Bimal Balakrishnan, Ph.D.
Professor (Tenured) & Associate Dean for Research
College of Architecture, Art + Design

Email: bb2957@msstate.edu

EDUCATION

Ph.D. in Mass Communication & Graduate Minor in Applied Statistics, **December 2008**
Penn State University, University Park, PA

Master of Science in Architecture (Digital Design emphasis), **May 2004**
Penn State University, University Park, PA

Bachelor of Architecture, December 1998
University of Kerala, College of Engineering – Trivandrum, India

EMPLOYMENT HISTORY

Professor, & Associate Dean for Research
College of Architecture, Art + Design
Mississippi State University, January 2022 to Present

Chair, Dept. of Architectural Studies
University of Missouri, July 2018 to December 2021
Director of Graduate Studies
Founding Director, Immersive Visualization Lab (iLab)

Associate Professor, Dept. of Architectural Studies
University of Missouri, September 2014 to present
Doctoral and graduate faculty status

Assistant Professor, Dept. of Architectural Studies
University of Missouri, August 2008 to August 2014
Doctoral and graduate faculty status
Founding Director, Immersive Visualization Lab (iLab)

Research Assistant, College of Information Sciences and Technology
Penn State University, August 2006 to July 2008
User Science and Engineering Lab &
Multi-Disciplinary Initiatives in Naturalistic Decision Systems (MINDS) Group
(Supervisor: Dr. Michael D. McNeese)

Research Assistant, College of Communications
Penn State University, August 2003 to May 2006
Media Effects Research Lab
(Supervisor: Dr. S. Shyam Sundar)

Research Assistant, Department of Architecture
Penn State University, August 2003 to May 2006

Immersive Environments Lab
(Supervisor: Dr. Loukas Kalisperis)

Research Assistant, Department of Architectural Engineering
Penn State University, May 2005 to August 2005
Immersive Construction (iCon) Lab
(Supervisor: Dr. John Messner)

Teaching Assistant/ Instructor, Department of Architecture
Penn State University, August 2003 to May 2006

Registered Architect, Independent Architectural Practice, India
Council of Architecture Reg. no. 99/24862, May 2000 to July 2001

Lecturer in Architecture, National Institute of Technology – Calicut, India
November 1999 to April 2000 (Short-term/ Adjunct appointment)

Registered Architect, Environmental Creations – Architects & Landscape Architects
Thiruvananthapuram, India
January 1999 to June 2000

Architectural Intern, Environmental Creations – Architects & Landscape Architects
Thiruvananthapuram, India
September 1997 to May 1998; January 1996 to January 1997

Architectural Intern, Matharoo Associates Architects, Ahmedabad, India
February 1997 to August 1997

AWARDS & HONORS

Administration

University of Missouri System Leadership Development Program, President's Academic Leadership Institute, 2018-2019 cohort

Teaching

Excellence in Education Award, University of Missouri, 2012

Teaching with Technology Award, for Graduate and Professional Education, Educational Technologies at Missouri, University of Missouri, 2011-2012

Superior Graduate Faculty Award, Graduate Student Association (GSA), University of Missouri, 2012

Research

Norman and Marilyn Pick Research Scholar, College of Human Environmental Sciences, University of Missouri, 2017-2019
One of six faculty scholars selected at college level for excellence in research or teaching

Fellowship, Reynolds Journalism Institute, 2014-2015.
Chosen for the prestigious fellowship to explore potential of emerging 3D technologies for journalism and advertising leveraging work in the Immersive Visualization Lab

Distinguished Researcher Award, College of Human Environmental Sciences, University of Missouri, 2013

First Place, Faculty Research Poster, College of Human Environmental Sciences, University of Missouri, 2010

Top Student Paper Award, Instructional & Developmental Communication Division, International Communication Association, 2007
With Keston Pierre

Jung-Sook Lee Award for Top Student Paper, Communication Technology and Policy Division, Association of Educators in Journalism and Mass Communication, 2006.
With Edward Downs, Sampada Marathe & Sue-Ellen Hopfer.

Second Best Student Presentation Award, Computer Aided Architectural Design Research in Asia, 2006

Graham Endowed Fellowship, Graduate School, Penn State University, 2003-2004.

August Pohland – Alma Heinz Scholarship for best graduate thesis proposal, School of Architecture and Landscape Architecture, Penn State University, 2002.

Graduate Assistantship, Fall 2001 to Summer 2008, Penn State University

Design and Creativity

Creative Achievement Award, College of Arts and Architecture, Penn State University, 2004.

Eighth Rank (All India Ranking) with 98.8th percentile score in CEED 1999 (Common Entrance Exam for Design for admission to Master of Design (M. Des) programs in Product Design & Visual Communication at the Indian Institute of Technologies (IIT)

Editor's Choice, Emerging Architecture Awards, Architectural Review, UK for *Ashwinikumar Crematorium* at Surat, India
With Gurjit Singh Matharoo (lead designer), Komal Mehta and Rolf Seiler, 2003.

Winner, National Open Competition - *Ashwinikumar Crematorium* at Surat, India
With Gurjit Singh Matharoo (lead designer), Komal Mehta and Rolf Seiler, 1997.

LEADERSHIP ROLES & ACCOMPLISHMENTS

Chair, Department of Architectural Studies, July 2018 – present
Led our close-knit team of 8 faculty to achieve:

- Strategic enrollment management leading to 11% overall increase between 2018 and 2020 against university trends
- Top 10 programs firms like to recruit from nationally among comparable size interior design programs (DesignIntelligence Ranking for 2018 placements)
- Increased external research expenditures as department chair with a team of 8 full-time faculty and Great Plains ADA Center Staff
- Curricular redesign to emphasize emerging forces shaping the design profession and current trends in industry, and strengthen collaboration across courses
- New academic collaborations with:

  - College of Agriculture, Food and Natural Resources for undergraduate-level Sustainability Minor (environmental focus)
  - College of Engineering for undergraduate-level Sustainability (engineering focus) and Construction Management Minors
  - School of Information Science and Learning Technologies for Undergraduate and Graduate level certificates in Serious Games
  - Textile and Apparel Management Department for Graduate Certificate in Digital Merchandising
- Collaborated with a team of faculty from College of Business, School of Journalism and College of Engineering to form Academic partnership with AT&T on emerging 5G technology
  - Co-led follow up efforts that resulted in AT&T investing in 5G infrastructure for a new collaborative research lab in Cornell Hall at the University of Missouri
- Successful reaccreditation for the interior design program for maximum allowable period of six years (2018-2024)
- Successful 5-Year Program Review for Architectural Studies at the university-level
- Significant infrastructure improvement and industry partnerships:
  - New donor funded state-of-the art digital fabrication lab being implemented (expected completion – Spring 2022)
  - One of 12 winners nationally from over 900 applicants for the Steelcase Active Learning Center Grant (2019)
  - Eaton/ Cooper Lighting investment in smart sensor and lighting technology to create a "living lab" for building performance analysis in our studio space (2020)

Founding Director, Immersive Visualization Lab (iLab), 2010 – present
- Led the development and manage operations of the iLab which has state-of-the-art advanced visualization hardware and software for our graduate and undergraduate students
- Selected to be part of Oculus (owned by Facebook) NextGen academic programs in 2017 given the innovative and interdisciplinary VR projects
- One of 5 virtual reality labs chosen for demonstration at the 2012 Annual Human Factors and Ergonomic Society (HFES) Conference in Boston
- On average led a team of 3-5 graduate and 2 undergraduate research assistants supported by grants
- Established and maintain multi-disciplinary collaborations with research groups in College of Engineering, School of Medicine, School of Nursing, College of Arts and Science, School of Journalism and University of Missouri – Kansas City, Thompson Center for Autism/ Children's Hospital of Orange County, CA, and Vanderbilt University among others
- Research and creative activities supported by funding from Health, & Human Services, National Science Foundation, Army Research Lab, Federal Highway Works Administration (FHWA), U.S Department of Transportation (U.S. DoT), Missouri Department of Transportation (MoDOT), U.S. Department of Agriculture (USDA), and Cooper Lighting

Chair, MU Information Technology Committee, 2018 – 2020
- Committee member 2016 - 2020
- Advise on issues involving computer and information technology including budget
- Provide faculty oversight of Computer and IT services on the MU campus.

Coordinator, Design with Digital Media Graduate Program, Architectural Studies, 2012 - 2018

- Led curriculum development and promote the emphasis area
- Led infrastructure development for digital media emphasis area needs

Member, MU Cyberinfrastructure Committee, 2012 - 2018

- Co-Lead for the Imaging & Visualization portion of the university's Cyberinfrastructure Plan; serve as a voice of 45+ faculty and 120+ graduate students whose research involves imaging, visualization, or simulation
- Contribute to overall strategic planning for cyberinfrastructure on campus
- Organized a campus wide research showcase of imaging and visualization research bringing together 6 research groups on campus and 2 external organizations

RESEARCH

Peer Reviewed Publications (Full Papers)

1.1 Kim, J. B., Aman, J., & **Balakrishnan, B.** (2020). Forecasting performance of Smart Growth development with parametric BIM-based microclimate simulations. In Proceedings of the 26th CAADRIA Conference - Volume 1, The Chinese University of Hong Kong and Online (Virtual Presentation), pp. 411-420

1.2 Clay, C., Schmitz, B.A., **Balakrishnan, B**., Hopfenblatt, J., Evans, A., & Kahng, S.W. (in press). Virtual Reality Behavioral Skills Training for Staff to Conduct Functional Communication Training, *Journal of Applied Behavior Analysis*, *54*(2), pp. 547-565.

1.3 Kim, J. B., & **Balakrishnan, B.**, & Aman, J. (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, Bangkok (Virtual Presentation), 873-882.

1.4 Roderick, M., Timko, N. J., **Balakrishnan, B.**, & Marshall, J. (2020). Learner-Centered Operating Room Training using Augmented Reality in 2030. *Journal of Graduate Medical Education*, *12*(3), 364-365.

1.5 Naderi, E., Naderi, I., **Balakrishnan, B.** (2020). Product design matters, but is it enough? Consumers' responses to product design and environment congruence. *Journal of Project and Brand Management*, https://doi.org/10.1108/JPBM-08-2018-1975

1.6 Oprean, D., & **Balakrishnan, B.** (2020). From engagement to user experience: A theoretical perspective towards learning with immersive technology informed by the spatial disciplines. Schmidt, M., A. Tawfik., Y. Earnshaw, I. Jahnke (Eds). Learner and User Experience Research: An Introduction for the field of Learning Design and Technology. Ed Tech Books.

1.7 Kim, J. B., & **Balakrishnan, B.** (2019). Visualize Smart Growth Development with Parametric BIM: A Case Study of Downtown Columbia Unified Plan, in *Proceedings of the Computer-Aided Architectural Design Futures (CAAD Futures) Conference*, Daejeon, South Korea, June 26-29, pp. 109-116.

1.8 D'souza, N., **Balakrishnan, B.**, Dastmalchi, M., Hopfenblatt, J. & Kress, M. (2018). iSTUDIO: An Interactive Form-making Environment for Architectural Pedagogy, in *Proceedings of the Biannual Conference of the Design Communication Association*, pp. 16-23.

1.9 Hopfenblatt, J., & **Balakrishnan, B.** (2018). The "Nine-Square Grid" Revisited: 9-Cube VR, An Exploratory Virtual Reality Instruction Tool for Foundation Studios, in *Proceedings of the annual conference of Computer Aided Architectural Design Research in Asia*, pp. 463-471.

1.10 Rodgers, S., Wang, Z., Maras, M., Burgoyne, S., **Balakrishnan, B**., Stemmle, J., &, Schultz, J. (2018). Decoding Science: Development and Evaluation of a Science Communication Skills Training Program Using a Triangulated Framework, *Science Communication, 40* (1), 3-32.

1.11 Sun, C., Edara, P., Qing, Z., **Balakrishnan., B.**, & Hopfenblatt, J. (2017). Driving Simulator Study of J-Turn Acceleration-Deceleration Lane and U-turn Spacing Configurations, *Transportation Research Record: Journal of the Transportation Research Board*, No. 2638, pp. 26-34.

1.12 **Balakrishnan, B.,** & Oprean, D. (2015). Communication, Coordination and Collaboration: Media affordances and Team Performance in a Collaborative Design Environment. In Martens, B., Wurzer, G., Grasl, T., Lorenz, W.E. & Schaffranek, R. (Eds*.) Proceedings of the annual conference of the Education and Research in Computer Aided Architectural Design in Europe (eCAADe 2015)*, Vienna, Sept. 16-18., pp. 225-232.

1.13 **Balakrishnan, B.**, Kalisperis, L. N., & Oprean, D. (2015). Visualizing Human-Environment Interactions: Integrating Concepts and Techniques from HCI, Human Factors and Media Psychology. In *Lecture Notes in Computers Science*, 9189, Springer, pp. 3-12.

1.14 Oprean, D., & **Balakrishnan, B**. (2013). Quest for efficiency: Examining cognitive processes underlying the use of 3D modeling tools. published in the *Proceedings of the annual conference of Education and Research in Computer Aided Architectural Design in Europe (eCAADe)*, Delft, September 18-20, pp. 101-107.

1.15 **Balakrishnan, B.** (2012). *Crisis management***.** In Mathew, V. G. (Ed.), Manorama Year Book 2012, pp. 915-918. (India's leading current affairs reference book in English)

1.16 **Balakrishnan, B.,** Oprean, D., Martin, B., & Smith, M. (2012). Virtual reality: Factors determining spatial presence, comprehension, and memory. In Lin, Yu-Cheng, & Kang, S.J. (Eds.), published in *Proceedings of the 12th International Conference on Construction Applications of Virtual Reality*, pp. 451-459.

1.17 **Balakrishnan, B.,** Oprean, D., & Yoon, S. Y. (2012). *Analog to digital: Image based 3-d modeling and motion capture for architectural design and evaluation.* In Williams, J. K. (Ed.), Proceedings of the Biennial Conference of the Design Computing Association, pp. 09-13.

1.18 Chandrasekara, T., Yoon, S. Y., & **Balakrishnan, B.** (2012). *Digital orthographic projections in architectural representations: Augmented-reality based learning.* In Williams, J. K. (Ed.), Proceedings of the Biennial Conference of the Design Computing Association, pp. 50-62.

1.19 **Balakrishnan, B.**, & Kalisperis, L.N. (2012). *Me and my VE: Demonstration 5 - Building affordable VR environments for education and research.* In Human Factors and Ergonomics Society Annual Meeting Proceedings, 56, pp. 2515-2516.
Note: This paper accompanies the demonstration session of 5 virtual reality labs selected nationwide to present.

1.20 D'souza, N., **Balakrishnan, B.**, & Dicker, J. (2012). *Transparency: Literal, phenomenal, digital*. In Goulthorpe, M., & Murphy, A. (Eds.), Digital Aptitudes + Other Openings, Proceedings of the Annual Conference of Association of the Collegiate Schools of Architecture, Boston, MA, March 1-4, pp. 708-715.

1.21 **Balakrishnan, B.**, & Sundar, S.S. (2011). *Where am I? How can I get there? Impact of navigability and narrative transportation on spatial presence*. Human-Computer Interaction, 26 (3), pp. 161-204.

1.22 **Balakrishnan, B.** (2010). *Design communication in architectural history courses*. In Proceedings of the Biennial conference of the Design Communication Association, Bozeman, MT, September 4-7.

1.23 **Balakrishnan, B**., & Kalisperis, L.N., (2009). *Design visualization: A media effects approach*. International Journal of Architectural Computing, 7(3), pp. 415-427.

1.24 Muramoto, K., Jemtrud, M., Kumar, S., **Balakrishnan, B**. & Wiley, D. (2009). *A Cyber-enabled collaborative design studio*. International Journal of Architectural Computing, 7(2), pp. 267-288.

1.25 **Balakrishnan, B.**, Pfaff, M., Adibhatla, V., & McNeese, M. D. (2009). *NeoCITIES Geo-tools: Assessing impact of perceptual anchoring and spatially annotated chat on geo-collaboration.* Human Factors and Ergonomics Society Annual Meeting Proceedings, 53, pp. 294-298.

1.26 Adibhatla, V., McNeese, M. D., Shapiro, A. & **Balakrishnan, B.** (2009). *Design and development of a transactive memory system prototype for geo-collaborative crisis management*. Human Factors and Ergonomics Society Annual Meeting Proceedings, 53(4), pp. 389-393.

1.27 Muramoto, K., Jemtrud, M., Kumar, S., **Balakrishnan, B**. & Wiley, D. (2008). *Emerging technologies in a tele-collaborative design studio between the Pennsylvania State University and Carleton University.* Journal of Information Technology in Construction (ITcon), 13, pp. 660-673.

1.28 **Balakrishnan, B.**, Kalisperis, L.N., & Muramoto, K. (2007). *Spatial presence: Explication from an architectural point of view*. In Lilley, B., & Beesley, P. (Eds.), Expanding Bodies: Art, Cities, Environment Proceedings of the annual conference of Association of Computer-Aided Design in Architecture (ACADIA), Halifax, NS, October 4-7, pp. 120-127.

1.29 **Balakrishnan, B**., Kalisperis, L.N., & Muramoto, K. (2007). *Implications of representation-presentation distinction in developing a presentation environment for CAAD.* Published in the proceedings of the annual conference of Education and Research in Computer Aided Architectural Design in Europe (eCAADe), Frankfurt am Main, September 26-29, pp. 133-139.

1.30 Kalisperis, L.N., Muramoto, K., **Balakrishnan, B**., Nikolic, D., & Zikic, N. (2006). *Evaluating relative impact of virtual reality system variables on architectural design comprehension*. In Bourdakis, V., & Charitos, D. (Eds.), Communicating Space(s), Proceedings of the annual conference of Education and Research in Computer Aided Architectural Design in Europe (eCAADe), Volos, Greece, September 6-9, pp. 66-73.

1.31 **Balakrishnan, B**., Kalisperis, L.N., & Sundar, S.S. (2006). *Capturing affect and cognition in architectural visualization: A case for integrating 3-dimensional visualization and psychophysiology*. In Bourdakis, V., & Charitos, D. (Eds.), Communicating Space(s), Proceedings of the annual conference of Education and Research in Computer Aided Architectural Design in Europe (eCAADe), Volos, Greece, September 6-9, pp. 664-669.

1.32 **Balakrishnan, B**., Kalisperis, L.N., Muramoto, K., & Otto, G.H. (2006). *A multimodal approach towards virtual reality for architectural design [re]presentation*. In Kaga, A., & Naka, R. (Eds.), Rhythm and Harmony in the Bit-Sphere, Proceedings of the annual conference of the association for Computer-Aided Architectural Design and Research in Asia (CAADRIA 2006), Kumamoto, Japan, March 30 - April 2, pp. 513-519.

- Winner - Second best presentation award

1.33 **Balakrishnan, B**., Kalisperis, L.N., & Muramoto, K. (2005). *Evaluating workflow and modeling strategies for pen computing in beginning design studio*. In Duarte, J. P., Dulca-Soares, G., & Zampaio, A. Z. (Eds.), Digital Design: Quest for New Paradigms, Proceedings of the annual conference of Education and Research in Computer Aided Architectural Design in Europe (eCAADe 2005), Lisbon, Portugal, September 20-24, pp. 163-170.

Publications under review

1.34 Dastmalchi, M., Balakrishnan, B., & Oprean, D. (under review). Team Cognition During Ideation: Can digital media affordances and verbal communication predict decision-making? Proceedings of the 23rd International Conference on Engineering Design (ICED).

Peer reviewed creative/technology exhibits

1.35 Hopfenblatt, J., & **Balakrishnan, B.** (2018). Oculus NextGen, Facebook Headquarters, Menlo Park CA

1.36 **Balakrishnan, B.**, Hopfenblatt, J., & Oprean, D. (2016). "Immersing designers in their design" Exhibit Showcasing Virtual Reality and Augmented Projects from the Immersive Visualization Lab at the 2016 Immersive Reality Symposium at Penn State.

1.37 **Balakrishnan, B.** & Kalisperis, L. N. (2012). "Virtual Reality Projects in Architecture", Demonstration at the Annual Conference of Human Factors and Ergonomic Society, Boston, MA, Oct. 22-26.
- One of the 5 labs chosen nationwide based on peer review

Peer Reviewed Conference Papers and Poster Presentations

1.38 Cole, L. B., Dastmalchi, M., & **Balakrishnan, B.** (2021). Design without the Dedicated Desk: Studio Pedagogy in the Active Learning Classroom. Paper to be presented at the Interior Design Educators Council Annual Conference (IDEC), Virtual Conference, March 2-5.

1.39 Hopfenblatt, J., Dastmalchi, M. R., Aman, J., Kim, J.B., **Balakrishnan, B.** (2021, accepted). Can Climate-Adaptive Building Facades inspire healthier interiors? Post Covid-19 computational design considerations? Poster at the Interior Design Educators Council Annual Conference

1.40 Dastmalchi, M., **Balakrishnan, B.**, Oprean, D., Hopfenblatt, J., Kim, J. B., & Aman, J. (2020). Poster presented (virtually) at the Design Computing and Cognition Conference, Atlanta, GA, December 14-16.

1.41 Dastmalchi, M., Walsh, R., Hopfenblatt, J., & **Balakrishnan, B.** (2020). Design as a Creative Discourse: Investigating Ways of 'Interacting, Representing, and Being' within Design Teams. Presentation at the Annual Conference of Interior Design Educators Council, Tulsa, OK, March 4-7

1.42 Hopfenblatt, J., Dastmalchi, M., & **Balakrishnan, B.** (2020). STEMette Camp: Interior Design as a Vehicle to Empower Middle School Girls in Science, Technology, Engineering, and Math. Presentation at the Annual Conference of Interior Design Educators Council, Tulsa, OK, March 4-7.

1.43 Naderi, E., **Balakrishnan, B.** & Khosravi, Z. (2019). The Impact of Attention on User Experience in the Virtual Environments: The Mediating Role of Sense of Presence in Virtual Reality. Human Computer Interaction International, Orlando, FL, July 26-31.

1.44 Schultz, J., **Balakrishnan, B.**, Stemmle, J. T., Rodgers, S. L., & Burgoyne, S. (2019, May). SciCom meets SciTS. Interdisciplinary teamwork for science communication training. International Network for the Science of Team Science. Lansing, MI, May 20-23.

1.45 Hopfenblatt, J., **Balakrishnan, B.**, & Dastmalchi, M. (2019). Experiential and technical considerations in developing virtual reality simulations for interior spaces. Presentation at the Annual Conference of Interior Design Educators Council, Charlotte, NC, March 6-10.

1.46 Dastmalchi, M., **Balakrishnan., B.**, Walsh, R.M., & Hopfenblatt, J. (2019) Contradictory Discourse in Interior Design Critique. Presentation at the Annual Conference of Interior Design Educators Council, Charlotte, NC, March 6-10.

1.47 Marshall, J. M., **Balakrishnan, B.**, Hopfenblatt, J., & Farmer, R. (2019). Comparison of Presenting a Virtual Reality Environment with Different Interfaces on Sense of

Presence, Realism, and Movement. Presentation at the Annual Conference of the Society for Simulation in Healthcare, Orlando, FL, January 26-30.

1.48 Mongeon, M., **Balakrishnan, B.**, & Hopfenblatt, J. (2018, April). The Impact of Stereoscopy, Interactivity, and Product Type on Perceptions of 3D Advertising. Midwestern Psychological Association Conference. Chicago, IL: Midwestern Psychological Association Conference.

1.49 Farmer, R.N., Khosravi, Z., Naderi, E., **Balakrishnan, B.**, & Marshall, J.M. (2017). Exploring Realism and Sense of Presence in Immersive Virtual Reality Training. Presentation at the Annual Meeting of the Society for Education in Anesthesia, Jacksonville, FL, April 27-30.

1.50 Sun, C., Edara, P., Qing, Z., **Balakrishnan., B.**, & Hopfenblatt, J. (2017). Driving Simulator Study of J-Turn Acceleration-Deceleration Lane and U-turn Spacing Configurations. Presentation at the 97th Annual Meeting of the Transportation Research Board of the National Academies, Washington D.C., January 7-11.

1.51 Hoffman, M.A., Siddicky, S.F., **Balakrishnan, B.**, & King, G.W. (2016). 3D Motion Analysis of Clinical Performance: A New Big Data Opportunity. Presentation at the American Medical Informatics Association Joint Summit, San Francisco, CA, Mar 21-24.

1.52 D'souza, N., Kutty, A., Nanda, U., **Balakrishnan, B.**, & Dobkins, K. (2015). Use of Neuroscience Concepts and Measurements in Environment Behavior Research: Challenges and Opportunities. Symposium Presentation at the Annual Conference of Environment Design Research Association, Los Angeles, CA, May 27-30.

1.53 D'souza, N., & **Balakrishnan, B.** (2014). Mizzou International Symposium on Creativity and New Media: Studying Media Affordances and Design Creativity. Poster presented at the International Conference on Design Computing and Cognition Conference, London, June 23-25.

1.54 **Balakrishnan, B.**, Oprean, D., Schrimpf, B. (2013). Motion capture and ergonomic Evaluation of Architectural Spaces. Paper presented at the 44th Environmental Design Research Association Conference (EDRA), Providence, RI, May 28-June 1.

1.55 Sohn, M-H., Ha-Brookshire, **Balakrishnan, B.**, D'souza, N., Hawley, J., Parsons, J., Stealey, J. (2013). Interdisciplinary teaching strategy: Creating digital/virtual student project showcases. Paper presented at the Annual Conference of International Textile and Apparel Association (ITAA), New Orleans, October 15-18.

1.56 D'souza, N., Yoon, S.-Y., **Balakrishnan, B.**, Oprean, D., Chandrasekhara, T., Vo, N., Lin, Y.-F. (2011). Virtual environments-Virtual behavior. Symposium presented at the 42nd Environmental Design Research Association Conference (EDRA), Chicago, May 25-28.

1.57 Wise, K., Yoon, S.-Y., **Balakrishnan, B.**, Alhabash, S., & Polivanaya, V. (2010). Testing color theory: How different color combinations affect physiological and self-report measures of emotion. Poster presented to the annual conference of the Society for Psychophysiological Research (SPR). Portland, Oregon. Sept. 29-Oct 3.

1.58 D'souza, N., **Balakrishnan, B.**, Yoon, S.-Y., & Oprean, D. (2010). The environment-behavior paradox in virtual environments. Symposium presented at the 41th Environmental Design Research Association Conference (EDRA), Washington D.C., June 2-6.

1.59 Yoon, S.-Y., Wise, K., & **Balakrishnan, B.** (2010). Evaluating emotional effects of color environments: The Case for Computer Simulations and Psychophysiological Measures.
- Presentation at the 41st Environmental Design Research Association Conference (EDRA), Washington DC, June 2-6.

1.60 **Balakrishnan, B**. & Sundar, S. (2009). Where am I? How can I get there? Impact of navigability and narrative transportation on spatial presence. Paper presented at the annual conference of the International Communication Association (ICA), Chicago, May 21-25.

1.61 **Balakrishnan, B.**, & Adibhatla, V. (2008). NeoCITIES transactive memory system for geo-collaboration in emergency crisis management. Poster presented at the Annual Department of Homeland Security University Summit, Washington D. C., March 19-20.

1.62 Muramoto, K., Jemtrud, M., Kumar, S., **Balakrishnan, B.** & Wiley, D. (2007). Emerging technologies in a tele-collaborative design studio between Pennsylvania State University and Carleton University. Paper presented at the CON VR 2007 - annual conference of Virtual Reality in Construction, University Park, PA, October 22-23.

1.63 **Balakrishnan, B.** & Pierre, K. (2007). Towards a human-centered approach towards instructional technology: Role of presence and engagement on student satisfaction in online courses. Paper presented at the annual conference of the International Communication Association (ICA), San Francisco, May 24-28.
Top student paper in Instructional & Developmental Communication Division.

1.64 **Balakrishnan, B.**, Nikolic, D., & Zikic, N. (2007). "Where am I?" - Impact of display and content variables on spatial presence and comprehension in virtual environments. Paper presented at the annual conference of the International Communication Association (ICA), San Francisco, May 24-28.

1.65 Downs, E.P., **Balakrishnan, B.**, Marathe, S., & Hopfer, S. (2006). Can Billie-Jo sell wine? The effect of social category cues and rich media in e-commerce websites. Paper presented at the annual conference of the Association for Education in Journalism and Mass Communication (AEJMC), San Francisco, USA, August 10 – 13.
- Winner Jung-Sook Lee award for top student paper in the Communication Technology & Policy Division.

1.66 **Balakrishnan, B.**, & Pierre, K. (2005). Towards a human-centered approach towards instructional technology: Role of social presence, interactivity and engagement on student satisfaction in online courses. Poster presented at the annual conference of the Association for Education in Journalism and Mass Communication (AEJMC 2005), San Antonio, USA, August 10 – 13.

1.67 **Balakrishnan, B.**, Tsay, M., Pierre, K., & Vincent-Killian, J. (2004). Need for acceptance and use of computer-mediated communication. Paper presented at

the annual meeting of the Association for Education in Journalism and Mass Communication (AEJMC 2004), Toronto, Canada, August 4 – 7.

Invited Lectures, Presentations and Exhibitions

1.68 Invited Lecture (with Casey Clay), *Immersive Virtual Reality Training for Caregivers of Children with Autism Spectrum Disorder*, The Sharon Disney Lund Medical Intelligence and Innovation Institute at the Children's Hospital of Orange County, CA – September 14, 2020

1.69 Invited Lecture, Midwest Bioinformatics Conference, *What does virtual reality and motion capture offer healthcare?* Columbia, MO – April 12-13, 2018

1.70 Keynote Presentation, Pennsylvania and Friends Spatial Cognition Symposium, *Spatial Ideation for Design: Potential of Emerging 3-D Technologies,* University Park, PA – May 20-22

1.71 Presentation with Newton D'souza, Mizzou International Symposium on Creativity – *Overview and Analysis Hallmark-Mizzou Creativity Workshop*, April 19-20, 2013.

1.72 Keynote Lecture, Indian Institute of Architects, Thrissur Chapter Meeting – *Visualization, Simulations and Development of Virtual Environments for Design Decision-Making*, January 16, 2013.

1.73 Invited Lecture, University of Calicut, Dept. of Architecture – *Design Visualization and Simulation Using Virtual Reality Environments*, January 16, 2013.

1.74 Invited Lecture, Indiana University Purdue University Indianapolis, School of Informatics – *Enhancing Imagination, Evaluating Experience: Cognitive and Affective Aspects of 3-D Visualization*, February 2012

1.75 Invited Lecture, University of Kerala, Dept. of Architecture – *Developing Affordable Virtual Reality for Architectural Design*, July 30, 2010.

Research Grants – In preparation for Resubmission

2.1 Co-Principal Investigator, **Institute of Education Sciences** grant for **AVID: Automated Virtual-Reality-Based Trainings for Intervention Development** (PI-Joseph Lambert – Vanderbilt University; Balakrishnan is PI for the MU sub-contract for $445,957 for 2022-2025; overall grant $1,925,093)
Received score for the 2020 submission; preparing resubmission

Research Grants – Funded

Secured over $6 million in grants as PI or Co-PI and an additional funding as a Co-Investigator working in interdisciplinary teams over the last 12 years.

2.2 Co-Principal Investigator (with primary responsibility for research), **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; with 15% of the overall budget dedicated to research efforts)

2.3 Co-Investigator, **Federal Highway Works Administration (FHWA)** grant for **iTrain – Immersive Training of Department of Transportation Work Zone Inspectors using Virtual Reality** (PI – Edara; $450,843 for 2020-2021)

2.4 Co-Principal Investigator, **National Science Foundation – Major Research Instrumentation** grant for **MRI: Acquisition of CAVE - An Immersive Virtual Reality Environment for Dynamic Interactive Decision Making and Learning** ($272,000 for 2020-2023, PI – Ye Duan)

2.5 Co-Investigator, **U.S. Dept. of Housing and Urban Development** grant for **Support Healthy Homes Training and Establish a Certified Trainer Network for OLHCHH** ($153,499 for 2020-2021, PI – Kandace Fisher)

2.6 Co-Principal Investigator, **Federal Highway Works Administration** grant for **MIMIC - Multidisciplinary Initiative on Methods to Integrate and Create Artificial Realistic Data** ($1,073,255 for 10.01.2019-09.30.2021; PI – Praveen Edara)

2.7 Co-Principal Investigator, **UM System Research and Creative Works Strategic Investment Program Tier-2** grant for **Building a Convergent Research Community for Smart City Center** ($168,500 for 2019-2021, PI – William Buttlar)

2.8 Principal Investigator, **Steelcase Active Learning Center** grant for **21st Century Collaborative Design Studio** ($67,000 gift in kind; one of 12 winners from over 900 applicants)

2.9 Co-Investigator, **Department of Army** grant for **Video Analytics and Image Processing for Multiview Scene Understanding** ($4,175,238 for 2018-2019, PI – Kannappan Palaniappan)

2.10 Co-Principal Investigator, **University of Missouri Center for Patient-Centered Outcomes Research** grant for **Virtual Reality Skills Training for Behavioral Intervention with Individuals with Autism Spectrum Disorders** ($19,981 for 2017-2018, PI – Casey Clay)

2.11 Principal Investigator, **University of Missouri – Interdisciplinary Innovations Fund** grant for **Development of 3D Virtual Reality Environments for Medical Education** ($25,000 for 2016-2017, Joint PI – Julie Marshall)

2.12 Co-Principal Investigator, **U.S. Department of Transportation – Federal Highway Administration** grant for **A Multidisciplinary Approach to Investigate Work Zone Using SHRP2 Safety Data** ($99,999 for 2015-2017; PI – Praveen Edara).

2.13 Collaborator, **National Science Foundation Research Traineeship (NRT) Program** grant for **NRT-IGE: A Test Bed for STEM Graduate Student Communication Training** ($487,468 for 2015-2017; PI – Jack Schultz)
- Workshop leader for design, visualization, and storytelling

2.14 Principal Investigator, **Seeding Interdisciplinary Research Collaboration (SIRC)** grant for **Evaluating Potential of VR simulations for Healthcare Facility Prototyping and Training of Healthcare Professionals** ($1,500 for 2015)

2.15 Co-Investigator, **Missouri Dept. of Transportation & Regional University Transportation Centers Program** grant for **Investigation of J-Turn Design Factors using the ZouSim** ($199,172 for 2014-2016)

2.16 Co-Investigator**, University of Missouri PRIME Match** funds for **Investigation of J-Turn Design Factors using the ZouSim** ($31,200 for 2014-2016)

2.17 Co-Principal Investigator, **University of Missouri System Interdisciplinary Intercampus (IDIC) Research** grant for **Informatic and Architectural Analysis of Human Performance in a Clinical Simulation Setting** ($94,640 for 2014-2015, PI – Mark Hoffman, Univ. of Missouri Kansas City Center for Health Insights)

2.18 Joint-Principal Investigator, **University of Missouri Mizzou Advantage** grant for **Immersive, interactive, integrative: Envisioning media of the future in 3-Dimensions** ($130,795 for 2014-2016, Joint PI – Clyde Bentley)

2.19 Principal Investigator, **Reynolds Journalism Institute Fellowship** for **Examining Potential of 3-D Technologies for Journalism, Science Communication and Advertising**. ($35,000 for buying out primary teaching responsibilities for 2014-2015 academic year)

2.20 Co-Investigator, **University of Missouri – Interdisciplinary Innovations Fund** grant for **iSTUDIO: An Interactive Form-making Environment for Art and Architectural Teaching** ($25,000 for 2014-2015; PI - Newton D'souza)

2.21 Principal Investigator, **University of Missouri – Mizzou Online** grant for **New Online Masters Concentration in Design Research** ($178,000 for 2012-2014; Ruth Tofle and Newton D'souza are Joint PIs)

2.22 Co-Principal Investigator, **University of Missouri – Mizzou Advantage** network grant for **Enhancing Disaster Resilience in a Digital Age** ($100,000 for 2012-2013; PI – Annette Sobel / Chris Fulcher)

2.23 Co-Principal Investigator, **University of Missouri – Mizzou Advantage** network grant for **Creative Convergence Network (CCN): International Symposium on Assessment and Facilitation of Creativity in New Media** ($25,000 for 2012-2013; PI – Newton D'souza)

2.24 Principal Investigator, **University of Missouri – Interdisciplinary Innovations Fund** for **ReCap: Reality Capture and Simulation for Design Evaluation** ($25,000 for 2012-2013; Co-I – Newton D'souza)

2.25 Co-Principal Investigator, **University of Missouri – Interdisciplinary Innovations Fund** grant for **Leading the Future of the Retail Industry through Creating Digital/Virtual Student Project Showcases** ($22,500 for 2012-2013; PI – Jung-Ha Brookshire)

2.26 Principal Investigator, **University of Missouri, College of Human Environmental Sciences – Seeding Interdisciplinary Research Collaboration (SIRC)** grant for **Analog to Digital: Image Based 3-D Modeling and Motion Capture for Architecture and Apparel Design**. ($1,236 for 2012)

2.27 Principal Investigator, **University of Missouri, College of Human Environmental Sciences – Margaret W. Mangel Faculty Research Catalyst** grant for **Understanding Team Cognition in Digitally-Mediated Design Collaboration** ($3,000 for 2011-2012)

2.28 Co-Investigator, **University of Missouri – Mizzou Advantage** network grant for **Creative Convergence Network (CCN): International Symposium on Assessment and Facilitation of Creativity in New Media** ($19,787 for 2011-2012; PI – Newton D'souza)

2.29 Co-Principal Investigator, **University of Missouri, College of Human Environmental Sciences – Seeding Interdisciplinary Research Collaboration (SIRC)** grant for **Developing a Large-scale Interactive Walkthrough: The Case for Gaming Engine-based VR Simulations of the Metabolic Kitchen** ($1,019 for 2011; PI – So-Yeon Yoon)

2.30 Co- Investigator, **University of Missouri – Research Board** grant for **Evaluating the Impact of Virtual Reality Learning environment on Design Creativity** ($21,366 for 2010-2011; PI – Newton D'souza).

2.31 Principal Investigator, **University of Missouri – Interdisciplinary Innovations Fund** grant for **Development of a Collaborative Design and Education (CoDE) Environment at the Immersive Visualization Lab (iLab)** ($25,000 for 2010-2011)

2.32 Principal Investigator, **University of Missouri – Interdisciplinary Innovations Fund** grant for **Development of an Immersive Visualization Lab** ($25,000 for 2009-2010)

2.33 Principal Investigator, **University of Missouri, College of Human Environmental Sciences – Margaret W. Mangel Faculty Research Catalyst** grant for **Examining the Relationship between Design Intelligence and 3D Visualization Strategies for Architectural Design** ($2,850 for 2009-2010)

2.34 Co-Principal Investigator, **University of Missouri, College of Human Environmental Sciences – Margaret W. Mangel Faculty Research Catalyst** grant for **Enhancing Creativity through a Virtual Reality Learning Environment** ($2,500 for 2009-2010; PI – Newton D'souza)

2.35 Co-Investigator, **University of Missouri – Interdisciplinary Innovations Fund** grant for **Implementation of Building Information Modeling for ShowMe Solar Decathlon** 2011 and ArchSt 4815 Studio V. ($15,875 for 2009-2010; PI – Michael Goldschmidt)

2.36 Co-Principal Investigator, **University of Missouri – Faculty Development Project Award** for **Hybrid Design Studios in Architectural Studies: Combining Online Virtual and Physical Environment Instruction** ($3,100 for 2009-2010; PI – So-Yeon Yoon)

2.37 Co-Principal Investigator, **University of Missouri, College of Human Environmental Sciences – Margaret W. Mangel Faculty Research Catalyst** grant for **Understanding the Effect of Color Environments: Physiological and Self-Report** ($2,621 for 2009-2010; PI – So-Yeon Yoon)

2.38 Co-Investigator, **College of Arts and Architecture, Penn State University – Research Initiation Grant** for **Participatory Design Studio (PDS) - Inquiry-based collaborative design studio between Penn State and Carleton University**, Ottawa. ($17,500 for 2007-2008; PI – Katsuhiko Muramoto).

2.39 **Grants for Undergraduate Research Mentorship at University of Missouri**
Faculty Mentor for College of Human Environmental Sciences P.U.R.E. (Program for Undergraduate Research Experience) Grants. Each project listed below received $2000 totaling $28,000 to provide research apprenticeship opportunities for undergraduate students from 2011-17.

- Brandon Johnston, **Understanding How Zoo Enclosures Can Influence Human Emotion** (2020)
- Mikaela Mongeon, **The Impact of Virtual Reality on Spatial Presence, Comprehension, Memory and Movement** (2018)
- Eric Ballesteros, **Evaluating the Perception of Architecture: Understanding How People Observe Different Geometric Forms** (2018)
- Jessica Blankinship, **Immersive VR Education Program for Enhanced and Practical Learning** (2018)
- Robin King, **Visualization Research: Real Ergonomic Testing of Medical Rooms** (2017)
- Jordan Frericks, **Virtual Reality Enhances the Game of College Basketball** (2017-2018)
- Mohammed Al Subaie, **Dynamic Architecture: Exploring Adaptive and Responsive Architecture** (2016-2017)
- Rebecca Van Lue, **Evaluating Emotional Responses to the Designed Environment: Integrating Virtual Reality Environments with Emotional Response Measurement** (2016)
- Rachael Liberty & Hannah Wallace, **Research-based Prototyping and Evaluation of an Intensive Care Unit** (2014)
- Ashlyn Jach, **Pervasive Developmental Disabilities in the Learning Environment** (2014)
- Lindsay Webb, & Alyssa Jensen, **Examining Digitally Mediated Collaborative Design Environments** (2013)
- Benjamin Schrimpf, **Ergonomic and Architectural Design Evaluation using Motion Capture Tools** (2012)
- Malia Bucher, **Balancing Performance and Aesthetics: Building Simulation Using Rhino, Grasshopper and Arduino** (2012)
- Nicole Wagy and Michael Sun, **Guidance Tools to Enhance Navigation in a Virtual Environment** (2012)
- Brad Martin and Melina Smith, **Evaluating Impact of Virtual Reality System Components on Spatial Experience** (2011)

Development of Simulations Tools and Prototypes

3.1 **Mnemonics for User-Interfaces in Digital Environment**
With Tojin Eapen (Lead), Lokesh Venkataswamy and Nowfal Abdul Khadar
CV Mnemonic method to map hard-to-recall numeric codes to memorable strings for software applications including digital security, password management etc.

3.2 **Crash Simulator Testbeds using Realistic Artificial Data**
With Praveen Edara, Carlos Sun, & James Hopfenblatt

Ongoing crash simulation tool development for transportation design research based on the SHRP2 Naturalistic Driving Study dataset

3.3 **AIR-SIM: Anesthesia Immersive Reality Simulator**
With Julie Marshall, James Hopfenblatt
Ongoing simulation tool development to train anesthesiologists

3.4 **AUT-SIM Virtual Reality Behavioral Skills Training**
With Casey Clay, James Hopfenblatt
Ongoing simulation tool development for behavioral skills training for those working with children on the autism spectrum

3.5 **Zou-Sim J-Turn Simulator & Work zone safety training**
With Carlos Sun (Lead), Praveen Edara, James Hopfenblatt & Zhu King
Simulation tool development for transportation design research and worker training

3.6 **Multi-Modal Virtual Environment for Design Presentation**
With Loukas Kalisperis, Danielle Oprean
Ongoing software development project led by Balakrishnan for a large-screen, multi-modal design presentation and critique environment for architectural designs.

3.7 **NeoCITIES Geotools**
with Mark Pfaff, Scott Pezanowski, Varun Adibhatla, Michael D. McNeese
Scaled-world simulation developed to study team collaboration and situation awareness funded by National Science Foundation and Department of Homeland Security. As a Graduate Research Assistant under Dr. McNeese, Balakrishnan was involved in design of experiment based on research objectives, development of prototypes and conduct of usability research, data collection and analysis and coordination of software developers.

3.8 **NeoCITIES Transactive Memory System**
with Varun Adibhatla, Alice Shapiro and Michael D. McNeese
Prototype developed for first responders to coordinate crisis response. As a Graduate Research Assistant under Dr. McNeese, Balakrishnan was involved in development of early prototypes integrating 2D and 3D spatial information and conducting usability evaluations with experts

TEACHING EXPERIENCE

Courses Taught at University of Missouri

Graduate Courses

- Arch St 8840 Graduate Design Studio
- Arch St 8830 Digital Design Studio 2
- Arch St 8050 Research Methods
- Arch St 8960 Readings Course – Theoretical Topics in Digital Media
- Arch St 8085 Problems in Environmental Design
- Arch St 9555 Recent Trends: Workshop for online & onsite students
- Arch St 7840 Graduate Design Studio
- Arch St 7232 Graduate Design Communication I
- Arch St 7961 Design Research & Service Design

- Arch St 7962 Information Visualization & Visual Analytics

Undergraduate Courses
- Arch St 4990 Thesis Design Studio
- Arch St 4860 Programming for Thesis
- Arch St 4823 Design Studio III
- Arch St 4824 Design Studio IV
- Arch St 4420/7420 History of the Designed Environment after 1750
- Arch St 3182 Design Studio II
- Arch St 2230 Design Communication
- Arch St 2220 Introduction to Computer Aided Design

Individual Study Courses
- Arch St 7960 Readings in Environmental Design
- Arch St 4085 Problems in Architectural Studies
- Arch St 4960 Readings in Architectural Studies
- Arch St 9990 Dissertation Proposal
- Arch St 9090 Doctoral Research in Environmental Design

Courses Newly Developed or Substantially Redesigned

Arch St 8050: Research Methods in Environment and Behavior
- Substantially redesigned the course to include experiential learning; Developed interactive video lectures for all course topics for online students to provide them with a near-classroom experience

Arch St 8633: Theoretical Perspectives in Design Computing
- This seminar course was newly developed to be the core theory course for M.S. & Ph.D. students in the design with digital media emphasis area

Arch St 4420/4440: History of Architecture, Interior and Furniture Design since the Industrial Revolution
- New course developed to better integrate the history course with the design studios in the Architectural Studies curriculum

Arch St 4555: Recent trends: Advanced Visualization
- Offered as an elective course teaching stereoscopic visualization, parametric modeling and behavioral simulation using intelligent agents

Arch St 4961/7961: Design Research and Service Design
- New course developed to provide an overview of applied research methods for use across design disciplines as well as offer industry perspective through guest lectures from experts at leading companies such as Microsoft, Ericsson, Hallmark etc.

Arch St 4962/7962: Information Visualization and Visual Analytics
- New course developed to provide introduction to information visualization and visual analytics drawing from an inter-disciplinary perspective.

Courses Taught at Penn State University

Arch 281 Introduction to Computer Applications in Architecture
Arch 481 Digital Design Media, Co-instructor with Prof. Katsuhiko Muramoto and Dr. Loukas Kalisperis

Teaching Assistantship at Penn State University

Arch 281	Introduction to Computer Applications in Architecture Dr. Loukas Kalisperis
Arch 441/442	Architectural Design and Analysis Prof. Pier Luigi Bandini
Arch 481	Digital Design Media Dr. Loukas Kalisperis & Prof. Katsuhiko Muramoto
Arch 497E	Virtual Design for the Built Environment Dr. Loukas Kalisperis & Dr. John Messner
Comm 404	Mass Communication Research Dr. S. Shyam Sundar
Comm 506	Mass Communication Research (Graduate Course) Dr. S. Shyam Sundar
Comm 418	Media Effects Dr. S. Shyam Sundar

Courses Taught at National Institute of Technology, Calicut, India

Architecture Design 1 Introductory Design Studio
Architecture Design 2 Intermediate Design Studio
Computer Aided Design
Professional Practice: Building Codes and Ethics of Architectural Practice

GRADUATE STUDENT ADVISING

Architectural Studies

Mohammad Dastmalchi (Chair, Ph.D. Committee)
James Hopfenblatt (Chair, Ph.D. Committee)
Jennifer Law (Chair, Ph.D. Committee)
Sara Mostowfi (Chair, M.S. Committee)
Stella Quinto Lima (Chair, M.S. Committee)
Jayedi Aman (Co-Chair, Ph.D. Committee)
Emili Carlson (Member, Ph.D. Committee)

Zhaleh Khosravi (Chair, M.S. Committee, Completed Spring 2018)
- Assistant Professor, University of Minnesota

Ehsan Naderi (Chair, Ph.D. Committee, Completed Fall 2017)
- Senior UX Designer, Arthrex

Benjamin Schrimpf (Chair, M.S. Committee, Completed Fall 2016)
- In Memorium
- Virtual Design & Construction Lead, Power Construction (last employment)

Danielle Oprean (Co-Chair, Ph.D. Committee; Completed Fall 2014)
- Assistant Professor, University of Missouri

Kenneth Jacquin (Chair, M.A. Committee; Completed Spring 2013)
- Healthcare Designer, MU Healthcare

Preeyarat Wuttisirisart (Chair, M.A. Committee; Completed Fall 2014)
- Designer, Thailand

Tilanka Chandrasekera (Member, Ph.D. Committee; Completed Fall 2015)
Ahmed Alawadhi (Member, Ph.D. Committee; Completed Fall 2014)
Thong Thai (Member, M.A. Committee; Completed Summer 2012)
Carrie Steuber (MA Committee member, Completed Fall 2011)

School of Journalism

Rachel Myers (Member, Ph.D. Committee; Completed Fall 2015)
Courtney Ledo (Member, M.A. Committee; Completed Fall 2014)
Ryan Kresse (Member, M.A. Committee; Completed Spring 2012)
Nathan Birt (Member, M.A. Committee; Completed Summer 2009)

College of Engineering

Shizeng Yao (Elec. Engg. & Comp. Sci) (Member, Ph.D. Committee, Completed Fall 2021)
Noor Al-Shakarji (Elec. Engg. & Comp. Sci) (Member, Ph.D. Committee, Completed Fall 2021)
Zhu Qing (Civil & Environ. Engg.) (Member, Ph.D. Committee, Completed Fall 2018)
Zhu Qing (Civil & Environ. Engg.) (Member, M.S. Committee, Completed Fall 2016)
Xiaonan Yang (Industrial Engg.) (Member, M.S. Committee, Completed Summer 2016)
Wei Du (Industrial Engg.) (Member, M.S. Committee; Completed Summer 2015)

AWARDS & HONORS WON BY ADVISEES AND STUDENTS

Danielle Oprean, Ph.D. Student (Completed, Fall 2014)

- ARCC King Student Medal (2013)
- John D. Bies International Travel Scholarship (2012)
- Top Graduate Student at the University of Missouri (2012) from Graduate Student Association (GSA)
- Marcia W. Healy & Robert N. Healy Graduate Scholarship, Dept. of Architectural Studies, 2010
- Graduate Professional Council (GPC) Travel Award Recipient (2010), University of Missouri

Ehsan Naderi, (Completed, Fall 2017)

- Graduate Teaching Award, College of Human Environmental Sciences, 2017
- Marcia W. Healy & Robert N. Healy Graduate Scholarship, Dept. of Architectural Studies, 2014

James Hopfenblatt, Current Ph.D. Student

- ARCC King Student Medal (2019)
- Finalist (with Zhu King & Ehsan Naderi), Traffic Control Device Challenge (TCDC) organized by The Transportation Research Board (TRB) Standing Committee on Traffic Control Devices (AHB50) and the American Traffic Safety Services Association (ATSSA)
- Marcia W. Healy & Robert N. Healy Graduate Scholarship, Dept. of Architectural Studies, 2015
- Selected for the Reynolds Journalism Institute Tech Showcase 2014

Mohammad Dastmalchi, Current Ph.D. Student

- Marcia W. Healy & Robert N. Healy Graduate Scholarship, Dept. of Architectural Studies, 2016-2020
- Mary L. Johnson Scholarship, Dept. of Architectural Studies, 2017-2019
- Curators Grant for International Students, Spring 2019
- College of Human Environmental Sciences Graduate Scholarship for Continuing Students, 2017-2018
- Richard Helmick Scholarship, Dept. of Architectural Studies, 2015-2016
- Adeline M. Hoffman Fellowship, College of Human Environmental Sciences, 2015-2016

Aaron McMurry, Undergraduate Student (Completed, Spring 2018)
- Award of Merit – Applied Design Category, MU Visual Art and Design Showcase, 2017 for MAKE: STEAM – A Makerspace for Columbia, Studio 4 Class Project

Mohammed Al Subaie, Undergraduate Student (Completed, Spring 2018)
- Award of Merit – Applied Design Category, MU Visual Art and Design Showcase, 2016 for MAKE: STEAM – A Makerspace for Columbia, Studio 4 Class Project

Coulton Becker, Undergraduate Student (Completed, Spring 2019)
- Second Prize – Applied Design Category, MU Visual Art and Design Showcase, 2018 for Child Development Lab, Studio 3 Class Project

James Rusk, Undergraduate student (Completed, Spring 2019)
- Missouri Theatre Display Award, MU Visual Art and Design Showcase, 2016 for Columbia Transit Station, Studio 3 Class Project

Alyssa Jensen and Lindsay Webb, Undergraduate students (Completed, Spring 2015)
- Honorable Mention, Undergraduate Research Exhibition MU (2014)

College of Human Environmental Sciences P.U.R.E. Grants
- Since the P.U.R.E. scholarships were instituted, 19 students who worked with me in the iLab as their mentor have won the scholarship – highest among all faculty in the college
- Two P.U.R.E. scholarship winners have gone on to start independent visualization companies specializing in virtual reality for the built environment

CREATIVE ENDEAVOR & ARCHITECTURAL PRACTICE (SELECTED)

Competition Entries

Ashwinikumar Crematorium with Gurjith Singh Matharoo (Lead Designer), Komal Mehta and Rolf Seiler, 1997
(Editor's Choice Award for Emerging Architecture, 2003 by Architectural Review)

Architectural/ Design Visualization

Kerala Institute of Travel and Tourism Studies, Thiruvananthapuram for Iyer & Mahesh Architects (National Competition Winner), 2001. | Independent Practice

KINFRA Software Technology Park, Cochin, for Iyer & Mahesh Architects (National Competition Winner), 2001. | Independent Practice

"Mangta Hai" Set Design Visualization, for Ajit Rao, 2001. |Independent Practice

Commercial Projects

Resort at Poovar, Trivandrum, India, 1999-2000 | Environmental Creations

Ayurgramam Resort, Bangalore, India, 1998-2000 | Environmental Creations

Public Projects

International Film City – Permanent venue for International Film Festival of Kerala | Environmental Creations
Festival Venue, International Film Festival of Kerala -2000, Calicut. | Environmental Creations

Residential Projects

Nawal Residence, Ajmer, India, 1997 | at Matharoo Associates Architects

Singh Residence, Ajmer, India, 1997 | at Matharoo Associates Architects

Bhandari Residence, Ahmedabad, India, 1997 | at Matharoo Associates Architects

Raju Nair Residence, Kottayam, India, 1999-2000 | at Environmental Creations: Architects and Landscape Architects
Girish Nair Residence, Trivandrum, India, 1999-2000 | Independent Practice

MEDIA COVERAGE

Coverage of Missouri Governor, Hon. Mike Parson's visit to the University of Missouri and the Immersive Visualization Lab
- Columbia Missourian (June 13, 2018)
- Columbia Tribune (June 13, 2018)
- KOMU (June 13, 2018)
- Missouri Business Alert (June 14, 2018)

Perception Neuron motion capture system testing at the Immersive Visualization Lab
- Tom's Hardware (Oct 23, 2016)

Coverage of Reynolds Journalism Institute Fellowship Project & Database of 3D Technologies
- *South Carolina Press Association eBulletin (Nov. 18, 2015)*
- *Lion Publishers (Nov. 17, 2015)*
- *Arizona Newspaper Association Weekly Newsletter (Nov. 12, 2015)*
- *Native American Journalists Association Newsletter (Nov. 12, 2015)*
- *Online News Association Weekly (Nov. 11, 2015)*
- *Society of Professional Journalists Leads Weekly (Nov. 11, 2015)*
- *MediaShift (Nov. 10, 2015)*
- *NetNewsCheck (Nov 10, 2015)*
- Association of Alternative Newsmedia (April 8, 2015)
- Editor and Publisher (April 2015, Vol 148, issue 4)

MU iLab showcases 3-D, virtual technology
Columbia Missourian (April 27, 2014)

MU's iLab opens doors to promote interaction
Columbia Daily Tribune (April 26, 2014)

A new point of view
HES Vanguard 2013

Awards recognize extra effort of MU employees
Columbia Daily Tribune (April 19, 2012)

New 3-D lab unveiled at the MU Department of Architectural Studies
Columbia Missourian (January 11, 2012)

Undergrad architecture students get immersive lab at University of Missouri
Campus Technology (January 03, 2012)

3-D visualization laboratory aids architects
Vision Systems Magazine (December 29, 2011)

Total Immersion for Designs
Constructech Magazine (December 28, 2011)

School opens 3-D design laboratory
St. Louis Post Dispatch – Education Digest (December 21, 2011)

A Collaborative Design and Education Environment
The Innovator: Exploring Educational Technologies at Mizzou (Fall 2011)

Balakrishnan, Stone honored for promoting tech-savvy students
MizzouWeekly (October 13, 2011)

iLab helps Missouri students
Newswire of ARCHITECT, The magazine of the American Institute of Architects
(December 22, 2011)

3-D lab helps MU architecture, interior design students
Columbia Daily Tribune (December 20, 2011)

MU Unveils 3-D Visual Immersion Laboratory
MU News Bureau (December 19, 2011)

SERVICE

University of Missouri

Advisory Board Member, Chancellor's Artist in Residence Program, Sept 2019 – present

Member, MU Information Technology Committee, August 2016 – August 2020

Member, Steering Committee – Digital Storytelling Program, College of Arts & Science, Sept 2017 – May 2018

Member, MU Cyberinfrastructure Council, January 2013 – December 2017

Co-Lead on Imaging & Visualization component of MU's Campus Cyberinfrastructure plan, Summer 2015 to Spring 2016

MU Annual Visual Art and Design Showcase Committee, Summer 2015 – Summer 2016

MU Honors College Diversity Committee, Spring 2016

Member, MU Information Technology Transition Project – Research sub-committee, Spring – Summer, 2015

Member, Technology Evaluation Sub-Committee, Fall 2010 – present

Faculty Fellow, Center for Digital Globe (CDiG), Spring 2011 – present

Faculty Advisor, Design with Digital Media Students Association, Fall 2011 – present

Architectural Studies Workshop Coordinator, High School Art Day, Fall 2011, Fall 2012

College of Human Environmental Sciences

Member, Taskforce on Inclusion, Diversity and Equity, Fall 2020 – present

Member, Faculty Committee on College Policy, Fall 2016 – Spring 2018

Member, Search Committee for the Dean of College of Human Environmental Sciences, Fall 2016 – Spring 2017
Member, Academic Appeals Committee, July 2010 – July 2014

Member, Search and Screening Committee for Instructional Technology Liaison Summer 2010; Fall 2013.

Department of Architectural Studies

Chair, Search and Screening Committee, Design with Digital Media faculty position Fall 2016-Spring 2017

Co-Chair, Search and Screening Committee, Design with Digital Media faculty position Fall 2012-Spring 2013

Coordinator, Design with Digital Media Graduate Program, Summer 2012 – present
Coordinator, Architectural Studies Print Center, Summer 2012 – Summer 2014

Coordinator, History Sequence, CIDA Program Accreditation Preparation, Spring 2012

Coordinator, Computing and Curriculum Committee, Summer 2012 – present

iLab Development and Promotion, November 2008 – present

Assisted Dept. Chair with the Development proposal – "Visualize/Actualize": Highlighting experiential learning in Architectural Studies and interdisciplinary programs.

Academic advisor
20 to 40 undergraduate students each year from 2009 to present

Profession

Current Professional Organization Memberships

- ACADIA – Association for Computer Aided Design in America
- ACM – Association for Computing Machinery & ACM SIGCHI – Special Interest Group in Computer Human Interaction ACSA – Association of Collegiate Schools of Architecture
- DCA – Design Communication Association
  - Scientific Committee Member for 2018 Biennial Conference

Previous Professional Organization Memberships

- AEJMC – Association of Educators in Journalism and Mass Communication
- CAADRIA – Computer-Aided Architectural Design Research in Asia
- eCAADe – Education and research in Computer Aided Architectural Design in Europe
- EDRA – Environmental Design Research Association
- HFES – Human Factors and Ergonomics Society
- ICA – International Communication Association

Community

Board Member, Graduate School Alumni Society, Penn State University

- Chair, Global Outreach Committee