CHRISTOPHER L. PASSAGLIA

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EDUCATION AND TRAINING

University of Iowa	B.S. in Biomedical Engineering, 1990
Syracuse University	Ph.D. in Bioengineering and Neuroscience, 1997
Northwestern University	Postdoc in Biomedical Engineering, 1998-2003

APPOINTMENTS

University of Iowa	Undergraduate Research Assistant (Mentor: David Skorton, M.D.), 1989-1990
Syracuse University	Graduate Research Assistant (Mentor: Robert Smith, Ph.D.), 1991-1992
Syracuse University	Graduate Research Assistant (Mentor: Robert Barlow, Ph.D.), 1992-1997
Northwestern University	Postdoctoral Fellow (Mentor: John Troy, Ph.D.), 1998-2003
Boston University	Assistant Professor, Biomedical Engineering, 2004-2011
University of South Florida	Associate Professor, Chemical & Biomedical Engineering, 2011-2017
University of South Florida	Professor, Chemical & Biomedical Engineering, 2018-2019
University of South Florida	Professor, Molecular Pharmacology & Physiology, 2018-present
University of South Florida	Professor, Ophthalmology, 2018-present
University of South Florida	Professor, Medical Engineering, 2019-present
University of South Florida	Undergraduate Program Director, Medical Engineering, 2019-present
University of South Florida	Associate Chair, Medical Engineering, 2020-present

HONORS AND AWARDS

The Capranica Foundation, Capranica Award in Neuroethology, 1997
The Society for Neuroscience, Donald B. Lindsley Prize in Behavioral Neuroscience, 1998
National Institutes of Health, NRSA Postdoctoral Fellowship, 1999
Karl Kirchgessner Foundation, Vision Research Award, 2004
The Medical Foundation, Smith Family New Investigator Award , 2005
National Science Foundation, CAREER Award, 2006
BrightFocus Foundation, Thomas R. Lee Award, 2014
University of South Florida, College of Engineering Outstanding Research Achievement Award, 2021
University of South Florida, USF Outstanding Research Achievement Award, 2021
University of South Florida, USF Excellence in Research Award, 2022

PATENTS

1. **Passaglia CL.** Auto-regulation system for intraocular pressure, US 9022968, issued 05/2015
2. **Passaglia CL.** Method for auto-regulation of intraocular pressure, US 9314375, issued 04/2016
3. **Passaglia CL**, Madow B, Richards D, Greenberg E. Quantitative image analysis applied to the grading of vitreous haze, US 9384416, issued 07/2016
4. Bello SA, **Passaglia CL**. Continuous wireless powering of moving biological sensors, US 10027179, issued 07/2018
5. Sunol AK, Ticknor EJ, Guardino S, Jacobsen TW, Rogers ED, Cogswell K, Frisina RD, **Passaglia CL**. Gas-inflatable personal floatation devices, US10027179, issued 09/2019

6. Bello SA, Correa EM, **Passaglia CL**. User-controlled urination management system, US 10744298, issued 08/2020
7. **Passaglia CL**, Malvade S. Tethered eye cannula and method of use, US 10758408, issued 09/2020
8. Muncey A, Enderling H, Pasetto S, **Passaglia CL**, Yarinsky J, Yamamoto Alves Pinto C, Blocker A. Time or tidal volume splitting ventilator and methods of use, Provisional 63/320453, filed 03/2022

BOOK CHAPTERS

1. **Passaglia CL**, Herzog ED (2014) Circadian modulation of the Limulus eye for day and night vision. In *The Retina and Circadian Rhythms* (Springer Series in Vision Research), eds. Tosini G, Iuvone PM, McMahon DG, Collin SP, Springer Press, pp 195-222.

PEER-REVIEWED PUBLICATIONS

1. Herzog ED, **Passaglia CL**, Dodge SA, Levine ND, Barlow RB. Limulus vision in the ocean: comparing neural and behavioral thresholds. *Biological Bulletin* 185: 307-308, 1993. PMID: 27768429
2. **Passaglia CL**, Dodge FA, Barlow RB. Visual responses from the brain of Limulus. *Biological Bulletin* 187: 260-261, 1994. PMID: 7811813
3. **Passaglia CL**, Dodge FA, Barlow RB. Limulus is tuned into its visual environment. *Biological Bulletin* 189: 213-215, 1995. PMID: 8541408
4. Kim E, **Passaglia CL**, Dodge FA, Barlow RB. The temporal transfer function of the Limulus lateral eye in situ. *Biological Bulletin* 191: 259-260, 1996. PMID: 29220248
5. Stewart KM, Porcello DM, McSweeney ME, Saito T, **Passaglia CL**, Dodge FA, Barlow RB. Histamine: putative neurotransmitter for lateral inhibition in Limulus eye. *Biological Bulletin* 193: 203-205, 1997. PMID: 9390386
6. **Passaglia CL**, McSweeney ME, Stewart KM, Kim E, Mole EJ, Powers MK, Barlow RB. Visual performance of horseshoe crabs: role of underwater lighting. *Biological Bulletin* 193: 205-207, 1997. PMID: 9390387
7. **Passaglia CL**, Dodge FA, Herzog ED, Jackson BS, Barlow RB. Deciphering a neural code for vision. *Proceedings of the National Academy Sciences* 94: 12649-12654, 1997. PMID: 9356504
8. **Passaglia CL**, Dodge FA, Barlow RB. Cell-based model of the Limulus lateral eye. *Journal of Neurophysiology* 80: 1800-1815, 1998. PMID: 9772240
9. **Passaglia CL**, Enroth-Cugell C, Troy JB. Effects of remote stimulation on the mean firing rate of cat retinal ganglion cells. *Journal of Neuroscience* 21: 5794-5803, 2001. PMID: 11466451
10. **Passaglia CL**, Troy JB, Rüttiger L, Lee BB. Orientation sensitivity of ganglion cells in primate retina. *Vision Research* 42: 683-694, 2002. PMID: 11888534
11. **Passaglia CL**, Guo X, Chen J, Troy JB. Tono-Pen XL calibration curves for cat, cow, and sheep. *Veterinary Ophthalmology* 7: 261-264, 2004. PMID: 15200622
12. **Passaglia CL**, Troy JB. Information transmission rates of cat retinal ganglion cells. *Journal of Neurophysiology* 91: 1217-1229, 2004. PMID: 14602836
13. **Passaglia CL**, Troy JB. Impact of noise on retinal coding of visual signals. *Journal of Neurophysiology* 92: 1023-1033, 2004. PMID: 15071086
14. Troy JB, Bohnsack DL, Chen J, Guo X, **Passaglia CL**. Spatiotemporal integration of light by the cat X-cell center under photopic and scotopic condition. *Visual Neuroscience* 22: 493-500, 2005. PMID: 16212706
15. Werner B, Cook PB, **Passaglia CL**. Whole-cell recordings of light evoked excitatory synaptic currents in the retinal slice. *Journal of Visualized Experiments* 17, pii:771, doi: 10.3791/771, 2008. PMID: 18579656
16. Freeman DK, Heine WF, **Passaglia CL**. The maintained discharge of rat retinal ganglion cells. *Visual Neuroscience* 18: 1-10, 2008. PMID: 18634718
17. Werner B, Cook PB, **Passaglia CL**. Complex response patterns from a simple retinal circuit. *Journal of Neurophysiology* 100: 1087-1097, 2008. PMID: 19066519

18. **Passaglia CL**, Freeman DK, Troy JB. Effects of remote stimulation on the modulated activity of cat retinal ganglion cells. *Journal of Neuroscience* 29: 2467-2476, 2009. PMID: 19244521
19. Liu JS, **Passaglia CL**. Using the horseshoe crab, Limulus polyphemus, in vision research. *Journal of Visualized Experiments* 29, pii:1384, doi: 10.3791/1384, 2009. PMID: 19578331
20. Freeman DF, Heine WF, **Passaglia CL**. Single-unit in vivo recordings from the optic chiasm of rat. *Journal of Visualized Experiments* 38, pii: 1887, doi:10.3791/1887, 2010. PMID: 20364119
21. Freeman DK, Grana G, **Passaglia CL**. Retinal ganglion cell adaptation to small luminance fluctuations. *Journal of Neurophysiology* 104: 704-712, 2010. PMID: 20538771
22. Wellman A, Eckert D, Jordan A, Edwards B, **Passaglia CL**, Jackson A, Gautam S, Owens R, Malhotra A, White DP. A method for measuring and modeling the physiologic traits causing obstructive sleep apnea. *Journal of Applied Physiology* 110: 1627-1637, 2011. PMID: 21436459
23. Liu JS, **Passaglia CL**. Spike firing pattern of output neurons of the Limulus circadian clock. *Journal of Biological Rhythms* 26: 335-344, 2011. PMID: 21775292
24. Heine WF, **Passaglia CL**. Spatial receptive field properties of rat retinal ganglion cells. *Visual Neuroscience* 28: 403-417, 2011. PMID: 21944166
25. Troy JB, Yrazu F, **Passaglia CL**. The uniqueness of the message in a retinal ganglion cell spike train and its implication for retinal prostheses. *Conference Proceedings: IEEE Engineering in Medicine and Biology Society* 2012: 312-313, 2012. PMID: 23365892
26. Wellman A, Edwards BA, Sands SA, Owens R, Nemati S, Butler J, **Passaglia CL**, Jackson AC, Malhotra A, White DP. A simplified method for determining phenotypic traits in patients with obstructive sleep apnea. *Journal of Applied Physiology* 114: 911-922, 2013. PMID: 23411488
27. Valtcheva T, **Passaglia CL**. Contrast adaptation in the Limulus lateral eye. *Journal of Neurophysiology* 114: 3234-3241, 2015. PMID: 26445869
28. Tang X, Tzekov R, **Passaglia CL**. Retinal crosstalk in the mammalian visual system. *Journal of Neurophysiology* 115: 3018-3029, 2016. PMID: 26984426
29. Ortiz G, Odom JV, **Passaglia CL**, Tzekov RT. Efferent influences on the bioelectrical activity of the retina in primates. *Documenta Ophthalmologica* 134: 57-73, 2017. PMID: 28032236
30. Bello SA, Malavade S, **Passaglia CL**. Development of a smart pump for monitoring and controlling intraocular pressure. *Annals of Biomedical Engineering* 45: 990-1002, 2017. PMID: 27679446
31. Bello SA, **Passaglia CL**. A wireless pressure sensor for continuous monitoring of intraocular pressure in conscious animals. *Annals of Biomedical Engineering* 45: 2592-2604, 2017. PMID: 28812168
32. Stothert AR, Suntharalingam A, Tang X, Crowley VM, Mishra SJ, Webster JM, Nordhues B, Huard DJE, **Passaglia CL**, Lieberman RL, Blagg BS, Blair LJ, Koren J, Dickey CA. Isoform-selective Hsp90 inhibition rescues model of hereditary open-angle glaucoma. *Scientific Reports* 7: 17951, 2017. PMID: 29263415
33. **Passaglia CL**, Arvaneh T, Greenberg E, Richards D, Madow B. Automated method of grading vitreous haze in patients with uveitis for clinical trials. *Translational Vision Science and Technology* 7: 10, 2018. PMID: 29600118
34. Ficarrotta KR, Bello SA, **Passaglia CL**. Aqueous humor dynamics of the Brown-Norway rat. *Investigative Ophthalmology and Visual Science* 59: 2529-2537, 2018. PMID: 29847660
35. Partida GJ, Fasoli A, Fogli Iseppe A, Ogata G, Johnson JS, Thambiaiyah V, **Passaglia CL**, Ishida AT. Autophosphorylated CaMKII facilitates spike propagation in rat optic nerve. *Journal of Neuroscience* 38: 8087-8105, 2018. PMID: 30076212
36. Mineeva L.A., Balashevich L.I., Kozhukhov A.A., Shubin L.B., Kabanov A.V., **Passaglia C.L.,** Richards D., Madow B. The ability to assess the state of the fundus in patients with lens opacities of varying intensity, including patients with type 2 diabetes mellitus, using quantitative analysis of images made with a fundus camera. A pilot study. *Russian Ophthalmological Journal* 13: 29-35, 2020. (https://doi.org/10.21516/2072-0076-2020-13-2-29-35)

37. Ficarrotta KR, **Passaglia CL**. Intracranial pressure modulates aqueous humor dynamics of the eye. *Journal of Physiology* 598: 403-413, 2020. PMID: 31769030
    [Toris C: Faculty Opinions Recommendation of [Ficarrotta KR and Passaglia CL, J Physiol (Lond) 2020 598(2):403-413. In *Faculty Opinions*, 05 Feb 2020; 10.3410/f.736989641.793570428]
38. Ficarrotta KR, **Passaglia CL**. Experimental glaucoma model with controllable intraocular pressure history. *Scientific Reports* 10: 126, 2020. PMID: 31924837
39. Fogli Iseppe A, Ogata G, Johnson JS, Partida GJ, Johnson N, **Passaglia CL**, Ishida AT. Extraretinal spike normalization in retinal ganglion cell axons. *eNeuro* 0504-19.2020, 2020. PMID: 32086286
40. Johnson N, Gregorich SM, **Passaglia CL**. Spatiotemporal contrast sensitivity of Brown-Norway rats under scotopic and photopic illumination. *Neuroscience* 449: 63-73, 2020. PMID: 33035619
41. Khiev D, Mohamed ZA, Vichare R, Paulson R, Bhatia S, Mohapatra S, Lobo GP, Valapala M, Kerur N, **Passaglia CL**, Mohapatra SS, Biswal MR. Emerging nano-formulations and nanomedicines: applications for ocular drug delivery. *Nanomaterials* 11: 173, 2021. PMID: 33445545
43. Nicou C, Pillai A, **Passaglia CL**. Effects of acute stress, general anesthetics, and body temperature on intraocular pressure in rats. *Experimental Eye Research* 210: 108727, 2021. PMID: 34390732
44. Mohamed Y, **Passaglia CL.** A portable feedback-controlled pump for monitoring eye outflow facility in conscious rats. *PLoS One* 17: e0280332, 2023. PMID: 36630474
45. Johnson N, Siddiq MM, Zorina Y, Yadaw AS, Toro CA, Hansen J, Rabinovich V, Gregorich SM, Xiong Y, Tolentino RE, Hannila SS, Kaplan E, Blitzer R, Filbin M, Cardozo CP, **Passaglia CL**, Iyengar R. A spatially specified systems pharmacology approach to axonal regeneration therapy for axonal recovery after injury. *Frontiers in Pharmacology* 14:fphar.2023.1225759, 2023.
46. Mohamed Y, **Passaglia CL**. Simulation of gravity- and pump-driven perfusion techniques for measuring outflow facility of ex vivo and in vivo eyes. In review with *PLoS ONE*
47. Nicou CM, **Passaglia CL**. Characterization of intraocular pressure variability in conscious rats. In review with *Experimental Eye Research.*

CONFERENCE PRESENTATIONS

1. Herzog ED, **Passaglia CL**, Longnecker K, et al. Seeing in Limulus: optic nerve recording in the ocean. *ARVO Meeting* 34: 1157, 1993.
2. **Passaglia CL**, Dodge FA, Barlow RB. Lateral inhibition in the Limulus brain. *ARVO Meeting* 36: S276, 1995.
3. Dodge FA, **Passaglia CL**, Barlow RB. Encoding of natural scenes by the Limulus eye. *ARVO Meeting* 36: S277, 1995
4. **Passaglia CL**, Dodge FA, Barlow RB. What Limulus sees when searching for a mate. *ARVO Meeting* 37: 4844, 1996
5. **Passaglia CL**, Dodge FA, Barlow RB. What the Limulus eye tells the Limulus brain about its underwater world. *ARVO Meeting* 37: 3090, 1996.
6. **Passaglia CL**, Dodge FA, Barlow RB. Design principles of the Limulus lateral eye. *ARVO Meeting* 38: 2854, 1997.
7. **Passaglia CL**, Dodge FA, Barlow RB. Image processing by the horseshoe crab eye. *BMES Meeting* 26: NE60, 1998.
8. Dodge FA, **Passaglia CL**, Barlow RB. Night vision in Limulus. *SFN Meeting* 27: 156.1, 1998.
9. Dodge FA, **Passaglia CL**, Barlow RB. Limulus vision at night. *ARVO Meeting* 39: 2854, 1998.
10. Troy JB, Bohnsack D, Diller LC, Enroth-Cugell C, **Passaglia CL**. Maintained discharge of cat retinal ganglion cells as a function of mean retinal illuminance. *ARVO Meeting* 40: 3094, 1999.
11. Dodge FA, **Passaglia CL**, Hitt J, Yamamoto T, Barlow RB. Assessing Limulus night vision using natural scenes. *ARVO Meeting* 40: 1241, 1999.
12. **Passaglia CL**, Enroth-Cugell C, Troy JB. Oscillations and correlations in cat retinal ganglion cell discharges. *SFN Meeting* 28*:* 575.22, 1999.

13. Troy JB, **Passaglia CL**, Enroth-Cugell C. Fast oscillatory discharges in and among cat retinal ganglion cells. *ARVO Meeting* 41: 4985, 2000.
14. **Passaglia CL**, Enroth-Cugell C, Troy JB. Excitatory and inhibitory nonlinear subunits provide input to Y cells. *ARVO Meeting* 41: 4040, 2000.
15. **Passaglia CL**, Rüttiger L, Lee BB, Troy JB. Ellipticity of primate ganglion cell receptive field centers. *SFN Meeting* 29: 52.12, 2000.
16. **Passaglia CL**, Enroth-Cugell C, Troy JB. Effects of remote stimulation on the spatial frequency response of cat retinal ganglion cells. *SFN Meeting* 30: 37.19, 2001.
17. **Passaglia CL**, Enroth-Cugell C, Troy JB. Information rate of cat retinal ganglion cells. *ARVO Meeting* 42: 3632, 2001
18. **Passaglia CL**. Information transmission rates of retinal ganglion cells. *BMES Meeting* 29: 223, 2001.
19. **Passaglia CL**, Guo X, Chen J, Troy JB. The impact of noise on retinal information transmission. *BMES Meeting* 31: 10.7.6, 2003.
20. Guo X, Chen J, Qiao Y, **Passaglia CL**, Ruoff R, Troy JB. Efficient construction of microelectrodes for neurophysiology. *BMES Meeting* 31: P3.1, 2003.
21. **Passaglia CL**, Chen J, Troy JB. Spectral properties of noise in the retinal output. *FASEB Conference: Retinal Neurobiology & Visual Processing,* 2004.
22. Chen J, Guo X, **Passaglia CL**, Troy JB. Properties of the ON-center Y-cell receptive field at the limit of visual sensitivity. *FASEB Conference: Retinal Neurobiology & Visual Processing,* 2004.
23. Werner B, Cook PB, **Passaglia CL**. Spatiotemporal response characteristics of salamander retinal ganglion cells during contrast adaptation. *ARVO Meeting* 47: 3109, 2006.
24. Freeman DK, **Passaglia CL**, Troy JB. Effects of peripheral gratings on human grating sensitivity. *ARVO Meeting* 47: 3769, 2006.
25. Freeman DK, **Passaglia CL**. Modeling luminance and contrast adaptive mechanisms of the mammalian retina. *BMES Meeting* 34: 353, 2006.
26. Oveson B, **Passaglia CL**. The spatiotemporal acuity of rats and rats with glaucoma. *BMES Meeting* 34: P24, 2006.
27. Freeman DK, **Passaglia CL**. Noise characteristics of the early visual system of rat. *SFN Meeting* 36: 34.12, 2007.
28. Werner B, Cook PB, **Passaglia CL**. A continuum of ON-OFF ganglion cells in the salamander retina. *SFN Meeting* 36: 34.21, 2007.
29. Werner B, Cook PB, **Passaglia CL**. Covariance analysis of light-induced input currents to ON-OFF ganglion cells in the salamander retina. *International Conference on Cognitive and Neural Systems*, 2007.
30. Freeman DK, **Passaglia CL**. Luminance adaptation to contrast steps in retinal ganglion cells. *BMES Meeting* 35: 267, 2007
31. Park BH, **Passaglia CL**, deBoer JF. Optical detection of action potential propagation using spectral-domain optical coherence tomography. *SPIE Conference* 6842E-110, 2008
32. Park BH, **Passaglia CL**, deBoer JF. Non-invasive optical detection of functionally-stimulated neural activity in the Limulus compound eye. *SPIE Conference* 6847-13, 2008
33. **Passaglia CL**, Freeman DK. Maintained discharge properties of rat ganglion cells. *ARVO Meeting* 49: 3847, 2008
34. Liu JS, **Passaglia CL**. Reading the output of the Limulus circadian clock. *International Conference on Cognitive and Neural Systems*, 2008.
35. Liu JS, **Passaglia CL**. Decoding the output of the Limulus circadian clock. *BMES Meeting* 36: 134, 2008
36. **Passaglia CL**, Hernandez VF. Elucidating a role for regenerative photon events in Limulus night vision using a cell-based model. *SFN Meeting* 37: 459.7, 2008.
37. Werner B, Cook PB, **Passaglia CL**. Temporal dynamics and contrast rectification of excitatory synaptic inputs to cells in the ON and the OFF pathway of the salamander retina. *SFN Meeting* 37: 365.14, 2008.
38. Freeman DK, **Passaglia CL**. Adaptation of rat retinal ganglion cells to a probed-sine wave paradigm. *SFN Meeting* 37: 365.15, 2008.
39. **Passaglia CL**, Heine WF. Spatial frequency response of rat retinal ganglion cells. *ARVO Meeting* 50: 1421, 2009.

40. **Passaglia CL**, Heine WF. Temporal response properties of rat retinal ganglion cells. *SFN Meeting* 38: 165.1, 2009.
41. Liu JS, **Passaglia CL**. Decoding and emulating the Limulus circadian clock. *SFN Meeting* 38: 869.1, 2009.
42. **Passaglia CL**, Grana GD, Freeman DK, Heine WF. Luminance adaptation in rat retinal ganglion cells under a binary white noise paradigm. *ARVO Meeting* 51: 968, 2010.
43. Liu JS, **Passaglia CL**. Reading the circadian code in Limulus efferent nerve spike trains. *SFN Meeting* 39: 733.8, 2010.
44. **Passaglia CL**, Heine WF, Grana GD. Temporal receptive field properties of rat retinal ganglion cells. *SFN Meeting* 39: 891.7, 2010.
45. Malhotra A, White DP, Eckert DJ, Edwards BA, Owens R, Sands SA, Nemati SI, Butler JP, **Passaglia CL**, Jackson AW, Wellman DA. Obstructive sleep apnea: a mechanistic approach. *IEEE EMBS Conference,* 2011.
46. **Passaglia CL**, Grana GD. Effect of contrast on the linearity of center and surround responses. *ARVO Meeting* 52: 4570, 2011.
47. Yrazu FM, **Passaglia CL**, Troy JB. How unique is the message in a ganglion cell spike train? *IBRO World Congress of Neuroscience*, 2011.
48. Valtcheva T, Covert D, **Passaglia CL**. Adaptation to stimulus mean and variance in the Limulus lateral eye. *SFN Meeting* 41: 256.3, 2012.
49. **Passaglia CL**, Bello S, Tzekov R, Malavade S. Development of an implantable system for measuring intraocular pressure in rats. *ARVO Meeting* 54: 5657, 2013.
50. Valtcheva T, **Passaglia CL**. Adaptive processes of the Limulus lateral eye. *Proceedings of Southern Biomedical Engineering Conference*, 2013.
51. **Passaglia CL**, Malavade S, Tzekov R, Bello S. Telemetric system for intraocular pressure measurement and regulation in rats. *International Society for Eye Research Conference, 2013*
52. **Passaglia CL**, Bello S, Tzekov R, Malavade S. Towards a system for intraocular pressure regulation. *BMES Meeting* 41: 89, 2013.
53. **Passaglia CL**, Greenberg E, Richards DW, Madow B. Quantitative image analysis applied to the grading of vitreous haze. *ARVO Meeting* 55: 3377, 2014.
54. Valtcheva T, **Passaglia CL**. Experimental analysis of variance adaptation in the horseshoe crab eye. *ARVO Meeting* 55: 2372, 2014.
55. Bello S, Malavade S, **Passaglia CL**. Development of an implantable system for controlling intraocular pressure in rats. *ARVO Meeting* 55: 2168, 2014.
56. **Passaglia CL**, Stevenson E, Greenberg E, Richards D, Madow B. Image processing algorithm for automated grading of vitreous haze. *BMES Meeting* 42: 630, 2014.
57. Bello S, Tang X, Malavade S, **Passaglia CL**. Development of an implantable system for controlling rat eye pressure. *BMES Meeting* 42: 110, 2014.
58. **Passaglia CL**, Tang X, Tzekov R. Experimental evidence for a "crossed ERG" in rat. *ARVO Meeting* 56: 474, 2015.
59. Tang X, Tzekov R, **Passaglia CL**. Light-evoked properties of a "crossed ERG" in rat. *ARVO Meeting* 56: 475, 2015
60. Bello SA, **Passaglia CL**. A wireless intraocular pressure sensor for rats. *ARVO Meeting* 56: 633, 2015.
61. Davis S, Tang X, Tzekov R, **Passaglia CL**. Experimental characterization of the rat electroretinogram. *BMES Meeting* 43: 616, 2015.
62. Bello SA, **Passaglia CL**. A wireless intraocular pressure sensor for rats. *BMES Meeting* 43: 641, 2015.
63. Ficarrotta K, Bello SA, **Passaglia CL**. Aqueous humor dynamics in the Brown Norway rat via a novel perfusion technique. *BMES Meeting* 43: 645, 2015.
64. Davis S, Carbono J, Gomaa M, **Passaglia CL**. Spatial and temporal contrast sensitivity of rats under varying light level. *ARVO Meeting* 57: 2766, 2016.
65. Tang X, Tzekov R, **Passaglia CL**. Further evidence of intraocular crosstalk in the rodent visual system. *ARVO Meeting* 57: 4784, 2016.

66. Bello SA, **Passaglia CL**. Intraocular pressure dynamics in Brown Norway rats measured by telemetry. *ARVO Meeting* 57: 6453, 2016.
67. Ficarrotta K, Bello S, **Passaglia CL**. Aqueous humor dynamics in the Brown Norway. *ARVO Meeting* 57: 6454, 2016.
68. Ficarrotta K**, Passaglia CL**. Effect of continuous eye perfusion on rat retinal ganglion cells. *ARVO Meeting* 58: 2558, 2017.
69. **Passaglia CL**, Ficarrotta K. Effect of continuous eye perfusion on rat aqueous humor dynamics. *ARVO Meeting* 58: 3478, 2017.
70. Bello S, **Passaglia CL**. Statistical analysis of continuous IOP recordings in awake rats. *ARVO Meeting* 58: 5328, 2017.
71. Davis S, **Passaglia CL**. Light evoked properties of compound action potentials of the rat optic nerve. *ARVO Meeting* 58: 5864, 2017.
72. **Passaglia CL**, Ficarrotta K, Bello S. Intraocular pressure recording in conscious rats and the effects of chronic pressure elevation. *BMES Meeting* 45: 510, 2017.
73. **Passaglia CL**, Siddiq MM, Zorina Y, Davis S, Kaplan E, Blitzer R, Iyengar R. A four-drug combination promotes axonal regeneration in the rat optic nerve crush model. *ARVO Meeting* 59: 2510, 2018.
74. Ficarrotta K, **Passaglia CL**. Effect of intracranial pressure on conventional outflow facility in rats. *ARVO Meeting* 59: 3318, 2018.
75. Mineeva L, **Passaglia CL**, Balashevich L, Ricahrds D, Shubin L, Kabanov A, Madow B, Greenberg E. Quantitative analysis of fundus images as affected by cataract. *ARVO Meeting* 60: 163, 2019.
76. Mohamed Y, Johnson N, Tzekov RT, **Passaglia CL**. Comparison of light-evoked spike trains, compound action potentials, and electroretinograms in rats. *ARVO Meeting* 60: 5969, 2019.
77. Nicou C, Pillai A, **Passaglia CL**. Effect of anesthesia, body temperature, and stress on intraocular pressure in rats. *ARVO Meeting* 60: 2410, 2019.
78. Johnson N, Heine W, **Passaglia CL**. Temporal properties of the receptive field center of rat retinal ganglion cells in vivo. *ARVO Meeting* 60: 5282, 2019.
79. **Passaglia CL**, Johnson N, Heine W. Temporal properties of the receptive field surround of rat retinal ganglion cells in vivo. *ARVO Meeting* 60: 5287, 2019.
80. Mohamed Y, **Passaglia CL**. Development of a micropump system capable of measure outflow facility in awake rats. *BMES Meeting* 47: 8, 2019.
81. Nicou C, **Passaglia CL**. Physiological factors affecting intraocular pressure in rats. *International Society for Eye Research Conference*, 2019.
82. Mohamed Y, **Passaglia CL**. Monitoring optic nerve health via the light-evoked compound action potential. *BMES meeting*. 48: 732, 2020.
83. Nicou C, **Passaglia CL**. Continuous measurement of IOP, ICP, and body temperature under various experimental conditions. *BMES Meeting*, 48: 740, 2020.
84. Johnson N, **Passaglia CL**. Temporal relationship between ERG waveforms and the firing patterns of rat retinal ganglion cells. *ARVO Meeting* 62, 2021.
85. Mohamed Y, **Passaglia CL**. Micropump device capable of measuring outflow facility in awake freely-moving rats. *ARVO Meeting* 62, 2021.
86. Safi AM, Hernandez Isidro C, Cini S, Moka S, Harrah M, **Passaglia CL**, Parthasarathy AB. Quantitative cerebral blood flow imaging with synthetic single-shot multi-exposure laser speckle imaging. *OSA Biophotonics Congress Meeting*, 2021.
87. Hernandez Isidro C, **Passaglia CL**. Diurnal rhythm of intracranial pressure in conscious Brown-Norway rats. *BMES Meeting* 49, 2021.
88. Tzekov R, Tsav SSK, Kremers J, **Passaglia CL**, Drucker D. Correlation between oscillatory potentials and photopic negative response amplitudes in a clinical setting. *ARVO Meeting* 63, 2022.
89. Hernandez Isidro C, **Passaglia CL**. Intracranial pressure and its effects on intraocular pressure. *ARVO Meeting* 63, 2022.

90. Nicou CN, **Passaglia CL**. Characterization of transient and sustained intraocular pressure fluctuations in rat. *ARVO Meeting* 63, 2022.
91. Mohamed Y, **Passaglia CL**. Estimating rat corneoscleral biomechanics using a dynamic model of the Goldmann equation. *ARVO Meeting* 63, 2022.
92. Nicou CN, **Passaglia CL.** IOP variability in conscious rats. *International Society for Eye Research Conference*, 2022.
93. **Passaglia CL**, Mohamed Y. Portable smart pump for ocular fluid dynamics monitoring and drug delivery in conscious rats. *BMES Meeting* 50, 2022.
94. Nicou CN, **Passaglia CL**. Telemetric monitoring of intraocular pressure, body temperature, and locomotor activity in conscious rats. *ARVO Meeting* 64, 2023.
95. Hernandez Isidro C, Zamitalo A, **Passaglia CL**. Effect of amplitude and duration of intracranial pressure elevation on aqueous humor dynamics of the rat eye. *ARVO Meeting* 64, 2023.
96. Zamitalo A, Nicou CN, **Passaglia CL**. Effect of tetrodotoxin on circadian intraocular pressure rhythms of rats. *ARVO Meeting* 64, 2023.

FUNDING HISTORY

Pending

NSF IUSE:EDU "IUSE: Science, technology, and engineering partnership upscale program (STEP-UP) for professional development of biomedical engineering"
PI: **Passaglia CL**, Co-PI: Kim A, Akintewe O, Zekri S, Jaroszeski M Amount: $2,000,000 Period: 01/2024-12/2028

NIH R41 EY036307 "Evaluating the efficacy of 4-phenylbutyrate prodrug-nanoparticles (Pro-PBA-NP) in lowering intraocular pressure (IOP) and retinal ganglion cell neuroprotection"
PI: **Passaglia CL**, Co-PI: Inman DM, Organization: Nutriforward LLC Award: $299,986 Period: 07/2024-06/2025

Present

NIH R01 EY027037 "Continuous measurement and control of intraocular pressure in normal and glaucomatous eyes"
PI: **Passaglia CL** Amount: $1,427,799 Period: 02/2021-01/2025

NIH R01 GM054508 "Functions of regulatory motifs in signaling networks."
PI: Iyengar R, Co-I: **Passaglia CL** Co-I Award Amount: $282,335 Period: 09/2020-08/2025

Prior

NIH R01 EY027037 "Continuous measurement and control of intraocular pressure in normal and glaucomatous eyes"
PI: **Passaglia CL** Amount: $1,426,711 Period: 08/2016-07/2021

BrightFocus Foundation "An implantable system for intraocular pressure measurement"
PI: **Passaglia CL** Amount: $100,000 Period: 07/2014-07/2016

NIH R21 EY023376 "A novel method of glaucoma induction and regulation",
PI: **Passaglia CL** Amount: $388,769 Period: 04/14-03/2016

NIH NEI R01 EY016849 "Retinal physiology in experimental glaucoma"
PI: **Passaglia CL** Amount: $975,000 Period: 09/2006-08/2011

NSF CAREER BES0547457 "Deciphering the neural basis of a visual behavior"
PI: **Passaglia CL** Amount: $400,000 Period: 02/2006-01/2011

The Medical Foundation "Retinal coding of visual information in rat eyes"
PI: **Passaglia CL** Amount: $200,000 Period: 12/2005-11/2007

Karl Kirchgessner Foundation "Quantitative assessment of rat visual function"
PI: **Passaglia CL** Amount: $50,000 Period: 11/2004-10/2006

NIH NRSA F32EY06908 "Role of correlated neuronal discharges in cat retina"
PI: **Passaglia CL** Amount: $61,000 Period: 03/1999-02/2001

INVITED TALKS

1. Northwestern University, Biomedical Engineering Department, "What the Limulus eye tells the Limulus brain", 02/1998
2. University of California-Berkeley, Molecular & Cell Biology Department, "What the Limulus eye tells the Limulus brain", 04/1998
3. Illinois Institute of Technology, Biomedical Engineering Department, "Deciphering the neural code for horseshoe crab vision", 12/2000
4. University of Illinois-Chicago, Biomedical Engineering Department, "Orientation sensitivity of primate retinal ganglion cells", 05/2001
5. Duke University, Biomedical Engineering Department, "The non-classical receptive field of cat retinal ganglion cells", 01/2002
6. University of California-Irvine, Biomedical Engineering Department, "The non-classical receptive field of cat retinal ganglion cells", 03/2002
7. Boston University, Biomedical Engineering Department, "The non-classical receptive field of cat retinal ganglion cells", 03/2002
8. University of Pennsylvania, Department of Neuroscience, "Sex, eyes, and videotape", 11/2003
9. Boston University, Program in Neuroscience, "Sex, eyes, and videotape", 01/2004
10. University of Southern California, Biomedical Engineering Department, "The spectral properties of retinal discharge noise and the impact on visual information transmission", 06/2006
11. Illinois Institute of Technology, Biomedical Engineering Department, "Control of retinal output by luminance and contrast dependent mechanisms", 04/2007
12. Boston University Medical Center, Department of Pharmacology, "Retinal coding of visual information in normal and glaucomatous eyes", 09/2007
13. Vanderbilt University, Department of Ophthalmology & Visual Sciences, "Retinal ganglion cell function in rats with normal and elevated IOP", 10/2009
14. Neurotech Inc, "Retinal ganglion cell function in rats with normal and elevated IOP", Cumberland, RI, 06/2010
15. Association for Research in Vision & Ophthalmology Symposium, "Understanding day and night vision: from experiments to models to behavior", Ft. Lauderdale, FL, 05/2010
16. Mt. Sinai Medical School, Department of Neuroscience, "Retinal adaptation to luminance and contrast", 10/2010
17. Ohio University, Department of Biological Sciences, "Retinal adaptation to luminance and contrast", 12/2010
15. University of Illinois-Chicago, Department of Ophthalmology, "Detangling retinal mechanisms of visual adaptation", 05/2011
16. Draper Laboratory, "Dissecting the functional properties of retinal neurons in normal and diseased eyes", Cambridge, MA, 05/2012
17. University of Pennsylvania, Department of Neuroscience, "Development of a wireless intraocular pressure sensor for rats", 12/2013
18. International Society for Eye Research Symposium, "Continuous measurement and control of intraocular pressure in rats", San Francisco, CA, 07/2014
19. University of Colorado-Denver, Department of Neuroscience, "Wireless measurement and control of intraocular pressure in rats", 05/15
20. Recent Trends in Vision & Ophthalmic Drug Delivery Symposium, "Continuous measurement and control of intraocular pressure in rats", Tampa, FL, 09/2015
21. Recent Trends in Vision & Ophthalmic Drug Delivery Symposium, "Monitoring intraocular pressure, ocular fluid dynamics, and optic nerve health in normal and glaucomatous rat eyes", Tampa, FL, 09/2016
22. University of Connecticut, Biomedical Engineering Department, "Continuous measurement and control of IOP in

normal and glaucomatous eyes", 03/2017

23. University of Illinois-Chicago, Biomedical Engineering Department, "Continuous measurement and control of IOP in normal and glaucomatous eyes", 04/2017
24. An Evening of BrightFocus, "Technologies being developed to understand the cause and effects of glaucoma", Washington, DC, 06/2017
25. Recent Trends in Vision & Ophthalmic Drug Delivery Symposium, "Round-the-clock IOP monitoring and manipulation in rats", Tampa, FL, 09/2017
26. International Society for Eye Research Symposium, "Round-the-clock IOP monitoring and manipulation in rats", Atlanta, GA, 10/2017
27. Biomed: Research to Reality Symposium, "Developing new technologies to study and treat glaucoma", Sarasota, FL, 08/2018
28. Recent Trends in Vision & Ophthalmic Drug Delivery Symposium, "Effect of elevation intracranial pressure of rat outflow facility", Tampa, FL, 02/2019
29. University of Alabama-Birmingham, Department of Ophthalmology & Visual Sciences, "Continuous monitoring and control of intraocular pressure in conscious rats", Birmingham, AL, 04/2022
30. International CSF Dynamics Symposium, "Intracranial pressure in the subarachnoid space and lateral ventricle of pigmented rats", Gainesville, FL 06/2022
31. International Society of Eye Research Symposium, "ICP of conscious rats and its influence on aqueous humor dynamics", Queensland, Australia, 02/2023

TEACHING HISTORY

Undergraduate Level

1. Engineering Physiology Labs, F2005-F2011
2. Modeling and Analysis of Engineering Systems, F2012
3. Research Design, Methods, and Interpretation, F2013
4. Numerical Methods in Chemical & Biomedical Engineering, F2015-F2016, S2012-S2018
5. Signals and Systems in Biomedical Engineering, F2004-F2005, F2018-F2021
6. Engineering Physiology, F2014-F2017, S2019-S2022

Graduate Level

7. Systems Identification & Parameter Estimation in Biomedical Engineering, S2005
8. Numerical Methods in Biomedical Engineering (co-instructor), S2007-S2011
9. Quantitative Physiology for Engineers, S2007-S2011
10. Biomedical Engineering II, S2015

PROFESSIONAL ACTIVITIES

Scientific Review Service

Reviewer, American Institute of Biological Science, BrightFocus Foundation Award, 02/2022
Reviewer, NIST US-Israel BIRD Foundation, 11/2021
Member, NIH F02B Study Section, 03/2021
Reviewer, NIH ETTN Special Emphasis Panel, 10/2020
Reviewer, NIH ETTN Special Emphasis Panel, 07/2020
Reviewer, NIH VSN Special Emphasis Panel, 08/2019
Member, NIH F02B Study Section, 06/2019
Member, NIH F02B Study Section, 03/2019
Member, NIH F02B Study Section, 06/2018

Member, NIH F02B Study Section, 03/2018
Reviewer, NIH VSN Special Emphasis Panel, 12/2017
Member, NIH NTRC Study Section, 09/2017
Member, NIH F02B Study Section, 06/2017
Member, NIH F02B Study Section, 03/2017
Member, NIH F02B Study Section, 10/2016
Reviewer, VA CDA1 Program Panel, 11/2014
Member, NSF CBET Study Section, 05/2011
Member, NSF CBET Study Section, 05/2009
Reviewer, NIH BDPE Study Section, 04/2008
Reviewer, NIH BDPE Study Section, 04/2006

Scientific Publishing Service

Review Editor, Frontiers in Neuroscience, 2023-present
Reviewer (past 3 years) for Acta Biomaterialia, Annals of Biomedical Engineering, Communications Biology, Current Eye Research, European Journal of Ophthalmology, Experimental Eye Research, Eye and Vision, Fluids and Barriers of the CNS, Investigative Ophthalmology & Visual Science, Journal of Physiology, Life Sciences, PLOS: Computational Biology, Science Advances, Scientific Reports, Sensors & Actuators A: Physical, Translational Visual Science & Technology

Scientific Society Service

Reviewer, BMES Conference 2014, 2015, 2020
Reviewer, Southern Biomedical Engineering Conference 2013
Session Chair, ARVO Conference 2006, 2007, 2013, 2017-2019
Session Chair, BMES Conference 2006, 2013, 2014

University Service

Member, USF Health Research Misconduct Investigation Panel, 2023
External Reviewer, Faculty Promotion to Full Professor, 2018, 2023
Member, USF Faculty Senate, 2016-2017, 2018-2021
Member, USF Undergraduate BME Program Development Committee, 2016-2018
Member, USF Joint Medical Engineering Department Development Committee, 2015-2017
Reviewer, USF Internal Grant Proposals, 2014-present
Member, USF Faculty Council on Student Admissions, 2014-2017
Member, USF Joint Department of Medical Engineering Planning Committee, 2015-2016
Member, BU Institutional Animal Care and Use Committee, 2008-2010
Member, BU Scientific Instruments Facility Committee, 2007-2009
Member, BU Biology Faculty Search Committee, 2007

Department Service

Member, USF MedE, Faculty Search Committee, 2021-present
Member, USF MedE Undergraduate Affairs Committee, 2019-present
Member, USF MedE Graduate Affairs Committee, 2019-present
Member, USF MedE Program Assessment Committee, 2019-present
Member, USF MedE, Faculty Search Committee, 2017-2019
Member, USF MedE, Chair Search Committee, 2018
Member, USF ChBME Graduate Program Committee, 2012-2018
Member, BU BME Senior Project Committee, 2006-2010

Member, BU BME Undergraduate Program Committee, 2005-2007
Member, BU BME Graduate Admissions Committee, 2004

College Service

Member, USF COE Administration and Research Management Committee, 2021-present
Member, USF COE Scholarship Committee, 2012-2018
Advisor, USF Tau Beta Pi Chapter, 2012-2013
Judge, USF COE Research Day, 2011-2018
Judge, BU Science and Engineering Day, 2006-2010
Advisor, BU Tau Beta Pi Chapter, 2006-2010

Community Outreach

STEM Presenter, Hillsborough County School District (Tampa, FL), 2012-present
- 1 to 3 presentations per year spanning elementary, middle, and high school

External Advisory Member, Helios Education Foundation (Tampa, FL), 2011-2013

Memberships

Association for Research in Vision & Ophthalmology (ARVO), 1995-present
Biomedical Engineering Society (BMES), 2003-present
International Society for Eye Research (ISER), 2013-present
Society for Neuroscience (SFN), 1998-2012

STUDENT ADVISING

Undergraduate Students (past 3 years)

Carolyn Morales, Noredden Bitar, Martin Recalde, Samantha Chanthalima, Krystian Gonzalez, Jacob Yarinsky, Ethan Daniels, Katriana Johnson, Andrew Kaiser, Mohammad al Mousa, Jade Houston, Emily Cecchio

M.S. Students

1. Aditi Pillai, 2017-2018, currently a Quality Engineer at Rook Quality Systems
2. Tchoudomira Valtcheva, 2012-2014, currently a Quality Associate at Baxter International Inc
3. Victor Hernandez, 2006-2008, currently a Quality Manager at Intelligent Hearing Systems Inc

Ph.D. Students

1. Kinnera Khareedu, 2023-present
2. Alexandra Zamitalo, 2022-present
3. Cesar Isidro-Hernandez, 2020-present
4. Christina Nicou, 2018-2023, currently a postdoc in Dr. Crawford Downs labs in UAB
5. Youssef Mohamed, 2017-2022, currently a medical student in USF Health
6. Nicholas Johnson, 2017-2022, currently a postdoc in Drs. Ravi Iyengar and Chris Cardozo labs in Mt. Sinai Health
7. Kayla Ficarrotta, 2014-2018, currently Diagnostic Medical Physicist at Fusion Physics LLC
8. Simon Bello, 2012-2016, currently Senior System Design Engineer at Carl Zeiss Meditec
9. Walter Heine, 2007-2011, currently Clinical Research Director at Sanofi
10. Jiahui Liu, 2006-2011, currently Head of Business Model Transformation at Novartis
11. Birgit (Werner) Fullerton, 2004-2008, currently Data Scientist at Hawa Dawa Inc (Munich, Germany)
12. Daniel Freeman, 2003-2008, currently Senior Research Engineer at MIT Lincoln Laboratory

Postdoctoral Students

1. Aman Chawla, 2017-2018, currently Assistant Professor in Electrical and Electronics Engineering at Dayananda Sagar College of Engineering (Bengaluru, India)
2. Xiaolan Tang, 2014-2015, currently Resident Physician at University of Central Florida

3. G. David Grana, 2009-2011, currently Academic Editor at Research Square Company
4. B. Hyle Park, 2006-2008, co-mentor: Prof. Johannes deBoer, currently Associate Professor at University of California-Riverside