

MOJTABA NAVVAB, Ph.D., FIES

Education

University of Michigan, Ann Arbor, MI, Ph.D., 1994
University of Michigan, Ann Arbor, MI, Certificate of Simulation & Gaming, 1993
University of California, Berkeley, CA, M. Arch. 1981
The University of California, Berkeley, CA, B.Arch., 1979

Academic, Research, and Practice Appointments

Associate Professor of Architecture,
The University of Michigan, A. Taubman College of Architecture and Urban Planning, Ann Arbor, MI.

Visiting Professor - SAPIENZA University of Roma, Roma, Italy
Department Astronautical, Electrical, and Energetic Engineering (DIAEE), Roma, Italy.
(November ó December 2012) and (June - August 2015 and 2016)

Fulbright Specialist Grant in Engineering Education, (August 2013)
J. William Fulbright Foreign Scholarship, The Bureau of Education and Cultural Affairs of the U.S. Department of State and the Council for International Exchange of Scholars (CIES), Institute of International Education (IIE), Specialist Grantee, ID #5191, School Light and Vision, National University of Tucuman, Tucuman, **Argentina**

Visiting Scholar - (September - October 2012)
Fraunhofer Institute of Computer Architecture and Software Technology, Berlin, Germany.

Visiting Scholar - (Jan 1999 - June 1999)
University of Fukuyama, Fukuyama, Japan

Senior Architect - (1997 to Present)
University of Michigan, Architectural Engineering and Construction, Ann Arbor, MI

Research Architect - (1985 to 1996)
University of Michigan, Architectural Engineering and Construction, Ann Arbor, MI

Assistant Professor of Architecture, (1985 to 1996)
University of Michigan, TCAUP, Ann Arbor, MI

Research Scientist (1981-1985)
University of California, Berkeley, Lawrence Berkeley National Laboratory, Berkeley, CA

Administrative Appointment

Chair of the Senate at the University of Michigan, Ann Arbor, MI., (2000 to 2002)
and Chair of the Senate Advisory Committee on University Affairs (SACUA)

Chair of Certificate Program in Simulation & Gaming, (1994 to Present) the
University of Michigan, Rackham School of Graduate Studies, Ann Arbor, MI

Teaching Areas

Acoustics, Daylight, Electric Light, LEED Certification, Building Energy Efficiency, CFD Modeling and Simulation, Photovoltaic System, Environmental Controls, Research Methods, Simulation and Gaming, Integrated Resource Planning. Application of Environmental Technology within Virtual Environment

PUBLICATIONS

Book Chapter

- 2018 Mojtaba Navvab*, Chiara Burattini, Fabio Bisegna and Franco Gugliermetti
* University of Michigan, Ann Arbor, MI, United States, Sapienza University, Rome, Italy.
Chapter 8.1, Efficient Lighting Systems, Title of the Book: "A Life-Cycle Approach, Handbook of Energy Efficiency in Buildings," by Elsevier 1st Edition, Editors: Umberto Desideri, Francesco Asdrubali, eBook ISBN: 9780128128183, Paperback ISBN: 9780128128176,
Imprint: Butterworth-Heinemann, Published Date: November 12, 2018.
<https://www.elsevier.com/books/handbook-of-energy-efficiency-in-buildings/desideri/978-0-12-812817-6>.
- 2011 T.W. Hall, M. Navvab, E. Maslowski, and S. Petty, Chapter 11 "Virtual Reality as a Surrogate Sensory Environment," Title of the Book: "Advances in Robotics and Virtual Reality," by Springer's Intelligent Systems, Reference Library, <http://www.springer.com/series/8578>, Author: Tauseef Gulrez, Ph.D., Head Intelligent Machines & Robotics Research Group, Department of Computer Science, COMSATS Institute of Information Technology, M.A. Jinnah Campus, Lahore, Pakistan,
<http://cimr.ciitlahore.edu.pk> ISBN 978-3-642-23362-3.
<http://www.springer.com/engineering/computational+intelligence+and+complexity/book/978-3-642-23362-3>

Patent:

- 2021 Patent in China: The Chinese Patent Office officially permitted the patent application (U.M. Ref. No. 7284-04) and Chinese (Ref. No. 2115-107284-CN-01) for the Chinese patent on February 20, 2021.
- 2020 U.S. Provisional Application No.: 62/480,579, Filing Date: April 3, 2017
Title: EYEWEAR FOR AUTOMATICALLY DETECTING AND BLOCKING SOURCES OF GLARE,
Inventor: Mojtaba Navvab, UM Ref: 7284; HDP Ref: 2115-007284-US-PS1
The patent was issued On Jan 7th2020, <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetacgi%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=10527870&OS=10527870&RS=10527870>.
The United States Letters Patent No. 10,527,870 on January 7, 2020
- 2018 U.S. Provisional Application No.: 62/450,678, Filing Date: January 26, 2017
Title: HOSPITAL DOOR NOISE SUPPRESSOR, Inventor:
Mojtaba NAVVAB UM Ref: 7283; HDP Ref: 2115-007283-US-PS1.

Research Publications & Presentations

- 2020 *Mojtaba Navvab and Andy Meyer*, "Exploratory analysis of noise reduction solutions in a psychiatric ward using beamforming techniques," *The Journal of the Acoustical Society of America* 148, 2441 (2020); <https://doi.org/10.1121/1.5146734>.
- 2019 *Mojtaba Navvab and Andy Meyer*, "Directivity of the musical instruments and voice in a real situation using beamforming techniques," *The Journal of the Acoustical Society of America* 146, 2823 (2019); <https://doi.org/10.1121/1.5136778>.
- 2016 *Mojtaba Navvab*, "Room acoustic design, measurement, and simulation techniques to reduce hospital noises within patients' environment," *The Journal of the Acoustical Society of America* 139, 2024 (2016); <https://doi.org/10.1121/1.4949967>.

- 2016 Navvab, M., Fabio, B., Cellucci, L., "Defining Pedestrian's Visual Adaptation Field under Night Lighting in Venice," IEEE_EEEIC 2016, June7-10, Florence, Italy.
- 2016 Navvab, M., Fabio, B., Gugliermetti, F., "Dynamic Roadways and In-Vehicle Lighting Conditions within City of Rome," IEEE_EEEIC 2016, June7-10, Florence, Italy.
- 2016 Navvab, M., Fabio, B., Gugliermetti, F., "Capturing ancient theaters sound signature using Beamforming," ICSV23- International Congress on Sound and Vibration, Athens Greece, July 10-14, 2016.
- 2015 Mojtaba Navvab, Robert Clear "Estimation of the Adaptation Luminance under Roadway Lighting Conditions," 28th CIE Session in Manchester, United Kingdom, June 28 - July 4, 2015.
- 2015 Mojtaba Navvab, "Photometric Evaluations for Pedestrian Environment with Emphasis of Light Spectrum at the Mesopic level," 28th CIE Session in Manchester, United Kingdom, June 28 - July 4, 2015.
- 2015 Mojtaba Navvab, Fabio Bisegna, Franco Gugliermetti, "Dynamic Roadways and in-vehicle Lighting Conditions for Determining Mesopic Adaptation Luminance," IEEE 2015, Session in Rome, Italy, June 9 June 11, 2015.
- 2014 G. Heilmann, M. Navvab, M. Boeck, B. Vonnrhein, "Acoustic Study and Visualization of a Complex Echo at the Klondike Bluffs, " Arches National Park," Inter-noise 2014, Nov.16-19, Australia.
- 2014 Mojtaba NAVVAB, Gunnar Heilmann, Andy MEYER, Sébastien BARRÉ, "Simulation of Concert Halls' Room acoustic Characteristics Toward Sustainability of their cultural Heritage," Culture and Computer Science 22 - 25 May 2014 in Berlin, Germany. Published in "Reality and Virtuality" by Franken-Wendelstorf, etc. P.P. 29-48, ISBN: 978-3-86488-064-3.
- 2014 Mojtaba Navvab, Richard Perez, Hayato Hosobuchi, "The Estimated Frequencies of CIE Sky Luminance Distributions and the Impact of the Circumsolar Region Using TMY Weather Files," American Solar Energy Society (ASES), 7-10 July 2014, San Francisco, Cal., USA.
- 2014 Mojtaba Navvab, "Virtual Reality as a Surrogate Sensory Environment for Evaluation of Human Luminous Environment," Proceedings of the ISCC/CIE Division 2 within Annual Inter-Society Color Council (ISCC), Color, Light and Appearance, 16-20, June 2014 NIST, Gaithersburg, Maryland, USA.
- 2014 Mojtaba Navvab, Peter Farrehi, Forooz Shahbazi, Andy Meyer, "Application of Beamforming Techniques to Localize and Reduce Noises within Acute Care Patient Environment," BeBEC-2104-29, Berlin, Germany, Feb 19-20, 2014, ISBN976-3-942709-12-5
- 2014 Mojtaba NAVVAB, Fabio BISEGNA, Gunnar HEILMANN, and Magdalena BÖCK, "Capturing Historical Building Space Sound Signature Using Beamforming," BeBEC-2104-27, Berlin, Germany, Feb 19-20, 2014, ISBN976-3- 942709-12-5
- 2013 Mojtaba Navvab, Fabio Bisegna, Franco Gugliermetti, "Evaluation of Historical Museum Interior Lighting System Using Fully Immersive Virtual Luminous Environment," SPIE Optical Metrology, 13 - 16 May 2013 in Munich, Germany. Proc. SPIE 8790, Optics for Arts, Architecture, and Archaeology IV, 87900F (May 30, 2013); DOI:10.1117/12.2020535.
- 2013 M. Navvab, F. Bisegna, F. Gugliermetti, "Virtual Reconstructions, Visualization, Auralization and Interaction within a Cultural Heritage buildings and Sites," Culture and Computer Science 22 - 25 May 2013 in Berlin, Germany. Published in "Visual World and Interactive Space" by Regina Franken-Wendelstorf, ETL. P.P. 131-146, ISBN: 978-3-86488-045-2.
- 2012 Navvab, M., "Dynamic Variation of the Direct and Reflected Sound Pressure

Levels Using Beamforming," Berlin, Beamforming Conference, Feb22-23, 2012.
ISBN: 978-3-94270904-0.

- 2012 Navvab, M., "Simulation, visualization and perception of sound in a virtual environment using Beamforming" Berlin, Beamforming Conference, Feb22-23, 2012. ISBN: 978-3-94270904-0.
- 2011 Navvab, M., "Acoustic Performance of Ancient Theatres: Ancient versus Virtual architecture" conference on "Acoustics of Ancient Theatres," organized by the European Acoustics Association, Petra, Greece. September 18-21, 2011.
- 2011 Navvab, M., "Measurable Domain for Color Differences within Virtual Environment," CIE 27th session, Sun City, July 9-16th South Africa 2011.p430-440, ISBN 978 3 901906992.
- 2011 Navvab, M., "Plant Lighting Aspects for Plant Growth in Controlled Environments," CIE 27th session, Sun City, July 9-16th, South Africa 2011, p246-256, ISBN 978 3 901906992.
- 2011 *Sentagi S. Utami and Mojtaba Navvab*, Impacts of architectural design variables to diffusion in room acoustics. The Journal of the Acoustical Society of America 129, 2503 (2011); <https://doi.org/10.1121/1.3588268>.
- 2011 *Sentagi S. Utami and Mojtaba Navvab*, Room acoustics simulation of hospital patient care unit. The Journal of the Acoustical Society of America 129, 2668 (2011); <https://doi.org/10.1121/1.3588932>.
- 2010 Navvab, M., "Application of the Head-Related Transfer Function (HRTF) in Room Acoustic," Berlin, Beamforming Conference, (BeBeC), Germany, Feb 20 ó 25th, 2010, ISBN 978-3-00-030027-1
- 2010 *Sentagi S. Utami and Mojtaba Navvab*, "Simulating diffuseness with geometry variations of room surfaces. The Journal of the Acoustical Society of America 127, 1752 (2010); <https://doi.org/10.1121/1.3383678>.

International Teaching Exchange and Research Collaborations

- 2019 Presented two lectures on "Acoustic Simulation Techniques" at the Audio Engineering Department within the National University of Tres de Febrero - UNTREF. Universidad Nacional de Tres de Febrero - UNTREF. Buenos Aires, Argentina. Contact: Prof. Alejandro Bidondo, Email: abidondo@untref.edu.ar, Monday 26th to Wednesday, August 28, 2019. (Invitation)
- 2019 I presented three lectures on "Smart Cities and application of ISO 37120: 2019 Sustainable cities and communities, indicators for city services and quality of life" at the Dept. of Astronautical Electrical and Energetic Engineering ó (DIAEE) within the University of Sapienza, Rome, Faculty of Engineering. Contact: Prof. ing. Fabio Bisegna, Email: fabio.bisegna@uniroma1.it, Tuesdays 3rd, and 8th and Thursday, October 10, 2019. (Invitation)
- 2019, 2018, 2017, 2015, "International Study Program," Workshop on Simulation Techniques, Chinese University of Hong Kong (March 2015, Feb + Mar 2017, Feb, + Apr 2018, Mar 1-9, 2019), the workshop provides an understanding of environmental design methods through the use of commercial and newly-developed specific computer programs. State-of-the-art thermal, lighting, daylighting, and acoustic analysis models are introduced through simulation techniques.
- 2017 Two Workshops on Simulation Techniques (acoustic, lighting and Thermal), Total of 7; 3-hrs sessions; Location: The Chinese University of Hong Kong, Center for Housing Innovations, Room 507, Esther Lee Building, Dr./Prof., Jin Tsou, Email: jinyeutsou@cuhk.edu.hk; jinyeutsou@gmail.com, dates: Feb-2017 (12 Hours) and March-2017 (9 Hours)

2016 One Seminar on Research Methods: Ph.D. Program at the SAPIENZA University of Roma, Contact Prof. /Dr. Franco Gugliemetti, Faculty of Architecture SAPIENZA University of Rome, Dept Astronautical, Electrical, and Energetic Engineering, Rome, Italy, Email: franco.gugliemetti@uniroma1.it, (June 2016), 3-hrs session Location: Rome

One Workshop Energy Performance: LEED compliance and energy performance for commercial buildings. Contact: Prof./Dr. Fabio Bisegna, Faculty of Architecture SAPIENZA University of Rome, Dept. Astronautical, Electrical, and Energetic Engineering, Rome, Italy, Email: fabio.bisegna@uniroma1.it, (June 2016), 3-hrs session, Location: Rome

2013 Fulbright Specialist Grant in Engineering Education, (August 2013)
J. William Fulbright Foreign Scholarship, The Bureau of Education and Cultural Affairs of the U.S. Department of State and the Council for International Exchange of Scholars (CIES), Institute of International Education (IIE), Specialist Grantee, ID #5191

2010 & 2015 - National University Tucumán, Argentina, Certificate in Engineering, Visual Environment, and Efficient Lighting (MAVILE - is a network of European, Latin-American, and North American teaching and research groups on lighting, environmental architecture, and psychology, optics, and vision. This is programmed for training specialists in the field of visual environment and efficient lighting. The department of lighting, Light, and vision of the National University Tucumán, Argentina, email: ilum@herrera.unt.edu.ar.

Professional Honors and Awards: Individual Teaching, Research, Service or Creative Activity

- 2015 Nominated and voted as one of the 2015 inductees for the Michigan Lighting Hall of Fame within Illuminating Engineering Society of North America (IESNA).
- 2015 Elected as Executive Committee Board Member for (2014- 2016).
USA / CIE (International Commission on Illumination)
- 2015 Visiting Professor: SAPIENZA University of Roma, Roma, Italy
Department Astronautical, Electrical, and Energetic Engineering (DIAEE), Roma, Italy
- 2013 Fulbright Specialist Grant in Engineering Education, J. William Fulbright Foreign Scholarship, The Bureau of Education and Cultural Affairs of the U.S. Department of State and the Council for International Exchange of Scholars (CIES), Institute of International Education (IIE),
Specialist Grantee, ID #5191
- 2012 Visiting Professor: SAPIENZA University of Roma, Roma, Italy
Department Astronautical, Electrical, and Energetic Engineering (DIAEE), Roma, Italy
- 2012 Visiting Faculty/Scholar: Fraunhofer Institute of Computer Architecture and Software Technology, Berlin, Germany.
- 2015 The 2015 University of Michigan Award of Service,
Member of the Senate Advisory Committee on University Affairs (SACUA)
- 2010 The Ocean Optics Industry National Competition Awards: Application of Spectroscopy through video and photography as a medium. 1) Architecture Research in Lighting 2) and Application of Colorimetric within the Virtual Environment - UM-3D Lab. - CAVE
- 2006 The 2006 TCAUP- Dean's Faculty Award of Service
- 2002 The 2002 University of Michigan Award of Service as the Chair of the Senate and the Senate Advisory Committee on University Affairs (SACUA)
- 2000 The 2000 Fellow Award: Fellow Member of the Illuminating Engineering Society of North America. Lighting Design, "MI, USA.
- 1999 The 1999 IESNA Design Award, EPRI-Award of Merit "The Paint and Finesse Inspection Deck for Chrysler Assembly Plant, "Newark, NJ, USA.
- 1997 The Energy Power Research Institute (EPRI) Award, as part of the International Illumination Design Award IIDA 1997 IESNA International Illumination Design Award, EPRI-Award of Merit "The World of Disney, the New Village Marketplace," F.L., USA. Architectural Practice Project - Consultant: Daylighting System and Energy Reduction Strategies.

- 1994 The 1994 IES Michigan Illumination Design Award Hatcher Graduate Library Reading Room Retrofit at University of Michigan, USA.
- 1994 The 1994 IESNA International Illumination Design Award, "Edwin F. Guth Memorial Award of Merit for lighting design of Chrysler Technology Center, Lighting Control System of Atrium Buildings, MI, USA.
- 1993 The 1993 IESNA International Illumination Design Award "Edwin F. Guth Memorial Award of Distinction for lighting design of Chrysler Technology Center, Styling Dome," Michigan, USA.
- 1992 The 1992 General Electric, Edison Design Award for lighting design of Chrysler Technology Center, Lighting System of Styling Dome, Michigan, USA.
- 1991 The 25th Annual Paper Award from the IEEE- 1991, "Strategies to Reduce the Electrical Consumption in Institutional Building Annual Conference, Detroit, MI, USA.
- 1989 The 1989 IESNA International Illumination Design Award Edwin F. Guth Memorial Award of Distinction for Daylighting design of 1988 Olympic Speed Skating Oval in Calgary, Alberta, Canada.
- 1988 The 14th Annual Paper Award from the Solar Energy Society of Canada, "1988 Best Paper of the Year Award on the Technical and Commercial Development in Energy Efficiency and Renewable Energy", Calgary, Alberta, Canada.
- 1988 AIA Educational Honors Program - The 1988 AIA Citation of Honors for the development of an architecture course "Technology Research for Design" at The University of Michigan, College of Architecture and Urban Planning, USA.
- 1988 National Lighting Awards Program - 1988 Awards for Daylighting Design Applications in Institutional Buildings, USA.
- 1985 The 32nd Annual Award from P/A, Progressive Architecture: Applied Research Award for 1985; Project Principal Scientist for the Design and Development of Daylighting Simulation Facility at Lawrence Berkeley National Laboratory (LBNL), USA.

Mojtaba Navvab, Ph.D., FIES

Taubman College of Architecture and Urban Planning
 The University of Michigan, Arch Bldg., Rm-1205D,
 2000 Bonisteel Blvd., Ann Arbor, MI 48109-2069
 Email: moji@umich.edu, Voice : (734)936-0228

https://www.researchgate.net/profile/Mojtaba_Navvab

