment for Dynamic Decision Making (\$496,000 for 2018-2021)
- 2017 **Co-Principal Investigator** (PI: Dr. Bimal Balakrishnan), National Institute of Standards and Technology, Achieving experiential congruence for Fire/EMS response training using AR & VR: A living lab approach National Institute of Standards and Technology (\$599,858 for 2018-2021)

## GRANT/ TECHNICAL REPORTS

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**Kim, J. B.**, Wang, F., Khanna, S., Balakrishnan, B., Aman, J., Uddin, M., & Thipparthi, V. (2024). Impact of 5G on the Reduction of Greenhouse Gas Emissions in Buildings, Final Report. AT&T Connected Climate Initiative, January 2024.

Yan, W., Haberl, J., Clayton, M., Jeong, W., **Kim, J. B.**, Kota, S., Bermudez Alcocer, J., Dixit, M., Rahmani Asl, M. (2015). Annual Report: Physical Building Information Modeling for Solar Building Design and Simulation, NSF GRANT CBET – 0967446, January 30, 2015.

Clayton, M. J., Haberl, J., Yan, W., Kota, S., Fariás, F., Jeong, W., **Kim, J. B.**, and Bermudez Alcocer, J. (2013). Development of a Reference Building Information Model (BIM) for Thermal Model Compliance Testing, a report published by ASHRAE. <http://www.techstreet.com/products/1868055>

Yan, W., Haberl, J., Clayton, M., Jeong, W., **Kim, J. B.**, Kota, S., Bermudez Alcocer, J., and Dixit, M. (2013). Annual Report: Physical Building Information Modeling for Solar Building Design and Simulation, NSF GRANT CBET – 0967446, December 1, 2013.

Yan, W., Haberl, J., Clayton, M., Jeong, W., **Kim, J. B.**, Kota, S., Bermudez Alcocer, J., and Dixit, M. (2012). Annual Report: Physical Building Information Modeling for Solar Building Design and Simulation, NSF GRANT CBET – 0967446, December 1, 2012. <http://esl.tamu.edu/docs/terp/2012/ESL-TR-12-12-08.pdf> (ESL-TR-12-12-08)

Bermudez Alcocer, J., Haberl, J., Yan, W., Clayton, M., **Kim, J. B.**, Kota, S., and Jeong, W. (2012). Report on High Performance Building's Energy Modeling, Physical Building Information Modeling for Solar Building Design and Simulation, Energy Systems Laboratory, Texas A&M University. August 2012. [http://esl.tamu.edu/docs/terp/2012/ESL-TR-12-08-02\\_Final\\_revised.pdf](http://esl.tamu.edu/docs/terp/2012/ESL-TR-12-08-02_Final_revised.pdf) (ESL-TR-12-08-02)

Yan, W., Haberl, J., Clayton, M., Jeong, W., **Kim, J. B.**, Kota, S., Bermudez Alcocer, J., and Dixit, M. (2011). Annual Report: Physical Building Information Modeling for Solar Building Design and Simulation, NSF GRANT CBET – 0967446, December 1, 2011. <http://esl.tamu.edu/docs/terp/2011/ESL-TR-11-12-05.pdf> (ESL-TR-11-12-05)

Yan, W., Haberl, J., Clayton, M., **Kim, J. B.**, Bermudez Alcocer, J., Jeong, W., and Kota, S. (2010). Annual Report: Physical Building Information Modeling for Solar Building Design and Simulation, NSF GRANT CBET – 0967446, November 30, 2010. <http://esl.tamu.edu/docs/terp/2010/ESL-TR-10-11-03.pdf> (ESL-TR-10-11-03).

A study on the improvement of intelligent building indoor air quality, Korea Heavy Industries & Construction, Co. Ltd. (1999). Project report, Korea.

Incheon International Airport: Great Hall HVAC-simulation, Incheon International Airport Corporation (1999). Project report, Korea.

## PEER-REVIEWED PUBLICATIONS

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5IF = 5-year impact factor, \*= Student research assistant

### University of Missouri

1. **Kim, J. B.**, Oprean D, Cole L, & Zangori L. (2023). Illumi's world: A mini-game development with parametric BIM-based simulations. *International Journal of Architectural Computing*. 2023;21(3). Sage Journals. doi: 10.1177/14780771231180256 [CiteScore: 2.5, h5-index: 15]
2. **Kim, J. B.**, Kim, S., & Aman, J\*. (2023). An Urban Building Energy Simulation Method Integrating Parametric BIM and Machine Learning. *Human-Centric, Proceedings of the 27th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA) 2023*, March 18-24, Navrangpura, India. Doi: [https://papers.cumincad.org/cgi-bin/works/Show?caadria2023\\_403](https://papers.cumincad.org/cgi-bin/works/Show?caadria2023_403) [CumInCAD indexed, double-blind, peer-reviewed full paper]
3. Youn, S., Hwang, J\*, Li, Z., and **Kim, J. B.** (2023). Privacy Paradox in 3D Body Scanning Technology: The Effect of 3D Virtual Try-On Experience in the Relation between Privacy Concern and Mobile App Adoption Intention, *Journal of Humanities and Social Sciences and Communications*. doi: <https://doi.org/10.1057/s41599-023-01632-y> [5IF:2.7]
4. Lima, S.Q\*, Balakrishnan, B., & **Kim, J. B.** (2023). Virtual Construction Simulation: Evaluating Impact of Immersion and Interactivity on Novice Designers. *Lecture Notes in Computer Science (LNCS)*, vol X. Springer, Cham (2023)

5. Aman, J\*. & **Kim, J. B.** (2023). Multi-Variate Prediction Interface: A framework for forecasting the impact of urban morphology on carbon emissions. Proceedings of the 41th International Conference on Education and research in Computer Aided Architectural Design in Europe (eCAADe), September 20-23, 2023, Graz, Austria. [CumInCAD indexed, double-blind, peer-reviewed full paper]
6. **Kim J. B.**, Oprean D, Cole L, & Zangori L. (2022). Net Zero Game: A pilot study of game development for green building education in rural schools. 27th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA), April 12-15, 2022, Sydney. doi: <https://doi.org/10.52842/conf.caadria.2022.2.455> [CumInCAD indexed, double-blind, peer-reviewed full paper]
7. Lee, S., & **Kim, J. B.** (2022). Mixed-use contextualized: Understanding the spatial characteristics of mixed-use in Kansas City, MO. Journal of Urbanism: International Research on Placemaking and Urban Sustainability, 1–20. doi: <https://doi.org/10.1080/17549175.2022.2137687> [CiteScore: 3.3, SNIP: 0.583]
8. Aman, J\*, Matisziw, T., and **Kim J. B.**, (2022). Sensing the City: Leveraging geotagged social media posts and street view imagery to model urban streetscapes using deep neural networks. 27th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA) 2022, April 12-15, 2022, Sydney. doi: <https://doi.org/10.52842/conf.caadria.2022.1.595>. [CumInCAD indexed, double-blind, peer-reviewed full paper]
9. Aman, J\*, Tabassum, N., Hopfenblatt, J., **Kim, J. B.**, & Haque, M. O. (2021). Optimizing Container Housing Units for Informal Settlements- A parametric simulation & visualization workflow for architectural resilience. Projection, Proceedings of the 26th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA) 2021, March 29-April 1, Hong Kong. doi: <https://doi.org/10.52842/conf.caadria.2021.1.051> [Quality: CumInCAD indexed, double-blind, peer-reviewed full paper]
10. **Kim, J. B.**, Aman, J\*, and Balakrishnan, B. (2021). Forecasting performance of Smart Growth development with parametric BIM-based microclimate simulation. Projection, Proceedings of the 26th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA) 2021, March 29-April 1, Hong Kong. doi: <https://doi.org/10.52842/conf.caadria.2021.1.411> [CumInCAD indexed, double-blind, peer-reviewed full paper]
11. **Kim, J. B.** and Balakrishnan, B. (2020). Environmental Performance-based Community Development, RE: Anthropocene, Proceedings of the 25th International Conference of the Association for Computer-Aided Architectural Design Research in Asia (CAADRIA) 2020, Hong Kong. doi: <https://doi.org/10.52842/conf.caadria.2020.1.873> [CumInCAD indexed, double-blind, peer-reviewed full paper]
12. Farias, F., Kota, S., Jeong, W., **Kim, J. B.**, Bermudez Alcocer, J., Haberl, J. S., Clayton, M. J., and Yan, W. (2019). Development of a Reference Building Information Model (BIM) for Thermal Model Compliance Testing (RP-1468) Part-II: Test Cases and Analysis, ASHRAE Transactions. [H5-index: 8, CiteScore: 0.6]



13. **Kim, J. B.** and Balakrishnan, B. (2019). Visualize Smart Growth Development with Parametric BIM: A Case Study of Downtown Columbia Unified Plan, Hello Culture, Proceedings of Computer-Aided Architectural Design Futures 2019 (CAAD Futures), June 26-28, 2019, Daejeon, Korea. doi: ISBN 978-89-89453-05-5] Daejeon, Korea, p. 26. [http://papers.cumincad.org/cgi-bin/works/Show?cf2019\\_007](http://papers.cumincad.org/cgi-bin/works/Show?cf2019_007) [CumInCAD indexed, double-blind, peer-reviewed full paper]

#### Prior to MU

14. **Kim, J. B.**, Jeong, W., Clayton, M. J., Haberl, J. S., and Yan, W. (2015). Developing a Physical BIM Library for Building Thermal Energy Simulation. *Automation in Construction*, vol. 50, P.16-28. doi: <http://dx.doi.org/10.1016/j.autcon.2014.10.011> [5IF:15, CiteScore: 10.5]
15. Jeong, W., **Kim, J. B.**, Clayton, M. J., Haberl, J. S., and Yan, W. (2015). A Framework to Integrate Object-Oriented Physical Modelling with Building Information Modelling for Building Thermal Simulation. *Journal of Building Performance Simulation*. doi: <http://dx.doi.org/10.1080/19401493.2014.993709>. [5IF: 3.4, CiteScore: 5.7]
16. Kota, S., Farias, F., Jeong, W., **Kim, J. B.**, Bermudez Alcocer, J., Clayton, M. J., Yan, W., and Haberl, J. S. (2015). Development of a Reference Building Information Model (BIM) for Thermal Model Compliance Testing (RP-1468) Part-I: Guidelines for Generating Thermal Model Input Files, *ASHRAE Transaction*. [H5-index: 8, CiteScore: 0.6]
17. Jeong, W., **Kim, J. B.**, Clayton, M. J., Haberl, J. S., and Yan, W. (2014). Translating Building Information Modeling to Building Energy Modeling Using Model View Definition. *The Scientific World Journal*, vol. 2014, Article ID 638276, 21 pages. doi: <http://dx.doi.org/10.1155/2014/638276>.
18. Clayton, M. J., Booth, G., **Kim, J. B.**, and Zarrinmehr, S. (2014). The fusion of BIM and quadruple net value analysis for real estate development feasibility assessment. In *Fusion, Proceedings of the 32nd International Conference on Education and research in Computer Aided Architectural Design in Europe (eCAADe)*, September 10-12, 2014, Newcastle Upon Tyne, UK. doi: <https://doi.org/10.52842/conf.ecaade.2014.2.445> [CumInCAD indexed, double-blind, peer-reviewed full paper]
19. Jeong W., **Kim, J. B.**, Clayton, M. J., Haberl, J. S., and Yan, W. (2013). Visualization of Building Energy Performance in Building Information Models. In *Proceeding of the ACADIA 2013 International Conference*, October 21-23, 2013, Cambridge, Ontario, Canada. doi: <https://doi.org/10.52842/conf.acadia.2013.087> [CumInCAD indexed, double-blind, peer-reviewed full paper]
20. **Kim, J. B.**, Clayton, M. J., and Yan, W. (2013). Parameterize urban design codes with BIM and Object-Oriented Programming. *Open Systems. The Proceedings of the 18th International Conference of the Association of Computer-Aided Architectural Design Research in Asia (CAADRIA) 2013*, May 15-18, 2013, Singapore. doi: <https://doi.org/10.52842/conf.caadria.2013.033> [CumInCAD indexed, double-blind, peer-reviewed full paper]

21. Yan, W., Clayton, M. J., Haberl, J. S., Jeong, W., **Kim, J. B.**, Kota, S., Bermudez Alcocer, J., and Dixit, M. (2013). Interfacing BIM with Building Thermal and Daylighting Modeling. 13th International Conference of the International Building Performance Simulation Association (IBPSA), August 25-28, 2013, Chambéry, France. [ CumInCAD indexed, double-blind, peer-reviewed full paper]
22. **Kim, J. B.**, Clayton, M. J., and Yan, W. (2011). Parametric Form-Based Codes: Incorporation of land-use regulations and Object-Oriented Parametric Modeling of BIM. In Proceeding of the ACADIA 2011 Regional Conference, March 10-12, 2011, Nebraska. doi: <https://doi.org/10.52842/conf.acadia.2011.x.l7j> [CumInCAD indexed, double-blind, peer-reviewed full paper]
23. **Kim, J. B.** and Clayton, M. J. (2010). Support Form-based Codes with Building Information Modeling – The Parametric Urban Model Case Study. In Proceeding of the 30th ACADIA 2010 International Conference, New York. doi: <https://doi.org/10.52842/conf.acadia.2010.133> [CumInCAD indexed, double-blind, peer-reviewed full paper]

## CONFERENCE PROCEEDINGS [PEER REVIEWED]

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\*= Student research assistant

### University of Missouri

1. **Kim J. B.**, Wang, F., Khanna, S., & Balakrishnan, B. (2023). Digital Twins framework to reduce greenhouse gas emission. Proceedings of Digital Twin 2023: The 2023 IEEE International Conference on Digital Twin, August 28-31, 2023, Portsmouth, UK.
2. Lima, S.Q.\*, Balakrishnan, B., & **Kim, J. B.** (2023). Virtual Construction Simulation: Evaluating Impact of Immersion and Interactivity on Novice Designers. HCI International 2023, 25th International Conference on Human-Computer Interaction, Copenhagen, Denmark, July 23-28.
3. Youn, S. & Hwang, J.\* & Zhao, L. & **Kim, J. B.** (2022) Interactive Web Service and Risk Perception: Implication Toward Virtual Try-On (VTO) Service, International Textile and Apparel Association Annual Conference Proceedings 78(1). doi: <https://doi.org/10.31274/itaa.13736>.
4. Kim, S.& **Kim, J. B.** (2022). Machine Learning with an Urban Building Energy Simulation (UBES) Focusing on Solar Accessibility. Proceedings of the 2022 ASC Region III Conference, Associated Schools of Construction (ASC). Downers Grove, Illinois, October 19-22, 2022.
5. Aman, J.\* Matisziw, T., & **Kim, J. B.** (2022). Measuring the Association Between Human Sentiment and Geospatial Context for Informed Decision Making. Poster presentation at USGIFGEOINT 2022. Symposium, April 24-27, Aurora, Colorado.
6. Hopfenblatt, J.\*, Dastmalchi, M. R.\*, Aman, J.\*, **Kim, J. B.**, & Balakrishnan, B. (2021). Can Climate-Adaptive Building Facades Inspire Healthier Interiors? Post Covid-19

Computational Design Considerations. Poster presentation at Interior Design Educators Council (IDEC) Annual Conference, Virtual.

7. Dastmalchi, M.\*, Balakrishnan, B., Oprean, D., Hopfenblatt, J.\*, Aman, J.\*, and **Kim, J. B.** (2020). Media affordances and transactive memory systems in design teams, Poster presentation at Ninth International Conference on Design Computing and Cognition (DCC20), December 14-16, 2020, Atlanta, Georgia.
8. Lee, S. and **Kim, J. B.** (2019). Contextualizing Mixed-Use, Association of Collegiate School of Planning (ACSP) 59<sup>th</sup> Annual Conference, October 24-27, 2019, Greenville, South Carolina.

#### Prior to MU

9. Booth, G., Clayton, M. J., and **Kim, J. B.** (2013). A framework for designing sustainable real estate developments using Quadruple Net Value Analysis and Building Information Modelling. The proceedings of CIB World Building Congress 2013 Conference, May 05-09, 2013, Brisbane, Australia.
10. Clayton, M. J., Booth, G., **Kim, J. B.**, and Zarrinmehr, S. (2013). Quadruple Net Value Analysis using Building Information Modeling and Immersive Visualization. ENHSA Conference, Napoli, October 3-5, 2013, Napoli, Italy.
11. **Kim, J. B.** (2013). Parameterize Urban Design Codes with BIM and Object-Oriented Programming, Fiatech Technology Conference & Showcase, 25-27 March 2013, San Antonio, Texas

## HONORS AND AWARDS

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\*= Student awardee

2023	Jayedi Aman* (Co-Author and faculty mentor), 2nd Place, Show Me Research Week 2023, Applied Design Graduate/ Postdoctoral Research, University of Missouri Columbia
2022	Architectural Studies Faculty Teaching Award, University of Missouri (\$1,200)
2022	A Leading Scholar Award for academic collaboration in research and student exchange, Ewha Woman's University
2022	Jayedi Aman* (Co-Author and faculty mentor), 1st Place, Student Poster Presentation, GEOINT 2022 Symposium, United States Geospatial Intelligence Foundation, Spring 2022
2020	HES Mangle Professional Development Award (\$500)
2019	HES Grant Writing Workshop Scholarship, summer workshop supported by HES to improve grant-writing skills (\$500)
2019	Tracy Stearns Faculty Scholar Teaching Award, University of Missouri (\$2,000)
2018	Tracy Stearns Faculty Scholar Teaching Award, University of Missouri (\$2,000)
2011	Robert L. and Helen Wingle Endowed Scholars Fund, Texas A&M University, College Station, TX.

- 2010 Carol J. and Jason W. Beal '77 Endowed Scholarship, Texas A&M University, College Station, TX.
- 2007 ULI design competition, 2nd prize at University of Texas at Austin, Austin, TX.
- 2007 Excellence in Design, University of Texas at Austin, Austin, TX.
- 2007 Jorge Luis Divino Centennial Scholarship, University of Texas at Austin, Austin, TX.

## SCHOLARLY PRESENTATIONS AND INVITED LECTURESHIP

### University of Missouri

- 2023 AI and ML Learning Initiative. Invited presentation, College of Arts and Science, University of Missouri, November 28, Columbia, MO
- 2022 Parametric BIM education and research trends in the United States. Invited lecture on BIM (Building Information Modeling), Seoul Metropolitan Government, July 6, Seoul, Korea [Invited as a global scholar in BIM and design computing]
- 2022 Parametric BIM research to envision sustainable built environment, Invited lecture, The Institute of Construction Technology, Chungbuk National University, June 26, Cheongju-si, Korea
- 2022 Parametric BIM research to envision sustainable built environment, Invited lecture, Ewha Woman's University, June 20, Seoul, Korea [Selected as a leading scholar award for academic collaboration in research and student exchange program]
- 2022 Parametric BIM Research to envision the impact of land developments on energy performance. Mizzou Transportation Group Seminar, University of Missouri, Columbia, MO
- 2019 Lecture on Computational Design in Architecture, Columbia Korean Baptist Church, November. 22, Columbia, MO

### Prior to MU

- 2015 BIM-based real estate development software, Caldwell Companies, Houston, TX.
- 2015 Parametric urban regulation models to predict development performances, Autodesk seminar, Texas A&M University, College Station, TX.
- 2015 Lecture on Palladio in BIM: parametric BIM modeling of Villa Rotunda for architectural history education, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205
- 2015 Lecture on plantation house modeling in parametric BIM, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205
- 2015 Lecture on computational real estate development with BIM and immersive visualization, Texas A&M University, College Station, TX. Undergraduate course of URPN 330
- 2014 Quadruple Net Value Analysis System, BIMSIM talk seminar, Texas A&M University, College Station, TX.

- 2014      Quadruple Net Value Analysis System, A presentation with Bill Peel of Tellepsen Corporation, Texas A&M University, College Station, TX.
- 2014      Lecture on parametric BIM for economic developments, Texas A&M University, College Station, TX. Graduate course of LDEV 667
- 2014      Lecture on architectural drawings and graphics, Texas A&M University, College Station, TX. Undergraduate studio of ENDS 115
- 2013      Parameterize Urban Design Regulation System, A meeting with Midway, Houston, TX.
- 2013      Parameterize Urban Design Codes with BIM and Object-Oriented Programming, College BIM Seminar, Texas A&M University, College Station, TX.
- 2013      Portfolio design and publication lecture, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205
- 2013      Architectural drawings and graphics lecture, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205
- 2013      Lecture on data analysis in urban design, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205
- 2012      Portfolio design and publication lecture, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205
- 2011      Portfolio design and graphics lecture, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205
- 2010      Portfolio design and publication lecture, Texas A&M University, College Station, TX. Undergraduate studio of ARCH 205
- 2010      Student Research Week, Texas A&M University, College Station, TX.
- 2009      Student Research Week, Texas A&M University, College Station, TX.

## **TECHNOLOGY DEMONSTRATIONS and EXHIBITIONS**

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### **University of Missouri**

- 2024      iLab open house and demonstration, Columbia Area Career Center (CACC) student visit, Architectural Studies, April 21, University of Missouri, Columbia
- 2023      iLab open house and demonstration, University of Western Cape student visit, Architectural Studies, December 11, University of Missouri, Columbia
- 2023      iLab demonstration, Dr. Mai-Lan Ho in Radiology, December 7, University of Missouri, Columbia
- 2023      iLab open house and demonstration, Advisory board Meeting and Homecoming, Architectural Studies, October 20, University of Missouri, Columbia
- 2023      iLab open house and demonstration, Burns and McDonnell Design Delivery Team Meeting, Architectural Studies, May 8, University of Missouri, Columbia

- 2023 iLab research presentation, Burns & McDonnell Campus Visit, May 8, 2023, University of Missouri, Columbia
- 2023 iLab research presentation, T-Mobile Campus Visit, February 8, 2023, University of Missouri, Columbia
- 2022 iLab research presentation, T-Mobile Campus Visit, November 4, 2022, University of Missouri, Columbia
- 2022 VR/AR Campus Working Group Meeting, November 21, 2022, University of Missouri, Columbia
- 2022 iLab reopening on department homecoming day, October 21, 2022, University of Missouri, Columbia
- 2021 Virtual Reality Demonstrations, Innovation Space Roll Out for TDAB, October 8, 2021, University of Missouri, Columbia, MO
- 2019 iLab demonstration, Immersive Virtual Reality, ShowMizzou Day, April 13, University of Missouri, Columbia
- 2019 iLab demonstration, Columbia Young Scientists Expo, MU Office of Research, February 9, University of Missouri, Columbia
- 2019 AIA Mid-Mo Chapter Meeting: Potential of Virtual and Augmented Reality Simulation for Architectural Design, University of Missouri, Columbia, MO
- 2018 Virtual Reality Demonstrations for UM System Precision Medicine Summit, June 20, Columbia, MO
- 2018 Virtual Reality Demonstrations for Governor Mike Parson at the Immersive Visualization Lab for Translational Precision Medicine Complex, June 13, Columbia, MO

**Prior to MU**

- 2014 Parametric BIM for economic developments, Texas A&M University, College Station, TX. Undergraduate class of URPN 330
- 2014 Undergraduate Studio Design Exhibition, Texas A&M University, College Station, TX.
- 2013 Real Projects Exhibition, Texas A&M University, College Station, TX.
- 2007 The Dallas Urban Laboratory Exhibition, October 16, AIA Dallas, TX.

**PRESS**

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Community for Advancing Discovery Research in Education (CADRE), Rural STEM Education Featured Projects. Retrieved from <https://cadrek12.org/spotlight/rural-stem-education#zangori>

Show Me Mizzou (2023). South Korean education influencers become Tigers for a day. Retrieved from <https://showme.missouri.edu/2023/photo-gallery-south-korean-education-influencers-become-tigers-for-a-day/>

Show Me Mizzou (2022). Interdimensional collaboration to enter the metaverse. Retrieved from <https://showme.missouri.edu/2022/interdimensional-collaboration/>

Show Me Mizzou (2021). Building 'smart' for a sustainable future. Retrieved from <https://showme.missouri.edu/2021/building-smart-for-a-sustainable-future/>

The Washington Post (2021). Connecting Campuses to Find Climate Solutions. Retrieved from <https://www.washingtonpost.com/creativegroup/att-business/connecting-campuses-to-find-climate-solutions/>

AT&T (2021). AT&T to Help Businesses Reduce Global Emissions. Retrieved from [https://about.att.com/story/2021/gigaton\\_global\\_emissions\\_2035.html](https://about.att.com/story/2021/gigaton_global_emissions_2035.html)

## OTHER PUBLICATIONS

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**Real Projects** (2012). Student's works of an Affordable Housing. Texas A&M University, College Station, TX. Created for design exhibition and the meetings with Brazos Valley Affordable Housing Corp.

**Studio portfolio** (2010). Passenger Depot and Housing, Texas A&M University, College Station, TX. Created for a design exhibition.

**Studio portfolio** (2010). Affordable Housing, Texas A&M University, College Station, TX. Created for a design exhibition.

Michael Neuman (ed.), (2010). **Hillsborough County, Florida Comprehensive Plan Sustainability Audit**, Department of Landscape Architecture and Urban Planning, Texas A&M University, College Station, TX. Presented at the meeting with Hillsborough Metropolitan Planning Organization

Illustrations in book Parametric BIM SIM: Integrating Parametric Modeling, BIM, and Simulation for Architectural Design, in Building Information Modeling: BIM in Current and Future Practice by Yan, W., Eds. Karen Kensek, Douglas Noble, Wiley, Hoboken, New Jersey, pp. 59–77. 2014. ISBN 978-1118766309

## SERVICE + LEADERSHIP

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### University

2023	Search & Screening Committee Chair, Assistant Professor position in Design (Fall 2022-Spring 2023)
2022 ~	Director, iLab, Architectural Studies
2022	Search & Screening Committees, Assistant Professor in Interior Design (Fall 2021-Spring 2022)
2020 ~ 2023	Design Studio Coordinator, Architectural Studies
2020	Search & Screening Committee Chair, Assistant Professor position in Architectural Computing (Fall 2019-Spring 2020)

- 2018 - Faculty Jury, Visual Art & Design Show Case
- 2019 Search & Screening Committees, Assistant Professor in Architectural Computing (Fall 2018-Spring 2019)
- 2019 Search & Screening Committees, Assistant Professor in Interior Design (Fall 2018-Spring 2019)
- 2018 CIDA Accreditation Faculty Committee
- 2018 Search & Screening Committees, Assistant Professor in Interior Design (Fall 2017-Spring 2018)
- 2017~ Department Photographer, Architectural Studies
- 2017~ Undergraduate Professional Portfolio Reviewer, Architectural Studies
- 2017~2021 Faculty Associate, iLab, Architectural Studies

### **Community**

- 2017 - Photography and video recording, Columbia Chamber and Young Artist Philharmonic, The Missouri Symphony Orchestra, Columbia, MO
- 2017 - Saturday Café, First Presbyterian Church, Columbia, MO

## **PEER-REVIEWER**

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- Journal of Building Engineering
- Journal of Computational Design and Engineering Review
- Journal of Planning Literature
- Journal of Sustainable Cities and Society
- The Journal of Technology, Architecture and Design (TAD)
- MU Research Board Grant Application Review
- Journal of Automation in Construction, Elsevier
- Journal of Renewable Energy, Elsevier

## **PROFESSIONAL AFFILIATIONS**

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- Member, Association of Collegiate Schools of Architecture (ACSA)
- Member, Architectural Research Centers Consortium (ARCC)
- Member, Environmental Design Research Association (EDRA)
- Member, Interior Design Educators Council (IDEC)
- Member, Computer Aided Architectural Design Futures (CAAD Futures)
- Member, Computer-Aided Architectural Design and Research in Asia (CAADRIA)



Member, Education and research in Computer Aided Architectural Design in Europe (eCAADe)

Member, Association for Computer Aided Design in Architecture (ACADIA)

Member, American Society of Heating and Air-Conditioning Engineers (ASHRAE)

Member, Global Network of Korean Building Technologists and Scientists (GNET KBTS)

Researcher and founding member, BIMSIM Research Group, Texas A&M University

Licensed Engineer Architecture in Korea (98202010689B)

## PROFESSIONAL DEVELOPMENT

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**Mentoring at Mizzou CIMER Training** (Fall 2023). University of Missouri. A certification program for graduate advising and mentoring training.

**National ADA Symposium** (Spring 2023). Kansas City. A conference on the Americans with Disabilities Act. Meet peers and took training sessions.

**Wakonse Conference on College Teaching** (2020, Awarded \$1000 in 2019). Shelby, Michigan. Week-long teaching workshop supported by Wakonse Foundation.

**Online Teaching Certificate Seminar** (2021). University of Missouri. 6 weeks certification program to learn the online teaching strategies, course management, and technologies.

**HES Grant Writing Workshop** (2019, Awarded \$500). University of Missouri. Week-long workshop supported by the College of HES to improve grant writing skills.

**ACSP Workshop** (2019). Clemson University, South Carolina. Participated in the workshop sessions hosted by Association of Collegiate School of Planning (ACSP).

**Autodesk University** (2017~2023). Largest venue in the design computing community.

**CAAD Futures Workshop** (2019). KAIST, Daejeon, Korea. Design computing workshop and technology training led by international researchers.

**CAADRIA Workshop** (2017~2023). Design computing workshop and technology training led by leading engineers and researchers.