

I. Personal Information

Sr. Instructor
Building Systems Engineering
Department of Civil, Environmental, and Architectural Engineering
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II. Related Experience

Instructor, 2016 to Present, Department of Civil, Environmental and Architectural Engineering at the University of Colorado Boulder
Co-Director, Rocky Mountain Lighting Academy, January 2012 to Present
Instructor, 2012 to 2015, Department of Civil, Environmental and Architectural Engineering at the University of Colorado Boulder
Senior Associate (Acoustics and Lighting), January 2008 to January 2011, Shen Milsom Wilke, LLC. – Denver, Colorado
Senior Associate (Acoustics), May –August 2008, Shen Milsom Wilke, LLC-FZ – Dubai, United Arab Emirates
Acoustics Consultant, 2005 to 2007, Kirkegaard Associates – Boulder, Colorado
Research Assistant, 2000 to 2005, Department of Civil, Environmental and Architectural Engineering, University of Colorado – Boulder, Colorado
Independent Contractor (Lighting Consultant), 1999 to 2008, Light'n Up – Washington, DC
Consultant (Lighting Design), 1998 to 1999, Robert Singer & Associates – Aspen, Colorado
Lighting Intern, May - August 1998, Moran Coventry Lighting Associates – Washington, DC

III. Education

Ph.D., Civil Engineering, University of Colorado Boulder, 2005,
Thesis: "Acoustic Radiosity: New Methods for Diffuse and Partially Specular Sound Field Prediction"
M.S., Civil Engineering, University of Colorado Boulder, 2003,
Thesis: "Measurement and Analysis of RVC Stacks for Thermoacoustic Refrigerators and Prime-Movers"
B.S., Architectural Engineering, University of Colorado Boulder, 1998,
Emphasis in Illuminating Engineering

IV. Professional Affiliations

Illuminating Engineering Society of North America (IESNA)
International Association of Lighting Designers (IALD)
Acoustical Society of America (ASA)
Institute of Acoustics (IOA)

International Institute of Acoustics and Vibration (IIAV)

V. Refereed Publications

1. Muehleisen, R. T. and Beamer, C. W., "Diffuse acoustic radiosity: New methods for sound field modeling", *Noise Control Engineering Journal*, Vol. 57(3), May-June 2009.
2. Muehleisen, R. T., Beamer, C. W., and Tinianov, B. D., "Measurements and empirical model of the acoustic properties of reticulated vitreous carbon", *Journal of the Acoustical Society of America*, Vol. 117(2), February 2005.
3. Muehleisen, R.T., Beamer, C.W., Tinianov, B. D., and Hougland, D. S., "Acoustic and illumination design of conference rooms", *Proceedings of the first AEI conference*, September 2003.
4. Muehleisen, R. T. and Beamer, C. W., "Comparison of errors in the three- and four-microphone methods used in the measurement of the acoustic properties of porous materials", *Acoustic Research Letters Online* 3(4), page 112, October 2002.

VI. Books Reviewed

1. Hansler, E. and Schmidt, G., "Acoustic Echo and Noise Control: A Practical Approach", Review published in the *International Journal of Acoustics and Vibration*, Vol. 12 (1), 2007

VII. Presentations and Invited Lectures

1. "Acoustics for Learning Environments", Beamer, C. W., *Emerging Design Standards for Higher Education Facilities, Presented by Tandus Flooring*, Kansas City, MO, May 2010
2. "Determination of absorption coefficients for audience seating from in situ measurements", Gulsrud, T. E., and Beamer, C. W., *153rd Meeting of the Acoustical Society of America*, Salt Lake City, UT, June 2007
3. "Application of acoustic radiosity methods to noise propagation within buildings", Muehleisen, R. T. and Beamer, C. W., *150th Meeting of the Acoustical Society of America*, Minneapolis, MN, October 2005
4. "Measurements of the acoustic properties of reticulated vitreous carbon", Muehleisen, R. T., Beamer, C. W., and Tinianov, B. D., *149th Meeting of the Acoustical Society of America*, Vancouver, BC, May 2005
5. "A comparison of partially specular radiosity and ray tracing for room acoustics modeling", Beamer, C. W. and Muehleisen, R. T., *149th Meeting of the Acoustical Society of America*, Vancouver, BC, May 2005

6. “A comparison of computational models for predicting speech intelligibility and speech privacy”, Muehleisen, R. T. and Beamer, C. W., *148th Meeting of the Acoustical Society of America*, San Diego, CA, November 2004
7. “Radiant exchange in partially specular architectural environments”, Beamer, C. W. and Muehleisen, R. T., *146th Meeting of the Acoustical Society of America*, Austin, TX, November 2003
8. “A comparison of radiosity with current methods of sound level prediction in commercial spaces”, Beamer, C. W. and Muehleisen, R. T., *Pan-American/Iberian Meeting on Acoustics*, Cancun, Mexico, December 2002
9. “Acoustic radiosity for computation of sound fields in diffuse environments”, Muehleisen, R. T. and Beamer, C. W., *Pan-American/Iberian Meeting on Acoustics*, Cancun, Mexico, December 2002
10. “Thermoviscous functions of wire mesh and RVC stacks”, Muehleisen, R. T. and Beamer, C. W., *141st Meeting of the Acoustical Society of America*, Chicago, IL, June 2001
11. “Comparison of techniques for measuring the acoustic properties of porous materials”, Beamer, C. W. and Muehleisen, R. T., *140th Meeting of the Acoustical Society of America/NOISE-CON*, Newport Beach, CA, December 2000

VIII. Research & Educational Support

1. “*Broadening the impact of the Lighting Program at CU Boulder through increased course offerings tailored specifically to engineering graduate students, architectural design students, and industry professionals*” - IES Education Grant: C. W. Beamer IV, S. Vasconez (Aug 2013 – Aug 2017), \$439,525
2. “*Study on the use of high dynamic range imaging (HDRI) for luminance measurement*” - PNNL, C. W. Beamer IV, (Sep. 2015 – Dec. 2015), \$24,920
3. David L. DiLaura Fellowship in lighting, D. Kinderdick, T. Brogden, S. Vasconez, C.W. Beamer IV, (Raised \$105,000 for the Lighting Program)

IX. Course Instruction

Fall 2015, *AREN 3450: Illumination 1*, 34 Students
Fall 2015, *CVEN 5830: Building Energy Systems*, 7 Grad Students
Spring 2015, *AREN 4560: Luminous Radiative Transfer*, 9 Students
Spring 2015, *AREN 4580: Daylighting*, 16 Students
Spring 2015, *AREN 4830: Lighting Design 2*, 11 Students
Fall 2014, *AREN 3450: Illumination 1*, 38 Students
Fall 2014, *CVEN 5830: Building Energy Systems*, 9 Grad Students
Spring 2014, *AREN 4317: Architectural Engineering Design*, 14 Students
Spring 2014, *AREN 4560: Luminous Radiative Transfer*, 8 Students

Spring 2014, *AREN 4830: Acoustics and Lighting in Architecture*, 16 Students
 Fall 2013, *AREN 4580: Daylighting*, 30 Students
 Fall 2013, *AREN 4560: Luminous Radiative Transfer*, 9 Students
 Spring 2013, *AREN 4830: Acoustics and Lighting in Architecture*, 20 Students
 Spring 2013, *AREN 3450: Illumination 1*, 39 Students
 Fall 2012, *CVEN 5830: Building Energy Systems*, 7 Grad Students
 Fall 2012, *AREN 4560: Luminous Radiative Transfer*, 10 Students
 Spring 2012, *AREN 3450: Illumination 1*, 36 Students
 Spring 2012, *AREN 3130: Building Energy Lab*, 28 Students

X. Course Development

Spring 2015, *AREN 4830: Lighting Design 2*
 Fall 2013, *AREN 4580: Daylighting*
 Spring 2013, *AREN 4830: Acoustics and Lighting in Architecture*
 Fall 2012, *AREN 4560: Luminous Radiative Transfer*
 Spring 2012, *AREN 3450: Illumination 1*

XI. Individual Student Guidance

1. Independent Study Advising

Sarah Safranek, Katherine Teman, Shelby White, Graduate Independent Study, 3 credit hours, High Dynamic Range Imaging for Luminance measurements, Spring 2016.
 Katherine Teman, Graduate Independent Study, 3 credit hours, Lighting Controls, Spring 2016.
 Sarah Safranek, Graduate Independent Study, 3 credit hours, Advanced Daylighting Design and Software, Fall 2015.
 Sarah Safranek, Undergraduate Independent Study, 3 credit hours, Advanced Radiative Transfer and Radiance, Fall 2014.
 Claire Kaplan, Undergraduate Independent Study, 3 credit hours, Architectural Acoustics, Fall 2013.
 Andrew Robbins, Undergraduate Independent Study, 3 credit hours, Architectural Acoustics, Fall 2013.
 Hornback, Jordan, Undergraduate Independent Study, 1 credit hours, Acoustic Measurements, Spring 2013.
 Hornback, Jordan, Undergraduate Independent Study, 2 credit hours, Architectural Acoustics, Fall 2012.
 Whiteneck, William, Undergraduate Independent Study, 3 credit hours, Ray Tracing applied to LED Optical Design, Fall 2012.
 Hanson, Mitchel, Undergraduate Independent Study, 3 credit hours, Architectural Acoustics, Spring 2012

2. Ph.D. and M.S. Students as Thesis Advisor

Stanley, Mio, (M.S.) Topic: High Dynamic Range (HDR) imaging in Luminance and near field Luminous Intensity Measurements. – Jan 2016.
 Safranek, Sarah, (M.S.) Expected graduation date is AY 16-17.
 Teman, Katherine, (M.S.) Expected graduation date is AY 16-17.
 White, Shelby, (M.S.) Expected graduation date is AY 16-17.

3. Ph.D. and M.S. Students – Thesis and Report Committee Member

- Kang, Yoonsuk, Member Ph.D. Committee, Graduated Summer 2014,
“Bayesian Based Parameter Identification for Calibrating Energy Models for Existing Buildings”
- LoVullo, David, Member MS Report Committee, Graduated Summer 2014,
“A Comprehensive Energy Audit of the University of Guam Campus in Order to Catalog Building Energy Usage and Provide Reduction Strategies”
- Gartman, Michael, Member MS Report Committee, Graduated Summer 2014, “A Feasibility Study of Double Skin Façades with Integrated Vertical Farming Systems”
- Acosta, Jason, Member MS Report Committee, Graduated Summer 2013,
“Zero Energy Greenhouse Analysis”
- Harmer, Lincoln, Member MS Report Committee, Graduated Summer 2013,
“Monitoring Based Commissioning Using Calibrated Energy Models”
- Smurygina, Anastasiya, Member MS Report Committee, Graduated Fall 2012, “Comparison of Daylight Workplane Illuminance Calculations Performed in SPOT and Estimation of Their Accuracy”
- Wanner, Jeffrey, Member MS Thesis Committee, Graduated Summer 2012,
“Inverse Modeling of Energy Consumption Data to Target Inefficient Residential Buildings”
- Du Mez, Katherine, Member MS Thesis Committee, Graduated Summer 2012, “Analysis and Optimization for Energy Efficient Curtain Walls in High-rise Buildings”
- Wanner, Jeffrey P., Member MS Report Committee, Graduated Summer 2012, “Inverse Modeling of Energy Consumption Data to Target Inefficient Residential Buildings”
- Deneville, Alexandre, Member MS Report Committee, Graduated Summer 2012, “Evaluating Energy Efficiency Measures in French and U.S. Medium Office Buildings”

XII. Professional Service

- Technical Committee on Daylighting, IES, 2014 – Present
- Illuminating Engineering Society Education Think Tank, 2014-Present
- Technical Committee on Architectural Acoustics (TCAA), 2003 – 2012

XIII. Departmental Service – CEAE

- Co-Director, Rocky Mountain Lighting Academy, 2012 - Present
- Operations Committee (AREN), 2014 – Present
- Computing Committee, 2015 – Present
- Chair, Computing Committee, Aug 2013 – Aug 2015
- Curriculum Committee, 2012 – 2013
- Computing Committee, 2012 – 2013

XIV. Research Interests

- High Dynamic Range (HDR) imaging
- Luminance based photometry

- Near-field photometry in illuminance prediction
- Daylighting
- Radiative transfer, light and sound (Radiosity)
- Lighting visualization and modeling
- Lighting controls, systems and architectural integration
- Architectural acoustics and auralization of architectural spaces
- Thermoacoustics