CURRICULUM VITAE

SHULIANG JIAO, DEPARTMENT OF BIOMEDICAL ENGINEERING

EDUCATION

PhD	Texas A&M University	Biomedical Engineering	9/1999–12/2003
PhD	Huazhong Univ. of Sci. and Tech.	Electronic Phys. & Device	9/1987–5/1992
MS	Huazhong Univ. of Sci. and Tech.	Photonics	9/1985–5/1987
BS	Huazhong Univ. of Sci. and Tech.	Photonics	9/1981–5/1985

FULL-TIME ACADEMIC EXPERIENCE

Florida Int. University	Professor	Biomedical Engineering	07/2018–present
Florida Int. University	Associate Professor	Biomedical Engineering	10/2012–06/2018
Univ. of Southern California	Associate Professor	Ophthalmology	11/2008–10/2012
University of Miami	Assistant Professor	Ophthalmology	04/2004–11/2008

PART-TIME ACADEMIC EXPERIENCE (list most recent first)

NA.

NON-ACADEMIC EXPERIENCE

Chinalink NV, Belgium	Project leader	12/1998 – 9/1999
Shenzhen OUR R&D Institute	Assist. Director and Vice Director	5/1994–12/1998

PUBLICATIONS IN DISCIPLINE

Peer Reviewed Journal Articles

**Students and post-docs in my lab are marked as "S".

1. Z. Guan, Y. Li, **S. Jiao**, N. Yeasmin[S], P. J. Rosenfeld, S. R. Dubovy, B. L. Lam, and R. Wen, "A2E Distribution in RPE Granules in Human Eyes", *Molecules*, *25*, 1413 (2020).

2. Z. Nafar[S], R. Wen, Z. Guan, Yiwen Li, and **S. Jiao**, "Quantifying lipofuscin in retinal pigment epithelium in vivo by visible-light optical coherence tomography-based multimodal imaging", Sci Rep 10, 2942 (2020). https://doi.org/10.1038/s41598-020-59951

3. A. Dadkhah[S] and **S. Jiao**, "Integrating Photoacoustic Microscopy, Optical Coherence Tomography, OCT Angiography, and Fluorescence Microscopy for Multimodal Imaging", Exp Biol Med. 245(4), 342-347 (2020). doi: 10.1177/1535370219897584.

4. A. Dadkhah[S] and **S. Jiao**, "Optical coherence tomography-guided dynamic focusing for combined optical and mechanical scanning multimodal photoacoustic microscopy", *J Biomed Opt*. 24(12),1-6 (2019). doi:10.1117/1.JBO.24.12.121906

5. A. Dadkhah[S], J. Zhou[S], N. Yeasmin[S], and **S. Jiao,** "Integrated multimodal photoacoustic microscopy with OCT- guided dynamic focusing", Biomed. Opt. Express 10, 137-150 (2019)

6. Z. Nafar[S], R. Wen, and **S. Jiao**, "Visible-light optical coherence tomography-based multimodal system for quantitative fundus autofluorescence imaging", Exp. Biol. Med (2018). https://doi.org/10.1177/1535370218813529.

7. Z. Nafar[S], R. Wen, and **S. Jiao**, "Visible light OCT-based quantitative imaging of lipofuscin in the retinal pigment epithelium with standard reference targets", Biomed. Opt. Express 9, 3768-3782 (2018).

8. Z. Nafar[S], M. Jiang[S], R. Wen, and **S. Jiao**, "Visible-light optical coherence tomography-based multimodal retinal imaging for improvement of fluorescent intensity quantification", Biomed. Opt. Express 7, 4242-4248 (2016).

9. X. Liu[S], R. Wen, Y. Li and **S. Jiao**, "Optical coherence photoacoustic microscopy (OC-PAM) with an intensitymodulated continuous-wave broadband light source", J. Opt. **18** 064001 (2016).

10. T. Liu[S], R. Wen, B. L. Lam, C. A. Puliafito, and **S. Jiao**, "Depth-resolved rhodopsin molecular contrast imaging for functional assessment of photoreceptors", Sci Rep. **5**:13992 (2015). doi: 10.1038/srep13992. PubMed PMID: 26358529; PubMed Central PMCID: PMCPMC4566094. http://www.nature.com/articles/srep13992

11. S. Fan, L. Li, Q. Li, C. Dai, Q. Ren, **S. Jiao**, and C. Zhou, "Dual band dual focus optical coherencetomography for imaging the whole eye segment", Biomed. Opt. Express **6**, 2481-2493 (2015). doi: 10.1364/BOE.6.002481.

12. X. Liu[S], T. Liu[S], R. Wen, Y. Li, C. A. Puliafito, H. F. Zhang, and **S. Jiao**, "Optical coherence photoacoustic microscopy for in vivo multimodal retinal imaging", Opt. Letters **40**, 1370–1373 (2015).

13. T. Liu[S], X. Liu[S], R. Wen, B. L. Lam, **S. Jiao**, "In vivo imaging rhodopsin distribution in the photoreceptors with nano-second pulsed scanning laser ophthalmoscopy", Quantitative Imaging in Medicine & Surgery **5**, 63-68 (2015).

14. M. Jiang[S], T. Liu[S], X. Liu[S], and **S. Jiao**, "Simultaneous optical coherence tomography and lipofuscin autofluorescence imaging of the retina with a single broadband light source at 480nm", Biomed. Opt. Express 5, 4242-4248 (2014).

15. W. Song, Q. Wei, W. Liu, T. Liu, J. Yi, N. Sheibani, A. Fawzi, R. A. Linsenmeier, **S. Jiao**, H. F. Zhang, "A combined method to quantify the retinal metabolic rate of oxygen using photoacoustic ophthalmoscopy and optical coherence tomography", SCIENTIFIC REPORTS **4**, 6525 (2014).

16. S. Fan, Y. Sun, C. Dai, H. Zheng, Q. Ren, **S. Jiao**, Q. Zhou, "Accommodation-induced variations in retinal thickness measured by spectral domain optical coherence tomography", J. Biomed. Opt. **19**, 096012 (2014).

17. C. Dai[S], X. Liu[S], H. F. Zhang, C. A. Puliafito, and **S. Jiao**, "Absolute retinal blood flow measurement with a dual-beam Doppler optical coherence tomography", Investigative Ophthalmology & Visual Science **54**, 7998–8003 (2013).

18. X. Liu[S], C.-H. Wang, C. Dai, A. Camesa, H. F. Zhang, and **S. Jiao**, "Effect of contact lens on optical coherence tomography imaging of rodent retina," Current Eye Research, **38**(12), 1235-1240 (2013).

19. T. Liu, H. Li, W. Song, S. Jiao, and H. F. Zhang, "Fundus camera guided photoacoustic ophthalmoscopy," Current Eye Research, **38**(12), 1229-1234 (2013).

20. Wenzhong Liu, **Shuliang Jiao**, Hao F. Zhang, "Accuracy of retinal oximetry: a Monte Carlo investigation", J Biomed Opt. 18(6):66003 (2013).

21. Ji Yi, Wenzhong Liu, Shuliang Jiao, and Hao F. Zhang, "Combining light and sound for retinal imaging", SPIE Newsroom, 19 March 2013, DOI: 10.1117/2.1201303.004764.

22. Tan Liu, Hao F. Zhang and Shuliang Jiao, "Watching while listening to the interaction of photons with bio-tissues", SPIE Newsroom, 3 January 2013. DOI: 10.1117/2.1201212.004580

23. F. Zheng, **X. Zhang[S]**, C. Tat Chiu, B. L. Zhou, K. Kirk Shung, H. F. Zhang, and **S. Jiao**, "Laser-scanning photoacoustic microscopy with ultrasonic phased array transducer", Biomed. Opt. Express **3**, 2694–2699 (2012).

24. Wei Song, Qing Wei, Liang Feng, Vijay Sarthy, Shuliang Jiao, Xiaorong Liu, Hao F. Zhang, "Multimodal photoacoustic ophthalmoscopy in mouse", Journal of Biophotonics, 2012. DOI: 10.1002/jbio.201200061.

25. W. Song, Q. Wei, S. Jiao, and H.F. Zhang, "Integrated photoacoustic ophthalmoscopy and spectral-domain optical coherence tomography," Journal of Visualized Experiments 71, e4390 (2013).

26. **C. Dai[S]**, **X. Liu[S]**, **S. Jiao**, "Simultaneous optical coherence tomography and autofluorescence microscopy with a single light source", J. Biomed. Opt. **17**, 080502-1– 080502-3 (2012).

27. **M. Jiang[S]**, P. C. Wu, M. Elizabeth Fini, C. L. Tsai, T. Itakura, **X. Zhang[S]**, and **S. Jiao**, "Single shot dimension measurements of mouse eye using spectral-domain optical coherence tomography", Ophthalmic Surgery and Lasers & Imaging **43**, 251-256 (2012).

28. Wei Song, Qing Wei, Tan Liu, David Kuai, Janice M. Burke, **Shuliang Jiao**, and Hao F. Zhang, "Integrating photoacoustic ophthalmoscopy with scanning laser ophthalmoscopy, optical coherence tomography, and fluorescein angiography for a multimodal retinal imaging platform" J. Biomed. Opt. **17**, 061206-1–061206-7 (2012).

29. Tan Liu, Qing Wei, Wei Song, Janice M. Burke, **S. Jiao**, and Hao F. Zhang, "Near-infrared light photoacoustic ophthalmoscopy," Biomed. Opt. Express **3**, 792-799 (2012) http://www.opticsinfobase.org/boe/abstract.cfm?URI=boe-3-4-792.

30. **X. Y. Zhang**[S], H. F. Zhang, C. A. Puliafito, and **S. Jiao**, "Optical Coherence Photoacoustic Microscopy: accomplishing optical coherence tomography and photoacoustic microscopy with a single light source", J. Biomed. Opt. **17**, 030502 (2012).

31. C. Dai, C. Zhou, S. Fan, Z. Chen, X. Chai, Q. Ren, and **S. Jiao**, "Optical coherence tomography for whole eye segment imaging", Optics Express **20**, 6109–6119 (2012).

32. **X. Y. Zhang**[S], **J. Hu**[S], R. W. Knighton, X-R Huang, C. A. Puliafito, and **S. Jiao**, "Dual-band spectral-domain optical coherence tomography for *in vivo* imaging the spectral contrasts of the retinal nerve fiber layer", Optics Express **19**, 19653-19659 (2011).

33. H. F. Zhang, C. A. Puliafito, and **S. Jiao**, "Photoacoustic ophthalmoscopy for in vivo retinal imaging: current status and prospects", Ophthalmic Surgery and Lasers **42**, No. 4 (Suppl), S106–S115 (2011).

34. **X. Y. Zhang**[S], H. F. Zhang, C. A. Puliafito, and **S. Jiao**, "Simultaneous *in vivo* imaging of melanin and lipofuscin in the retina with multimodal photoacoustic ophthalmoscopy", J. Biomed. Opt. **16**, 080504 (2011); doi:10.1117/1.3606569.

35. Qing Wei, Tan Liu, **S. Jiao,** and Hao F. Zhang, "Image chorioretinal vasculature in albino rats using photoacoustic ophthalmoscopy", Journal of Modern Optics, **58**, 1997–2001 (2011).

36. T. Liu, Q. Wei, J. Wang, **S. Jiao**, and H. F. Zhang, "Combined photoacoustic microscopy and optical coherence tomography can measure metabolic rate of oxygen", Biomedical Optics Express **2**, 1147–1158 (2011). * Senior/corresponding author

37. **M. S. Jiang**[S], **X. Zhang**[S], C. A. Puliafito, H. F. Zhang, and **S. Jiao**, "Adaptive optics photoacoustic microscopy", Optics Express **18**, 21770-21776 (2010).

38. **X. Y. Zhang**[S], **M. S. Jiang**[S], A. A. Fawzi, X. A. Li, K. K. Shung, C. A. Puliafito, H. F. Zhang, and **S. Jiao**, "Simultaneous dual molecular contrasts provided by the absorbed photons in photoacoustic microscopy," Optics Letters **35**, 4018-4020 (2010).

39. **M. Ruggeri**[S], J. C. Major Jr., C. McKeown, **H. Wehbe**[S], R. W. Knighton, C. A. Puliafito, and **S. Jiao** "Retinal Structure of Birds of Prey Revealed by Ultra-High Resolution Spectral-Domain Optical Coherence Tomography", Investigative Ophthalmology & Visual Science **51**, 5789-5795 (2010).

40. Mohamed Abou Shousha, Victor L. Perez, Jianhua Wang, Takeshi Ide, **S. Jiao**, Qi Chen,

Victoria Chang, Nancy Buchser, Sander R. Dubovy, William Feuer, Sonia H. Yoo, "Use of Ultra High Resolution Optical Coherence Tomography to Detect In Vivo Characteristics of Descemet's Membrane in Fuchs' Dystrophy," Ophthalmology **117**, 1220-1227 (2010).

41. Jing Wang, Tan Liu, **S. Jiao**, Ruimin Chen, Qifa Zhou, K. Kirk Shung, Lihong V. Wang, Hao F. Zhang, "Saturation effect in functional photoacoustic imaging," J. Biomed. Opt. **15**, 021317-1 - 021317-5 (2010).

42. Qi Chen, Jianhua Wang, Aizhu Tao, Meixiao Shen, **S. Jiao**, and Fan Lu "Ultra-high Resolution Measurement by Optical Coherence Tomography of Dynamic Tear Film Changes on Contact Lenses," Invest. Ophthalmol. Vis. Sci. **51**, 1988-1993 (2010).

43. **S Jiao**, **Minshan Jiang**[S], **Jianming Hu**[S], Amani Fawzi, Qifa Zhou, K. Kirk Shung, Hao F. Zhang, and Carmen A. Puliafito, "Photoacoustic ophthalmoscopy for *in vivo* retinal imaging," Optics Express **18**, 3967-3972 (2010).

44. Hao F. Zhang, Jing Wang, Qing Wei, Tan Liu, **Shuliang Jiao***, and Carman A. Puliafito, "Collecting back-reflected photons in photoacoustic microscopy," Optics Express **18**, 1278-1282 (2010). *** Senior/corresponding author**

45. **S Jiao**, Zhixing Xie, Hao Zhang, and Carmen A. Puliafito, "Simultaneous multimodal imaging with integrated photoacoustic microscopy and optical coherence tomography", Optics Letters **34**, 2961-2963 (2009). *** Senior/corresponding author**

46. **Chuanqing Zhou**[S], Jianhua Wang, and **S Jiao**, "Dual channel dual focus optical coherence tomography for imaging accommodation of the eye", Optics Express **17**, 8947-8955 (2009).

47. Zhixing Xie, **S Jiao**, Hao Zhang, and Carmen A. Puliafito, "Laser-scanning optical resolution photoacoustic microscopy", Optics Letters **34**, 1771-1773 (2009).

48. Miloš Todorović, **S Jiao**, George Stoica, and Lihong V. Wang, "Skin cancer detection in SENCAR mice using Mueller optical coherence tomography", Journal of Innovative Optical Health Science **2**, 289-294 (2009).

49. **M. Ruggeri**[S], G. Tsechpenakis, **S. Jiao***, M. E. Jockovich, C. Cebulla, E. Hernandez, T. G. Murray, and C. A. Puliafito, "Retinal tumor imaging and volume quantification in mouse model using spectral-domain optical coherence tomography (INVITED)" Opt. Express **17**, 4074-4083 (2009). *** Senior/corresponding author**

50. Michael I Seider, Brandon J. Lujan, Giovanni Gregori, **S. Jiao**, and Carmen A. Puliafito, "Ultra-high Resolution Spectral Domain Optical Coherence Tomography of Traumatic Maculopathy", Ophthalmic Surgery Lasers & Imaging **40**, 516-521(2009).

51. Jianhua Wang, **S. Jiao**, Jayachandra R. Palakuru, and Carmen A. Puliafito, "In situ visualization of tears on contact lens using ultra high resolution optical coherence tomography", Eye and Contact Lens **35**, 44-49 (2009).

52. **S. Jiao** and **Marco Ruggeri**[S], "Polarization effect on the depth resolution of optical coherence tomography", J. Biomed. Opt. **13**, JBO Letters 060503-1 (2008).

53. Miloš Todorović, **S. Jiao**, Jun Ai, David Pereda-Cubián, George Stoica, Lihong V. Wang, "*In vivo* burn imaging using Mueller optical coherence tomography", Opt. Express **16**, 10279-10284 (2008).

54. **M. Ruggeri**[S], **H. Wehbe**[S], **S. Jiao***, M. E. Jockovich, C. Cebulla, Y. Duan, E. Hernandez, T. G. Murray, J. L. Goldberg and C. A. Puliafito, "Ultra High-Resolution Optical Coherence Tomography for quantitative evaluation of retinal tumor volume in mouse model of retinoblastoma", Journal of Innovative Optical Health Science **1**, 17-28 (2008).

*** Senior/corresponding author**

55. CM Cebulla, ME Jockovich, H Boutrid, Y Piña, M Ruggeri, **S Jiao**, SK Bhattacharya, WJ Feuer, and TG Murray*, "Lack of effect of SU1498, an Inhibitor of Vascular Endothelial Growth Factor Receptor-2, in a Transgenic Murine Model of Retinoblastoma", Open Ophthalmology Journal **2**, 62–67 (2008).

56. **H. Wehbe**[S], **M. Ruggeri**[S], **S. Jiao***, G. Gregori, C. A. Puliafito, and W. Zhao, "Automatic retinal blood flow calculation using spectral domain optical coherence tomography," Opt. Express **15**, 15193-15206 (2007). *** Senior/corresponding author**

57. **Marco Ruggeri**[S], **Hassan Wehbe**[S], **S Jiao***, Giovanni Gregori, Maria E. Jockovich, Abigail Hackam, Yuanli Duan, and Carmen A. Puliafito, "*In-vivo* three-dimensional high-resolution imaging of rodent retina with spectral-domain optical coherence tomography", Investigative Ophthalmology & Visual Science **48**, 1808–1814 (2007). *** Senior/corresponding author**

58. **S. Jiao**, **C. Wu**[S], R. W. Knighton, G. Gregori, and C. A. Puliafito, "Registration of high-density cross sectional images to the fundus image in spectral-domain ophthalmic optical coherence tomography," Opt. Express 14, 3368-3376 (2006). http://www.opticsinfobase.org/abstract.cfm?URI=oe-14-8-3368

59. **S. Jiao**, M. Todorovic, and L. V. Wang, "Fiber-based polarization-sensitive Mueller-matrix optical coherence tomography with continuous source-polarization modulation", Applied Optics, 44(26), 5463-5467 (2005).

60. **S. Jiao**, R. Knighton, X. Huang, G. Gregori, and C. A. Puliafito, "Simultaneous acquisition of sectional and fundus ophthalmic images with spectral-domain optical coherence tomography", Opt. Express 13, 444-452 (2005), http://www.opticsexpress.org/abstract.cfm?URI=OPEX-13-2-444

61. **S. Jiao** and L. V. Wang, "Reply to the comments on "Optical-fiber-based Mueller optical coherence tomography"", Optics Letters, 29(24), 2875-2877 (2004).

62. M. Todorović, **S. Jiao**, G. Stoica, and L. V. Wang, "Determination of local polarization properties of biological samples in the presence of diattenuation using Mueller optical coherence tomography", Optics Letters 29(20), 2402-2404 (2004).

63. **S. Jiao**, W. Yu, G. Stoica, and L. V. Wang, " Fiber-based Mueller optical coherence tomography", *Optics Letters*, 28(14), 1206–1208 (2003).

64. **S. Jiao**, W. Yu, G. Stoica, and L. V. Wang, " Phase-based polarization contrast in Polarization-sensitive Mueller-matrix optical coherence tomography and application in burn imaging", *Applied Optics*, 42(25), September, (2003).

65. **S. Jiao** and L. V. Wang, "Jones-matrix Imaging of biological tissues with quadraple-channel optical coherence tomography", *J. of Biomedical Optics* 7(3), 350–358 (2002)

66. **S. Jiao** and L. V. Wang, "Two-dimensional depth-resolved Mueller matrix of biological tissue measured with double-beam polarization-sensitive optical coherence tomography", *Optics Letters* 27(2), 101–103(2002).

67. **S. Jiao**, G. Yao, and L. V. Wang, "Depth-resolved two-dimensional Stokes vectors of backscattered light and Mueller matrices of biological tissue measured with optical coherence tomography", *Applied Optics* 39(34), 6318–6324(2000).

68. G. Yao, **S. Jiao**, and L. V. Wang, "Frequency-swept ultrasound-modulated optical coherence tomography in biological tissue by use of parallel detection", *Optics Letters* 25(10), 734–736(2000).

69. **S. Jiao**, D. Liu, Z. Liu, and Z. Li, "In situ deposition of $YBa_2Cu_3O_{7-x}$ high Tc superconducting thin film with laser evaporation of a nonsuperconducting powder target", *J. Huazhong Univ. of Sci. & Tech. (Chinese J.)* 23(sup. I), 112–114(1995).

70. **S. Jiao**, D. Liu, Z. Liu, and Z. Li, "In situ deposition of high Tc superconducting thin film on silicon substrate with Excimer laser", *J. Huazhong Univ. of Sci. & Tech. (Chinese J.)* 23(sup. I), 115–117(1995).

71. D. Liu, **S. Jiao**, W. Guan, *et al*., "DC discharge enhancement of chemical activity in laser-produced plasma", *Jpn. J. of Applied Physics* 33 part 1 (2), 1018–1022 (1994).

72. W. Song, D. Liu, **S. Jiao**, D. Lu, *et al*., "*In situ* deposition of $YBa_2Cu_3O_{7-x}$ superconducting thin film without high pressure oxygen during film cooling", *J. Vac. Sci. Technol. A* 12(2), 533–535(1994).

73. D. Liu, **S. Jiao**, Z. Li, and W. Guan, "Determination of electron density of laser-induced Y-Ba-Cu-O plasma with laser interferometry", *Acta Optica Sinica (Chinese J.)* 13(10), 897–901(1993).

74. **S. Jiao**, G. Pei, D. Liu, *et al*, "Thermodynamic study on the formation of orthogonal phase of the *in situ* $YBa_2Cu_3O_{7-x}$ superconducting thin film and the activity of oxygen", *Cryogenics and Superconductivity (Chinese J.)* 20(2), 12–16(1993).

75. **S. Jiao**, D. Liu, W. Guan, Z. Li, "Plasma expansion produced by Excimer laser evaporation of $YBa_2Cu_3O_{7-x}$ target", *Acta Optica Sinica (Chinese J.)* 12(12), 1117–1122(1992).

76. **S. Jiao**, S. Chen, Y. Fan, Z. Li, "Experimental study of the plasma ejected by pulse laser of solid surface", *Chinese Journal of Lasers* 19(9), 205–208(1992).

Chapters in Books

1. **Shuliang Jiao** and Hao F. Zhang, "Multimodal microscopy for comprehensive tissue characterization," in Advanced Biophotonics: Tissue Optical Sectioning, V. Tuchin and R. K. Wang ed. (Taylor & Francis, 2012).
2. Hao F. Zhang, and **Shuliang Jiao**, "Photoacoustic microscopy for ophthalmic applications," in Emerging Imaging Technologies in Medicine, Anastasio & La Riviere ed. (Taylor & Francis, 2012)

PRESENTED PAPERS AND LECTURES

1. Shuliang Jiao, Rong Wen, and Byron L. Lam, "VIS-OCT based multimodal retinal imaging", ICER-2016 Tokyo, Sept. 2016.

2. Shuliang Jiao, Rong Wen, and Byron L. Lam, "Depth-resolved imaging of rhodopsin molecular contrast with OCT", ARVO Imaging Conference 2016.

3. Shuliang Jiao, Tan Liu, Byron L. Lam, and Rong Wen, "Imaging rhodopsin molecular contrast in vivo by optical coherence tomography", ARVO 2015.

4. Tan Liu, Xiaojing Liu, Rong Wen, Yiwen Li, Carmen A. Puliafito, Hao F. Zhang and Shuliang Jiao, "Optical coherence photoacoustic microscopy for in vivo multimodal retinal imaging" ARVO 2015.

5. Xiaojing Liu, Tan Liu and Shuliang Jiao, "Optical coherence photoacoustic microscopy (OC-PAM) for in vivo multimodal eye retinal imaging", SPIE Photonics West 2015.

6. Xiaojing Liu, Minshan Jiang, Tan Liu and Shuliang Jiao, "Simultaneous optical coherence tomography and lipofuscin autofluorescence imaging of the retina with a single broadband light source at 480nm", SPIE Photonics West 2015.

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8. Xiaojing Liu, Tan Liu, Cuixia Dai, Hao F. Zhang, and Shuliang Jiao, "Absolute retinal blood flow measurement with a dual-beam Doppler optical coherence tomography", SPIE Photonics West 2014.

9. Wenzhong Liu, Wei Song, Shuliang Jiao, and Hao F. Zhang, "In vivo quantification of retinal oxygen metabolic rate in rodent" SPIE Photonics West 2014.

10. Tan Liu, Xiaojing Liu, Hao F. Zhang, and Shuliang Jiao, "Near infrared optical coherence photoacoustic microscopy (NIR-OC-PAM)" Photonics West 2014.

11. Xiaojing Liu, Hao F. Zhang, Shuliang Jiao, “Effect of contact lens on optical coherencetomography imaging of rodent retina” SPIE Photonics West 2014.

12. Shuliang Jiao, “Photoacoustic Ophthalmoscopy for In Vivo Retinal Imaging”, ARVO 2013 (Invited).

13. Hao F. Zhang, S. Jiao, T. Liu, and W. Song, “Photoacoustic ophthalmoscopy guided by real-time fundus camera” ARVO 2013.

14. Shuliang Jiao, “Simultaneous optical coherence tomography and autofluorescence microscopy with a single light source”, OSA Optics in the Life Sciences 2013 (Hawaii).

15. Shuliang Jiao, “Multimodal Photoacoustic retinal imaging: current status and prospects”, Invited, OSA Optics in the Life Sciences 2013 (Hawaii).

16. H. F. Zhang, S. Jiao, W. Song, Q. Wei, T. Liu, and W. Liu, "Photoacoustic microscopy based multimodal imaging system," SPIE Photonics West (2013).

17. D. Chen, S. Jiao, and H.F. Zhang, "Feasibility study of two-photon absorption-dependent photoacoustic microscopy," SPIE Photonics West (2013).

18. Cuixia Dai, Xiaojing Liu, Shuliang Jiao, “Simultaneous optical coherence tomography and autofluorescence microscopy with a single light source”, SPIE Photonics West (2013).

19. Hao F. Zhang, Shuliang Jiao, “Photoacoustic microscopy based multimodal imaging system (Invited Paper)”, SPIE Photonics West (2013).

20. Teng Ma, Xiangyang Zhang, Ruimin Chen, K. Kirk Shung, Shuliang Jiao, Qifa Zhou, “Optimized high-frequency ultrasonic transducer design for laser-scanning photoacoustic ophthalmoscopy”, SPIE Photonics West (2013).

21. Xiaojing Liu, Fan Zheng, Chi-Tat Chiu, Bill L. Zhou, K. Kirk Shung, Hao F. Zhang,Shuliang Jiao, “Laser-scanning photoacoustic microscopy with ultrasonic phased array transducer”, SPIE Photonics West (2013).

22. Xiangyang Zhang, Hao F. Zhang, Lixiang Zhou, and Shuliang Jiao, “Simultaneous *in vivo* imaging of melanin and lipofuscin in the retina with multimodal photoacoustic ophthalmoscopy,” *SPIE Photonics West* (2012).

23. Xiangyang Zhang, Robert W. Knighton, Xiang-Run Huang, Carmen A. Puliafito, and Shuliang Jiao, “Dual band OCT for imaging the spectral contrast of the retinal nerve fiber layer,” *SPIE Photonics West* (2012).

24. Hao F. Zhang and Shuliang Jiao, “Improving spatial resolution in photoacoustic imaging with adaptive optics,” *SPIE Photonics West* (2012)

25. Qing Wei, Shuliang Jiao, and Hao F. Zhang, “Hemoglobin oxygen saturation

measurement in rat retinal vessels by multi-wavelength laser-scanning photoacoustic ophthalmoscopy," *SPIE Photonics West* (2012).

26. Wei Song, Shuliang Jiao, and Hao F. Zhang, "Photoacoustic ophthalmoscopy in mouse eyes," *SPIE Photonics West* (2012).

27. Shuliang Jiao, Carmen A. Puliafito, Hao F. Zhang, **"**Simultaneous Imaging Of Multiple Molecular Contrasts With Photoacoustic Ophthalmoscopy", ARVO 2011.

28. Hao F. Zhang, Carmen A. Puliafito, Shuliang Jiao, "Imaging RPE Melanin Optical Absorption Using Photoacoustic Ophthalmoscopy", ARVO 2011.

29. J. M. Heur, J. G. Crump, Shuliang Jiao, David R. Hinton, "Utility of Zebrafish as a Model for Human Corneal Development and Disease", ARVO 2011.

30. S. Jiao and H. F. Zhang, "Advances in the technology development of multimodal photoacoustic ophthalmoscopy", SPIE Bios 2011.

31. S. Jiao and H. F. Zhang, "Integrated Photoacoustic Microscopy and Fiber-Optic Confocal Microscopy Using Signal Laser Source", OSA biomedical topical meeting 2010.

32. H. F. Zhang and S. Jiao, "Naturally Combined Photoacoustic Microscopy and Optical Coherence Tomography for Simultaneous Multimodal Imaging", OSA biomedical topical meeting 2010.

33. M. Jiang and S. Jiao, "Effective Bandwidth in Spectral-domain OCT", SPIE Bios 2010.

34. H. F. Zhang, S. Jiao, A. Fawzi, and C. A. Puliafito, "Integrated fiber-optic photoacoustic and confocal microscope for ophthalmic applications", ARVO 2010.

35. S. Jiao, H. F. Zhang, A. Fawzi, and C. A. Puliafito, "Optical coherence tomography guided photoacoustic ophthalmoscopy", ARVO 2010.

36. S. Jiao and J. Wang, "Novel OCT for real time simultaneous imaging of all the surfaces of the anterior segment for studying accommodation", ARVO 2009.

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38. S. Jiao, "Polarization in Low Coherence Interferometry", EMBC: 2009 ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE.

39. J. Wang, S. Jiao, M. Ruggeri, H. Wehbe, "Direct visualization of tear film on soft contact lens using ultra-high resolution spectral domain optical coherence tomography", SPIE Bios 2008.

40. M. Ruggeri, J. C. Major, C. McKeown, H. Wehbe, S. Jiao, and C. A. Puliafito, "in vivo imaging of raptor retina with ultra high resolution spectral domain optical coherence

tomography", SPIE Bios 2008.

41. H. Wehbe, M. Ruggeri S. Jiao, G. Gregori, and C. A. Puliafito, "Automatic retinal blood flow calculation using spectral domain optical coherence tomography", SPIE Bios 2008.

42. S. Jiao, J. Wang, and C. A. Puliafito, "Contrast Enhancement for Imaging the Tears and Contact Lens with Optical Coherence Tomography", ARVO 2008.

43. S. Jiao, M. Ruggeri, H. Wehbe, G. Gregory, M. E. Jockovich, A. Hackam, and C. A. Puliafito, "Imaging of eye tumor in the mouse model of retinoblastoma with spectral-domain optical coherence tomography", SPIE Bios 2007.

44. M. Ruggeri, H. Wehbe, S. Jiao, G. Gregori, M. E. Jockovich, A. Hackam, Y. Duan, and C. A. Puliafito, "Spectral domain optical coherence tomography for *in-vivo* three dimensional retinal imaging of small animals", SPIE Bios 2007.

45. H. Wehbe, M. Ruggeri, S. Jiao, G. Gregori, and C. A. Puliafito, "Automatic retinal blood vessel parameter calculation in spectral domain optical coherence tomography", SPIE Bios 2007.

46. S. Jiao, M. Ruggeri, H. Wehbe, G. Gregory, M. E. Jockovich, and C. A. Puliafito, "Quantitative imaging of eye tumor in the mouse model of retinoblastoma with spectral-domain optical coherence tomography", ARVO 2007.

47. M. Ruggeri, H. Wehbe, S. Jiao, G. Gregori, J. Wang, A. Hackam, V. Porciatti, M. E. Jockovich, Y. Duan, and C. A. Puliafito, "Non Contact *in-vivo* Small Animal Ocular imaging with Spectral Domain Optical Coherence Tomography", ARVO 2007.

48. H. Wehbe, M. Ruggeri, S. Jiao, and C. A. Puliafito, "Quantitative 3D Angiogram using Spectral-domain Ophthalmic Optical Coherence Tomography", ARVO 2007.

49. S. Jiao, C. Wu, R. Knighton, G. Gregori, and C. A. Puliafito, "Image registration in ophthalmic spectral-domain optical coherence tomography," OSA Biomedical topical meeting, Ft Lauderdale 2006.

50. S. Jiao, S. Jiao, C. Wu, X. Huang, G. Gregori, R. Knighton, and C. A. Puliafito, "High-density Image Registration and Retinal Blood Vessel Study in Ophthalmic Spectral-domain OCT," ARVO 2006.

51. C. Wu, S. Jiao, G. Gregori, R. Knighton, and C. A. Puliafito, "Reconstruction of 3D agiogram from Spectral-domain OCT images," ARVO 2006.

52. S. Jiao, R. Knighton, G.Gregori, X. Huang, C. A. Puliafito, "Macula Mapping and Simultaneous Acquisition of Sectional and Fundus Ophthalmic Images With Three-Dimensional Spectral-Domain Optical Coherence Tomography", presentation, ARVO 2005.

53. S. Jiao, R. W. Knighton, X. R. Huang, G. Gregory, C. A. Puliafito, "Simultaneous acquisition of sectional and fundus ophthalmic images with spectral-domain optical coherence tomography", SPIE Photonics West, 01/22/2005–01/27/2005, San Jose, California

54. S. Jiao, Tseng-Ming Hsieh, Jun Ai, Milos Todorovic, George Stoica, Lihong V. Wang, "Characterization of the polarization properties of biological tissues with fiber-based Mueller-matrix optical coherence tomography" in *Laser Interaction with Tissue and Cells XV*, Steven L. Jacques, William P. Roach; Eds, Proc. SPIE 5319 130(2004).

55. S. Jiao, T. Hsieh, J. Ai, M. Todorovic, G. Stoica, and L. V. Wang, "Fiber-based polarization-sensitive Mueller-matrix optical coherence tomography with continuous source polarization modulation" in *Coherence Domain Optical Methods and Optical Coherence Tomography in Biomedicine VIII* , V. V. Tuchin, J. A. Izatt, J. G. Fujimoto; eds, Proc. SPIE 5316, 350(2004).

56. Milos Todorovic, S. Jiao, George Stoica, Lihong V. Wang, "Depth-wise differentiation of Jones matrices obtained from Mueller optical coherence tomography" in *Coherence Domain Optical Methods and Optical Coherence Tomography in Biomedicine VIII* , V. V. Tuchin, J. A. Izatt, J. G. Fujimoto; eds, Proc. SPIE 5316, 370(2004).

57. S. Jiao, W. Yu, G. Stoica, and L. V. Wang, "Cancellation of the polarization distortions in fiber-based polarization-sensitive Mueller-matrix optical coherence tomography", Coherence Domain Optical Methods and Optical Coherence Tomography in Biomedicine VII, SPIE Conference on Biomedical Optics 2003, 25–31 Jan. 2003, San Jose, CA.

58. S. Jiao, W. Yu, G. Stoica, and L. V. Wang, "Multiple-channel Mueller-matrix optical coherence tomography in biological tissue", 24th Annual International Conference of the IEEE/EMBS and annual fall meeting of the BMES, Houston, Texas, 2002.

59. S. Jiao and L. V. Wang, "Multi-channel Mueller-matrix optical coherence tomography", OSA Biomedical Topical Meetings, Miami Beach, Florida, 2002.

60. L. V. Wang and S. Jiao, "Quantification of polarization in biological tissue by optical coherence tomography", Laser-Tissue Interaction XIII: Photochemical, Photothermal, and Photomechanical, *Proceedings of SPIE* 4617, San Jose, California, 2002.

61. S. Jiao, G. Yao, and L. V. Wang, "Depth-resolved two dimensional Stokes vectors of backscattered light and Mueller matrices of biological tissue measured by optical coherence tomography", Nineteenth Annual Houston Conference on Biomedical Engineering Research, Houston, 2001.

62. S. Jiao, G. Yao, and L. V. Wang, "Depth-resolved degree of polarization of backscattered light and two-dimensional Mueller matrices of biological tissue measured by optical coherence tomography", Laser-Tissue Interaction XII: Photochemical, Photothermal, and Photomechanical, *Proceedings of SPIE* 4257, San Jose, California, 2001.

63. S. Jiao, D. Liu, and Z. Li, "Determination of electron density of laser-produced Y-Ba-Cu-

O plasma with laser interferometry", *SPIE* 1553 Laser Interferometry IV: Computer-aided Interferometry, San Diego, California, 1992.

CREATIVE WORK

- The breakthrough technology, visible-light OCT based rhodopsin molecular contrast imaging of the retina, is promising to provide functional mapping of the rod photoreceptors. It has potential significant impact in the diagnosis of major blinding diseases like age-related macular degeneration (AMD) and retinitis pigmentosa (RP). It also provides a functional outcome measure for regenerative treatment of the degenerative retinal diseases, such as stem cell therapy and gene therapy. The technology was highlighted in **Medical News** (http://www.medicalnewsinc.com/clinical/article/20359500/imaging-rhodopsin-could-shed-light-on-retinal-disorders-in-joint-project-between-bascom-palmer-eye-institute-and-florida-international-university) and **Review of Ophthalmology** (http://www.reviewofophthalmology.com/content/t/imaging_and_diagnostic_instruments/c/57369/)
- My lab invented a new imaging technology termed "optical coherence photoacoustic microscopy" (OC-PAM), which can accomplish the functions of OCT and photoacoustic microscopy (PAM) simultaneously by using a single illuminating light source. In OC-PAM, each laser pulse generates both one OCT A-line and one PAM A-line simultaneously; as a result, the two imaging modalities are intrinsically registered in the lateral directions. Since the OC-PAM images are provided by the same photons it may provide an unprecedented platform for the study of optical absorption and scattering in biological tissues. The technology was achieved with three different designs: using a pulsed broadband laser centered at 580 nm, using a NIR pulsed broadband laser centered at 800 nm, and using modulated continuous wave SLD light source centered at 840 nm. The invention has been awarded an US patent (US 9,442,095 B2). The work was also reported in SPIE Newsroom (http://spie.org/newsroom/4580-watching-while-listening-to-the-interaction-of-photons-with-bio-tissues).
- We were the first to use home-made ultrahigh resolution spectral-domain OCT to study the retinal structures of birds of prey in vivo. The study was published in the journal Investigative Ophthalmology and Visual Science. The publication was highlighted in Science Daily in July 2010. (High-Resolution Imaging Expands Vision Research of Live Birds of Prey, http://www.sciencedaily.com/releases/2010/07/100721133229.htm).
- We invented the algorithms for constructing retinal fundus image, which solved the problem of OCT image registration. The technology was awarded a patent (US patent 7,301,644) and licensed to Carl Zeiss Meditech in 2005. The technology was also highlighted in Ophthalmology Times in May 2005. (Three-dimensional spectral-domain OCT solves problem of precise spatial registration. http://ophthalmologytimes.modernmedicine.com/ophthalmologytimes/article/articleDetail.jsp?id=159344).

WORKS IN PROGRESS

Pending grant Proposals

NIH/NEI 1R01EY027909-01 (PI: Jiao)
Visible-light OCT-based quantitative multimodal retina imaging
Project period: 03-01-2019 to 02-28-2024
Total direct cost: $2,497,176
Retinal degenerative disorders and glaucoma are major causes of visual disability. We propose new multimodal imaging technologies based on a visible-light optical coherence tomography platform to quantitatively image the distribution of lipofuscin, a nondegradable lipid/protein aggregates accumulated in the retinal pigment epithelium, and the spectral reflectance of the retinal nerve fiber layer. These novel imaging technologies will add a significant clinical tool for diagnosis, staging, and follow-up of retinal degenerative disorders and glaucoma, and will have a great impact on patient care and clinical trials for potential treatments.
PI: Shuliang Jiao; Co-I: Rong Wen and Byron Lam (Bascom Palmer Eye Institute)

FUNDED RESEARCH

ACTIVE

NIH/NEI 1R01EY026643-01A1 (PI: Jiao)
Imaging the functional biomarker of photoreceptors
Project period: 04-01-2017 to 03-31-2021
Total cost: $2,007,145
Retinal degenerative disorders are major causes of visual disability. We propose new imaging technologies based on visible light optical coherence tomography to quantitatively image the distribution of rhodopsin, the functional biomarker of rod photoreceptors. These novel imaging technologies will add a significant clinical tool for diagnosis, staging, and follow-up of retinal degenerative disorders, and will have a great impact on patient care and clinical trials for potential treatments.
PI: Shuliang Jiao; Co-I: Rong Wen and Byron Lam (Bascom Palmer Eye Institute)

COMPLETED

NIH/NEI 1R01EY019951-01A1 (Leading PI: Jiao)
Multi-modal functional retinal imaging for diabetic retinopathy
Project period: 03-01-2011 to 02-29-2017
Total direct cost: $2.836 million
The proposed research will provide a powerful multimodal functional retinal imaging tool that enables the early diagnosis of diabetic retinopathy before clinical signs occur. It also provides a unique tool for the research on the pathological pathways of diabetic retinopathy and the development of new therapies.
PIs: Shuliang Jiao (Leading), Hao Zhang, and Amani Fawzi (Northwestern University)

Department of Defense W81XWH-11-1-0197 (PI: Jiao)
Eye TVR: Eye Trauma & Visual Restoration Team
02-18-2011 – 02-17-2012 (base year)
Total costs: $698,000
This was a congressional appropriation (potentially renewable annually) to continue the advanced imaging project and extend to other projects. I served as the Co-PI of the imaging program (with Carmen Puliafito). We were in the process of writing the grant proposal that is required by TATRC to obligate the funds when I left the Miami.
PI: Shuliang Jiao

Coulter Translational Award (Phase 1) **(PI: Jiao)**
Multi-modal photoacoustic ophthalmoscope for in vivo retinal imaging
Project period: 09-01-2010 – 08-31-12
Total costs: $180,000
This is a translational award. The purpose of the award is to support the transition from an idea into a product. The supported product development is OCT guided laser-scanning photoacoustic ophthalmoscope.
PI: Shuliang Jiao

NIH/Director's Office Challenge Grant 1RC4EY021357 (Subcontract from Northwestern, 1 month effort)
Integrated Multidisciplinary Strategies for Detection of Diabetic Retinopathies
Project period: 10/1/2010-9/30/2013
Total direct cost: $800,000
The goal of this project is to discover a multidisciplinary approach based on functional optical imaging, metabolomics, and gene expression analysis to determine the role that thrombospondin-1 (TSP1) plays in retinal vascular homeostasis and vasculopathies associated with diabetes. The proposed studies will be carried out in a unique mouse model of diabetic retinopathy (Akita/+ TSP1-/-), which develops an extensive array of diabetic retinopathies (including acellular capillaries and saccular microaneurysms) and truly replicates the pathological response seen in humans.
PIs: Sheibani (contact), Zhang, Assadi Assadi-Porter

Research Contract with Carl Zeiss Meditech (PI: Jiao)
Evaluation of Ophthalmic Imaging Devices
Start date: 10/1/2009 Duration: 18 months
Total direct cost: $100,000
PI: Shuliang Jiao

NIH/NIBIB 1 R21 EB008800-01 (PI: Jiao)
Ophthalmic Imaging of Small Animal Models of Ocular Diseases
Project period: 09-01-2008 to 08-30-2011, on no-cost extension
Total direct cost: $275,000

The goal of the proposed research is to provide a powerful tool that will greatly accelerate the research on ocular diseases like glaucoma, retinoblastoma, and corneal transplant. It promises not only to reduce the number of animals required but also possible longitudinal studies that are currently impossible to conduct.

Juvenile Diabetic Research Foundation (PI: Zhang)
Functional Imaging of Diabetic Retinopathy
Project period: 08-01-2009 – 04-30-11, on no-cost extension
Total costs: $110,000
The goal of the proposed research is to develop a functional imaging technology for the early diagnosis of diabetic retinopathy.
Role in the grant: Co-PI

US Army (DOD) Telemedicine and Advanced Technology Research Center USAMRAA , W81XWH-07-1-0188 (PI: Jiao)
Development and Application of Advanced Ophthalmic Imaging Technology to Enhance Military Ocular Health Capabilities Project period: 03-06-2007 to 03-05-2008
Total direct cost: $194,986
This was a preliminary grant made to support project development in the area of military health and telemedicine. Dr. Jiao is the PI of the funded pilot project.

NIH/NEI R03 EY016420 (PI: Jianhua Wang)
Characterization of Tear dynamics
Project period: 09-30-2005 to 08-30-2008
Total direct cost: $97,103
The purpose of this project is to characterize human tear dynamics using custom built optical coherence tomography.
Role in the grant: Co-investigator.

University of Miami Scientific Awards Committee Research Grant Application (Jianhua Wang)
Spectral-domain optical coherence tomography for imaging human tear dynamics
Project period: 2006-2007
Total direct cost: $20,000

Carl Zeiss Meditec Sponsored Study (Knighton)
Spectral-domain OCT application study
Project period: 2005-2006
Effort: 50%

PROPOSALS SUBMITTED BUT NOT FUNDED

(List title of project, funding agency, project dates, and amount of requested funding)

NIH/NEI 1U01 EY025476-01 (Leading PI: Jiao)
Functional Imaging of Photoreceptor Regeneration
Project period: 04-01-2015 to 03-31-2020
Total cost: $4,968,438
PIs: Shuliang Jiao (Leading), Rong Wen and Byron Lam (Bascom Palmer Eye Institute)

NIH/NEI 1R01EY024646-01 (PI: Jianhua Wang)
Quantitative mapping of rhodopsin and cone opsin by Parallel Space-Time-Coded SLO
Project period: 07-01-2014 to 06-30-2019
Total direct cost: $2,499,897
Role: Co-investigator, 50% funding

NIH/NEI 1R21 EY022173-01A1 (PI: Jiao)
Optical coherence photoacoustic microscopy (OC-PAM)
Project period: 04-01-2013 to 03-31-2015
Total cost: $275,000
PI: Shuliang Jiao

PATENT DISCLOSURES, APPLICATIONS, AND AWARDS

Awarded patents:

1. **Shuliang Jiao**, Rong Wen, Byron Lam, and Tan Liu, "Functional Imaging of Photoreceptors in the retina by rhodopsin mapping", U. S. Patent US 10,485,418 B2.

2. **Shuliang Jiao**, Rong Wen, and Byron Lam, "Quantitative Retinal autofluorescence Mapping with Multimodal Imaging Technology", U. S. Patent US 10,052,019 B1.

3. **Shuliang Jiao** and Rong Wen, "Device for Assisting Visually Impaired Patients", U.S. Patent US 9,952,434 B2.

4. **Shuliang Jiao** and Hao Zhang, "Optical Coherence Photoacoustic microscopy", U.S. Patent US 9,442,095 B2.

5. **Shuliang Jiao**, Xiangrun Huang, and Robert W. Knighton, "SPECTRAL CONTRAST FOR GLAUCOMA IMAGING", U.S. Patent US 8,641,193 B2

6. Hao Zhang and **Shuliang Jiao**, "SYSTEMS AND METHODS FOR PHOTOACOUSTIC OPTHALMOSCOPY" U.S. Patent US 8,016,419.

7. Hao Zhang and **Shuliang Jiao**, "SYSTEMS AND METHODS FOR PHOTOACOUSTIC OPTHALMOSCOPY" U.S. Patent US 8,025,406.

8. Robert W. Knighton, **Shuliang Jiao**, Giovanni Gregori, and Carmen A. Puliafito, "Macula mapper using high-speed OCT", US patent **7,301,644**.

9. Lihong V. Wang, and **Shuliang Jiao**, "Method and apparatus for obtaining information from polarization-sensitive optical coherence tomography", US patent **6,961,123**.

Patents applications:

10. Hao Zhang and **Shuliang Jiao**, "SYSTEMS AND METHODS FOR PHOTOACOUSTIC OPTHALMOSCOPY" U.S. Patent Application No. **12/726,182**.

11. Hao Zhang and **Shuliang Jiao**, "SYSTEMS AND METHODS FOR PHOTOACOUSTIC OPTHALMOSCOPY" U.S. Patent Application No. **12/726,186**.

12. **Shuliang Jiao**, Rong Wen, Byron Lam, and Tan Liu, "FUNCTIONAL IMAGING OF PHOTORECEPTORS IN THE RETINA BY RHODOPSIN MAPPING", U.S. Patent Application No. **20170035291.**

13. Hao F Zhang and **Shuliang Jiao**, "ULTRASONIC IMAGING DEVICE", U.S. Patent Application No. **20100249562**

OFFICES HELD IN PROFESSIONAL SOCIETIES
N/A

OTHER PROFESSIONAL ACTIVITIES AND PUBLIC SERVICE

Grant-review for federal funding agencies and organizations

NIH SBIB-V (58) R Challenge grant Panel #23 (June 2009)

NIH ZRG1 ETTN-E 12 (June 2011)

NIH ZRR1 CR-3 (01) (Sept. 2011)

NIH ZRG1 ETTN-L (30) I (Feb. 2012)

NIH NOIT (Feb. 2012) Neuroscience and Ophthalmic Technologies Study Section

NIH ETTN B(80) (Feb. 2012)

AIBS (American Institute of Biological Sciences, Jan. 2012)

NIH NOIT (Jun 2012) Neuroscience and Ophthalmic Technologies Study Section

NIH ZRG1 ETTN-L (50) R Innovations in Biomedical Computational Sci. and Tech.

NIH SBIR [R43/R44] Development and Translation of Medical Technologies that Reduce Health Disparities (Jan. 2013)

NIH 2014/01 ZRG1 ETTN-L (30) I, Special Emphasis Panel/Scientific Review Group (Oct. 2013).

NIH 2014/01 NOIT, Special Emphasis Panel/Scientific Review Group (Oct. 2013).

NIH ZDK1 GRB-9(O3), Diabetes Complications, NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES SPECIAL EMPHASIS PANEL

(June, 2014)

NIH Special Emphasis Panel ZEY1 VSN 01, NEI Glaucoma and Posterior Eye Research and Training Grant Applications (July, 2014)

NIH 2015/05 ZEY1 VSN (01) 1NEI Clinical and Epidemiological Grant and Cooperative Agreement Applications (March 2015)

NIH ZEY1 VSN (02) National Eye Institute Special Emphasis Panel (June 2015)

German Research Foundation (DFG) grant proposal review (June 2015)

NIH NOIT Neuroscience and Ophthalmic Technologies Study Section (Feb. 2016)

NIH Special Emphasis Panel/Scientific Review Group 2016/05 ZRG1 ETTN-L (Feb. 2016)

NIH ZEY1 VSN (04) NEI Mentored Training Grant Applications (K08) (March 2016)

NIH DPVS Diseases and pathophysiology of the Visual System (10/27/2016 - 10/28/2016)

University of Washington's NIH Diabetes Research Center (DRC, March, 2017)

NIH DPVS Diseases and pathophysiology of the Visual System (06/18/2017 - 06/20/2017)

NIH NEI K99 GRANT REVIEW (11/1/2017 – 11/12/2017)

NIH NEI K99 Grant review (03/13/2018 – 03/14/2018)

NIH NOIT Neuroscience and Ophthalmic Technologies Study Section (Feb. 2018)

NIH ZEY1 VSN (01) NEI Audacious Goals Initiative on Translation-Enabling Models (U24) (Aug. 2018)

FWF Austrian Science Fund grant proposal review (Nov. 2018)

NIH 2019/05 ZRG1 EITN-L (08) F - EITN Overflow (March 2019)

NIH DPVS Diseases and pathophysiology of the Visual System (03/05/2020 - 03/06/2020)

NIH NEI Special Emphasis Panel ZEY1-VSN(06) (07/30/2020)

Editorial Board:

2012 –present Ophthalmic Surgery, Lasers and Imaging Retina (OSLI Retina).

2018 –present Experimental Biology and Medicine (EBM, Associate Editor)

Journal Reviewer

Physical Review Letters
IEEE Transactions on Medical Imaging
Journal of Biomedical Optics
Optics Letters
Optics Express
Biomedical Optics Express
Journal of Optical Society of America A

Applied Optics
Journal of Bio-photonics
Optics Communications
Investigative Ophthalmology and Vision Science
Journal of Vision
American Journal of Ophthalmology
Journal of Innovative Optical Health Science
Ophthalmic Surgery Lasers & Imaging
Chinese Optics Letters
PLOS One
Optics and Lasers in Engineering
BMJ Open Ophthalmology
IEEE Photonics Journal
BMC Ophthalmology
Scientific Reports

Conference Service

Co-organizer for the section "Advances in Imaging the Eye", International Congress of Eye Research (ICER), Beijing, 2008

Chair for the workshop "OCT imaging of the eye", 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2012), San Diego, 2012.

Chair for the section "Optical Imaging II", 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2012), San Diego, 2012.

Co-Chair for the section "Optical Imaging III", 34th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2012), San Diego, 2012.

Chair and organizer, "Functionally imaging the retina", VI International Conference on Computational Bioengineering (ICCB 2015), September 14-16, 2015, Barcelona, Spain.

Memberships

National Academy of Inventors (NAI): senior member
Optical Society of America (OSA): senior member
Society of Photographic Instrumentation Engineers (SPIE)
Association for Research in Vision and Ophthalmology (ARVO)

OTHER SERVICE TO THE UNIVERSITY AND THE COMMUNITY

Department Service

2016 – 2018	BME Graduate Program Director
2013 – Present	Supervising BME teaching Lab
2012 – 2015	BME Undergraduate Program Committee Member
2015 – 2016	Chair New Faculty Search Committee
2013 – 2014	BME W. Coulter Lecture Series Organizer

College Service

2018– Present	Tenure and Promotion Committee of the College of Engineering and Computing
2016	Tenure and Promotion Committee of the College of Engineering and Computing
2016	Member of the IT committee

University Service

2015 – 2016	Member of FIU IRB
2014	Member of the Steering Committee of Aging Initiative