BIOGRAPHICAL SKETCH AND PROFESSIONAL ACTIVITIES
JOHN D. BULLOUGH, PH.D., FIES
ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI

I. BIOGRAPHICAL INFORMATION

Name: John Donovan Bullough

Current Position: Program Director, Population Health Science and Policy

As Program Director, manages the Light and Health Research Center's research activities in transportation lighting and safety, human factors and ergonomics. Leads research related to visual perception, mesopic vision, disability and discomfort glare, brightness perception, flicker and stroboscopic effects, light pollution, vehicle and roadway lighting, signal lighting, color perception, visual performance and aging, and circadian rhythms.

Chronology:

- Program Director, Population Health Science and Policy, 2021-present
- Director of Transportation and Safety Lighting Programs, 2015-2021
- Lighting Research Center Course Instructor, 2019-2021
- Adjunct Faculty Member, 1999-2018
- Senior Research Scientist, 2007-2015
- Lighting Scientist, 1999-2007
- Research Associate, 1992-1999

Education:

- Ph.D., Multidisciplinary Science, Rensselaer Polytechnic Institute, 2004
- M.S., Lighting, Rensselaer Polytechnic Institute, 1999
- M.S., Communication and Rhetoric, Rensselaer Polytechnic Institute, 1992
- B.S., Computer Science, Rensselaer Polytechnic Institute, 1991

II. PROFESSIONAL EXPERIENCE

- Program Director, Population Health Science and Policy, Light and Health Research Center, Icahn School of Medicine at Mount Sinai, 2021-present
- Director of Transportation and Safety Lighting Programs, Lighting Research Center, Rensselaer Polytechnic Institute, 2015-2021
- Lighting Research Center Course Instructor, 2019-2021
- Adjunct Faculty Member, School of Architecture, Rensselaer Polytechnic Institute, Troy, NY, 1999-2018
- Pre-Examiner, School of Engineering, Aalto University, Helsinki, Finland, 2018-2019

- Senior Research Scientist, Lighting Research Center, School of Architecture, Rensselaer Polytechnic Institute, Troy, NY, 2007-2015
- Prior Learning Assessment Evaluator, Center for Distance Learning, Empire State College, Saratoga Springs, NY, 2013-2014
- Lighting Scientist, Lighting Research Center, School of Architecture, Rensselaer Polytechnic Institute, Troy, NY, 1999-2007
- Research Associate, Lighting Research Center, School of Architecture, Rensselaer Polytechnic Institute, Troy, NY, 1992-1999
- Staff Technologist, Bell Communications Research, Piscataway, NJ, 1990

III. TEACHING

A. Courses

i. Instructor

- Instructor, Human Factors in Lighting (3 credits), Rensselaer Polytechnic Institute, Fall 2017-2020, LGHT-4840

Human Factors in Lighting – Course Information Since 2017

Course Name	Semester	Course Code	No. of Students	Instructor Rating (out of 5)	Course Rating (out of 5)
Human Factors in Lighting	Fall 2020	LGHT-4840	11	4.3	4.3
Human Factors in Lighting	Fall 2019	LGHT-4840	12	4.2	3.3
Human Factors in Lighting	Fall 2018	LGHT-4840	16	4.8	4.7
Human Factors in Lighting	Fall 2017	LGHT-4840	13	4.1	4.0

- Instructor, Warning Lights and Visual Perception (4 credits, independent study), Rensselaer Polytechnic Institute, Spring 2017, LGHT-6940
- Instructor, Master's Project (3 credits), Rensselaer Polytechnic Institute, Spring 2016, 2018-2021, LGHT-6980
- Instructor, Lighting Research Design I (3 credits), Rensselaer Polytechnic Institute, Spring 2014-2017, LGHT-6960

Lighting Research Design I – Course Information Since 2014

Course Name	Semester	Course Code	No. of Students	Instructor Rating (out of 5)	Course Rating (out of 5)
Lighting Research Design I	Spring 2017	LGHT-6960	1	5.0	5.0
Lighting Research Design I	Spring 2016	LGHT-6960	3	5.0	4.7
Lighting Research Design I	Spring 2014	LGHT-6960	2	5.0	4.5

- Instructor, Advanced Topics in Visual Perception (2 credits, independent study), Rensselaer Polytechnic Institute, Spring 2013, LGHT-6940
- Instructor, Advanced Issues in Lighting Applications (2 credits, independent study), Rensselaer Polytechnic Institute, Fall 2012, LGHT-6940
- Instructor, Calculation of Visual and Circadian Responses to Light Spectral Distribution (2 credits, independent study), Rensselaer Polytechnic Institute, Spring 2009, LGHT-6940
- Instructor, Transportation Lighting Study (2 credits, independent study), Rensselaer Polytechnic Institute, Spring 2007, LGHT-6940
- Instructor, Lighting Research Design (4 credits), Rensselaer Polytechnic Institute, Spring 2005-2013, LGHT-6740/6750

Lighting Research Design – Course Information Since 2012

Course Name	Semester	Course Code	No. of Students	Instructor Rating (out of 5)	Course Rating (out of 5)
Lighting Research Design	Spring 2013	LGHT-6750	2	4.5	3.5
Lighting Research Design	Spring 2012	LGHT-6750	4	4.8	5.0

- Co-Instructor, Lighting Workshop (4-8 credits), Rensselaer Polytechnic Institute, Fall 1999-2002, Spring 2004, LGHT-6760 (with S. Vasconez, R. Leslie, V. Roberts, D. Frering, M. McColgan, Y. Akashi, J. Van Derlofske)
- Co-Instructor, Lighting Research Workshop (8 credits), Rensselaer Polytechnic Institute, Fall 1997, 10-6760 (with M. Rea, A. Bierman, N. Eklund)

ii. Teaching Assistant

- Vision (3 credits), Fall 1996, 10-6710, Rensselaer Polytechnic Institute (M. Rea, instructor)
- Research Design (3 credits), Spring 1996, 10-6740, Rensselaer Polytechnic Institute (M. Rea, instructor)
- Research Design (3 credits), Spring 1995, 10-6740, Rensselaer Polytechnic Institute (M. Rea, instructor)
- Introduction to Differential Equations (3 credits), Fall 1991, 65-2400, Rensselaer Polytechnic Institute (G. Kovacic, instructor)

iii. Guest/Topical Lecturer

a. University Courses

- Light and Health (D. Frering, instructor), Spring 2021, LGHT-6770, Rensselaer Polytechnic Institute (topic: blue light hazard and optical radiation hazards)
- Lighting Leadership Seminar (M. Rea, instructor), Spring 2020, LGHT-6870, Rensselaer Polytechnic Institute (topic: occupational health)
- Lighting Research Design II (M. Rea, instructor), Fall 2014, 2017, LGHT-6750, Rensselaer Polytechnic Institute (topic: statistical analysis)

- Human Factors in Lighting (Y. Akashi, M. Figueiro, instructors), Fall 2004-2016, LGHT-4840, Rensselaer Polytechnic Institute (topics: mesopic vision, visual performance, transportation lighting)
- Lighting Workshop (R. Leslie, N. Narendran, I. Perera, instructors), Spring 2006-2011, 2020, LGHT-6760, Rensselaer Polytechnic Institute (topic: scholarship and policy, discomfort glare calculations)
- Light and Health (M. Figueiro, instructor), Spring 2004-2010, LGHT-6770, Rensselaer Polytechnic Institute (topic: specification of the light stimulus for circadian photobiology)

b. Non-University Courses

- Online Certificate Course in Light and Human Health (Light and Health Research Center, Icahn School of Medicine at Mount Sinai), October 2021, October 2022, October 2024 (topics: blue light hazard, optical radiation safety)
- Online Professional Certificate Course in Lighting Design (Light and Health Research Center, Icahn School of Medicine at Mount Sinai), May 2021, October 2021, September 2022, October 2023, October 2024 (topics: human factors, optical radiation safety)
- Light and Health Institute (Lighting Research Center, Rensselaer Polytechnic Institute), September 2020 (topics: blue light hazard, optical radiation safety)
- Professional Certificate Course in Lighting Design (Lighting Research Center, Rensselaer Polytechnic Institute), September 2020 (topic: human factors, optical radiation safety)
- LED Outdoor Lighting Training (National Park Service), December 2019 (topics: outdoor lighting overview, evaluation and measurement issues, light pollution, pedestrian safety)
- Lighting Seminar for New York State Parks (Lighting Research Center, Rensselaer Polytechnic Institute), September 2019 (topics: outdoor lighting, lighting metrics, lighting evaluation)
- Sustainable Roadway Lighting Seminar (New York State Department of Transportation), April 2014, June 2014 (topics: roadway lighting, visual performance, lighting technology, light pollution, mesopic vision)
- LED Lighting Institute (Lighting Research Center, Rensselaer Polytechnic Institute), May 2011, September 2011, May 2012, September 2012, May 2013, September 2013, May 2014, November 2014, April 2017, October 2017 (topics: outdoor lighting, flicker, human factors)
- Outdoor Lighting Institute (Lighting Research Center, Rensselaer Polytechnic Institute), October 2011, October 2012, October 2014 (topics: mesopic vision, outdoor lighting design, brightness and safety perception)
- Roadway Lighting Workshop (Iowa Association of Municipal Utilities), August 2011 (topics: visibility and glare, roadway lighting and safety, mesopic vision, light pollution)
- Advanced Lighting Seminar (Swedish Energy Administration), June 2011 (topics: human factors in lighting)
- Light and Color (Luminus), June 2010 (topics: mesopic vision, lighting calculations, light spectrum and outdoor lighting)
- Lighting and Photometry (National Institute for Occupational Safety and Health), May 2006 (topics: visual performance, mesopic vision, field measurement techniques)

iv. Learning Assessment Evaluator

- Integrated Lighting Systems (4 credits), Empire State College, Fall 2013-Spring 2014

B. Graduate Research Supervision

i. Master's Thesis Advisor/Co-Advisor

2. Besenecker, U. C. 2013. *Investigating Melanopsin Contribution to Scene Brightness Perception* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (M. Figueiro, advisor).
1. Skinner, N. P. 2007. *Effects of Roadway Delineator Spacing, Size and Height on Drivers' Perception and Behavior* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute.

ii. Master's Project Supervisor

7. Donaldson, L. 2021. *Pupil Size Calculator Web Tool* [M.S. project, lighting]. Troy, NY: Rensselaer Polytechnic Institute.
6. Scircle, E. 2021. *Supplemental Green Light and Alerting Outcomes from Immediate Exposure* [M.S. project, lighting]. Troy, NY: Rensselaer Polytechnic Institute.
5. Kozak, K. 2020. *Evaluating Street Lighting Upgrades for Troy, New York* [M.S. project, lighting]. Troy, NY: Rensselaer Polytechnic Institute.
4. Wille Kielwagen, C. 2020. *Lighting for Waterfronts: Case Study – Riverfront Park, Troy, NY* [M.S. project, lighting]. Troy, NY: Rensselaer Polytechnic Institute.
3. Burns, C. 2019. *Factors Influencing Office Lighting Perceptions* [M.S. project, lighting]. Troy, NY: Rensselaer Polytechnic Institute.
2. Kiefer, K. 2018. *Optimized Exterior Lighting: Brightness and Safety* [M.S. project, lighting]. Troy, NY: Rensselaer Polytechnic Institute.
1. Plummer, T. T. 2016. *Impact of Flash Frequency on Identifying Relative Motion and Direction in Simulated Service Vehicles* [M.S. project, lighting]. Troy, NY: Rensselaer Polytechnic Institute.

iii. Doctoral Dissertation Committee

1. Besenecker, U. C. 2016. *Beyond Appearances: The Experience of Equivalent Colors in Architecture* [Ph.D. dissertation, architectural sciences]. Troy, NY: Rensselaer Polytechnic Institute (T. Krueger, advisor).

iv. Doctoral Dissertation Pre-Examiner

1. Bozorg, S. 2019. *Dimming of Road Lighting: The Effect of Car Headlights, Glare and Road Surface Conditions on Drivers' Visual Performance* [Ph.D. dissertation, built environment]. Espoo, Finland: Aalto University (T. Luttinen, supervising professor).

v. Master's Thesis Committee

25. Hiebner, E. 2022. *Effects of Emergency Vehicle Warning Lighting System Characteristics on Driver Perception and Behavior* [M.S. thesis, civil engineering, committee member]. Daytona Beach, FL: Embry-Riddle Aeronautical University (S. Parr, advisor).

24. Sweater Hickcox, K. 2011. *Effect of Different Colored Background Lighting on LED Glare Perception* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (N. Narendran, advisor).
23. Zhang, W. 2011. *Impact of Heat on the Light Output and Chromaticity of Direct-Emitting and Phosphor-Converted Amber LEDs* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (N. Narendran, advisor).
22. Wu, Y. 2010. *Failure Analysis of LED Array Due to Rapid Power Cycling* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (N. Narendran, advisor).
21. Capó-Irizarry, R. I. 2009. *The Effects of Horizontal Louvers on Subjective Evaluation of Window View* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (R. Leslie, advisor).
20. Hazra, O. 2009. *Characterizing Light Transmission Properties of White LED Encapsulants When Exposed to Heat and Short Wavelength Radiation* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (N. Narendran, advisor).
19. Zhang, X. 2009. *Evaluation of Approaches to Crosswalk Lighting Design* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (M. Rea, advisor).
18. Yuan, Z. 2007. *Visual Performance Study of a Remote Airfield Lighting System Configuration Varying in Intensity, Color, and Flash Frequency* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (M. Rea, advisor).
17. Appleman, K. 2006. *A Light Mask for Circadian Entrainment* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (M. Figueiro, advisor).
16. Zhang, C. 2006. *Performance of Luminaire Metrics for Roadway Lighting Systems* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (R. Leslie, advisor).
15. Watkinson, J. C. 2005. *Additivity of Discomfort Glare* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (J. Van Derlofske, advisor).
14. Brons, J. A. 2004. *Daylight and Performance of Office Workers: A Circadian Approach* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (M. Rea, advisor).
13. Chen, J. 2004. *Effects of Headlamp Glare Exposure on Glare Recovery and Discomfort* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (J. Van Derlofske, advisor).
12. Dee, P. A. 2003. *The Effect of Spectrum on Discomfort Glare* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (J. Van Derlofske, advisor).
11. Fay, C. R. 2003. *Twice Upon a Time: An Investigation Into the Spectral Sensitivity of the Human Pupil Over the Solar Day* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (M. Rea, advisor).
10. Freyssinier-Nova, J. P. 2003. *The Effects of Color on Brightness Contrast Perception in the Mesopic Region* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (M. Rea, advisor).
9. Mulder, M. 2003. *Spectral Effects in Escape Route Lighting* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (P. Boyce, advisor).
8. Ramanath, J. 2003. *Retinal Flux Density Measurements and Conventional Illuminance Measurements: A Field Comparison* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (M. Rea, advisor).
7. Rizzo, P. 2003. *Discriminable Color and Brightness Differences in White LEDs: Development of a Three Dimensional Tolerance Zone* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (M. Rea, advisor).

6. Ling, C. 2002. *Collision Avoidance Under Mesopic Conditions* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (P. Boyce, advisor).
5. Lingard, R. D. 2002. *Off-Axis Detection at Mesopic Light Levels in a Driving Context* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (M. Rea, advisor).
4. Yan, H. 2002. *Visual Response to Incandescent, Sweeping Neon and LED Stop Lamps* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (J. Van Derlofske, advisor).
3. Fu, Z. 2001. *Effects of Headlamp Spectrum on Discomfort and Disability Glare* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (J. Van Derlofske, advisor).
2. Perry, J. R. 2001. *Brightness Perception of Illuminated Automotive Interior Graphics* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (J. Van Derlofske, advisor).
1. Huang, K. 1999. *Detection and Identification of LED Traffic Signals by Protan Observers* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute (P. Boyce, advisor).

C. Course and Curriculum Development

i. University Courses

- Human Factors in Lighting (laboratory study), Fall 2017-2020 (LGHT-4840), Rensselaer Polytechnic Institute
    - Developed laboratory studies based on course concepts
- Warning Lights and Visual Perception (independent study), Spring 2017 (LGHT-6940), Rensselaer Polytechnic Institute
    - Literature review and laboratory perception study
- Master's Project, Spring 2016, 2018-2019 (LGHT-6980), Rensselaer Polytechnic Institute
    - Literature reviews, laboratory experiments, data analysis and write-up
- Lighting Research Design I, Spring 2014-2017 (LGHT-6960), Rensselaer Polytechnic Institute
    - Course readings, laboratory studies, statistical analyses
- Advanced Topics in Visual Perception (independent study), Spring 2013 (LGHT-6940), Rensselaer Polytechnic Institute
    - Laboratory study of brightness perception for different light source spectra
- Advanced Issues in Lighting Applications (independent study), Fall 2012 (LGHT-6940), Rensselaer Polytechnic Institute
    - Laboratory investigation of discomfort glare from large-area sources
- Calculation of Visual and Circadian Responses to Light Spectral Distribution (independent study), Spring 2009 (LGHT-6940), Rensselaer Polytechnic Institute
    - Literature review, development of quantitative model of eye optics based on observer age
- Transportation Lighting Study (independent study), Spring 2007 (LGHT-6940), Rensselaer Polytechnic Institute
    - Developed digital photometric measurement methods
- Lighting Research Design, Spring 2005-2013 (LGHT-6740/6750), Rensselaer Polytechnic Institute
    - Course readings, laboratory studies, statistical analyses

- Lighting Workshop (Scholarship and Lighting Policy curricula), Fall 1999-2002, Spring 2004 (LGHT-6760), Rensselaer Polytechnic Institute
    - Literature review

ii. Non-University Courses

- Web-Based Training for FHWA Roadway Lighting Workshop (Federal Highway Administration online course modules), July 2018
    - Topics: roadway lighting design, lighting hardware and light sources, roadway lighting calculations, spectral effects of roadway lighting
- Sustainable Roadway Lighting Seminar (New York State Department of Transportation), April 2014, June 2014
    - Topics: roadway lighting objectives, lighting technologies, mesopic vision, lighting and safety, crosswalk lighting, light pollution

IV. PUBLICATIONS (Student Co-Authors Indicated by Asterisk*)

A. Books, Book Chapters, Monographs and Journal Issues

i. Author or Co-Author

23. **Bullough, J. D.** 2022. *Understanding Glare in Exterior Lighting, Display and Related Applications*. Bellingham, WA: SPIE Press. Reviewed by:
    a. Miller NJ. 2022. *Lighting Research and Technology* 54(8): 833.
    b. Anonymous. 2022. *DrivingVisionNews.com* (770): 7-8.
    c. Wilkins A. 2023. *Perception* 52(2): 146-147.
22. Peana, S. and **J. D. Bullough**. 2022. Characterizing short-wavelength exposure. In *How to Save Your Eyes in the Digital Age*, 2nd edition (pp. 129-133). J. Houston, editor. Minneapolis, MN: Eyesafe.
21. **Bullough, J. D.** 2021. Light pollution. In *International Encyclopedia of Transportation*, Volume 2 (pp. 361-366). R. Vickerman, editor. New York, NY: Elsevier.
20. **Bullough, J. D.** 2021. Lighting. In *International Encyclopedia of Transportation*, Volume 7 (pp. 292-296). R. Vickerman, editor. New York, NY: Elsevier.
19. **Bullough, J. D.** 2020. Road lighting. In *Encyclopedia of Color Science and Technology*, 2nd edition. R. Shamey, editor. New York, NY: Springer.
18. **Bullough, J. D.** 2018. LEDs and automotive lighting applications. In *Nitride Semiconductor LEDs: Materials, Performance and Applications*, 2nd edition (pp. 647-658). J.-J. Huang, H.-C. Kuo and S.-C. Shen, editors. Cambridge, UK: Woodhead Publishing.
17. Rhode, M. and J. A. Lent with **J. Bullough.** 2018. *Comics Research Bibliography: 2018 Print Edition*. Arlington, VA: ComicsDC/Lulu Press, Inc.
16. **Bullough, J. D.** 2017. The future of vehicle lighting: Breakthroughs in the science of safety. In *Impact of a Changing Automotive Industry on Exterior Lighting* (pp. 77-79). H. Fratty, L. Metzemaekers, R. Schaefer, J.-P. Ravier, J.-P. Charret, and D. Stern, editors. Paris, France: Driving Vision News.
15. Mullaney, R., with J. Taylor and **J. Bullough**. 2017. *Lighting Research Center*. Troy, NY: Rensselaer Polytechnic Institute.

14. **Bullough, J. D.** 2016. Road lighting. In *Encyclopedia of Color Science and Technology* (pp. 1127-1132). R. Luo, editor. New York, NY: Springer.
13. **Bullough, J. D.** 2016. Measurement of light and color. In *Handbook of Measurement in Science and Engineering: Volume 3* (pp. 2043-2074). M. Kutz, editor. New York, NY: Wiley.
12. **Bullough, J. D.** 2014. LEDs in automotive lighting. In *Nitride Semiconductor LEDs: Materials, Performance and Applications* (pp. 595-605). J.-J. Huang, H.-C. Kuo and S.-C. Shen, editors. Cambridge, UK: Woodhead Publishing.
11. Rea, M. S., A. Bierman, M. G. Figueiro and **J. D. Bullough**. 2014. A new approach to understanding the impact of circadian disruption on human health. In *Sleep, Circadian Rhythms and Metabolism: The Rhythm of Life* (pp. 271-297). W. Olds, editor. Toronto, ON: Apple Academic Press.
10. **Bullough, J. D.** 2011. Roadway transportation lighting. In *Handbook of Transportation Engineering*, 2nd edition (pp. 8.1-8.24). M. Kutz, editor. New York, NY: McGraw-Hill.
9. Akashi, Y., **J. D. Bullough**, M. G. Figueiro, C. O'Rourke and J. Van Derlofske. 2007. *Research Matters: A Compilation of Articles from the Lighting Research Center*, IESNA RM-1-07. New York, NY: Illuminating Engineering Society of North America.
8. **Bullough, J. D.** 2005. Lighting. In *Time-Saver Standards for Architectural Design*, 8th edition (pp. D5.3.1-D5.3.28). D. Watson and M. J. Crosbie, editors. New York, NY: McGraw-Hill.
7. **Bullough, J. D.** 2004. *Exploring Mechanisms for Circadian Phototransduction in Mus musculus Using Light Spectrum* [Ph.D. dissertation, multidisciplinary science]. Troy, NY: Rensselaer Polytechnic Institute.
6. **Bullough, J. D.** and M. S. Rea. 2004. Light and lighting systems. In *Optics Encyclopedia: Basic Foundations and Practical Applications* (pp. 1323-1336). T. G. Brown, K. Creath, H. Kogelnik, M. A. Kriss, J. Schmit and M. J. Weber, editors. Weinheim, Germany: Wiley-VCH.
5. Van Derlofske, J. and **J. D. Bullough**. 2004. Spectral effects of high-intensity discharge automotive forward lighting on visual performance (reprint of SAE paper 2003-01-0559). In *Recent Developments in Automotive Safety Technology*, PT-119 (pp. 417-424). D. J. Holt, editor. Warrendale, PA: Society of Automotive Engineers.
4. **Bullough, J. D.**, Z. Fu* and J. Van Derlofske. 2003. Discomfort and disability glare from halogen and HID headlamp systems (reprint of SAE paper 2002-01-0010). In *Advances in Lighting Technology*, PT-98 (pp. 243-247). D. J. Holt, editor. Warrendale, PA: Society of Automotive Engineers.
3. Van Derlofske, J., **J. D. Bullough** and C. M. Hunter. 2003. Visual benefits of high-intensity discharge automotive forward lighting (reprint of SAE paper 2002-01-0259). In *Advances in Lighting Technology*, PT-98 (pp. 249-254). D. J. Holt, editor. Warrendale, PA: Society of Automotive Engineers.
2. **Bullough, J. D.** 1999. *Effects of Headlamp Spectrum on Visual Perception Through Perturbed Atmospheres* [M.S. thesis, lighting]. Troy, NY: Rensselaer Polytechnic Institute.
1. **Bullough, J.** 1997. Lighting. In *Time-Saver Standards for Architectural Design Data*, 7th edition (pp. D231-D254). D. Watson, M. J. Crosbie and J. H. Callender, editors. New York, NY: McGraw-Hill.

ii. Editor or Co-Editor

2. **Bullough, J. D.** and J. Zwinkels (guest editors). 2013. Special Issue: Photometry, Colorimetry and Radiometry—Issues and Applications, Sponsored by the Council for Optical Radiation Measurements. *Journal of Modern Optics* 60(14).
1. **Bullough, J. D.** and A. Arecchi (guest editors). 2009. Special Issue: Applications in Photometry, Radiometry and Colorimetry—Selected Papers Related to the Council for Optical Radiation Measurements 2008 Annual Conference. *Journal of Modern Optics* 56(13).

iii. Editorial Assistant

2. Rea, M. S. (editor). 2000. *Illuminating Engineering Society of North America Lighting Handbook: Reference and Application*, 9th edition. New York, NY: Illuminating Engineering Society of North America.
1. Rea, M. S. (editor). 1993. *Lighting Handbook: Reference and Application*, 8th edition. New York, NY: Illuminating Engineering Society of North America.

B. Journal, Magazine and Newsletter Articles

i. Refereed Articles

124. **Bullough, J. D.**, A. Das,* N. P. Skinner, S. I. Guler and M. S. Rea. [In press.] Consistency in subjective judgments of service vehicle type based upon vehicle and flashing light colors. *Transportation Research Record*.
123. **Bullough, J. D.**, S. Parr, A. Sblendorio* and E. Hiebner.* [In press.] Effects of emergency vehicle warning lighting system characteristics on driver perception and behavior. *Society of Automotive Engineers International Journal of Transportation Safety*.
122. Figueiro, M. G., **J. D. Bullough**, A. Thayer, R. M. Nagare and M. S. Rea. 2025. Supporting visual and non-visual lighting design without increasing discomfort glare or lighting power density. *Lighting Research and Technology* 57(1): 5-27.
121. **Bullough, J. D.** 2024. Impacts of ambient brightness control and short-wavelength spectral content on display screen user responses. *Journal of Innovation and Applied Technology* 10(2): 46-52.
120. **Bullough, J. D.** and S. A. Parr. 2024. Impacts of emergency vehicle marking characteristics and wearable lights on driver responses. *Transportation Research Record* 2678(10): 514-522.
119. Mehri, A.,* R. Golmohammadi, M. Alibadi, M. Farhadian, **J. D. Bullough** and M. Samavati. 2024. Visual and non-visual responses of drivers to simulated LED headlights varying in correlated color temperature. *Lighting Research and Technology* 56(5): 502-526.
118. Rea, M. S., R. Nagare, **J. D. Bullough** and M. G. Figueiro. 2024. Days to re-entrainment following the spring and autumn changes in local clock time: Beyond simple heuristics. *Frontiers in Photonics* 5: 1386703.
117. Kobbert, J.,* A. Erkan,* **J. D. Bullough** and T. Q. Khanh. 2023. A novel way of optimizing headlight distributions based on real life traffic and eye tracking data - Part 3: Driver gaze behaviour on real roads and optimized light distribution. *Applied Sciences* 13: 9898.
116. Kobbert, J.,* A. Erkan,* **J. D. Bullough** and T. Q. Khanh. 2023. A novel way of optimizing headlight distributions based on real life traffic and eye tracking data - Part 2: Analysis of real-world traffic environments data in Germany. *Applied Sciences* 13: 9911.

115. Kobbert, J.,* A. Erkan,* **J. D. Bullough** and T. Q. Khanh. 2023. A novel way of optimizing headlight distributions based on real life traffic and eye tracking data - Part 1: Idealized baseline distribution. *Applied Sciences* 13: 9908.
114. Skinner, N. P., M. S. Rea and **J. D. Bullough**. 2022. Effectiveness of the field application of UV-C for cucumber downy mildew control. *Journal of Horticultural Sciences* 17(2): 424-435.
113. **Bullough, J. D.**, L. K. Donaldson,* W. J. Ebel,* M. G. Irish,* A. M. Kallish,* M. A. MacDonald,* D. Reinhard,* E. J. Scircle,* P. M. Shrestha,* Z. Tan,* A. Tao* and Y. Zhao.* 2022. Preliminary investigations of the visual impacts of mask wearing. *International Engineering and Technology Institute Transactions on Ergonomics and Safety* 6(2): 11-14.
112. Rea, M. S., **J. D. Bullough** and A. C. Bierman. 2022. Output reduction over time of germicidal UV-C lamps used for treating agricultural crops. *Leukos* 18(4): 438-446.
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b. Co-Illustrator

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ii. Consensus Standards and Committee Reports

13. Illuminating Engineering Society Photobiology Committee [D. Sliney (chair), R. Bergman, G. Brainard, **J. Bullough**, D. Burnett, H. Claus, D. De Grazio, J. Dowdy, P. Forbes, E. Gaudreau, L. Gennetten, P. Ghassemi, A. Jackson, C. Klein, C. Kruggel, A. Lewis, N. Miller, S. Miller, S. Mintz, M. O'Boyle, J. O'Hagan, J. Roberts, D. Saputa, P. Sharma, J. Sheehy, R. Simons, R. Soler, K. Stekr, L. Tang, J. Urbanowski, R. Vincent, J. Wang, S. Wengraitis, E. Yandek]. 2022. *Recommended Practice: Risk Group Classification and Minimization of Photobiological Hazards from Ultraviolet Lamps and Lamp Systems*, ANSI/IES RP-27.1-22. New York, NY: Illuminating Engineering Society.
12. Illuminating Engineering Society Sports and Recreational Area Lighting Committee [L. Livingston (chair), C. Berhost, S. Berman, **J. Bullough**, H. Cai, J. Casper, C. Douglass, B. Drost, C. Fote, H. Johnson, M. Lambert, J. Love, J. McCarty, M. Moore, C. Nolan, M. Owens, R. Owens, C. Rogers, J. Sanfilippo, L. Smith, J. Wratten, M. Wuijano and M. Zukerman]. 2022. *Recommended Practice: Lighting Sports and Recreational Areas*, ANSI/IES RP-6-22. New York, NY: Illuminating Engineering Society.

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9. Illuminating Engineering Society Vision Science Committee [D. Gafford (co-chair), M. Royer (co-chair), S. Berman, U. C. Besenecker, R. Bhagavathula, S. Borzendowski, **J. Bullough**, M. A. H. Donners, J. L. Fetters, S. A. Fotios, M. Herf, M. A. Lambert, W. R. Lane, C. C. Miller, N. Miller, J. B. Sheehy, M. Spitschan, S. A. Zilber]. 2020. *Lighting Science: Vision – Perceptions and Performance*, ANSI/IES LS-8-20. New York, NY: Illuminating Engineering Society.
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3. Illuminating Engineering Society of North America Photobiology Committee [R. E. Levin (chair), R. Bergman, G. Brainard, **J. Bullough**, A. Clarke, R. Collins, G. Costa, R. Daubach, M. Dhaliwal, P. Forbes, H. Hoover, A. Jackson, R. Landry, A. Lewis, M. Mainster, S. Miller, S. Mintz, R. Nigrello, J. Sheehy, D. Sliney, A. Thompson, R. Vincent, T. West, C. Wilson, M. Wolbarsht, E. Yandek and S. Zigman]. 2007. *Recommended Practice for Photobiological Safety for Lamps: Risk Group Classification and Labeling*, ANSI/IESNA RP-27.3-07. New York, NY: Illuminating Engineering Society of North America.
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iii. Web Sites

12. *Web-Based Training for FHWA Roadway Lighting Workshop*. Federal Highway Administration, U.S. Department of Transportation. [http://safety.fhwa.dot.gov/roadway_dept/night_visib/roadway_lighting_workshop]
11. *Warning Beacons for Front Line Service Worker Safety*. Lighting Research Center, Rensselaer Polytechnic Institute. [http://www.lrc.rpi.edu/programs/NIOSH/]
10. *John F. Waymouth Collection on Lamp Sciences and Technologies*. Lighting Research Center, Rensselaer Polytechnic Institute. [http://www.lrc.rpi.edu/library/waymouth/index.html]
9. *Online Lighting and Historic Preservation-Related Sources*. Lighting Research Center, Rensselaer Polytechnic Institute. [http://www.rpi.edu/dept/lrc/hp-lighting.html]
8. *Energy-Efficient Street Lighting in New York State*. Lighting Research Center, Rensselaer Polytechnic Institute. [http://www.rpi.edu/dept/lrc/nystreet/]
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6. *Research Bibliography on the Industrial History of the Hudson-Mohawk Region* (with S. D. Bullough). Hudson Mohawk Industrial Gateway. [http://www.hudsonmohawkgateway.org/bibliography.html]
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3. *Lighting Futures*. Lighting Research Center, Rensselaer Polytechnic Institute. [http://www.lrc.rpi.edu/publicationResults.asp?type=3]
    - The long and lighted road: Lighting and driving. [http://www.lrc.rpi.edu/programs/futures/lf-auto/]
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2. *Increasing New York State Market Awareness and Demand for Energy-Efficient Light-Emitting Diode Traffic Signals*. Lighting Research Center, Rensselaer Polytechnic Institute. [http://www.lrc.rpi.edu/ltgtrans/nysled/]
1. *Optimizing the Design and Use of Light-Emitting Diodes for Visually Critical Applications in Transportation and Architecture*. Lighting Research Center, Rensselaer Polytechnic Institute. [http://www.lrc.rpi.edu/ltgtrans/led/]

V. RESEARCH GRANTS AND CONTRACTS

A. Proposals Funded

- "White Paper on Myopia and Lighting," with M. Rea. May-October 2024. $12,000, Nichia America Corporation.
- "Enhancing Autonomous Vehicle Passenger Experience with Cabin Visual Displays," November 2023-October 2024. $48,000, ams OSRAM.
- "Whitepaper: Lighting and Visual Information for Vulnerable Road User Safety," September-December 2023. $15,000, Vulnerable Road User Safety Consortium, Society of Automotive Engineers Industry Technologies Consortia.
- "Investigation of Visual Display Screen Characteristics on Visual Performance and Comfort," August 2023-May 2024. $50,000, Dell Technologies.
- "Investigation of Safety Impacts of Offshore Wind Farm Lighting Systems," April 2022-December 2025. $50,000, SABIK Offshore GmbH.
- "Evaluation of Reflective Sheeting Materials for Stationary Vehicle Demarcation," October 2021-June 2023. $25,000, Emergency Responder Safety Institute, Cumberland Valley Volunteer Firemen's Association.
- "Coordination of Vehicle Lighting and Markings for Improved Worker Safety," with M. Rea. November 2021-October 2023. $419,920, National Institute for Occupational Safety and Health.
- "Assessing Impacts of LED Exit Sign Luminance Degradation," with M. Figueiro. November 2020-December 2021. $95,000, Jim H. McClung Lighting Research Foundation.
- "Collaboration Activities between National Grid and the Lighting Research Center." June-December 2020. $22,500, National Grid.
- "Research Studies on Glare by Front and Rear Lighting Functions with Small Light Output Size." October 2019-January 2020. $10,000. Groupe de Travail "Bruxelles 1952," International Automotive Lighting and Light Signalling Expert Group.
- "Lighting Practices for Isolated Rural Intersections." October 2019-August 2020. $45,000, National Cooperative Highway Research Program, Transportation Research Board.

- "Study of Emergency Vehicle Warning Lighting Systems." September 2019-February 2021. $35,000, Emergency Responder Safety Institute, Cumberland Valley Volunteer Firemen's Association.
- "Short-Wavelength Light Measurement Issues for Display Applications." July 2019-March 2020. $30,000, Dell Technologies.
- "Educational and Research Activities on Emergency Signal Lighting." June 2019-May 2020. $35,000, SoundOff Signal.
- "Visual Tuning of Displays to Enhance Cues for Detection, Identification and Tracking." November 2018-October 2019. $90,526, Defense Advanced Research Projects Administration.
- "Evaluation of Light Emitting Surface and Light Emitting Diode Roadway Luminaires." November 2018-May 2019. $48,000, New York State Department of Transportation.
- "Evaluation of Innovative Automobile Interior Lighting." April 2018-June 2019. $36,000, OSRAM Opto Semiconductors.
- "Evaluation of Beacon Warning Lights: Performance Field Evaluation." February-May 2018. $2000, New York State Department of Transportation.
- "Evaluation of Beacon Warning Lights: Photometric Measurement and Literature Support." February-May 2018. $2000, New York State Department of Transportation.
- "Developing and Demonstrating Approaches to ATM Lighting Practice," with M. Rea. September 2017-October 2018. $75,000, American Bankers Association.
- "Outdoor Lighting Approaches to Enhance Pedestrian Safety." August 2017-March 2019. $48,000, Philips Lighting Research.
- "Daytime and Nighttime Evaluation of LED Warning Beacons." March-April 2017. $2000, New York State Department of Transportation.
- "Evaluation of Warning Lights for NYSDOT Service Trucks." November-December 2016. $2000, New York State Department of Transportation.
- "Web-Based Training for FHWA Lighting Workshop," with M. Rea. September 2016-December 2017. $78,149, Federal Highway Administration.
- "Energy Usage and Efficiency Analysis of Model Illuminated Signs," with J. P. Freyssinier and M. Rea. July 2016-September 2017. $50,000, Signage Research Foundation.
- "Illuminated Sign Conspicuity: What Factors Make a Sign Noticeable and Impactful?" with M. Rea. July 2016-July 2017. $45,000, Signage Research Foundation.
- "LED Roadway Lighting Benefits and Costs: A Collaborative Partnership," with M. Rea. April 2016-March 2018. $300,000, New York State Energy Research and Development Authority; $35,000, University Transportation Research Center.
- "Evaluation of Raised Pavement Markers." July 2015-August 2017. $40,000, Rutgers, The State University of New Jersey.
- "Optimizing Work Zone Lighting," with M. Rea. May 2014-April 2015. $50,000, New Jersey Department of Transportation, $50,000, University Transportation Research Center.
- "Analysis of Energy Efficient Highway Lighting Retrofits," with M. Rea. November 2014-May 2015. $189,672, New York State Department of Transportation.

- "Demonstration of Outdoor Lighting for Maximizing Perceptions of Safety and Security," with M. Rea. October 2014-September 2015. $50,000, Bonneville Power Administration.
- "Technical Consulting Related to Adaptive Vehicle Lighting and Driving Performance," May-July 2014. $2500, Insurance Institute for Highway Safety.
- "Automated Teller Machine Lighting: Design Considerations and Criteria," with M. Rea. April-June 2014. $5000, GMR.
- "Demonstrations of Urban Outdoor Lighting for Pedestrian Safety and Security," with M. Rea. April 2014-June 2015. $56,695, University Transportation Research Center.
- "Warning Beacons for Front Line Service Worker Safety," with M. Rea. October 2013-September 2017. $2,377,494, National Institute for Occupational Safety and Health.
- "Educational Seminars on Sustainable Roadway Lighting," with M. Rea. July 2013-June 2014. $20,000, New York State Energy Research and Development Authority.
- "Demonstration and Evaluation of Pedestrian Crosswalk Bollard Lighting," with M. Rea. June-September 2013. $23,500, City of Aspen.
- "Market and Technical Information Summary on LED Roadway Lighting." May-June 2013. $5000, International Access Corporation.
- "Technical Assistance for Field Studies on Adaptive Vehicle Lighting and Driving Performance." March-June 2013. $4400, Insurance Institute for Highway Safety.
- "Parameters for Indirect Viewing of Visual Signals Used in Emergency Notification," with N. Narendran. January 2013-September 2013. $52,500, Fire Protection Research Foundation.
- "Miner Health and Safety Issues Concerning Glare, Fatigue and Shift Work," with M. Figueiro. October-December 2012. $24,500, National Institute of Occupational Safety and Health.
- "Leveraging Brightness from Transportation Lighting Systems through Light Source Color: Implications for Energy Use and Safety for Traffic and Pedestrians." September 2012-August 2013. $50,000, Region 2 University Transportation Research Center.
- "Outdoor Lighting Institute," with M. Rea. February-May 2012. $20,000, Region 2 University Transportation Research Center.
- "Temporary Outdoor Work-Zone Light for Energy, Cost, and Safety Improvements," with J. Snyder and M. Rea. January 2012-December 2013. $268,391, New York State Energy Research and Development Authority.
- "Innovative Roadway Light Source and Dye Combinations to Improve Visibility and Reduce Environmental Impacts," with J. Snyder. December 2011-September 2012. $50,000, University Transportation Research Center.
- "Optimizing Light Source Spectra for Brightness in Outdoor Lighting Applications." October 2011-June 2012. $60,000, Jim H. McClung Lighting Research Foundation.
- "Performance Objectives for Light Sources Used in Emergency Notification Appliances," with Y. Zhu and N. Narendran. October 2011-May 2012. $35,000, Fire Protection Research Foundation.
- "Analysis of New Highway Lighting Technologies." August 2011-July 2012. $75,000, Transportation Research Board, National Cooperative Highway Research Program.

- "Issues with Use of Airfield LED Light Fixtures." May 2011-May 2012. $35,000, Transportation Research Board, Airport Cooperative Research Program.
- "Guide for Optimizing the Effectiveness and Efficiency of Roadway Lighting." March 2011-February 2012. $15,000, New York State Energy Research and Development Authority.
- "Review of Visual Needs and Lighting Technologies for Temporary Work Lighting Systems." January 2011 - May 2011. $25,000, Wacker Neuson.
- "High Visibility Reflective Sign Sheeting Evaluation," with M. Rea. January 2011 - December 2012. $200,000, New York State Department of Transportation.
- "Nighttime Highway Construction Illumination," with M. Rea. November 2010 - October 2013. $300,000, New York State Department of Transportation.
- "Innovative Lighting Approaches for Efficient and Safe Roadway Travel - Phase 2," with M. Rea. July 2010 - December 2011. $300,000, New York State Energy Research and Development Authority and New York State Department of Transportation.
- "Using Lighting to Alter Driver Behavior." February 2010 - August 2011. $210,000, New York State Department of Transportation.
- "Barricade Lighting System," with M. Rea and J. Snyder. January - December 2010. $50,000, University Transportation Research Center.
- "Technical Support for Energy Efficient Street Lighting Programs," with P. Morante. August - November 2009. $21,598, Ameresco.
- "Solid-State Helmet-Worn Mine Lighting Systems." April - November 2009. $15,000, National Institute for Occupational Safety and Health.
- "Evaluation of LED Beacon-Light Fixtures for Highway Maintenance Trucks." July - September 2009. $12,000, New York State Department of Transportation.
- "Replacement Process for Light Emitting Diode (LED) Traffic Signals." June 2008 - August 2009. $75,000, National Cooperative Highway Research Program.
- "Innovative Lighting Approaches for Efficient and Safe Roadway Travel - Phase 1," with M. S. Rea. May 2008 - April 2009. $75,000, New York State Energy Research and Development Authority and New York State Department of Transportation.
- "Investigating the Relative Influence of Light Level and Color Rendering on Brightness Appearance under Mesopic Conditions." April - October 2008. $40,000, Philips Lighting.
- "Mine Lighting Research." March - December 2008. $18,500, National Institute for Occupational Safety and Health.
- "Potential Research Tasks Regarding LED Billboards and Driving Safety." March - November 2008. $10,000, New York State Department of Transportation.
- "Design and Evaluation of Effective Crosswalk Illumination." January 2008 - March 2009. $65,000, New Jersey Department of Transportation.
- "Innovative, Energy-Efficient Lighting for New York State Roadways." February 2007 - January 2008. $50,000, New York State Energy Research and Development Authority and New York State Department of Transportation.
- "Miners' Cap Lamp." April - December 2006. $15,000 and $2450, National Institute for Occupational Safety and Health.

- "Evaluation of Ambient-Illumination Flat Screen Televisions." April - September 2005. $50,000, Philips Electronics.
- "Light and Circadian Photobiology: Interactions and Implications for Biotechnology," with M. S. Rea, R. H. Parsons and M. G. Figueiro. January 2002 - June 2003. $50,000, Rensselaer Polytechnic Institute.
- "Short-Wavelength Light and Visual Health." January - April 1999. $2,500, Illuminating Engineering Society of North America.
- "Initial Research and Development of a New Light Source for Off-Axis Viewing at Night," with M. S. Rea, principal investigator. January - December 1995. $77,048, New York State Energy Research and Development Authority.
- "Improving Visibility for Snow Plowing Operations," with M. S. Rea, principal investigator. January 1995 - July 1996. $60,000, New York State Department of Transportation.
- "Field Measurement of Lighting and Electromagnetic Field Conditions in the Neonatal Intensive Care Unit," with M. S. Rea, principal investigator. August - September 1994. $10,000, Pacific Northwest Laboratory.
- "Neonatal Infant Incubator," with M. S. Rea, principal investigator. February - November 1994. $48,477, Niagara Mohawk Power Corporation.

B. Research Interests

- Lighting and vision for transportation and safety
- Psychological and biological effects of lighting
- Solid state lighting
- Technology transfer

VI. EDITORSHIP OF JOURNALS, REVIEWS OF MANUSCRIPTS, BOOKS AND RESEARCH PROPOSALS

A. Editorships, Editorial Board Memberships and Technical/Scientific Review Committees

- Editorial Board, *Interdisciplinary Journal of Signage and Wayfinding*, Academic Advisory Council for Signage Research and Education, 2016-present.
- Editorial Board, *Transport*, Taylor and Francis, 2015-present.
- Associate Editor, *Leukos*, Illuminating Engineering Society, Taylor and Francis, 2013-2022.
- Editorial Advisory Board, *Leukos*, Illuminating Engineering Society, Taylor and Francis, 2023-present.
- Handling Editor, *Transportation Research Record*, Transportation Research Board, Sage, 2021-present.
- Editor, *Optical Radiation News*, Council for Optical Radiation Measurements, 2012-present.
- Scientific Committee Member, Société des Ingénieurs de l'Automobile, Vehicle and Infrastructure Safety Improvement in Adverse Conditions and Night Driving Congress, 2010-present.
- Guest editor, *Journal of Modern Optics*, Taylor and Francis, 2009, 2013.

- Technical Review Council member, Illuminating Engineering Society of North America, 2004-2007, 2013-2017.
- Editor, *Lighting Futures*, Lighting Research Center, Rensselaer Polytechnic Institute, 2000-2002.
- Technical editorial committee, *Lighting Futures*, Lighting Research Center, Rensselaer Polytechnic Institute, 1999-2000.

B. Manuscript Review

- Paper reviewer, *International Journal of Environmental Research and Public Health*, MDPI, 2022.
- Paper reviewer, *Frontiers in Neuroergonomics*, Frontiers Media, 2022.
- Paper reviewer, *Journal of Optics*, Springer, 2021.
- Paper reviewer, *Sustainability*, MDPI, 2021.
- Paper reviewer, *Indoor and Built Environment*, Sage, 2020.
- Paper reviewer, *The Surgery Journal*, Thieme Medical Publishers, 2020.
- Paper reviewer, *Applied Sciences*, Multidisciplinary Digital Publishing Institute, 2020.
- Paper reviewer, *Remote Sensing*, Multidisciplinary Digital Publishing Institute, 2019.
- Paper reviewer, *Annals of the American Association of Geographers*, 2019.
- Paper reviewer, *Mining, Metallurgy and Exploration*, 2019.
- Paper reviewer, *Canadian Journal of Civil Engineering*, 2019.
- Paper reviewer, *International Journal of Transportation Safety*, Society of Automotive Engineers, 2019.
- Paper reviewer, *Displays*, Elsevier, 2019-2020.
- Paper reviewer, *Neuroscience*, 2019.
- Paper reviewer, *Building and Environment*, Elsevier, 2018-2020.
- Paper reviewer, *PLOS One*, 2017.
- Paper reviewer, *Aerospace Medicine and Human Performance,* Aerospace Medical Association, 2017-2019.
- Paper reviewer, *Transportation Research Part F: Traffic Psychology and Behaviour*, Elsevier, 2017.
- Paper reviewer, *Photochemistry and Photobiology*, Wiley, 2016.
- Paper reviewer, *Energies*, Multidisciplinary Digital Publishing Institute, 2016, 2019-2021.
- Paper reviewer, *Traffic Injury Prevention*, Taylor and Francis, 2016-2018.
- Paper reviewer, *IIE Transactions on Occupational Ergonomics and Human Factors*, Taylor and Francis, 2016.
- Paper reviewer, *Advanced Optical Technologies*, De Gruyter, 2016.
- Paper reviewer, *Transport*, Taylor and Francis, 2015-2019.
- Paper reviewer, *Journal of Transportation Engineering*, American Society of Civil Engineers, 2014.

- Paper reviewer, *Journal of the Optical Society of America-A*, Optical Society of America, 2018-2019.
- Paper reviewer, *Current Eye Research*, Informa Healthcare, 2014.
- Paper reviewer, *Solar Energy*, Elsevier, 2013.
- Paper reviewer, *IEEE Transactions on Industry Applications*, Institute of Electrical and Electronics Engineers, 2012-2014.
- Paper reviewer, Institute of Electrical and Electronics Engineers Intelligent Transportation Systems Conference, 2011, 2013.
- Paper reviewer, *Applied Optics*, Optical Society of America, 2011-2014.
- Paper reviewer, *Journal of Energy Engineering*, American Society of Civil Engineers, 2011.
- Paper reviewer, *Journal of Clinical Medicine and Research*, 2011.
- Paper reviewer, *IEEE/OSA Journal of Display Technology*, Institute of Electrical and Electronics Engineers, 2010-2016.
- Paper reviewer, *Optics Letters*, Optical Society of America, 2010-2015.
- Paper reviewer, *Optics Express*, Optical Society of America, 2010-2018.
- Paper reviewer, *Advances in OptoElectronics*, Hindawi Publishing, 2010.
- Paper reviewer, *Biomedical Optics Express*, Optical Society of America, 2010.
- Paper reviewer, *Journal of Modern Optics*, Taylor and Francis, 2009-2010.
- Paper reviewer, Annual Conference of the European Association for Computer Graphics, 2008.
- Paper reviewer, *Aviation, Space and Environmental Medicine*, Aerospace Medical Association, 2007, 2017-2018.
- Paper reviewer, *Iranian Journal of Electrical and Computer Engineering*, 2007.
- Paper reviewer, *Color Research and Application*, Wiley, 2007-2020.
- Paper reviewer, *Neuroscience Letters*, Elsevier, 2006-2017.
- Paper reviewer, *Applied Ergonomics*, Elsevier, 2006.
- Paper reviewer, *Ophthalmic and Physiological Optics*, Wiley, 2005, 2010.
- Paper reviewer, *Proceedings of the Institution of Mechanical Engineers: Journal of Automobile Engineering, Part D*, Professional Engineering Publishing, 2005-2009.
- Paper reviewer, *Leukos*, Illuminating Engineering Society of North America, 2004-2024.
- Paper reviewer, Society of Automotive Engineers, 2004, 2006-2023.
- Paper reviewer and discusser, *Transportation Research Record*, Transportation Research Board of the National Academies, 2003-2024.
- Paper reviewer, Transportation Research Board Annual Meeting, National Academy of Sciences, 2003-2024.
- Paper referee and discusser, *Lighting Research and Technology*, Chartered Institution of Building Services Engineers, 2002-2023.
- Paper reviewer, *IEEE Transactions on Vehicular Technology*, Institute of Electrical and Electronics Engineers, 2001-2003.

- Paper reviewer, *IEEE Transactions on Industrial Electronics*, Institute of Electrical and Electronics Engineers, 2001-2003, 2010-2016.
- Paper discusser, *Journal of the Illuminating Engineering Society*, Illuminating Engineering Society of North America, 1997-2001.

C. Proposal Reviewer

- Book proposal reviewer, CRC Press, Taylor and Francis, 2019, 2022.
- Proposal reviewer, Swiss National Science Foundation, 2018.
- Proposal reviewer, Ralph E. Powe Junior Faculty Award, Oak Ridge Associated Universities, 2016.
- Technical proposal reviewer, National Aeronautics and Space Administration, 2012.
- Technical proposal reviewer, Mid-America Transportation Center, University of Nebraska, 2012.
- Technical proposal reviewer, Mid-Atlantic Universities Transportation Center, 2010.
- Technical proposal reviewer, Academy of Finland, 2009.
- Technical proposal reviewer, U.S. Department of Agriculture, 2005-2007.
- Award proposal reviewer, Singapore National Science and Technology Awards, 2006.

VII. SERVICE

A. Service to Academic Institution(s)

- Recording Secretary, M.S. in Lighting Faculty, Rensselaer Polytechnic Institute, 2003-2020.
- Community Service Day Committee, Rensselaer Polytechnic Institute, 1998-2003.

B. Membership and Service in Professional and Technical Organizations

- Academic Advisory Council for Signage Research and Education, member, 2015-present.
- Commission Internationale de l'Éclairage, U.S. National Committee, member, 2014-present.
- Society for Information Display, 2018-present.
- Optical Society of America, member, 2017-2019.
- American Physical Society, member, 2017-2019.
- Transportation Research Board, National Academy of Sciences, Users Performance Section Executive Board (member, 2012-2018).
- Transportation Research Board, National Academy of Sciences, Committee on Visibility (member, 2003-2020; chair, 2012-2018).
- Transportation Research Board, National Academy of Sciences, Committee on Human Factors of Infrastructure Design and Operations (member, 2020-present).
- Transportation Research Board, National Academy of Sciences, Joint Subcommittee on Emergency Response (member, 2024-present).
- Human Factors Engineering Technical Advisory Group, U.S. Department of Defense, member, 2011-present.

  - Technical Society/Industry Subgroup member representing the Illuminating Engineering Society of North America, 2011-present.
- Airport Cooperative Research Program, Transportation Research Board, National Academy of Sciences, member of Airport Energy Efficiency and Cost Reduction Synthesis advisory panel, 2009-2010.
- National Cooperative Highway Research Program, Transportation Research Board, National Academy of Sciences, member of Updated Headlamp Design Criteria for Sag Vertical Curves project panel, 2009-2012.
- Strategic Highway Research Program 2, Transportation Research Board, National Academy of Sciences, member of Driver Testing Technical Expert Task Group, 2007-2008.
- Council for Optical Radiation Measurements, member, 2003-present.
  - Board of Directors, 2004-present.
  - Vice President, 2016-present.
- International Municipal Signal Association, member, 2003-2018.
- Society of Automotive Engineers, member, 1999-present.
- Illuminating Engineering Society of North America, member, 1999-present.
  - Lamp Spectral Effects Committee member, 2001-2018, chair, 2003-2007.
  - Outdoor Nighttime Environment Committee member, 2021-present.
  - Discomfort Glare in Outdoor Nighttime Environments Committee member, 2020-present.
  - Vision Science Committee member, 2018-present.
  - Photobiology Committee member, 2002-present.
  - Color Committee member, 2018-present.
  - Research Committee member, 2007-2014.
  - Research Symposium Committee member, 2016-2021.
  - Technical Review Council member, 2004-2007, 2013-2017.
  - Sports and Recreational Area Lighting Committee member, 2016-present.
  - Board of Fellows Award Committee member, 2009-2014, 2016-2021.
  - Lighting Criteria committee member, 2009-2017.
  - Mesopic Committee member, 2009-2016.
  - Research Advisory Committee, 2011-2015.

C. Community and Public Service

- Troop Committee Member, Boy Scout Troop 502, Troy, NY, 2019-present.
- Pack Committee Member, Den Leader, Cubmaster, Treasurer, Cub Scout Pack 15, Troy, NY, 2013-present.
- Volunteer Lector and Extraordinary Minister of the Eucharist, St. Michael the Archangel Catholic Church, Troy, NY, 2018-present.
- Amnesty International, Urgent Action Network Volunteer, 2010-present.
- Treasurer and Committee Member, City of Troy Democratic Committee, 2005-2011, 2012-present.

- Treasurer, Committee to Elect Tiffani Silverman, 2023-2024.
- Treasurer, Committee to Elect Carol Harvin, 2023-2024.
- Treasurer, Committee to Elect Ian Silverman City Court Judge, 2024-present.
- Treasurer and Committee Member, Rensselaer County Democratic Committee, 2005-2012, 2019-present.
- Co-Organizer and Volunteer, Rensselaer Community Service Day, 1999-2002.
- City of Troy Zoning Board of Appeals, 1998-2002 (Vice-chairman, 1999-2002).
- Volunteer for New York State Labor-Religion Coalition, 1998-2000.
- Volunteer for Hudson Mohawk Industrial Gateway, 1997-2009.
- Volunteer for Troy's RiverSpark Visitor Center, 1997-2001.
- Internet Volunteer/Webmaster, Rensselaer County Democratic Committee, 1996-2017.
- Volunteer for Interfaith Alliance of New York State and the Capital District, 1996-2020.
- Volunteer for Lutheran Statewide Advocacy, 1996-1998.

VIII. PROFESSIONAL AND PUBLIC LECTURES AND PUBLICATIONS (Student Co-Authors Indicated by Asterisk*)

A. Conference and Technical Papers and Abstracts

i. Refereed

108. **Bullough, J. D.** [In press.] A survey of vehicle forward lighting system mounting height and driver eye height. *Society of Automotive Engineers World Congress Experience*, Detroit, MI, April 8-10, 2025. Warrendale, PA: Society of Automotive Engineers.
107. **Bullough, J. D.** 2025. Why is headlight glare such a persistent problem for the driving public? A review. *Transportation Research Board 104th Annual Meeting*, Washington, DC, January 5-9. Washington, DC: Transportation Research Board.
106. **Bullough, J. D.**, N. P. Skinner and M. S. Rea. 2024. Responses to flashing warning lights and colors of service vehicles (SAE paper 2024-01-2229). *Society of Automotive Engineers World Congress Experience*, Detroit, MI, April 16-18, 2024. Warrendale, PA: Society of Automotive Engineers.
105. **Bullough, J. D.** and N. P. Skinner. 2024. Performance of headlights fitted with LED replacement bulbs (SAE paper 2024-01-2230). *Society of Automotive Engineers World Congress Experience*, Detroit, MI, April 16-18, 2024. Warrendale, PA: Society of Automotive Engineers.
104. **Bullough, J. D.** and M. S. Rea. 2024. Lights, colors, action! The importance of consistent perceptual information on service vehicles for safe driving. *Transportation Research Board 103rd Annual Meeting*, Washington, DC, January 7-11. Washington, DC: Transportation Research Board.
103. **Bullough, J. D.** and S. A. Parr. 2024. Impacts of emergency vehicle marking characteristics and wearable lights on driver responses. *Transportation Research Board 103rd Annual Meeting*, Washington, DC, January 7-11. Washington, DC: Transportation Research Board.

102. **Bullough, J. D.**, N. P. Skinner and M. S. Rea. 2023. Impacts of coordinating the colors of flashing warning lights and vehicle markings on driver perception (SAE paper 2023-01-0839). *Society of Automotive Engineers World Congress Experience*, Detroit, MI, April 18-20. Warrendale, PA: Society of Automotive Engineers.
101. **Bullough, J. D.** 2023. Using visual performance modeling to assess the safety consequences of headlight evaluation systems (SAE paper 2023-01-0917). *Society of Automotive Engineers World Congress Experience*, Detroit, MI, April 18-20. Warrendale, PA: Society of Automotive Engineers.
100. **Bullough, J. D.**, B. D. Miller, D. V. Baker and M. S. Rea. 2022. Flashing emergency lights: Influence of intensity, flash rate and synchronization on driver visibility, comfort and confidence (SAE paper 2022-01-0801). *Society of Automotive Engineers World Congress Experience*, Detroit, MI, April 5-7. Warrendale, PA: Society of Automotive Engineers.
99. Kobbert, J., M. Hamm, C. Hinterwaelder and **J. D. Bullough**. 2022. Illuminated vehicle logos: Investigation on potential distraction and their influence on road safety (SAE paper 2022-01-0797). *Society of Automotive Engineers World Congress Experience*, Detroit, MI, April 5-7. Warrendale, PA: Society of Automotive Engineers.*
98. **Bullough, J. D.** 2021. Intelligent vehicle lighting: Impacts on visual perception of drivers varying in age (SAE paper 2021-01-0851). *Society of Automotive Engineers World Congress Experience Digital Summit*, April 13-15, 2021. Warrendale, PA: Society of Automotive Engineers.
97. **Bullough, J. D.** 2021. Evaluation of LED roadway lighting upgrades on a major arterial. *Transportation Research Board 100th Annual Meeting*, January 21-29, 2021. Washington, DC: Transportation Research Board.
96. Brons, J. A., **J. D. Bullough** and D. C. Frering. 2021. A rational basis for LED street lighting retrofit luminaire selection. *Transportation Research Board 100th Annual Meeting*, January 21-29, 2021. Washington, DC: Transportation Research Board.
95. Skinner, N. P. and **J. D. Bullough**. 2020. Influence of intensity, duration and spectral characteristics on glare recovery for peripheral visibility (SAE paper 2020-01-0632). *Society of Automotive Engineers World Congress Experience*, Detroit, MI, June 16-18. Warrendale, PA: Society of Automotive Engineers.
94. Nagare, R. M.* and **J. D. Bullough**. 2020. Influence of background spectral distribution on perceptions of discomfort glare (SAE paper 2020-01-0637). *Society of Automotive Engineers World Congress Experience*, Detroit, MI, June 16-18, 2020. Warrendale, PA: Society of Automotive Engineers.
93. **Bullough, J. D.**, E. E. Allegretti,* A. C. Alsdorf,* C. E. Burns,* A. J. Champagne,* B. Crawford,* A. P. S. De Vas Gunawardena,* Y. Du,* E. L. Freeman,* Y. Lai,* K. G. Mitchell,* K. R. Snively,* S. G. Sosa-Yanez,* J. Su,* J. Tung,* A. S. Udage* and G. Zhu.* 2020. Impacts of mobile screens on pedestrian visual performance at night: Pilot study results. *Transportation Research Board 99th Annual Meeting*, Washington, DC, January 12-16. Washington, DC: Transportation Research Board.
92. Skinner, N. P., T. T. LaPlumm* and **J. D. Bullough**. 2020. Warning light flash frequency as a method for visual communication to drivers. *Transportation Research Board 99th Annual Meeting*, Washington, DC, January 12-16. Washington, DC: Transportation Research Board.

91. **Bullough, J. D.**, N. P. Skinner and M. S. Rea. 2019. Impacts of flashing emergency light intensity and color and of vehicle-side illumination on identification of first response workers and discomfort glare (SAE paper 2019-01-0847). *Society of Automotive Engineers World Congress Experience*, Detroit, MI, April 9-11. Warrendale, PA: Society of Automotive Engineers.
90. Skinner, N. P. and **J. D. Bullough.** 2019. Influence of LED spectral characteristics on glare recovery (SAE paper 2019-01-0845). *Society of Automotive Engineers World Congress Experience*, Detroit, MI, April 9-11. Warrendale, PA: Society of Automotive Engineers.
89. Liu, Y.-W. and **J. D. Bullough.** 2019. Evaluation of after-market light emitting diode headlight bulbs (SAE paper 2019-01-0850). *Society of Automotive Engineers World Congress Experience*, Detroit, MI, April 9-11. Warrendale, PA: Society of Automotive Engineers.
88. **Bullough, J. D.** and Y. Liu. 2019. Response to white light emitting diode aviation signal lights varying in correlated color temperature. *Transportation Research Board 98th Annual Meeting*, Washington, DC, January 13-17. Washington, DC: Transportation Research Board.
87. Kersavage, K.,* N. P. Skinner, **J. D. Bullough**, P. M. Garvey, E. T. Donnell and M. S. Rea. 2019. Driver behavior in response to flashing lights. *Transportation Research Board 98th Annual Meeting*, Washington, DC, January 13-17. Washington, DC: Transportation Research Board.
86. Rea, M. S., N. P. Skinner and **J. D. Bullough**. 2018. A novel barricade warning light system using wireless communications (SAE paper 2018-01-5036). *Society of Automotive Engineers Technical Paper*. Warrendale, PA: Society of Automotive Engineers.
85. **Bullough, J. D.** 2018. Influence of oncoming light exposure on safety outcomes in a naturalistic driving study (SAE paper 2018-01-1039). *Society of Automotive Engineers World Congress Experience*, Detroit, MI, April 10-12. Warrendale, PA: Society of Automotive Engineers.
84. **Bullough, J. D.** and X. Liu. 2018. Luminance measurement and visual performance analyses of raised pavement markers. *Transportation Research Board 97th Annual Meeting*, Washington, DC, January 7-11. Washington, DC: Transportation Research Board.
83. Kersavage, K.,* N. P. Skinner, **J. D. Bullough**, P. M. Garvey, E. T. Donnell and M. S. Rea. 2018. Determination of optimal intensities and periods for vehicle-mounted warning lights using field experiments. *Transportation Research Board 97th Annual Meeting*, Washington, DC, January 7-11. Washington, DC: Transportation Research Board.
82. **Bullough, J. D.** 2017. Spectral considerations for transportation lighting systems. *Frontiers in Optics/Laser Science* (FTh3C.4), Washington, DC, September 17-21. Washington, DC: Optical Society of America.
81. **Bullough, J. D.** 2017. Investigation of the influence of headlight glare and aim on risk-related driving behavior (SAE paper 2017-01-1360). *Society of Automotive Engineers World Congress Experience*, Detroit, MI, April 4-6. Warrendale, PA: Society of Automotive Engineers.
80. **Bullough, J. D.** 2017. Human factors impacts of light-emitting diode airfield lighting. *Transportation Research Board 96th Annual Meeting*, Washington, DC, January 8-12. Washington, DC: Transportation Research Board.
79. **Bullough, J. D.** and N. P. Skinner. 2017. Real-world demonstrations of novel pedestrian crosswalk lighting. *Transportation Research Board 96th Annual Meeting*, Washington, DC, January 8-12. Washington, DC: Transportation Research Board.

78. **Bullough, J. D.**, N. P. Skinner and T. T. Plummer.* 2016. Assessment of adaptive driving beam photometric performance (SAE paper 2016-01-1408). *Society of Automotive Engineers World Congress*, Detroit, MI, April 12-14. Warrendale, PA: Society of Automotive Engineers.
77. **Bullough, J. D.**, N. P. Skinner and T. T. Plummer.* 2016. Assessment of an adaptive driving beam headlighting system: Visibility and glare. *Transportation Research Board 95th Annual Meeting*, Washington, DC, January 10-14. Washington, DC: Transportation Research Board.
76. Besenecker, U.,* T. Krueger, **J. Bullough**, Z. Pearson* and R. Gerlach. 2016. The experience of equivalent luminous colors at architectural scale. *XII Conferenza del Colore, Volume XIIB: Colour and Colourimetry, Multidisciplinary Contributions* (pp. 109-117), Turin, Italy, September 8-9. Milan, Italy: Gruppo del Colore-Associazione Italiana Colore.
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B. Public Presentations

142. **Bullough, J. D.** 2024. Circadian-effective lighting: human performance, glare and energy use. *Canadian Standards Association TC-419 Meeting*, Toronto, ON, November 5.
141. **Bullough, J. D.** 2024. Visual aspects of flicker: Some terminology and metrics. *Impacts of LED Flicker / Temporal Light Modulation on Machine Vision Workshop*, Vulnerable Road User Safety Consortium, October 3.
140. **Bullough, J. D.** [presented by M. Larsen]. 2024. Survey of headlight mounting heights: Preliminary update. *Society of Automotive Engineers Lighting Discussion Forum*, Santa Fe, NM, September 30-October 4.
139. **Bullough, J. D.** 2024. From science to safety: What have we learned from research on warning lights and vehicle markings? *SMART Emergency Vehicle Lighting Workshop*, Rosemont, IL, September 18-19.
138. **Bullough, J. D.** 2024. Alert, inform, manage: Research-based suggestions for warning lights and vehicle markings. *Equipment Fleet Management 2024 National Conference*, Loveland, CO, August 18-22.
137. **Bullough, J. D.** 2024. Outdoor lighting characteristics and perceptions of safety. *Canadian Standards Association TC-419 Meeting*, Vancouver, BC, June 12.
136. Spellman, L. and **J. D. Bullough**. 2024. Lighting and visual information for vulnerable road user safety. *Driving Vision News Workshop: Lighting Technology and EE Architecture to Support New Mobility*, Driving Vision News, Detroit, MI, June 11-12.
135. Frank, N. J. and **J. D. Bullough**. 2024. Assessing LED exit sign luminance in the field [webinar]. *International Day of Light Research Webinar: Focus on Roadways and Safety*, New York, NY, May 2.
134. **Bullough, J. D.** 2024. Recent research on vehicle lighting. *Society of Automotive Engineers Lighting Discussion Forum*, Nashville, TN, April 11.
133. **Bullough, J. D.** 2024. Getting the AIM right with flashing service vehicle lights. *New Jersey Work Zone Safety Conference*, West Windsor, NJ, April 4.
132. **Bullough, J. D.** 2024. Good practices and current research in vehicle lighting for roadway incidents. *Talking Traffic Incident Management Webinar*, National Operations Center of Excellence, February 28.

131. Spellman, L. and **J. D. Bullough**. 2024. Lighting and visual information for vulnerable road user safety. *Society of Automotive Engineers Government-Industry Meeting*, Washington, DC, January 16-18.
130. **Bullough, J. D.** [presented by L. Kunzman]. 2024. Warning lights and vehicle markings: AIMing for improved safety. *Transportation Research Board 103rd Annual Meeting*, Washington, DC, January 7-11.
129. **Bullough, J. D.** 2023. Impacts of emergency vehicle lighting and markings on responder safety. *Transportation Research Board Emergency Responder Transportation Safety Research Summit*, Center for Advanced Infrastructure and Transportation, Piscataway, NJ, November 1-2.
128. **Bullough, J. D.** 2023. Headlight performance/Safety matters? *Driving Vision News Workshop: Lighting the Future – Safety, Communication and Emotions for EVs, AVs and Trucks*, Driving Vision News, San Francisco, CA, August 29-30.
127. **Bullough, J. D**. 2023. Understanding glare. *Live from the LHRC*, Light and Health Research Center, Icahn School of Medicine, Albany, NY, June 13.
126. **Bullough, J. D.** 2023. Recent research on emergency vehicle lighting and safety. *Road Insights: Trends in Emergency Lighting*, CARFAX for Police, Centreville, VA, May 16.
125. **Bullough, J. D.** [presented by J. Jaklic]. 2023. Recent vehicle lighting research. *Society of Automotive Engineers Lighting Discussion Forum*, San Antonio, TX, May 2-3.
124. **Bullough, J. D.** 2023. Lighting and visual information for vulnerable road user safety: Brief overview. *Society of Automotive Engineers-Industry Technologies Consortia: Vulnerable Road Users Safety Consortium Meeting*, Society of Automotive Engineers, Warrendale, PA, January 24.
123. **Bullough, J. D.** 2022. Human perception and response to interior automotive lighting and displays. *Automotive Interior Lighting Seminar: Wellness in Interiors*, ams OSRAM, Novi, MI, September 14.
122. **Bullough, J. D.** 2022. Impacts of adaptive driving beam (ADB) headlights on safety. *12th Annual Automotive Lighting and Technology Symposium*, ams OSRAM, Novi, MI, September 13.
121. Skinner, N. P., **J. D. Bullough** and M. S. Rea. 2022. Effectiveness of field applications of UV-C for controlling downy mildew in cucumber. *Plant Health 2022*, American Phytopathological Society, Pittsburgh, PA, August 6-10.
120. **Bullough, J. D.** 2022. Potential impacts of ADB legalization on U.S. pedestrian and driver safety [keynote lecture]. *Driving Vision News Workshop: Safety and Design - Challenges and Opportunities*, Driving Vision News, Rochester Hills, MI, June 20-21.
119. **Bullough, J. D.** 2022. Effects of emergency vehicle lighting characteristics on driver perception and behavior. *Texas Department of Transportation Bi-Monthly Statewide Traffic Incident Management Webinar*, Texas Department of Transportation, Austin, TX, April 20.
118. **Bullough, J. D.** 2022. Effects of emergency vehicle lighting characteristics on driver perception and behavior. *Society of Automotive Engineers Emergency Warning Lights and Devices Committee Meeting*, Society of Automotive Engineers, Warrendale, PA, April 12.
117. **Bullough, J. D.** 2022. Impacts of emergency vehicle lighting on first responder safety. *Annual Thomas F. With Fire Police Training and Education Seminar*, Volunteer Fire Police Association of the State of New York, Mountour Falls, NY, March 19.

116. **Bullough, J. D.** 2022. Effects of emergency vehicle lighting characteristics on driver perception and behavior. *Transportation Research Board Emergency Response Subcommittee AMR00(1) Meeting*, Transportation Research Bord, Washington, DC, January 10.
115. **Bullough, J. D.** and M. J. Flannagan. 2021. Is a 'subjective' or 'simulated' assessment of real-world performance such a bad thing? *DrivingVisionNews Workshop: How to Save Lives in Nighttime Traffic*, DrivingVisionNews, Novi, MI, September 21-22.
114. **Bullough, J. D.** 2021. Advances in understanding the safety benefits of adaptive vehicle lighting. *DrivingVisionNews Workshop: How to Save Lives in Nighttime Traffic*, DrivingVisionNews, Novi, MI, September 21-22.
113. **Bullough, J. D.** 2021. Lighting, visual guidance and age: Importance to safety in work zones [webinar]. *New Jersey Department of Transportation Technology Transfer Research Showcase – Lunchtime Edition*, New Jersey Department of Transportation, April 22.
112. **Bullough, J. D.** 2021. Overview of recent lighting and human factors research at LRC [webinar]. *Society of Automotive Engineers Lighting Systems Group – Lighting Forum*, Society of Automotive Engineers, April 20.
111. **Bullough, J. D.**, C. Huss, G. Luo, L. Mogk, D. Rathbun and E. O'Malley. 2020. Vision and driving [webinar panel]. *The Eye, The Brain and The Auto Pre-Congress Panel Discussion*, Detroit Institute of Ophthalmology, November 4.
110. **Bullough, J. D.** 2020. Human factors of vehicle displays and lighting [webinar]. *Automotive Lighting and Technology Virtual Symposium*, OSRAM Automotive, Novi, MI, June 22.
109. **Bullough, J. D.** and J. A. Brons. 2020. Outdoor lighting: Making uniformity a priority for security lighting [webinar]. *Live from the LRC*, Lighting Research Center, Rensselaer Polytechnic Institute, Troy, NY, March 10.
108. **Bullough, J. D.** 2020. Converging technology, safety evidence and standards for new headlight systems. *Transportation Research Board 99th Annual Meeting*, Washington, DC, January 12-16.
107. **Bullough, J. D.** 2020. [Presider.] *Approaches to Modeling Visibility and Safety Effects* (Session 1427), *Transportation Research Board 99th Annual Meeting*, Washington, DC, January 12-16.
106. Frering, D. and **J. D. Bullough.** 2019. LED street lighting: Understanding impacts on the public [webinar]. *Clean Energy Communities LED Street Lighting Academy*, New York State Energy Research and Development Authority, Albany, NY, December 10.
105. Frering, D. and **J. D. Bullough.** 2019. LED street lighting: Planning for success with LED street lighting [webinar]. *Clean Energy Communities LED Street Lighting Academy*, New York State Energy Research and Development Authority, Albany, NY, November 12.
104. Frering, D. and **J. D. Bullough.** 2019. LED street lighting: Talking tech – How LED street lights compare [webinar]. *Clean Energy Communities LED Street Lighting Academy*, New York State Energy Research and Development Authority, Albany, NY, October 8.
103. Frering, D. and **J. D. Bullough.** 2019. LED street lighting: Help is on the way [webinar]. *Clean Energy Communities LED Street Lighting Academy*, New York State Energy Research and Development Authority, Albany, NY, September 10.
102. **Bullough, J. D.** 2019. Flashing warning lights and first responder safety [keynote address]. *Cumberland Valley Volunteer Firemen's Association 118th Annual Convention*, Berkeley Springs, WV, July 31-August 3.

101. Liu, X. and **J. D. Bullough**. 2019. Evaluation of raised pavement markers. *98th Transportation Research Board Annual Meeting*, Washington, DC, January 13-17.
100. **Bullough, J. D.** [Presider.] 2019. *Visibility of Signs and Roadway Markings* (Session 1415). *98th Transportation Research Board Annual Meeting*, Washington, DC, January 13-17.
99. **Bullough, J. D.** 2018. Headlamp light performance evaluation. *Groupe de Travail Bruxelles Glare and Visibility Forum*, Geneva, Switzerland, October 22.
98. **Bullough, J. D.** [Moderator.] 2018. *Assessing Light at Night. Illuminating Engineering Society Research Symposium on Light + Human Health*, Atlanta, GA, April 8-10.
97. **Bullough, J. D.** 2018. Analysis of energy-efficient highway lighting retrofits. *97th Transportation Research Board Annual Meeting*, Washington, DC, January 7-11.
96. Rashid, M. and **J. D. Bullough**. 2018. Optimizing work zone lighting. *97th Transportation Research Board Annual Meeting*, Washington, DC, January 7-11.
95. **Bullough, J. D.** [Presider]. 2018. *Weather-Related Aspects of Visibility* (Session 363). *97th Transportation Research Board Annual Meeting*, Washington, DC, January 7-11.
94. Liu, X., **J. D. Bullough** and M. Jafari. 2017. Evaluation of raised pavement markers. 19th Annual New Jersey Department of Transportation Research Showcase, West Windsor, NJ, October 25.
93. **Bullough, J. D.** and L. C. Radetsky. 2017. Avoiding the sockets' blue glare; and other uncomfortable topics. *Illuminating Engineering Society Street and Area Lighting Conference*, Austin, TX, September 10-13.
92. **Bullough, J. D.** 2017. [Moderator]. 2017. Display Metrology (Session I). *Council for Optical Radiation Measurements/Inter-Society Color Council 2017 Joint Annual Conference*, Troy, NY, July 30-August 2.
91. **Bullough, J.**, A.C. Hickox, B. Liebel and J. Benson. 2017. Our city street lighting: LED in NYC [panel]. *Illuminating Engineering Society New York City Section Meeting*, New York, NY, May 24.
90. **Bullough, J. D.** 2017. New approaches to lighting for pedestrian safety and sense of personal security. *Transportation Research Board Human Factors Workshop: Walking at Night - The Pedestrian's Perspective, or "The Dangers of the Night-Walkers"*, Washington, DC, January 8.
89. Carlson, P. J. and **J. D. Bullough**. 2017. [Presiders.] *Signs, Markings, Signals, Visibility, and Related Technologies* (Session 732). *96th Transportation Research Board Annual Meeting*, Washington, DC, January 8-12.
88. **Bullough, J. D.** 2017. [Presider.] *Addressing Concerns About LED Street Lighting* (Session 746). *96th Transportation Research Board Annual Meeting*, Washington, DC, January 8-12.
87. **Bullough, J. D.**, S. Pruchnicki, S. Young and G. Canter. 2016. Linear airfield lighting evaluations: From the laboratory to the field. *Illuminating Engineering Society Aviation Lighting Committee Fall Technology Meeting*, San Diego, CA, October 23-27.
86. **Bullough, J. D.** 2016. Less is more: Energy-efficient lighting alternatives to support pedestrian friendly communities. *Illuminating Engineering Society Street and Area Lighting Conference*, Hollywood, CA, September 18-21.
85. Brons, J. and **J. Bullough**. 2016. The price is right… right? A look at LED street/highway lighting economics. *Illuminating Engineering Society Street and Area Lighting Conference*, Hollywood, CA, September 18-21.

84. **Bullough, J. D.**, M. Nicholas and T. Kracker. 2016. New NHTSA regulations and consumer safety ratings: Vehicle design and production considerations [panel]. *Advanced Lighting for Automotive 2016*, Detroit, MI, May 23-25.
83. Besenecker, U. C.,* T. Krueger and **J. D. Bullough**. 2016. Exploring equivalent colors (metamers) under architectural-scale, full-field exposure conditions. *Illuminating Engineering Society Research Symposium III: Light + Color,* Gaithersburg, MD, April 3-5.
82. **Bullough, J. D.** 2016. Indirect flicker perception: Stroboscopic effects from light source flicker [webinar]. *ENERGY STAR Lighting Webinar Series: Understanding and Addressing Flicker*, Washington, DC, February 25.
81. Spevacek, A., **J. D. Bullough** and E. Clayson. 2016. Implementing energy efficient technologies for cost-savings at airports [webinar]. *Transportation Research Board*, Washington, DC, February 11.
80. **Bullough, J. D.** 2016. [Presider.] Road Illumination, Signage and Visibility (Session 699). *95th Transportation Research Board Annual Meeting*, Washington, DC, January 10-14.
79. Gibbons, R., P. Lutkevich, **J. D. Bullough** and N. Hawkins. 2015. Applications of adaptive lighting on roadways [webinar]. *Transportation Research Board*, Washington, DC, November 18.
78. **Bullough, J. D.** and N. Chambers. 2015. Characterizing the benefits of linear airfield lighting elements. *Illuminating Engineering Society Aviation Lighting Committee Fall Technology Meeting*, Denver, CO, October 18-22.
77. **Bullough, J. D.** 2015. Optimizing flashing yellow warning lights for safety. *Western States Highway Equipment Managers Association Meeting*, Anchorage, AK, August 23-27.
76. **Bullough, J. D.** and M. Jongewaard. 2015. [Conference organizers.] *Council for Optical Radiation Measurements 2014 Annual Conference and Business Meeting*, Boulder, CO, May 12-15.
75. **Bullough, J. D.** 2015. Research findings on economic and life-cycle impacts of adoption of LED lighting at airports. *94th Transportation Research Board Annual Meeting*, Washington, DC, January 11-15.
74. **Bullough, J. D.** 2015. [Presider.] Perception of Roadway Signs, Signals and Delineation (Session 573). *94th Transportation Research Board Annual Meeting*, Washington, DC, January 11-15.
73. **Bullough, J. D.** and M. S. Rea. 2014. Warning beacons for maximizing worker safety. *New Jersey Department of Transportation Technology Transfer Seminar*, Trenton, NJ, December 15.
72. **Bullough, J. D.** and M. S. Rea. 2014. Intelligent warning beacon design for maximizing worker and driver safety [presented by H. Gong]. *Ground Transportation Technology Symposium: Big Data and Innovative Solutions for Safe, Efficient and Sustainable Mobility*, New York, NY, November 19.
71. **Bullough, J. D.** 2014. How do LED and incandescent light fixtures compare in good and bad visibility? *Illuminating Engineering Society Aviation Lighting Committee Conference*, Orlando, FL, October 19-23.
70. **Bullough, J. D.** and N. P. Skinner. 2014. Can linear light sources be of benefit to pilots? *Illuminating Engineering Society Aviation Lighting Committee Conference*, Orlando, FL, October 19-23.

69. **Bullough, J. D.** 2014. Perception of LED aviation signal lights compared to incandescent: Brightness, color identification and visibility in fog. *Federal Aviation Administration Light Emitting Diode Symposium*, Washington, DC, October 7.
68. **Bullough, J. D.** and M. S. Rea. 2014. New approaches to barricade and warning lights in work zones. *Intelligent Transportation Society of New York 21st Annual Meeting and Technology Exhibition*, Saratoga Springs, NY, June 12-13.
67. Bullough, S. D. and **J. D. Bullough**. 2014. Historic streetscape lighting: Integration of aesthetic concerns with modern technology. *U.S. Green Building Council New York Upstate Chapter Sustainable Speakers Series*, Albany, NY, May 13.
66. **Bullough, J. D.** 2014. Adaptive vehicle lighting: Review of safety impacts. *Society of Automotive Engineers Lighting Systems Group Meeting*, Arlington, VA, April 28-May 1.
65. Besenecker, U. C.* and **J. D. Bullough**. 2014. Investigating scene brightness perception of different light spectra. *Advanced Energy Conference 2014*, Albany, NY, April 28-29.
64. **Bullough, J. D.** 2014. Adaptive vehicle lighting, visibility and safety. *Transportation Research Board Human Factors Workshop: Let There Be Light-But When and Where?*, Washington, DC, January 12.
63. Gibbons, R. B. and **J. D. Bullough**. 2014. [Presiders.] *Transportation Research Board Human Factors Workshop: Let There Be Light-But When and Where?*, Washington, DC, January 12.
62. **Bullough, J. D.** 2013. Breaking news from the research desk: Roadway intersection lighting as it affects traffic safety. *Minnesota 10th Annual Toward Zero Deaths Conference*, St. Cloud, MN, November 14-15.
61. **Bullough, J. D.** 2013. Metrics for the effectiveness of flashing lights. *Illuminating Engineering Society Aviation Lighting Committee Conference*, Tucson, AZ, October 20-24.
60. **Bullough, J. D.** 2013. Modifying chevron size and spacing to alter driver behavior along curves. *Roadway Departure Web Conference*, National Highway Institute, Federal Highway Administration, June 14.
59. **Bullough, J. D.** 2013. [Session chair.] *Council for Optical Radiation Measurements Annual Conference: Display Technology and Metrology*, Gaithersburg, MD, May 7-9.
58. **Bullough, J. D.** 2012. Issues with the use of airfield LED light fixtures. *81st Annual Illuminating Engineering Society Aviation Lighting Committee Fall Conference*, St. Pete Beach, FL, October 14-18.
57. **Bullough, J. D.** 2012. Street lighting quantity and quality: Relevance to safety and security. Illuminating Engineering Society 2012 Street and Area Lighting Conference, Miami, FL, September 9-12.
56. **Bullough, J. D.** 2012. Flicker characteristics: Effects on detection, acceptability and comfort. *Illuminating Engineering Society Albany Section Meeting*, Troy, NY, April 10.
55. Frering, D., J. A. Brons, **J. D. Bullough**, M. G. Figueiro, J. P. Freyssinier, N. Narendran, L. C. Radetsky, M. S. Rea and J. Snyder. 2012. [Seminar presenters.] *Outdoor Lighting Institute*, Troy, NY, March 28-29.
54. **Bullough, J. D.**, J. D. Snyder and L. C. Radetsky. 2011. LED streetlights: How do they compare? *New York State Association of Transportation Engineers One-Day Technical Seminar*, Colonie, NY, October 27.
53. Skinner, N. P. and **J. D. Bullough**. 2011. Color identification of LED and incandescent aviation signal lights. *80th Annual Illuminating Engineering Society Aviation Lighting Fall Conference*, Wilmington, NC, October 16-20.

52. Sjöberg, J. and **J. D. Bullough**. 2011. [Session co-chairs.] *14th International Institute of Electrical and Electronics Engineers Annual Conference on Intelligent Transportation Systems: Advanced Vehicle Safety Systems 1*, Washington, DC, October 5-7.
51. Frering, D., J. A. Brons, **J. D. Bullough**, J. P. Freyssinier, R. P. Leslie, P. Morante, N. Narendran and L. C. Radetsky. 2011. [Seminar presenters.] *Outdoor Lighting Institute*, Troy, NY, October 12-13.
50. Snyder, J., **J. Bullough** and L. Radetsky. 2011. LED streetlights: How do they compare? *Environmental Landscape Architecture Training Series*, Latham, NY, October 5.
49. Snyder, J. D., L. C. Radetsky and **J. D. Bullough**. 2011. [Workshop organizers.] *Understanding Street Lighting Technology and Science*, Ankeny, IA, August 17.
48. **Bullough, J. D.** 2009. Design and evaluation of effective crosswalk illumination. *11th Annual New Jersey Department of Transportation Research Showcase*, West Windsor, NJ, October 14.
47. **Bullough, J. D.** 2009. Vehicle lighting, roadway illumination and interactions: Recent data. *Society of Automotive Engineers Forum on Safety, Vehicular Lighting and Roadway Lighting*, Troy, MI, September 22.
46. **Bullough, J. D.**, M. S. Rea and E. T. Donnell. 2009. Roadway lighting and safety. *New Jersey Department of Transportation Technology Transfer Seminar*, Trenton, NJ, November 24.
45. Arecchi, A. and **J. D. Bullough**. 2008. [Conference organizers.] *Council for Optical Radiation Measurements 2008 Annual Conference*, Troy, NY, June 9-11.
44. **Bullough, J. D.** 2008. Headlamp characteristics, glare and peripheral visibility. *Darmstadt Expert Lighting Research International Summit*, Darmstadt, Germany, September 18-19.
43. **Bullough, J. D.** 2008. [Session moderator.] *Darmstadt Expert Lighting Research International Summit: Vehicle Lighting Systems - Efficiency and Ecological Balance Sheet*, Darmstadt, Germany, September 18-19.
42. **Bullough, J. D.** 2008. [Session chair.] *Council for Optical Radiation Measurements 2008 Annual Conference: Visual and Nonvisual Responses*, Troy, NY, June 9-11.
41. **Bullough, J. D.** 2008. Transportation lighting: Rethinking visibility. *Cornell Club of the Greater Capital District Symposium - Why Does it Take Four PhDs to Screw in a Light Bulb?* Troy, NY, April 24.
40. **Bullough, J. D.** 2008. Outdoor lighting research summary [presented by N. Clanton]. *Outdoor Lighting Symposium*, Davis, CA, September 9-10.
39. **Bullough, J. D.** 2007. Effects of spectral power distribution on visual performance at mesopic light levels. *Transportation Research Board Human Factors Workshop: There Goes the Sun - Driver Vision and Behavior During Dusk and Darkness*, Washington, DC, January 21.
38. **Bullough, J. D.**, J. P. Freyssinier and M. S. Rea. 2007. Nighttime construction illumination using high mast lighting. *17th Annual Transportation and Planning Symposium and Institute of Transportation Engineers New York Upstate Section Annual Meeting*, Latham, NY, October 29-30.
37. **Bullough, J. D.** and M. S. Rea. 2007. Tripping the light fantastic: Applications of advanced lighting technologies for transportation. *New Jersey Department of Transportation Technology Transfer Seminar*, Trenton, NJ, September 18.

36. **Bullough, J. D.**, J. R. Sayer and D. M. Burns. 2007. [Presiders.] *Transportation Research Board Human Factors Workshop: There Goes the Sun - Driver Vision and Behavior During Dusk and Darkness*, Washington, DC, January 21.
35. **Bullough, J. D.** 2006. [Moderator.] *Does Architectural Lighting Impact Breast Cancer? An Examination of the Evidence*, Troy, NY, April 17.
34. **Bullough, J. D.** 2006. Mesopic vision: Lighting for safety and security. *LightCongress 2006*, New York, NY, March 7.
33. **Bullough, J. D.**, J. Van Derlofske and Y. Akashi. 2006. New headlamp technologies: Implications for headlamp glare. *Society of Automotive Engineers Government-Industry Meeting*, Washington, DC, May 8-10.
32. **Bullough, J. D.**, Z. Yuan,* A. Bierman and M. S. Rea. 2006. Brightness/luminous intensity values for LED signal lights. *Illuminating Engineering Society of North America Aviation Lighting Committee Conference*, Williamsburg, VA, November 6-9.
31. Van Derlofske, J., **J. D. Bullough** and Y. Akashi. 2006. Research gaps and needs for automotive front-lighting systems. *Society of Automotive Engineers Government-Industry Meeting*, Washington, DC, May 8-10.
30. Freyssinier, J. P., N. Narendran and **J. D. Bullough**. 2006. Luminance recommendations for lighted signage. *6th International Conference on Solid State Lighting*, San Diego, CA, August 14-17.
29. **Bullough, J. D.** 2004. Exploring mechanisms for circadian phototransduction in *Mus musculus* using light spectrum. *Rensselaer Polytechnic Institute Biology Department Spring 2004 Seminar Series*, Troy, NY, January 26.
28. **Bullough, J. D.** and M. G. Figueiro. 2004. Light and health: Exploring the lighting palette. *Illuminating Engineering Society of North America Annual Conference*, Tampa, FL, July 25-28.
27. Freyssinier, J. P., M. S. Rea and **J. D. Bullough**. 2004. Brightness contrast perception in the mesopic region. *Vision in the Twilight Zone: Studies of Visual Performance Under Mesopic Conditions*, London, UK, November 11.
26. Rea, M. S., **J. D. Bullough**, M. G. Figueiro and A. Bierman. 2004. Of mice and men: Light at night and cancer risk. *Emerging Topics in Breast Cancer and the Environment*, Princeton, NJ, November 4-6.
25. Van Derlofske, J. and **J. D. Bullough**. 2004. What is glare? *National Highway Traffic Safety Administration Workshop on Headlamp Safety Metrics: Balancing Visibility and Glare*, Washington, DC, July 13.
24. Boyce, P. R. and **J. D. Bullough**. 2003. Incandescent and LED traffic signals: More of the same? *Transportation Research Board 82nd Annual Meeting*, Washington, DC, January 12-16.
23. **Bullough, J. D.** 2003. Mercury-free lighting: The pros and cons. *Great Lakes Binational Toxics Strategy Stakeholder Forum*, Chicago, IL, December 16.
22. **Bullough, J. D.** 2003. So you want to (see and) be seen? *8th Eastern Winter Road Maintenance Symposium and Equipment Expo*, Manchester, NH, September 3-4.
21. **Bullough, J. D.** 2003. Opportunities for energy efficiency: Traffic signals and street lighting. *ReCharge Energy Expo and Conference*, Bear Mountain, NY, September 12-13.
20. **Bullough, J. D.** 2003. Physiology of glare. *Transportation Research Board Human Factors Workshop: Glare and Nighttime Roadway Visibility*, Washington, DC, January 12.

19. **Bullough, J. D.**, M. G. Figueiro and M. S. Rea. 2003. Circadian photometry. *Council for Optical Radiation Measurements 2003 Conference*, Menlo Park, CA, June 18-20.
18. **Bullough, J. D.**, J. P. Freyssinier and M. S. Rea. 2003. Color my world: The spectral effects of lighting. *Lightfair International 2003*, New York, NY, May 6-8.
17. **Bullough, J. D.** and J. Van Derlofske. 2003. Color perception, metrics and preference for vehicle lighting. *Society of Automotive Engineers Forum on Color and Color Rendering Index*, Orlando, FL, September 30.
16. **Bullough, J. D.**, M. G. Figueiro and M. S. Rea. 2002. Lighting and photobiology: Implications for design. *Florida Agency for Health Care Administration 18th Annual Seminar*, Orlando, FL, November 18-19.
15. Caldaro, B.,* **J. Bullough**, B. Possidente, M. Figueiro and M. Rea. 2002. The masking of varying intensities of blue (470 nm) and green (530 nm) LEDs on locomotor activity of mice. *Skidmore College Summer Collaborative Research Program Poster Session*, Saratoga Springs, NY, August 1.
14. Holmes, A. and **J. D. Bullough**. 2002. NYSERDA high efficiency public street lighting project. *22nd Annual Capital District Celebration of National Engineers' Week*, Albany, NY, February 28-March 1.
13. Van Derlofske, J., **J. D. Bullough** and M. S. Rea. 2002. Human vision and visibility: Adaptation. *Transportation Research Board Human Factors Workshop: Shedding Light on Visibility Models*, Washington, DC, January 13.
12. **Bullough, J. D.** 2001. Lighting quality: Using the 9th edition of the *Illuminating Engineering Society of North America Lighting Handbook*. *Illuminating Engineering Society of North America*, Western New England Section, Berlin, CT, January 18.
11. Van Derlofske, J. and **J. D. Bullough**. 2001. Guidelines for efficient street lighting and control of light pollution. *20th Annual IESNA Street and Area Lighting Conference*, Orlando, FL, October 14-17.
10. **Bullough, J. D.** 2000. *Illuminating Engineering Society of North America Lighting Handbook*, 9th edition: Preview of contents. *Illuminating Engineering Society of North America*, Milwaukee Section, Milwaukee, WI, March 9.
9. **Bullough, J. D.** 2000. Light and photobiology in the health care environment. *Illuminating Engineering Society of North America*, Milwaukee Section, Milwaukee, WI, March 9.
8. **Bullough, J. D.** 2000. Roadway and outdoor lighting and mesopic vision. *Illuminating Engineering Society of North America*, Milwaukee Section, Milwaukee, WI, March 9.
7. **Bullough, J. D.**, P. R. Boyce, A. Bierman, K. M. Conway, K. Huang,* C. P. O'Rourke, C. M. Hunter and A. Nakata.* 2000. The visibility of LED traffic signals: The results of two studies. *Intertraffic 2000 Seminar on LED Traffic Signals: Towards Market Acceptance*, Amsterdam, Netherlands, April 12.
6. **Bullough, J. D.**, P. R. Boyce, A. Bierman, K. M. Conway, K. Huang,* C. P. O'Rourke, C. M. Hunter and A. Nakata.* 2000. Luminous intensity for traffic signals. *2nd Transportation Research Board Workshop on Light-Emitting Diode Technology in Traffic Systems*, Ft. Lauderdale, FL, June 5-6.
5. Rea, M. S., A. Bierman and **J. D. Bullough**. 1999. Night vision theory. *Inauguration of the Honorable Dr. Shirley Jackson: Displays of Scholarly and Professional Activities*, Troy, NY, Rensselaer Polytechnic Institute, September 22-23.

4. Rea, M. S. and **J. D. Bullough**. 1999. Simulated driving performance at mesopic light levels. *Inauguration of the Honorable Dr. Shirley Jackson: Displays of Scholarly and Professional Activities*, Troy, NY, Rensselaer Polytechnic Institute, September 22-23.
3. **Bullough, J. D.** 1998. LED traffic signal technology and application: Research issues and options. *Institute of Transportation Engineers 68th Annual Meeting*, Toronto, ON, August 9-12.
2. **Bullough, J. D.** 1998. Linking human factors data to measurement of traffic signals. *Transportation Research Board Workshop on Light-Emitting Diode Technology in Traffic Systems*, Irvine, CA, October 26-27.
1. **Bullough, J.** 1997. Mesopic photometry: Issues and implications. *Joint U.S. National Committee/Canadian National Committee, Commission Internationale de l'Éclairage Technical Conference*, Cleveland, OH, October 31-November 2.

IX. HONORS AND AWARDS

- High Value Safety Research Project, *Evaluation of Raised Pavement Markers*, American Association of State Highway and Transportation Officials, Research Advisory Committee, 2018.
- Transportation Research Board, National Academy of Sciences, Certificate of Appreciation, 2018.
- Sweet Sixteen High Value Research Project, *Analysis of Energy Efficient Highway Lighting Retrofits*, American Association of State Highway and Transportation Officials, Research Advisory Committee, 2017.
- High Value Safety Research Project, *Optimizing Work Zone Lighting*, American Association of State Highway and Transportation Officials, Research Advisory Committee, 2017.
- Transportation Research Board, National Academy of Sciences, Practice-Ready Paper designation for "Human factors impacts of light-emitting diode airfield lighting," 2017.
- Driving Vision News, Lighting Community Support Special Award, 2017.
- Societe des Ingenieurs de l'Automobile Vehicle and Infrastructure Safety Improvement in Adverse Conditions and Night Driving Congress, Best Lecture for "Vehicle forward lighting: A new look at intelligent adaptive headlamps, safety and performance," 2014.
- Transportation Research Board, National Academy of Sciences, Practice-Ready Paper designation for "Historic streetscape lighting: Integration of aesthetic concerns with modern technology," 2013.
- Fire Protection Research Foundation, National Fire Protection Association, Ronald K. Mengel Award for "Characteristics of light-emitting diode sources: Relevance for visual signal detection," 2012.
- Rensselaer County Legislature, Resolution for the Accomplishment of National Academies Report on LED Airfield Lighting, 2012.
- Transportation Research Board, National Academy of Sciences, Practice-Ready Paper designation for "Evaluation of light-emitting diode warning beacons for maintenance vehicles," 2011.
- *Journal of Circadian Rhythms*, Highly Accessed article designation for "Circadian light," 2010.
- Society of Automotive Engineering, Certificate of Recognition, 2009-2018.

- *Journal of Circadian Rhythms*, Highly Accessed article designation for "A new approach to understanding the impact of circadian disruption on human health," 2008.
- Transportation Research Board, National Academy of Sciences, Work Zone Traffic Control Committee, Best Paper Award, 2008.
- *Journal of Circadian Rhythms*, Highly Accessed article designation for "Preliminary evidence for a change in spectral sensitivity of the circadian system at night," 2006.
- *Journal of Carcinogenesis*, Highly Accessed article designation for "Does architectural lighting contribute to breast cancer," 2006.
- Illuminating Engineering Society of North America, Fellow Designation, 2005.
- Society of Light and Lighting, Walsh-Weston Award, 2003, 2004, 2007, 2011.
- Society of Automotive Engineering, several papers have received Transaction status, 2002-2006.
- Society of Automotive Engineering, Human Factors Committee, Certificate of Appreciation, 2002-2007.
- City Council, Troy, NY, Commendation for Community Service Day, 1999.
- Rensselaer Polytechnic Institute Student Union, Volunteer Recognition Award, 1999.
- Society of Technical Communication, Mohawk Chapter, Award of Excellence, 1999, 2004.
- Illuminating Engineering Society of North America, Certificate of Appreciation, 1999, 2007.
- New York State Governor's Award for Energy Excellence, 1994.

X. SABBATICAL LEAVES, OFF-CAMPUS STUDY PROGRAMS, FOREIGN PROFESSIONAL TRAVEL

- *15th International Symposium on Automotive Lighting* (steering board member), Darmstadt, Germany, September 25-27, 2023.
- *13th International Symposium on Automotive Lighting*, Darmstadt, Germany, September 23-25, 2019.
- *Groupe de Travail "Bruxelles 1952" Glare and Visibility Forum*, Geneva, Switzerland, October 22, 2018.
- *Commission Internationale de l'Éclairage Workshop on a New Vision of Visibility for Roadway Lighting*, Berlin, Germany, May 24-25, 2018.
- *12th International Symposium on Automotive Lighting*, Darmstadt, Germany, September 25-27, 2017.
- *Société des Ingénieurs de l'Automobile Vehicle and Infrastructure Safety Improvement in Adverse Conditions and Night Driving Congress* (scientific committee member), Paris, France, October 13-14, 2016.
- *11th International Symposium on Automotive Lighting*, Darmstadt, Germany, September 28-30, 2015.
- *Commission Internationale de l'Éclairage 28th Session*, Manchester, UK, June 28-July 4, 2015.

- *Société des Ingénieurs de l'Automobile Vehicle and Infrastructure Safety Improvement in Adverse Conditions and Night Driving Congress* (scientific committee member), Versailles, France, October 14-15, 2014.
- *10th International Symposium on Automotive Lighting*, Darmstadt, Germany, September 23-25, 2013.
- *Société des Ingénieurs de l'Automobile Vehicle and Infrastructure Safety Improvement in Adverse Conditions and Night Driving Congress* (scientific committee member), Versailles, France, October 9-10, 2012.
- *Council for Optical Radiation Measurements 2012 Annual Conference*, Ottawa, ON, May 30-June 1, 2012.
- *9th International Symposium on Automotive Lighting*, Darmstadt, Germany, September 26-28, 2011.
- *Société des Ingénieurs de l'Automobile Vehicle and Infrastructure Safety Improvement in Adverse Conditions and Night Driving Congress* (scientific committee member), Versailles, France, October 6-7, 2010.
- *8th International Symposium on Automotive Lighting*, Darmstadt, Germany, September 29-30, 2009.
- *Darmstadt Expert Lighting Research International Summit* (invited speaker and session chair), Darmstadt, Germany, September 18-19, 2008.
- *CIE Expert Symposium on Temporal and Spatial Aspects of Light and Colour Perception and Measurement*, Veszprém, Hungary, August 22-23, 2002.
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XI. OTHER ACTIVITIES

A. Featured Research and Media Interviews

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B. Patents (Student Co-Inventors Indicated by Asterisk*)

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1. Van Derlofske, J., M. Rea, **J. Bullough** and A. Bierman. 2007. *Retinal Flux Density Meter and Method of Use* [U.S. Patent No. 7,258,438]. Published August 21, 2007.

C. Patent Applications

2. Rea, M. S., A. Bierman and **J. D. Bullough**. 2023. *Systems and Methods for Controlling Outdoor Lighting to Reduce Light Pollution* [U.S. Patent Application No. 2023/0209685 A1]. Published June 29, 2023.
1. Bierman, A., M. Rea, M. Figueiro and **J. Bullough**. 2009. *System and Method to Quantify Circadian Entrainment Disruption* [International Application No. PCT/US2008/085579]. Published June 11, 2009.

D. Citation Metrics (Google Scholar)

- Citations: 7165
- H-index: 41 (37 excluding self-citations)
- I10-index: 120

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