

1. **Date:** February 1, 2026

PERSONAL

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2. **Name:** Fabrice Manns
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 4. **Office Phone:** 305 284 2335 (Biomedical Engineering) / 305 482 4548 (Ophthalmology)
 5. **Home Address:** 6151 SW 64th Avenue, South Miami, FL 33143
 6. **Current Academic Rank:** Professor
 7. **Primary Department:** Biomedical Engineering
 8. **Secondary or Joint Appointments:** Ophthalmology (Joint Appointment)
 9. **Citizenship:** United States, France
 10. **Visa Type:** N/A

HIGHER EDUCATION

11. **Institutional**
University of Miami, Department of Biomedical Engineering; PhD; May 1996.
University of Bordeaux I, Bordeaux, France; Diplôme d'Etudes Approfondies, Mention Bien (MS, with Distinction); September 1991.
Ecole Nationale Supérieure d'Electronique et de Radioélectricité de Bordeaux (ENSERB), Bordeaux, France; Diplôme d'Ingénieur en Electronique (Electrical Engineering Degree); June 1991.
12. **Non institutional:** None.
13. **Certification, licensure:** None.

EXPERIENCE

14. **Academic**

Academic Appointments

Department of Biomedical Engineering, University of Miami College of Engineering (Primary Appointment);
Department of Ophthalmology, University of Miami School of Medicine (Secondary Appointment);

Professor; 6/13-present.

Associate Professor (with tenure); 6/06-5/13.

Assistant Professor; 8/00-5/06.

Research Assistant Professor; 10/97-8/00.

University of Miami College of Engineering

Interim Associate Dean for Research, 8/15/22-8/14/25

Interim Associate Dean for Graduate Studies, 6/22-8/15/23

Department of Biomedical Engineering, University of Miami College of Engineering

Chair, 2/27/17-pres.

Associate Chairman: 4/08-3/17.

Graduate Program Director: 9/09-3/17.

Acting Chair, Academic Year 2013-2014; 8/15/13-5/31/14

Department of Biomedical Engineering, University of Miami College of Engineering;

Adjunct Instructor; 6/96-10/97.

Department of Ophthalmology, University of Miami School of Medicine;
Post-doctoral Associate; 6/96-10/97.

Laboratory Appointments

Ophthalmic Biophysics Center, Bascom Palmer Eye Institute, University of Miami School of Medicine;
Co-Director; 1/01-present.

Biomedical Optics Laboratory, Department of Biomedical Engineering, University of Miami College of Engineering
Director; 8/97-present

Ophthalmic Biophysics Center, Bascom Palmer Eye Institute, University of Miami School of Medicine;
Manager, Laser Research Laboratories; 1/95-1/01.

Department of Biomedical Engineering, University of Miami College of Engineering;
Graduate Research Assistant; 02/92-06/96.

IXL Microelectronics Laboratory; University of Bordeaux I, Bordeaux, France;
Research Engineer; 9/91-1/92.

IXL Microelectronics Laboratory; University of Bordeaux I, Bordeaux, France;
Research Assistant; 1/91-9/91.

Confocal Microscopy Group, European Molecular Biology Laboratory, Heidelberg, Germany;
Trainee; 9/90-12/90.

15. **Non Academic:** None.

16. **Military:** None.

PUBLICATIONS

17. **Books and monographs published:**

1. **Manns F**; The correction of ametropia by photoablation of the cornea with a scanning beam; University of Miami Dissertation, May 1996, Coral Gables, FL.

18. **Juried or refereed journal articles and exhibitions**

97. Schumacher J, Zevallos-Delgado C, Rohman L, Schill AW, Singh M, Zhang H, Ruggeri M, Parel JM, **Manns F**, Larin KV, Scarcelli G. Clinical multimodal Brillouin microscopy-optical coherence elastography system for lens biomechanics. *Journal of Biomedical Optics* **2025**; 30(12); 124511. doi: 10.1117/1.JBO.30.12.124511.
96. Rohman L, Navia JC, Zevallos-Delgado C, Durkee H, Schumacher J, Nagalla K, Zaleski N, Ruggeri M, Singh M, Aglyamov S, Parel JM, Scarcelli G, Larin K, **Manns F**. In vivo safety evaluation of acoustic radiation force for optical coherence elastography of the crystalline lens. *Translatonal Vision Science and Technology*, 14(8), 35. <https://doi.org/10.1167/tvst.14.8.35>.
95. Ruggeri M, Pozzo Guiffirida F, Truong N, Parel JM, Cabot F, Abou Shousha M, **Manns F**, Ho A. Wide-field self-referenced optical coherence tomography imaging of the corneal microlayers. *Optics Letters* **2025**; 50(4):1204-1207. <https://doi.org/10.1364/OL.542289>
94. Cabeza Gil I, Ruggeri M, **Manns F**. Quantification of the anterior-centripetal movement of the ciliary muscle during accommodation using dynamic OCT imaging. *Translatonal Vision Science and Technology* **2025**; 14:17. <https://doi.org/10.1167/tvst.14.1.17>
93. Ferreira BCLB, Durkee HA, Aston L, Gonzalez L, Peterson J, Ahemd A, Navia JC, Echeverri Tibin F, Aguilar MC, Gonzalez A, Ruggeri M, **Manns F**, Amescua G, Parel JM, Leblanc RM. Effect of concentration on singlet oxygen generation from xanthene-based photosensitizers. *Journal of Photochemistry and Photobiology A: Chemistry*. **2025**; 461: 116167. <https://doi.org/10.1016/j.jphotochem.2024.116167>
92. Zevallos-Delgado C, Mekonnen TT, Duvvuri C, Rohman L, Schumacher J, Singh M, Aglyamov SR, Twa MD, Parel JM, Scarcelli G, **Manns F**, Larin KV. Acoustic Radiation Force Optical Coherence Elastography of the

- crystalline lens: Safety. *Translational Vision Science and Technology*. **2024**;13(12):36. <https://doi.org/10.1167/tvst.13.12.36>
91. Natarajan R, Maceo Heilman B, Ruggeri M, Ho A, Singh VM, Augusteyn R, Parel JM, Vaddavalli PK, Manns F. Age dependence of the average refractive index of the isolated human crystalline lens. *Biomedical Optics Express* **2024**; 5901-5911. <https://doi.org/10.1364/BOE.536501>
 90. Heilman BM, Mote K, Batchelor W, Rowaan C, Gonzalez A, Arrieta E, Ruggeri M, Ziebarth N, Cabrera-Ghayouri S, Dibas M, Parel JM, **Manns F**. Effect of compound treatments on mouse lens viscoelasticity. *Experimental Eye Research*; **2024**:109992. doi: 10.1016/j.exer.2024.109992.
 89. Schumacher J, Rodriguez Lopez R, Larin K, **Manns F**, Scarcelli G. Functional effects of the spatial-varying lens mechanical properties in accommodation. *Journal of Physics: Photonics*; **2024**; 6(3):035021. doi: 10.1088/2515-7647/ad3e55. (IF = 3.8).
 88. Natarajan R, Heilman BM, Ho A, Singh VM, Ruggeri M, Mohamed A, Reddy JC, Parel JM, Vadavalli PK, **Manns F**. Peripheral defocus of monofocal intraocular lenses. *Journal of Cataract and Refractive Surgery* **2024**; 50(6):637-643. <https://doi.org/10.1097/j.jcrs.0000000000001441>
 87. Durkee H, Ruggeri M, Rohman L, Williams S, Ho A, Parel JM, **Manns F**. Dynamic refraction and anterior segment OCT biometry during accommodation. *Biomedical Optics Express* **2024**; 15 (5): 2876-2889. <https://doi.org/10.1364/BOE.512193>
 86. Truzzi S, **Manns F**, Parel JM, Ruggeri M. Handheld contact-type OCT and color fundus system for retinal imaging. *Biomedical Optics Express* **2024**; 15 (4): 2681-2696. <https://doi.org/10.1364/BOE.520735>
 85. Martinez-Enriquez E, Heilman BM, De Castro A, Mohamed A, Ruggeri M, Zvietcovich F, **Manns F**, Marcos S. Estimation of the full shape of the crystalline lens from OCT: validation using stretched donor lenses. *Biomedical Optics Express*, **2023**; 14 (8): 4261-4276.
 84. Cabeza Gil I, **Manns F**, Calvo B, Ruggeri M. Quantification of scleral changes during dynamic accommodation. *Experimental Eye Research*. **2023**; 230:109441.
 83. Rohman L, Ruggeri M, Ho A, Parel JM, **Manns F**. Lens thickness microfluctuations in young and pre-presbyopic adults during steady-state accommodation. *Investigative Ophthalmology and Vision Science*. **2023**; 64(2):12.
 82. Martinez-Enriquez E, Curatolo A, De Castro A, Birkenfeld JS, Gonzalez AM, Mohamed A, Ruggeri M, **Manns F**, Zvietcovich F, Marcos S. Estimation of the full shape of the crystalline lens in-vivo from optical coherence tomography images using eigenlenses. *Biomedical Optics Express*, **2023**; 14 (2) 608-626.
 81. **Manns F**, Ho A. Paraxial equivalent of the gradient-index lens of the human eye. *Biomedical Optics Express* **2022**; 13(10):5131-5150.
 80. Chang YC, Cabot F, Maceo Heilman B, Meza L, Ruggeri M, Ho A, Yoo SH, Parel JM, **Manns F**. Predictability of pseudophakic refraction using patient-customized paraxial eye models. *Journal of Cataract and Refractive Surgery* **2022**; 48(9):1016-1022.
 79. Cabeza-Gil I, Ruggeri M, Chang YC, Begonia C, **Manns F**. Automated segmentation of the ciliary muscle in OCT images using fully-convolutional networks. *Biomedical Optics Express* **2022**; 13(5):2810-2823.
 78. Maceo Heilman B, Durkee H, Rowaan CJ, Arrieta E, Kelly SP, Ehrmann K, **Manns F**, Parel JM. Temperature affects the biomechanical response of in vitro non-human primate lenses during lens stretching. *Experimental Eye Research* **2022**; 216; 108951.
 77. Ruggeri M, Belloni G, Chang YC, Durkee H, Masetti E, Cabot F, Yoo SH, Ho A, Parel JM, **Manns F**. Combined anterior-segment OCT and wavefront-based autorefractor using a shared beam. *Biomedical Optics Express* **2021**; 12; 6746-6661.
 76. Batchelor WM, Heilman BM, Arrieta-Quintero E, Ruggeri M, Parel JM, **Manns F**, Cabrera-Ghayouri S, Dibas M, Ziebarth NM. Measuring the effects of postmortem time and age on mouse lens elasticity using Atomic Force Microscopy. *Experimental Eye Research* **2021**; 212; 108768.
 75. Monterano Mesquita G, Patel D, Chang YC, Cabot F, Ruggeri M, Yoo SH, Ho A, Parel JM, **Manns F**. In vivo measurement of the attenuation coefficient of the sclera and ciliary muscle. *Biomedical Optics Express* **2021**; 12 (8); 5089-5106.

74. Mohamed A, Nandyala S, Ho A, **Manns F**, Parel JA, Augusteyn RC. Relationship of the cornea and globe dimensions to the changes in adult human crystalline lens diameter, thickness and power with age. *Experimental Eye Research* **2021**; 209 (Jun 5): 108653.
73. Heilman BM, Mohamed A, Ruggeri M, Williams S, Ho A, Parel JM, **Manns F**. Age-dependence of the peripheral defocus of the isolated human crystalline lens. *Investigative Ophthalmology and Vision Science*. **2021**; 62 (3): 15.
72. Mohamed A, Nandyala S, Martinez-Enriquez E, Heilman BM, Augusteyn RC, de Castro A, Ruggeri M, Parel JM, Marcos S, **Manns F**. Isolated human crystalline lens three-dimensional shape: a comparison between Indian and European populations. *Experimental Eye Research*; **2021**; 202:108481.
71. Mohamed A, Durkee HA, Williams S, **Manns F**, Ho A, Parel JM, Augusteyn RC. Morphometric analysis of in vitro human crystalline lenses using digital shadow photogrammetry. *Experimental Eye Research* **2021**; 202:108334.
70. Peterson JC, Arrieta E, Ruggeri M, Silgado JS, Mintz KJ, Weisson EH, Leblanc RM, Kochevar I, **Manns F**, Parel JM. Detection of singlet oxygen luminescence for experimental corneal rose bengal photodynamic antimicrobial therapy. *Biomedical Optics Express* **2021**; 12 (1); 272-287.
69. Martinez-Enriquez E, de Castro A, Mohamed A, Sravani NG, Ruggeri M, **Manns F**, Marcos S. Age-related changes of the 3-dimensional full shape of the isolated human crystalline lens. *Investigative Ophthalmology and Vision Science* **2020**; 61 (4): 11.
68. de Castro A, Birkenfeld J, Heilman BM, Ruggeri M, Arrieta E, Parel JM, **Manns F**, Marcos S. Off-axis optical coherence tomography imaging of the crystalline lens to reconstruct the gradient refractive index using optical methods. *Biomedical Optics Express* **2019**; 10 (7): 3622-3634.
67. Chang YC, Mesquita GM, Williams S, Gregori G, Cabot F, Ho A, Ruggeri M, Yoo SH, Parel JM, **Manns F**. In vivo measurement of the human crystalline lens equivalent refractive index using extended-depth OCT. *Biomedical Optics Express*; **2019**;10(2):411-422.
66. Aguilar MC, Gonzalez A, Rowaan C, de Freitas C, Alawa KA, Durkee H, Feuer WJ, **Manns F**, Asfour SS, Lam BL, Parel JA. Automated instrument designed to determine visual photosensitivity thresholds. *Biomedical Optics Express*; **2018**; 9(11):5583-5596.
65. Ruggeri M, Williams S, Maceo-Heilman B, Yao Y, Chang YC, Mohamed A, Sravani NG, Durkee H, Rowaan C, Gonzalez A, Ho A, Parel JM, **Manns F**. System for on- and off-axis volumetric OCT imaging and ray tracing aberrometry of the crystalline lens. *Biomedical Optics Express*; **2018**; 9 (8): 3834-3851.
64. Heilman BM, **Manns F**, Ruggeri M, Ho A, Gonzalez A, Rowaan C, Bernal A, Arrieta E, Parel JM. Peripheral defocus of the monkey crystalline lens with accommodation in a lens stretcher. *Investigative Ophthalmology and Vision Science*; **2018**; 59(5):2177-2186.
63. Chang YC, Liu K, Cabot F, Yoo SH, Ruggeri M, Ho A, Parel JM, **Manns F**. Variability of manual ciliary muscle segmentation in optical coherence tomography images. *Biomedical Optics Express*; **2018**; 9 (2); 791-800.
62. Chang YC, Liu K, De Freitas C, Pham A, Cabot F, Williams S, Adre E, Gregori G, Ruggeri M, Yoo SH, Ho A, Parel JM, **Manns F**. Assessment of eye length changes in accommodation using dynamic extended-depth OCT. *Biomedical Optics Express*; **2017**; 8 (5):2709-2719.
61. Ruggeri M, de Freitas C, Williams S, Hernandez VM, Cabot F, Yesilirmak N, Alawa K, Chang YC, Yoo SH, Gregori G, Parel JM, Manns F.. Quantification of the ciliary muscle and crystalline lens interaction during accommodation with synchronous OCT imaging. *Biomedical Optics Express*; **2016**; 7 (3); 1351-1364.
60. Hernandez VM, Cabot F, Ruggeri M, Ho A, Yoo S, Parel JM, **Manns F**. Calculation of crystalline power using a modification of the Bennett method. *Biomedical Optics Express*; **2015**; 6 (11); 4501-4515.
59. Marussich L, **Manns F**, Nankivil D, Maceo Heilman B, Yao Y, Arrieta-Quintero E, Ho A, Augusteyn R, Parel JM. Measurement of crystalline lens volume during accommodation in a lens stretcher. *Investigative Ophthalmology and Vision Science*; **2015**; 56 (8); 4239-4248.
58. Nankivil D, Maceo B, Durkee H, **Manns F**, Ehrmann K, Kelly S, Arrieta-Quintero E, Parel JM. The zonules selectively alter the shape of the lens during accommodation based on the location of their anchorage points. *Investigative Ophthalmology and Vision Science*; **2015**; 56 (3):1751-1760.

57. Maceo-Heilman B, **Manns F**, de Castro A, Durkee H, Arrieta E, Marcos S, Parel JM. Changes in monkey crystalline lens spherical aberration during simulated accommodation in a lens stretcher. *Investigative Ophthalmology and Visual Science*; **2015**; 56 (3):1743-1750.
56. de Freitas C, Cabot F, **Manns F**, Culbertson W, Yoo S, Parel JM. Calculation of ophthalmic viscoelastic device-induced focus shift during femtosecond laser-assisted cataract surgery. *Investigative Ophthalmology and Visual Science*; **2015**; 56(2): 1222-1227.
55. Wu C, Han Z, Wang S, Li J, Singh M, Liu C, Aglyamov S, Emelianov S, **Manns F**, Larin KV. Assessing age-related changes in the biomechanical properties of rabbit lens using a co-aligned ultrasound and optical coherence elastography system. *Investigative Ophthalmology and Visual Science*; **2015**; 56(2): 1292-1300.
54. Pour HM, Kanapathipillai S, Zarrabi K, **Manns F**, Ho A. Stretch-dependent changes in surface profiles of the human crystalline lens during accommodation: A finite-element study. *Clinical and Experimental Optometry*; **2015**; 98(2):126-137.
53. Wang S, Aglyamov S, Karpouk A, Li J, Emelianov S, **Manns F**, Larin KV. Assessing the mechanical properties of tissue-mimicking phantoms at different depths as an approach to measure biomechanical gradient of crystalline lens. *Biomedical Optics Express*; **2013**; 4(12): 2769-2780.
52. de Castro A, Birkenfeld J, Maceo B, Arrieta E, **Manns F**, Parel JM, Marcos S. Influence of shape and gradient refractive index in the accommodative changes of spherical aberration in non-human primate crystalline lenses. *Investigative Ophthalmology and Visual Science*; **2013**; 54(9): 6197-6207.
51. deFreitas C, Ruggeri M, **Manns F**, Ho A, Parel JM. *In vivo* measurement of the average refractive index of the human crystalline lens using optical coherence tomography. *Optics Letters*; **2013**; 38(2):85-87.
50. Hao X, Jeffery JL, Le TP, McFarland G, Johnson G, Mulder RJ, Garrett Q, **Manns F**, Nankivil D, Arrieta E, Ho A, Parel JM, Hughes TC. High refractive index polysiloxane as injectable, in situ curable accommodating intraocular lens biomaterials. *Biomaterials*, **2012**; 33(23):5659-5671.
49. Ruggeri M, Uhlhorn S, De Freitas C, Ho A, **Manns F**, Parel JM. Imaging and full-length biometry of the eye during accommodation using Spectral-Domain OCT with an optical switch. *Biomedical Optics Express*, **2012**; 3(7):1506-1520.
48. Siedlecki D, de Castro A, Gamba E, Ortiz S, Borja D, Uhlhorn S, **Manns F**, Marcos S, Parel JM. Distortion correction of OCT images of the crystalline lens: Gradient-Index approach. *Optometry and Vision Science*, **2012**; 89(5):E709-E718.
47. Maceo B, Manns F, Borja D, Nankivil D, Uhlhorn S, Arrieta E, Ho A, Augusteyn R, Parel JM. Contribution of the crystalline lens gradient refractive index to the accommodation amplitude in non-human primates: in vitro studies. *Journal of Vision*, **2011**; 11(13):23.
46. de Castro A, Siedlecki D, Borja D, Uhlhorn S, Parel JM, **Manns F**, Marcos S. Age-dependent variation of the gradient index profile in human crystalline lenses. *Journal of Modern Optics*, **2011**; 58:1781-1787.
45. Augusteyn R, Mohamed A, Nankivil D, Veerendranath P, Arrieta E, Taneja M, **Manns F**, Ho A, Parel JM. Age-dependence of the optomechanical responses of ex vivo human lenses from India and the USA, and the force required to produce these in a lens stretcher: the similarity to in vivo disaccommodation. *Vision Research* **2011**; 51:1667-1678.
44. Ale J, **Manns F**, Ho A. Paraxial analysis of the depth-of-field of a pseudophakic eye implanted with Accommodating IOLs. *Optometry and Vision Science* **2011**; 88:789-794.
43. Chou TH, Kocaoglu OP, Borja D, Ruggeri M, Uhlhorn SR, **Manns F**, Porciatti V. Postnatal elongation of eye size in DBA/2J mice compared with C57BL/6J mice: *In vivo* analysis with whole-eye OCT. *Investigative Ophthalmology and Visual Science*, **2011**; 52:3604-3612.
42. Ziebarth N, Arrieta E, Moy VT, **Manns F**, Parel J-M. Primate lens capsule elasticity assessed using Atomic Force Microscopy. *Experimental Eye Research* **2011**; 92:490-494.
41. Ale J, **Manns F**, Ho A. Magnifications of single and dual element accommodative intraocular lenses: Paraxial optics analysis. *Ophthalmic and Physiological Optics* **2011**; 31: 7-16.

40. Borja D, Siedlecki D, De Castro A, Uhlhorn S, Ortiz S, Arrieta E, Parel JM, Marcos S, **Manns F**. Distortions of the posterior surface in optical coherence tomography images of the isolated crystalline lens: Effect of the lens index gradient. *Biomedical Optics Express* **2010**; 1: 1331-1340.
39. Fedke C, **Manns F**, Ho A. The entrance pupil of the human eye: a three-dimensional model as a function of viewing angle. *Optics Express*, **2010**; 18: 22364-22376.
38. Urs R, Ho A, **Manns F**, Parel JM. Age-dependent Fourier model of the shape of the isolated ex vivo human crystalline lens. *Vision Research*; **2010**; 50:1041-1047.
37. Borja D, **Manns F**, Ho A, Ziebarth N, Acosta AC, Arrieta E, Augusteyn RC, Parel JM. Optical power and biometric properties of the non-human primate isolated crystalline lens. *Investigative Ophthalmology and Visual Science*; **2010**; 51:2118-2125.
36. Ale J, **Manns F**, Ho A. Evaluation of the performance of accommodating IOL using paraxial optics analysis. *Ophthalmic and Physiological Optics* **2010**; 30:132-142.
35. Nankivil D, **Manns F**, Arrieta-Quintero E, Ziebarth N, Borja D, Amelinckx A, Bernal A, Ho A, Parel JM. Effect of anterior zonule transection on the change in lens diameter and power in cynomolgus monkeys during simulated accommodation. *Investigative Ophthalmology and Visual Science*, **2009**; 50:4017-4021.
34. Urs R, **Manns F**, Ho A, Borja D, Amelinckx A, Smith J, Jain R, Augusteyn R, Parel JM. Shape of the isolated ex-vivo human crystalline lens. *Vision Research*, **2009**; 49:74-83.
33. Uhlhorn SR, Borja D, **Manns F**, Parel JM. Refractive index measurement of the isolated crystalline lens using optical coherence tomography. *Vision Research*, **2008**; 48; 2732-2738.
32. Ziebarth NM, Borja D, Arrieta E, Aly M, Dortonne I, Urs R, Jain R, **Manns F**, Parel J-M. Role of the lens capsule on the mechanical accommodative response in a lens stretcher. *Investigative Ophthalmology and Visual Science*, **2008**; 49: 4490-4496.
31. Yoo SH, Kymionis GD, Deobhakta AA, Ide T, **Manns F**, Culbertson WW, O'Brien TO, Alfonso EC. One-year results and anterior segment Optical Coherence Tomography findings of Descemet Stripping Automated Endothelial Keratoplasty combined with phacoemulsification. *Archives of Ophthalmology* **2008**; 126:1052-1055.
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29. **Manns F**, Parel JM, Denham D, Billotte C, Ziebarth N, Borja D, Fernandez V, Aly M, Arrieta E, Ho A, Holden B. Optomechanical response of human and monkey lenses in a lens stretcher. *Investigative Ophthalmology and Visual Science*; **2007**; 48: 3260-3268.
28. Ziebarth NM, Wojcikiewicz EP, **Manns F**, Moy VT, Parel JM. Atomic Force Microscopy measurements of lens elasticity in monkey eyes. *Molecular Vision*; **2007**; 13: 504-510.
27. Kocaoglu OP, Uhlhorn SR, Hernandez E, Juarez R, Will R, Parel JM, **Manns F**. Simultaneous fundus imaging and optical coherence tomography of the mouse retina. *Investigative Ophthalmology and Visual Science*; **2007**; 48:1283-1289.
26. Bernal A, Parel JM, **Manns F**. Evidence for posterior zonular fiber attachment on the anterior hyaloid membrane. *Investigative Ophthalmology and Visual Science* **2006**; 47: 4708-4713.
25. Parel JM, Ziebarth N, Denham D, Fernandez V, **Manns F**, Lamar P, Rosen A, Ho A, Erickson P. Assessment of the strength of mini-capsulorhexes. *Journal of Cataract and Refractive Surgery* **2006**; 32:1366-1373.
24. Ho A, **Manns F**, Pham T, Parel JM. Predicting the performance of accommodating intra-ocular lenses using ray-tracing. *Journal of Cataract and Refractive Surgery* **2006**; 32:129-136.
23. Rosen A, Denham DB, Fernandez V, Borja D, Ho A, **Manns F**, Parel JM, Augusteyn RC. *In vitro* lens dimensions and curvatures of human lenses. *Vision Research*; **2006**; 46:1002-1009.
22. Yavuz E, Morawski K, Telischi F, Ozdamar O, Delgado RE, **Manns F**, Parel JM. Simultaneous measurement of electrocochleography and cochlear blood flow during cochlear hypoxia in rabbits. *Journal of Neuroscience Methods*. **2005**; 147:55-64.

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20. Ziebarth N, **Manns F**, Uhlhorn S, Anna Venkatraman, Parel JM. Non-contact optical measurement of lens capsule thickness in human, monkey, and rabbit postmortem eyes. *Investigative Ophthalmology and Visual Science*; **2005**; 46:1690-1697.
19. Salas N, **Manns F**, Milne PJ, Denham DB, Minhaj AM, Parel JM, Robinson DS. Thermal analysis of laser interstitial thermotherapy in ex-vivo fibro-fatty tissue using exponential functions. *Physics in Medicine and Biology*; **2004**; 49:1609-1624.
18. Borja D, **Manns F**, Lamar P, Rosen A, Fernandez V, Parel JM. Preparation and hydration control of corneal tissue strips for experimental use. *Cornea*; **2004**; 23:61-66.
17. **Manns F**, Fernandez V, Zipper S, Sandadi S, Hamaoui M, Ho A, Parel JM. Radius of curvature and asphericity of the anterior and posterior surface of human cadaver crystalline lenses. *Experimental Eye Research*, **2004**; 78:39-51.
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15. **Manns F**, Milne P, Parel JM; UV corneal photoablation. *Journal of Refractive Surgery*; **2002**; 18:S610-S614 (Supplement: Proceedings of the Third International Congress on Wavefront Sensing and Aberration-Free Refractive Surgery).
14. Minhaj AM, **Manns F**, Milne PJ, Denham DB, Salas N, Nose I, Damgaard-Iversen K, Parel JM, Robinson DS. Laser interstitial thermotherapy (LITT) monitoring using high-resolution digital mammography: Theory and experimental studies. *Physics in Medicine and Biology*; **2002**; 47:2987-2999.
13. Mizota A, Takasoh M, Kobayashi K, Parel JM, **Manns F**, Rol P. Internal sclerostomy with the Er:YAG laser using a gradient-index (GRIN) endoscope; *Ophthalmic Surgery and Lasers*; **2002**; 33:214-220.
12. **Manns F**, Ho A, Parel JM, Culbertson W. Ablation profiles for wavefront-guided correction of myopia and primary spherical aberration. *Journal of Cataract and Refractive Surgery*; **2002**; 28:766-774.
11. Ho A, Erickson P, **Manns F**, Pham T, Parel JM. Theoretical analysis of accommodation amplitude and ametropia correction by varying refractive index in phaco-ersatz; *Optometry and Vision Science*; **2001**; 78:405-410.
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330. Ruggeri M, Truong NLV, Parel JM, Ho A, Abou Shousha M, **Manns F**. High-resolution wide-field OCT imaging of anterior corneal layers using a near-normal incidence scanning beam. Abstract and poster presentation #5900. 2024 ARVO Annual Meeting, May 9, 2024; Seattle, WA.
329. Gonzalez L, Carrera Loureiro B Ferreira B, Durkee HA, Echeverri Tribin F, Peterson JC, Flynn HW, Ruggeri M, **Manns F**, Amescua G, Miller D, Leblanc R, Parel JM. Arginine-Mediated Enhancement of Photodynamic Antimicrobial Therapy to Target the Oxygen-Independent Pathway. Abstract and poster presentation #5605. 2024 ARVO Annual Meeting, May 9, 2024; Seattle, WA.
328. Ahmed A, Carrera Loureiro B Ferreira B, Durkee HA, Aston L, Gonzalez L, Mar J, Peterson JC, Krishna K, Chou B, Ruggeri M, **Manns F**, Flynn HW, Amescua G, Miller D, Leblanc R, Parel JMA. Inhibition of Fungal Isolates via Singlet Oxygen Generation from Erythrosin B and Rose Bengal Photodynamic Antimicrobial Therapy. Abstract and oral presentation #4917. 2024 ARVO Annual Meeting, May 8, 2024; Seattle, WA.
327. Carrera Loureiro B Ferreira B, Durkee HA, Aston L, Gonzalez L, Peterson JC, Gonzalez A, Flynn HW, Ruggeri M, **Manns F**, Amescua G, Leblanc R, Parel JM. Assessment of photosensitizer concentration with a Singlet Oxygen luminescence dosimeter for Photodynamic Antimicrobial Therapy. Abstract and poster presentation #4118. 2024 ARVO Annual Meeting, May 7, 2024; Seattle, WA.
326. Heilman BM, Navia JC, Durkee HA, Carrera Loureiro B Ferreira B, **Manns F**, Parel JM, Donaldson PJ. Effect of TRPV1 activation on the accommodative changes in monkey crystalline lens shape, power, and stiffness. Abstract and oral presentation #1481. 2024 ARVO Annual Meeting, May 6, 2024; Seattle, WA.
325. Schumacher J, Rodriguez Lopez R, Larin K, **Manns F**, Scarcelli G. Measurements of spatial-varying mechanical properties of the crystalline lens and their functional role in accommodation loss. Abstract and oral presentation #1480. 2024 ARVO Annual Meeting, May 6, 2024; Seattle, WA.
324. Truong NLV, **Manns F**, Parel JM, Ho A, Abou Shousha M, Ruggeri M. Extended thickness and backscattering maps of the epithelium and Bowman's layers using wide-fieldof OCT imaging of the cornea. Abstract and Poster Presentation; ARVO/ISIE Meeting, May 4, 2024; Seattle WA.

323. Ruggeri M, Chang YC, Rohman L, Cabeza Gil I, Durkee H, Cabot F, Heilman BM, Monterano Mesquita G, Yoo S, Williams S, Gregori G, Ho A, Parel JM, **Manns F**. Dynamic Biometry of Accommodation. Poster presentation. Wavefront Congress, Houston, TX, March 7-9, 2024.
322. Zevallos-Delgado C, Mekonnen T, Singh M, Schumacher JS, Scarcelli G, Rohman L, **Manns F**, Aglyamov SR, Larin KV. Assessment of safe acoustic radiation force for crystalline lens optical coherence elastography in ex-vivo porcine eyes. Abstract and Poster Presentation #12844-46, Optical Elastography and Tissue Biomechanics XI; San Francisco, CA; January 29, 2024.
321. Ruggeri M, Cabeza-Gil I, **Manns F**. Quantification of the centripetal ciliary muscle movement during accommodation with transscleral OCT imaging. Abstract and Oral Presentation #12824-40, Ophthalmic Technologies XXXIV; San Francisco, CA; January 28, 2024.
320. Schumacher J, Rohman L, Zevallos-Delgado C, Ruggeri M, Parel JM, Manns F, Larin K, Scarcelli G. Multimodal elastography to evaluate the in vivo structure-function relationship of lens mechanics in presbyopia. Abstract and Oral Presentation #12824-32, Ophthalmic Technologies XXXIV; San Francisco, CA; January 28, 2024.
319. Rohman L, Schumacher JS, Ruggeri M, Parel JM, Scarcelli G, Larin K, **Manns F**. Age-dependent analysis of lens Brillouin shift and objective accommodation. Abstract and Oral Presentation #12824-31, Ophthalmic Technologies XXXIV; San Francisco, CA; January 28, 2024.
318. Martinez-Enriquez E, Maceo Heilman B, De Castro A, Mohamed A, Ruggeri M, **Manns F**, Marcos S. Contributed Session II: Ex-vivo human crystalline lenses geometrical changes during simulated disaccommodation. Optica Fall Vision Meeting; Rochester NY, October 20-23, 2023. Abstract published in *J Vis.* 2023;23(11):21.
317. Ghlaibafan F, Lai J, Truong V, Chau V, **Manns F**, Ruggeri M, Yannuzzi NA, Townsend JH. Assessment of visual outcomes and lens tilt in patients with secondary scleral fixated intraocular lens using extended depth OCT. Abstract and Presentation; American Academy of Ophthalmology, Nov 3-6 2023, San Francisco, CA.
316. Pozzo Giuffrida F, Zhou E, Heilman B, Ruggeri M, Rohman L, **Manns F**, Cabot F. Low-dose pilocarpine effects on near vision in early presbyopic subjects, and correlation with anterior segment changes using custom-made extended-depth OCT. Abstract ESCRS23-FP-3505; ESCRS 2023, Vienna, 8-12 Sept 2023.
315. **Manns F**, Natarajan R, Heilman BM, Ho A, Mohamed A, Ruggeri M, Singh V, Parel JM, Vadavalli P. Peripheral defocus profile of spherical and aspheric intraocular lenses. Abstract and poster presentation #2512. 2023 ARVO Annual Meeting, April 25, 2023; New Orleans, LA.
314. de Castro A, Martinez-Enriquez E, Heilman BM, Ruggeri M, Natarajan R, Mohamed A, Manns F, Marcos S. Human crystalline lens refractive index distribution: age-related changes consistent with optical behavior. Abstract and poster presentation #4978. 2023 ARVO Annual Meeting, April 27, 2023; New Orleans, LA.
313. Rohman L, Ruggeri M, Chang YC, Ho A, Parel JM, **Manns F**. High-speed dynamic biometry of the lens-pupil response during accommodation. Abstract and poster presentation #4967. 2023 ARVO Annual Meeting, April 27, 2023; New Orleans, LA.
312. Ruggeri M, Pozzo Giuffrida F, Rohman L, Cabeza I, Heilman BM, **Manns F**, Cabot F. Effect of pilocarpine presbyopia treatment on anterior segment biometry. Abstract and poster presentation #2499. 2023 ARVO Annual Meeting, April 25, 2023; New Orleans, LA.
311. Heilman BM, Parel JM, **Manns F**. Average refractive index of Cynomolgus monkey lenses remains constant with accommodation. Abstract and oral presentation #3819. 2023 ARVO Annual Meeting, April 26, 2023; New Orleans, LA.
310. Truong NLV, Lai J, Krishna K, Chou B, Chen J, Rowley K, Parastou P, Chau V, **Manns F**, Townsend JH, Ruggeri M. Assessment of scleral fixated intraocular lens tilt using extended depth OCT. Abstract and oral presentation #5419. 2023 ARVO Annual Meeting, April 27, 2023; New Orleans, LA.
309. Natarajan R, Maceo Heilman B, Ruggeri M, Ho A, Singh V, Augusteyn R, Parel JM, Vadavalli P, **Manns F**. Age dependence of the average refractive index of the isolated human crystalline lens. Abstract and oral presentation #3817. 2023 ARVO Annual Meeting, April 26, 2023; New Orleans, LA.

308. Weiss M, Cabot F, **Manns F**, Ruggeri M, Pozzo Giuffrida F. Effect of 1.25% and 1% Pilocarpine on near visual acuity and anterior segment geometry using custom-made whole-eye OCT. ASCRS 2023 Meeting – Session on *Presbyopia Correction: New Treatments and Studies*; Paper ID 92545. San Diego, CA; May 6, 2023.
307. Heilman BM, Ruggeri M, Parel JM, **Manns F**. Imaging the crystalline lens and its changes with age. Invited talk; Session on Lens accommodation, aging and the onset of presbyopia. ISER 2023 Conference, Gold Coast, Queensland, Australia; Feb 19-23, 2023.
306. Ruggeri M, Chang YCC, Rohman L, Iulen CG, Durkee H, Cabot F, Maceo Heilman B, Monterano Mesquita G, Yoo SH, Williams S, Gregori G, Ho A, Parel JM, **Manns F**. Dynamic imaging and quantification of human accommodation with OCT. Invited talk; ISER 2023 Conference, Gold Coast, Queensland, Australia; Feb 19-23, 2023.
305. Schumacher J, Schill AW, Singh M, **Manns F**, Larin KV, Scarcelli G. Combining OCE and Brillouin microscopy to evaluate in vivo lens biomechanics in 3D. Abstract and oral presentation #12360-31, Ophthalmic Technologies XXXIII / Optical Elastography and Tissue Biomechanics X conferences, San Francisco, CA; January 29, 2023
304. Maceo Heilman B, Ruggeri M, **Manns F**, Parel JM. The optics of accommodation and presbyopia and therapeutic strategies to treat presbyopia. Invited talk, Special Session: Lens in middle age – New insights into presbyopia. International Conference on the Lens, Kona, Hawaii, Dec 4-9, 2022.
303. Martinez-Enriquez E, Maceo Heilman B, De Castro A, Mohamed A, Ruggeri M, **Manns F**, Marcos S. Ex-vivo human crystalline lenses geometrical changes during simulated disaccommodation. Optica Fall Vision Meeting Rochester, University of Rochester, NY, Oct 20-23, 2022.
302. Martinez-Enriquez E, Maceo Heilman B, De Castro A, Mohamed A, Ruggeri M, **Manns F**, Marcos S. Ex-vivo human crystalline lenses geometrical changes during simulated disaccommodation. Optica Fall Vision Meeting Rochester, University of Rochester, NY, Oct 20-23, 2022.
301. Cabeza Gil I, Ruggeri, M, Chang YC, Calvo B, **Manns F**. Analysis of the ciliary muscle movement during accommodation using artificial intelligence. Podium presentation, Contribution ID 392, 27th Congress of the European Society of Biomechanics, Track / Type : Ocular biomechanics; Porto, Portugal, June 26-29, 2022.
300. Martinez E, De Castro A, Mohamed A, Maceo Heilman B, Williams S, Nandyala S, Ruggeri M, Parel JM, Augusteyn R, Ho A, **Manns F**, Marcos S. 3D OCT-based geometrical changes of human crystalline lenses during simulated accommodation in a lens stretcher. ARVO abstract and poster, Denver, CO; May 2022.
299. Cabeza-Gil I, Calvo, Chang YC, Ruggeri M, **Manns F**. Quantification of ciliary muscle movement during accommodation from transscleral OCT images. ARVO abstract and oral presentation, Denver, CO; May 2022.
298. Heilman BM, Durkee H, Ruggeri M, Rohman L, Ho A, Parel JM, **Manns F**. Age-dependence of the objective optical and mechanical accommodative response measured using a combined dynamic autorefractor and OCT system. ARVO abstract and poster, Denver, CO; May 2022.
297. Peterson J, Kochevar IE, Arrieta E, Leviste K, Sepulveda-Beltran PA, Mintz KJ, Ferreira BC, Leblanc RM, **Manns F**, Parel JM. Improving Rose Bengal Photodynamic Antimicrobial Therapy efficacy by validating predictive model. ARVO abstract and poster, Denver, CO; May 2022.
296. Truong NLV, Monterano Mesquita G, Chang YC, Cabot F, Ruggeri M, Yoo SH, Parel JM, Ho A, **Manns F**. Quantification of ciliary muscle thickness changes during accommodation from dynamic transscleral OCT images. ARVO abstract and oral presentation, Denver, CO; May 2022.
295. Rohman L, Ruggeri M, Ho A, Parel JM, **Manns F**. Quantification of lens thickness microfluctuations in young and pre-presbyopic eyes using dynamic OCT biometry. ARVO abstract and poster, Denver, CO; May 2022.
294. Monterano Mesquita G, Truong NLV, Chang YC, Cabot F, Ruggeri M, Yoo SH, Ho A, Parel JM, **Manns F**. Relation between lens, pupil and ciliary muscle dynamics during accommodation from OCT images. ARVO abstract and poster, Denver, CO; May 2022.
293. Durkee H, Ruggeri M, Ho A, Williams S, Parel JM, **Manns F**. Combined system for dynamic refraction and ocular biometry during accommodation. ARVO abstract and poster, Denver, CO; May 2022.

292. Ruggeri M, Chang YC, Cabeza-Gil I, Rohman L, Maceo-Heilman B, Cabot F, Yoo Sonia H, Ho A, Parel JM, **Manns F**. Longitudinal changes in thickness of the aging human lens measured with OCT. ARVO abstract and oral presentation, Denver, CO; May 2022.
291. **Manns F**, Ho A, Ruggeri M, Parel JM. Relation between lens equivalent index and lens gradient parameters and their age-dependence. ARVO abstract and poster, Denver, CO; May 2022.
290. Rohman L, Ruggeri M, Chang YC, Gonzalez A, Ho A, Parel JM, **Manns F**. Measurements of mechanical steady-state accommodation fluctuations using optical coherence tomography. Abstract and oral presentation, Ophthalmic Technologies XXXII conference, San Francisco, CA; January 22-23, 2022.
289. Peterson J, Chang Y-C, Kochevar I, **Manns F**, Parel JM. Photodynamic Antimicrobial Therapy: Chemical kinetic modeling to improve treatment efficacy. 19th Congress of the European Society for Photobiology; Salzburg, Austria, 08/30-09/03, 2021. Abstract Submitted 5/31/21.
288. **Manns F**, Ho A, Maceo Heilman B, Mohamed A, Ruggeri M, Parel JM. Age-dependent contribution of the crystalline lens to the retinal image field curvature. Abstract and oral presentation; 2021 ARVO Annual Meeting. Online due to COVID.
287. Mohamed A, Maceo Heilman B, Nandayla S, Natarajan R, Venkataraju KU, Williams S, Ruggeri M, Parel JM, Ho A, **Manns F**. Peripheral defocus of polymethylmethacrylate spherical optic monofocal intraocular lenses. Abstract and oral presentation; 2021 ARVO Annual Meeting. Online due to COVID.
286. Monterano Mesquita G, Patel D, Chang YC, Cabot F, Ruggeri M, Yoo SH; Parel JM, Ho A, **Manns F**. Inter-individual variability of the scleral and ciliary muscle optical attenuation and its implication for transscleral laser therapy. Abstract and oral presentation; 2021 ARVO Annual Meeting. Online due to COVID.
285. Ruggeri M, Chang YC, Maceo Heilman B, Cabot F, Yoo SH, Parel JM, **Manns F**. Measurement of the average group refractive index of the human crystalline lens in vivo using OCT images acquired before and after IOL implantation. Abstract and oral presentation; 2021 ARVO Annual Meeting. Online due to COVID.
284. Peterson JC, Chang YC, Kochevar I, **Manns F**, Parel JM. Predictive modeling for singlet oxygen generated during Rose Bengal Photodynamic Antimicrobial Therapy. Abstract and oral presentation; 2021 ARVO Annual Meeting. Online due to COVID.
283. Ruggeri M, Chang YC, Monterano Mesquita G, Belloni G, Williams S, Ho A, Parel JM, **Manns F**. High speed biometry of the crystalline lens during accommodation with swept source OCT. Abstract and oral presentation # 116230P, Ophthalmic Technologies XXXI, Photonics West BIOS Conference; Online due to COVID; March 5, 2021.
282. Ashik M, **Manns F**, Ho A, Taneja M, Nandyala S, Augusteyn R, Parel JM. Relationship of the cornea and globe dimensions to the changes of adult human crystalline lens diameter and power with age. Abstract #3362097 and poster presentation; 2020 ARVO Annual Meeting, April 28, 2020; Baltimore MD. Conference moved online due to COVID-19.
281. Peterson JC, Silgado J, Weisson E, Meizoso R, Arrieta E, Ruggeri M, **Manns F**, Parel JM. Dosimetry for rose bengal photodynamic antimicrobial therapy (RB-PDAT) for treatment of infectious keratitis. Abstract ##3366219 and poster presentation; 2020 ARVO Annual Meeting, April 28, 2020; Baltimore MD. Conference moved online due to COVID-19..
280. **Manns F**, Durkee H, Chang Y-C, Monterano Mesquita G, Williams S, Cabot F, Yoo S, Ruggeri M, Ho A, Parel JM. Effect of inter-individual variations in ocular parameters on optical and mechanical accommodation efficiency. Abstract #4637 and poster presentation; 2020 ARVO Annual Meeting, May 6, 2020; Baltimore MD. # 3361769. Conference moved online due to COVID-19.
279. Ruggeri M, Chang Y-C, Monterano Mesquita G, Belloni G, Williams S; Ho A, Parel JMA, **Manns F**. High-speed imaging and biometry of human accommodation dynamics with SS-OCT. Abstract #3363370 and oral presentation; 2020 ARVO Annual Meeting, April 28, 2020; Baltimore MD. Conference moved online due to COVID-19.
278. Maceo Heilman B, Williams S, Chang Y-C, Cabot F, Ruggeri M, Yoo SH, Parel J-M, **Manns F**. Relation between pre- and post-operative iris depth and IOL position in cataract surgery patients measured using extended-depth OCT Abstract #605 and poster presentation; 2020 ARVO Annual Meeting, May 3, 2020; Baltimore MD. Conference moved online due to COVID-19.

277. Durkee H, Ruggeri M, Belloni G, Ho A, Chang Y-C, Parel J-M, **Manns F**. Combined autorefractor and motorized visual fixation target to measure accommodation response to step and ramp demands. Abstract #3366886 and poster presentation; 2020 ARVO Annual Meeting, April 28, 2020; Baltimore MD. Conference moved online due to COVID-19.
276. Belloni G, Chou B, Meza L, Chang Y-C, Durkee H, Parel JM, **Manns F**, Ruggeri M. Evaluation of a combined anterior segment OCT and aberrometer using the same light source. Abstract #3358800 and poster presentation # 3349567. 2020 ARVO Annual Meeting, April 28, 2019; Baltimore MD. Conference moved online due to COVID-19.
275. Patel DM, Monterano Mesquita G, Chang Y-C, Cabot F, Ruggeri M, Yoo S, Parel J-M, **Manns F**. Regional variation in the attenuation coefficient of the sclera measured in vivo using optical coherence tomography. Abstract #336566 and poster presentation # 3349567. 2020 ARVO Annual Meeting, April 28, 2019; Baltimore MD. Conference moved online due to COVID-19.
274. Chang Y-C, Cabot F, Heilman Maceo B, Meza L, Ruggeri M, Ho A, Yoo S, Parel J-M, **Manns F**. Modeling of the lower limits of IOL prediction error resultant from instrument precision. Abstract #3363921 and poster presentation # 3349567. 2020 ARVO Annual Meeting, April 28, 2019; Baltimore MD. Conference moved online due to COVID-19.
273. Arthur Ho, Tawanyavitchajit C, Kanapathipillai S, Augustyten R, **Manns F**: Influence of lens geometry on accommodation: Verification with an improved finite element model. Abstract and poster presentation # 4635. 2020 ARVO Annual Meeting, May 6, 2020; Baltimore MD. Conference moved online due to COVID-19.
272. Martinez E, De Castro A, Mohamed A; Maceo Heilman B, Williams S, Nandyala S; Ruggeri M, Parel JM, Augusteyn R, Ho A, **Manns F**, Marcos S. 3D OCT-based geometrical changes of crystalline lenses mounted in a stretcher. Abstract # 3363274 and poster presentation # 3349567. 2020 ARVO Annual Meeting, April 28, 2019; Baltimore MD. Conference moved online due to COVID-19.
271. Monterano Mesquita G, Patel DM, Chang YC, Cabot F, Ruggeri M, Yoo S, Parel JM, Ho A, **Manns F**. Relation between refractive error and scleral attenuation coefficient obtained from transscleral OCT images. Abstract #3401377 and poster presentation. 2020 ARVO-ISIE Meeting, Baltimore, MD. May 2, 2020. Conference moved online due to COVID-19.
270. Ruggeri M, Belloni G, Chou B, Meza LL, Chang YC, Durkee HA, Parel JM, **Manns F**. Combined OCT and wavefront aberrometer using a single beam delivery system. Abstract and oral presentaiton # 11218-35 Ophthalmic Technologies XXX, Photonics West BIOS Conference; San Francisco, CA; February 1-2, 2020.
269. Heilman BM, Ruggeri M, **Manns F**, Parel JM. The optics of accommodation and presbyopia and therapeutic strategies to treat presbyopia. Abstract and Invited oral presentation. Interionational Conference on the Lens, Kona, Hawaii; December 10, 2019.
268. Cabot F, Ruggeri M, Chang YC, Williams S, Yoo SH, Parel JM, **Manns F**. Assessment of scleral thickness during accommodation using dynamic OCT imaging. ASCRS 2019 Annual Meeting; Oral Presentation #54566; San Diego, CA, May 6, 2019.
267. Batchelor W, Heilman B, Arrieta E, Ruggeri M, Parel JM, **Manns F**, Cabrera-Ghayouri S, Dibas M, Ziebarth NM. Assessing the effects of postmortem preservation time on mouse lens properties using Atomic Force Microscopy and Optical Coherence Tomography. Abstract and poster presentation #3167; 2019 ARVO Annual Meeting, April 30, 2019; Vancouver, Canada.
266. **Manns F**, Ruggeri M, Mohamed A, Williams S, Maceo Heilman B, Durgam SS, Taneja M, Ho A, Parel JM. Optical testing of intraocular lenses using a combined laser-ray tracing and optical coherence tomography system. Abstract and poster presentation #3693. 2019 ARVO Annual Meeting, April 30, 2019; Vancouver, Canada.
265. Maceo Heilman B, Mote K, Gonzalez A, Rowaan C, Arrieta E, Silgado J, Weisson E, Batchelor WM, Ziebarth NM, Ruggeri M, Cabrera-Ghayouri S, Dibas M, Parel JM, **Manns F**. Age-dependence of mouse lens viscoelasticity. Abstract and poster presentation #3165. 2019 ARVO Annual Meeting, April 30, 2019; Vancouver, Canada.
264. Ho A, Aung Phyo M, Kanapathipillai S, Augusteyn RC, **Manns F**. Finite element model of the influence of zonules-capsule attachment position on accommodation amplitude. Abstract and poster presentation #1789. 2019 ARVO Annual Meeting, April 29, 2019; Vancouver, Canada.

263. Chang YC, Cabot F, Ruggeri M, Ho A, Yoo SH, Parel JM, **Manns F**. Dynamic Imaging of Ciliary Muscle and Pupil Changes During Accommodation. Abstract and oral presentation #1400. 2019 ARVO Annual Meeting, April 29, 2019; 8:30AM; Vancouver, Canada.
262. Mohamed A, Williams S, Martinez E, De Castro A, Ruggeri M, Maceo Heilman B, Chang, YC, Sravani, NG, Rowaan C, Gonzalez A, Durgam SS, Ho A, Augusteyn RC, Parel JM, Marcos S, **Manns F**. Isolated human crystalline lens spherical aberration: Experimental measurements and predictions from OCT-based geometry. Abstract and poster presentation #598. 2019 ARVO Annual Meeting, April 28, 2019; Vancouver, Canada.
261. Monterano Mesquita G, Chang YC, Cabot F, Williams S, Gregori G, Ho A, Ruggeri M, Yoo SH, Parel JM, **Manns F**. Comparison of curvature-based and biometry-based methods for in vivo crystalline lens power calculation. Abstract and poster presentation #599. 2019 ARVO Annual Meeting, April 28, 2019; Vancouver, Canada.
260. Martinez-Enriquez E, De Castro A, Mohamed A, Ruggeri M, Williams S, Parel JM, Manns F, Marcos S. Eigenlenses: an eigenvectors-based model for full crystalline lens shape description. Abstract and poster presentation #3687. 2019 ARVO Annual Meeting, April 30, 2019; Vancouver, Canada.
259. Ruggeri M, Williams S, Heilman B, Mohamed A, Chang YC, Sravani NG, Durgam SS, Ho A, Parel JM, **Manns F**. Quantifying spherical aberration of the human crystalline lens during simulated accommodation using ray-tracing aberrometry. Abstract and poster presentation #3170. 2019 ARVO Annual Meeting, April 30, 2019; Vancouver, Canada.
258. Monterano Mesquita G, Benson M, Chang YC, Ruggeri M, Ho A, Parel JM, **Manns F**. High-speed measurement of crystalline lens dynamics using optical coherence tomography. Abstract and Poster Presentation # 10858-81; Ophthalmic Technologies XXIX, Photonics West BIOS Conference; San Francisco, CA; February 2-3, 2019.
257. Sigaldo JD, Parel JM, Gonzalez A, Durkee H, Ruggeri M, **Manns F**. Relationship between visual positive afterimages and the Ocular Photosensitivity Analyzer light source distance. Abstract and Poster Presentation # 10858-59; Ophthalmic Technologies XXIX, Photonics West BIOS Conference; San Francisco, CA; February 2-3, 2019.
256. Chang YC, Ruggeri M, Parel JM, **Manns F**. Enhanced ciliary muscle imaging of accommodative response with swept source-OCT Abstract and Poster Presentation # 10858-47; Ophthalmic Technologies XXIX, Photonics West BIOS Conference; San Francisco, CA; February 2-3, 2019.
255. Williams S, Ruggeri M, Heilman B, Chang YC, Mohamed A, Sravani G, Rowaan C, Gonzalez A, Ho A, Parel JM, **Manns F**. Spherical aberration of the crystalline lens measured in-vitro using an LRT-OCT system. Abstract and Oral Presentation # 10858-14; Ophthalmic Technologies XXIX, Photonics West BIOS Conference; San Francisco, CA; February 2-3, 2019.
254. Benson M, Monterano G, Chang YC, Ruggeri M, Ho A, Parel JM, **Manns F**. High-Speed Measurement of Dynamic Accommodative Changes in Crystalline Lens Thickness using Optical Coherence Tomography. Abstract and Poster Presentation #P-SAT-289. 2018 BMES Annual Meeting, Atlanta, GA, October 17-20, 2018.
253. Elsayy A, Sayed-Ahmed I, Wen D, Roongpoovapatr V, Ruggeri M, **Manns F**, Mottaleb M, Abou Shousha M. Validation Study for Corneal Microlayer Tomography Automatic Segmentation Algorithm. ARVO Abstract and Poster Presentation #5737; Honolulu, HI, May 3, 2018.
252. Mesquita G, Chang YC, Cabot F, Williams S, Gregori G, Ho A, Ruggeri M, Yoo S, Parel JM, **Manns F**. In vivo measurement of the human crystalline lens equivalent refractive index using whole-eye OCT. ARVO Abstract and Oral Presentation #2979; Honolulu, HI, May 1, 2018; 12:15-12:30PM.
251. **Manns F**, Williams S, Ruggeri M, Mohamed A, Sravani NG, Heilman BM, Yao Y, Gonzalez A, Rowaan C, Ho A, Parel JM. Age-dependence of the peripheral defocus of the isolated human crystalline lens. ARVO Abstract and Oral Presentation #2978; Honolulu, HI, May 1, 2018; 12:00-12:15PM.
250. Batchelor WM, Arrieta E, Ruggeri M, Parel JM, **Manns F**, Dibas M, Ziebarth NM. Assessing mouse lens elasticity and viscoelasticity using Atomic Force Microscopy. ARVO Abstract and Poster Presentation #3031; Honolulu, HI, May 1, 2018.

249. Ruggeri M, Chang YC, Williams S, Cabot F, Gregori G, Ho A, Yoo SH, Parel JM, **Manns F**. Assessment of scleral shape and thickness during accommodation using OCT. ARVO Abstract and Oral Presentation #1950; Honolulu, HI, April 30, 2018; 4:00PM-4:15PM.
248. Chang YC, Cabot F, Williams S, Gregori G, Ruggeri M, Ho A, Yoo SH, Parel JM, **Manns F**. Quantification of synchronized lens and pupil dynamics during accommodation. ARVO Abstract and Oral Presentation #1949; Honolulu, HI, April 30, 2018; 3:45PM-4:00PM.
247. Martinez-Enriquez E, Mohamed A, Ruggeri M, Velasco-Ocana M, Williams S, Heilman BM, De Castro A, Perez-Merino P, Sravani NG, Sangwan V, Parel JM, Augusteyn RC, Ho A, **Manns F**, Marcos S. Full shape crystalline lens geometrical changes with age from 3-D OCT images in vivo and ex vivo. ARVO Abstract and Poster Presentation #268; Honolulu, HI, April 29, 2018
246. Durkee HA, Cabot F, Chang YC, Ruggeri M, Yoo SH, **Manns F**, Parel JM. Dynamic Interaction Between Accommodating Intraocular Lens and Ciliary Muscle Using OCT. ASCRS-ASOA 2018 Annual Meeting on Cataract, IOL and Refractive Surgery, presentation #46735; Washington DC, April 13-17, 2018.
245. Williams S, Gregori G, Ruggeri M, Chang YC, Cabot FA, Ho A, Yoo SH, Parel JM, **Manns F**. Objective dynamic changes in lens curvature during accommodation using optical coherence tomography images. Abstract and Oral Presentation #10474-61; Ophthalmic Technologies XXVIII, Photonics West BIOS Conference; San Francisco, CA; January 27-28, 2018.
244. Chang YC, Mesquita GM, Ruggeri M, Yoo SH, Ho A, Parel JM, **Manns F**. Age-dependence of the attenuation coefficients of the sclera and ciliary muscle measured in vivo with OCT. Abstract and Oral Presentation #10474-61; Ophthalmic Technologies XXVIII, Photonics West BIOS Conference; San Francisco, CA; January 27-28, 2018.
243. Elsayy A, Gustavo G, Ruggeri M, Abdel-Mottaleb M, **Manns F**, Abou Shousha M. Optical Coherence Tomography endothelium/Descemet's membrane complex three dimensional thickness maps in normal subjects. ARVO Abstract and Poster Presentation #1482; Baltimore, MD, May 8, 2017.
242. Chang Y.C, Cabot F, Williams S, Gregori G, Ruggeri M, Yoo SH, **Manns F**, Parel J-M. Pre-operative Prediction of Post-cataract Surgery IOL Position Using Anterior Chamber Depth and Lens Thickness Determined with Extended-depth OCT. ARVO Abstract and Poster Presentation #2717; Baltimore, MD, May 9, 2017.
241. **Manns F**, Chang CY, Cabot F, Ruggeri M, Yoo SH, Parel J-MA. Spherical equivalent refractive error of the pseudophakic eye pre- and post-refractive surgery predicted using Gaussian optics. ARVO Abstract and Poster Presentation #2720; Baltimore, MD, May 9, 2017.
240. Ruggeri M, Chang YC, Williams S, Cabot F, Gregori G, **Manns F**, Parel J-M. Extended depth OCT imaging and biometry of the eye during accommodation in function of subject posture. ARVO Abstract and Oral Presentation #2063; Baltimore, MD, May 8, 2017.
239. Liu K, Cabot F, Chang YC, Ruggeri M, Yoo SH, Parel JMA, **Manns F**. Variability of Ciliary Muscle in Optical Coherence Tomography images. ARVO Abstract and Poster Presentation #2708; Baltimore, MD, May 9, 2017.
238. Mesquita G, Chang YC, Cabot F, Ruggeri M, Yoo SH, Parel JMA, **Manns F**. In Vivo measurement of the Attenuation Coefficient of the Sclera and Ciliary Muscle from Transscleral Optical Coherence Tomography images. ARVO Abstract and Poster Presentation #2709; Baltimore, MD, May 9, 2017.
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4. Q Ren, **F Manns**, J-M Parel, G Simon; Investigation of an algorithm for Photo-Refractive Keratectomy (PRK) using a scanning beam delivery system; *Abstract*; X Curso Internacional de Oftalmologia, Barcelona; 1993; Abstract printed in *Annales Instituto Barraquer (Barcelona)* 25(7):786; 1996.
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Florida Lions Eye Bank reports and other newsletter and magazine articles:

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9. **Manns F**, Fernandez V, Hamaoui M, Zipper S, Sandadi S, Ho A, Parel JM. Donated eyes uncover the shape of the human lens. *Florida Lions Eye Bank Annual Report*, 2003, pp. 10-11.

8. Parel JM, Denham DB, Fernandez V, Billotte C, Rosen A, Lamar P, Ho A, **Manns F**, Lee Y. Will reading glasses one day be obsolete? Eye-Bank supported research studies the mysteries of the human lens. *Florida Lions Eye Bank Annual Report*, 2002, pp. 10-11.
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6. Lamar P, Fernandez V, **Manns F**, Dubovy S, Zipper S, Sandadi S, Nakagawa N, Weiser M, Malecaze F, Parel JM. La sclérotomie ciliaire antérieure: Effet sur la topographie cornéenne, l'intégrité du globe et rôle d'un nouveau gel antifibrotique. *L'Ophthalmographe* (Corneal SA Newsletter), January 2002.
5. Parel J-M, Qiu H, **Manns F**, Fujiwara E, Lee W, Salas N, Hayden B, Lee E, Dubovy S, Murray TG: Experimental models for transscleral laser thermotherapy of ocular tumors. *Florida Lions Eye Bank Annual Report*, 2001, pp. 10-11.
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Oral Presentations:

19. **Manns F**, Borja D, Ho A, Parel JM. Effect of the refractive index gradient on the paraxial ray path in the crystalline lens. Oral Presentation #7163-42; Ophthalmic Technologies XIX Conference; Photonics West Meeting, San Jose, CA, January 25, 2009.
18. **Manns F**, Lee Y, Parel JM. Comparison of keratometric and Gaussian optics formula for corneal power calculation after LASIK; Oral Presentation #6426A-21; SPIE Ophthalmic Technologies XVII Conference; San Jose, CA, January 20-21, 2007.
17. Ziebarth N, Wojcikiewicz EP, **Manns F**, Moy V, Parel JM. Atomic Force Microscopy (AFM) measurement of lens elasticity; Oral Presentation #6426A-19; SPIE Ophthalmic Technologies XVII Conference; San Jose, CA, January 20-21, 2007.
16. Borja D, Rosen A, Augusteyn RC, Ho A, **Manns F**, Parel JM. Ex vivo refractive index and biometric properties of postmortem crystalline lenses. Oral Presentation #6426A-20; SPIE Ophthalmic Technologies XVII Conference; San Jose, CA, January 20-21, 2007.
15. **Manns F**, Parel JM, Denham D, Ziebarth N, Billotte C, Borja D, Abri A, Acosta C, Fernandez V, Ho A. Comparison of the optomechanical response of normal and refilled lenses in a lens stretcher; Oral Presentation #6138-42; SPIE Ophthalmic Technologies XVI Conference; San Jose, CA, January 21-22, 2006.
14. Kocaoglu OP, Uhlhorn SR, Hernandez E, Will R, Parel JM, **Manns F**. Slit-lamp based fundus imaging and optical coherence tomography of the mouse retina in vivo. Oral Presentation #6138-14; SPIE Ophthalmic Technologies XVI Conference; San Jose, CA, January 21-22, 2006.
13. Uhlhorn SR, **Manns F**, Parel JM. Optical coherence tomography of the crystalline lens during simulated accommodation; Oral Presentation #6138-43; SPIE Ophthalmic Technologies XVI Conference; San Jose, CA, January 21-22, 2006.
12. **Manns F**, Juarez RA, Uhlhorn S, Kocaoglu O, Hernandez E, Knighton R, Parel JM. Mouse fundus imaging using a slit-lamp. Oral Presentation #5688-07; SPIE Ophthalmic Technologies XV Conference; San Jose, CA, January 22-23, 2005.
11. Parel JM, Denham D, Acosta A, Lamar PD, **Manns F**, Ho A, Yoo S. Morphology assessment of crystalline, IOL implanted, and refilled lenses with and without stretching. Oral Presentation #5688-41; SPIE Ophthalmic Technologies XV Conference; San Jose, CA, January 22-23, 2005.

10. Parel J, **Manns F**, Denham D, Billotte C, Fernandez V, Stoiber J, Abri A, Lamar P, Rosen A, Ziebarth N, Orozco M, Borja D, Watling J, Ho A, Holden B. Ex vivo assessment of accommodation and its restoration by lens refilling in primates (Phaco-Ersatz); Oral Presentation #5314-13; SPIE Ophthalmic Technologies XIV Conference; San Jose, CA, January 24-25, 2004.
9. Qiu H, Fujiwara E, **Manns F**, Murray TG, Parel JM. Experimental eye-bank eye model for transscleral laser thermotherapy of ocular tumors; Oral Presentation #4245-34; SPIE Ophthalmic Technologies XI Conference; January 20-21, 2001.
8. **F Manns**, P Rol, JM Parel, P Milne; Teaching optics and lasers in biomedical engineering; ASEE Annual Meeting - Bioengineering Division; St Louis, MO; June 2000.
7. **F Manns**, J Chang, P Soederberg, P Rol, JM Parel; Kinetics of laser-induced corneal shrinkage; *Ophthalmic Technologies X*; Oral Presentation #3908-19; SPIE Photonics West Conference; January 22-23, 2000.
6. DS Robinson, **F Manns**, PJ Milne, N Salas Jr, S Mendoza, JM Parel; Gray-scale change in digital image analysis of breast tissue under interstitial laser thermotherapy; *Innovations in Breast Cancer Diagnosis and Minimally Invasive Therapy*; Oral Presentation #3907-103; SPIE Photonics West Conference; January 22-23, 2000.
5. **F Manns**, N Salas Jr, S Mendoza, DB Denham, PJ Milne, JM Parel, EL Sinofsky, DS Robinson; Evaluation of cylindrical diffusing fiber designs for laser-interstitial thermotherapy of breast cancer; *Innovations in Breast Cancer Diagnosis and Minimally Invasive Therapy*; Oral Presentation #3907-102; SPIE Photonics West Conference; January 22-23, 2000.
4. DB Denham, N Salas, **F Manns**, PJ Milne, JM Parel, DS Robinson; Goniometric evaluation of the emission field of diffusing fiber tips for laser interstitial thermotherapy (LITT) of breast tumors; *Presentation #3590G-88*; SPIE Photonics West Conference; January 23-24, 1999.
3. **F Manns**, Interstitial temperature measurements with thermocouples during laser-irradiation of tissue; *Oral Presentation*; Fourth Biomedical Optics and Implants Colloquium; Bascom Palmer Eye Institute, University of Miami; 5/16/98.
2. **F Manns**, J Chang, PG Soederberg, JM Parel; Laser thermal shrinkage of the cornea and sclera; *Oral Presentation*; Third Biomedical Optics and Implants Colloquium; Bascom Palmer Eye Institute, University of Miami; 5/19/97.
1. **Manns F**. Corneal measurement by interferometry; *Oral Presentation*; Second Biomedical Optics and Implants Mini-Symposium; Bascom Palmer Eye Institute, University of Miami; 4/29/96.

Interviews:

1. Radio interview on *New Lens Technology*, Morning Show (Louise Ray), ABC Riverland SA, Australia; July 29, 2003 (08:41 AM).

Invited Lectures, Courses and Presentations:

57. *Restoration of accommodation: The holy grail of refractive surgery*. OftalmoCiencia Innova 2025, Lima, Peru, September 27, 2025
56. *The mechanism of accommodation and presbyopia revealed using technology*. OftalmoCiencia Innova 2025, Lima, Peru, September 27, 2025.
55. *Biomedical Engineering and Ophthalmic Research at the University of Miami From Discovery to Clinical Translation*, Seminar: Frontiers of International Biomedical Engineering. Pontificia Universidad Catolica de Peru (PUCP), Lima, Peru, September 26, 2025.
54. *Engineering the optics of the eye*; Biomedical Engineering Distinguished Lecture Series; University of Houston Department of Biomedical Engineering, Houston, TX; April 18, 2025.
53. *Ophthalmic Technologies I-XXXV. A-perspective-on-34-years of technological innovation in ophthalmology*. Invited Talk; Special Session - 35th Anniversary of Ophthalmic Technologies; Oral Presentation #13300-36; Ophthalmic Technologies XXXV; San Francisco, CA; January 26, 2025.
52. *Optics Course for Swedish Ophthalmology Residents*; Guest Faculty; Course organizer: Prof. Per Soederberg; University of Uppsala, Uppsala Sweden; May 21-23, 2024.

51. *Optics Course for Swedish Ophthalmology Residents*; Guest Faculty; Course organizer: Prof. Per Soederberg; University of Uppsala, Uppsala Sweden; May 30-June 1, 2023.
50. *Experience with an International NEI-Sponsored Research Collaboration*; NEI 2nd Mexico – United States Symposium on Vision Health: Strengthening International Partnerships to Reduce the Impact of Diabetes on Eye Health; Mexico City, Mexico; January 26-27, 2023 (recorded presentation).
49. *Can OCT transform anterior segment and cataract surgery? and Real-time OCT imaging of ocular accommodation*; Hoy Family Lecture, Vanderbilt University Department of Ophthalmology and Biophotonics Center, Nashville, TN; November 29, 2022.
48. *Optics Course for Swedish Ophthalmology Residents*; Guest Faculty; Course organizer: Prof. Per Soederberg; University of Uppsala, Uppsala Sweden; May 31-June 2, 2022.
47. *Real-time refraction and OCT imaging of the anterior segment*; International Society of Presbyopia; Webinar 4: Presbyopia Trends: Quantitative Imaging and Simulation; December 8, 2021.
46. *Optics Course for Swedish Ophthalmology Residents*; Guest Faculty; Course organizer: Prof. Per Soederberg; University of Uppsala, Uppsala Sweden; May 31 -June 3, 2021 (Remote due to COVID).
45. *Imaging the lens and ciliary muscle during ocular accommodation*; Biomedical Engineering seminar series; Department of Biomedical Engineering, Ohio State University; April 10, 2021.
44. *The joys and challenges of a NEI-funded foreign research collaboration*; Invited Panelist; Mexico-United States Symposium on Vision Health. January 29, 2021. (Organized by NEI and US Embassy).
43. *Optics Course for Swedish Ophthalmology Residents*; Guest Faculty; Course organizer: Prof. Per Soederberg; University of Uppsala, Uppsala Sweden; January 11-13, 2021 (May 2020 course rescheduled as a remote course due to COVID).
42. *The joys and challenges of a NEI-funded foreign research collaboration*; Invited Speaker (Abstract #3280590), Global Membership Committee Workshop on “Eyes on the Prize: Funding resources for the International Community”, ARVO Webinar, July 13, 2020. (Originally scheduled to be presented at the 2020 Annual Meeting, Baltimore, MD, May 3-7, 2020. Conference cancelled due to COVID-19).
41. *Imaging the lens and ciliary muscle during ocular accommodation*; Medical Engineering seminar series; Department of Medical Engineering, University of South Florida, Tampa, FL; February 17, 2020.
40. *Real-time imaging of ocular accommodation*. BME graduate seminar; University of Illinois at Urbana Champaign; November 13, 2019.
39. *Real-time OCT imaging of the accommodating lens and ciliary muscle*; Presbyopia 2019, International Society of Presbyopia, Paris, France; September 13, 2019.
38. *Optics Course for Swedish Ophthalmology Residents*; Guest Faculty; Course organizer: Prof. Per Soederberg; University of Uppsala, Uppsala Sweden; May 21 to May 23; 2019.
37. *Ocular accommodation and presbyopia: Imaging studies*; Graduate Seminar, Department of Biomedical Engineering, University of Minnesota, September 17, 2018.
36. *Optics Course for Swedish Ophthalmology Residents*; Guest Faculty; Course organizer: Prof. Per Soederberg; University of Uppsala, Uppsala Sweden; May 29 to May 31; 2018.
35. *Accommodation, presbyopia and Optical Coherence Tomography*. Wallace H Coulter Foundation Lecture Series; Florida International University. March 2, 2018.
34. *Optical Coherence Tomography imaging of human accommodation and presbyopia correction*. Biomedical Engineering Seminar, University of Houston, October 27, 2017.
33. *Mechanism of accommodation: Imaging studies*. Research Seminar, Brien Holden Vision Institute, Sydney, Australia. June 16, 2017. (by Teleconference).
32. *Optics Course for Swedish Ophthalmology Residents*; Guest Faculty; Course organizer: Prof. Per Soederberg; University of Uppsala, Uppsala Sweden; May 30 to June 1; 2017.

31. *Imaging of age-related changes in lens and ciliary muscle accommodation*. ARVO 2017 MiniSymposium: Age-related changes in optics of the eye and vision. Program #2994. ARVO 2017 Meeting, Baltimore MD, May 9, 2017.
30. *Optics Course for Swedish Ophthalmology Residents*; Guest Faculty; Course organizer: Prof. Per Soederberg; University of Uppsala, Uppsala Sweden; May 23 to May 26; 2016.
29. *Optics Course for Swedish Ophthalmology Residents*; Guest Faculty; Course organizer: Prof. Per Soederberg; University of Uppsala, Uppsala Sweden; May 25 to May 28; 2015.
28. *Accommodation and presbyopia: Lessons learned from Gullstrand and Optical Coherence Tomography (OCT)*; Department of Neuroscience, University of Uppsala, Uppsala, Sweden; March 19, 2014.
27. *Optics Course for Swedish Ophthalmology Residents*; Guest Faculty; Course organizer: Prof. Per Soederberg; University of Uppsala, Uppsala Sweden; March 17 to March 20; 2014.
26. *Optics Course for Swedish Ophthalmology Residents*; Guest Faculty; Course organizer: Prof. Per Soederberg; University of Uppsala, Uppsala Sweden; March 18 to March 21; 2013.
25. *Optics Course for Swedish Ophthalmology Residents*; Guest Faculty; Course organizer: Prof. Per Soederberg; University of Uppsala, Uppsala Sweden; March 26 to March 29 2012.
24. *Accommodating lens refilling after cataract surgery*; Department of Neuroscience, University of Uppsala, Uppsala, Sweden; March 26, 2012.
23. *Phaco-ersatz and the refractive index gradient*; Oxyopia seminar, Indiana University School of Optometry; Bloomington, Indiana; March 25, 2011
22. *Biometry of the crystalline lens and the mouse eye using Optical Coherence Tomography*; University of Houston School of Optometry; Houston, TX; January 11, 2010.
21. *Polymer refilling of the capsular bag to restore accommodation*; Lens, Refractive and Wavefront Summit - ARI/WFC 2009; Palacio de Congress, Alicante, Spain, March 6, 2009 (Ron Krueger, Raymond Applegate, Jorge Alio).
20. *Optics of the in vitro crystalline lens*; Instituto de Optica, Consejo Superior de Investigaciones Científicas, Madrid, Spain, March 4, 2009 (Susana Marcos).
19. *In vitro studies of accommodation*; Wavefront Presbyopic Refractive Corrections Congress; San Francisco, CA; February 15, 2008.
18. *Optimization of laser-tissue interactions for applications in ophthalmology*; Summer School on Visual Optics... from Physics to Biomedical Applications; Jaca, Spain; June 19-22, 2007 (organized by the Vision Sciences Committee, Spanish Optical Society).
17. *Optical Coherence Tomography of the mouse retina*; Workshop on "Ocular Imaging Technologies: From Bedside to Animal Models and Back"; ARVO Meeting, Fort Lauderdale, FL, May 6, 2007.
16. *Advances in Ophthalmology*; "Saturday Night Hot Topics" (Plenary Session), Biomedical Optics'2005; SPIE Photonics West Meeting; San Jose, CA; January 22, 2005.
15. *Presbyopia Alternatives*; "Breakfast with the Experts" Session, American Academy of Ophthalmology Annual Meeting, Anaheim, CA; November 17, 2003.
14. *Technology for dynamic vision*; In Focus Symposium; Vision Cooperative Research Centre, University of New South Wales, Sydney, Australia; July 28, 2003.
13. *Current status and future of phaco-ersatz surgery*; Zweiter Erlanger Symposium - Akkommodation, Presbyopie und Kunstlinsen; University of Erlangen Department of Ophthalmology, Erlangen, Germany; November 23, 2002.
12. *Laser phacoemulsification and laser glaucoma surgery: Update*; International Congress for Eye Research, Geneva, Switzerland; October 7, 2002.
11. *Phaco-Ersatz for correction of presbyopia*; Hospital San Raffaele Department of Ophthalmology (Prof. R Brancato), Milan, Italy; July 3, 2002.

10. *The correction of presbyopia and Phaco-Ersatz*; "Engineering the Eye", 23rd Symposium of the Center for Visual Science; University of Rochester, Rochester, NY; June 13-15, 2002.
9. *Wavefront-guided corneal ablations: How precise?*; 7th Annual CREST Meeting (Congress of Researchers in Eye Surgery and Technology), Ft Lauderdale, FL, May 4, 2002.
8. *UV photoablation: What is unknown?*; Third International Congress of Wavefront Sensing and Aberration-free Refractive Surgery, Interlaken, Switzerland, February 16, 2002.
6. *Les Phaco-Ersatz en 2001*; Congrès Annuel de la SAFIR (Société de l'Association Française des Implants et de la Chirurgie Réfractive), Paris, France; May 6, 2001.
5. *Asphéricité cornéenne et sa variabilité après PRK ou LASIK*; III^{ème} Cours de Chirurgie Réfractive Raisonnée, Hôpital Américain de Paris, Neuilly sur Seine, France; October 7, 2000.
4. *Flying spot photorefractive keratectomy at 213 nm*; St Erik's Eye Hospital, Karolinska Institute, Stockholm, Sweden; September 10, 1998.
3. *Lasers and beam delivery systems in Ophthalmology*, Part III of the SPIE Short Course Lasers in Ophthalmology, Biomedical Optics Europe'98 Meeting, Stockholm, Sweden; September 11, 1998.
2. *Development of stereotactically-guided laser hyperthermia for the treatment of breast cancer*; Institut für Biomedizinische Technik, University of Stuttgart, Stuttgart, Germany; December 17, 1997.
1. *Thermal modeling of laser photo thermal keratoplasty (LPTK) and laser scleral buckling (LSB)*; National Eye Research Foundation (NERF) Eastern Regional Conference, Orlando; April 29, 1995.

Presentations at Bascom Palmer Eye Institute's CME Courses, Grand Rounds and Research Retreats:

13. *Resource and Expertise: Department of Biomedical Engineering*, UM Medical AI Initiative Research Day, Bascom Palmer Eye Institute, University of Miami; November 20, 2019.
12. *Imaging of accommodation: crystalline lens and ciliary muscle*. McKnight Vision Research Center Laboratory Conference, Bascom Palmer Eye Institute, University of Miami, November 17, 2016.
11. *Optics of the crystalline lens, accommodation and presbyopia: Ex vivo, in vivo and in real-time*; McKnight Vision Research Center Laboratory Conference, Bascom Palmer Eye Institute, University of Miami, August 08, 2013.
10. *Optics of the crystalline lens and its implications*; McKnight Vision Research Center Laboratory Conference, Bascom Palmer Eye Institute, University of Miami, November 14, 2011.
9. *Optics of the eye and vision correction*; McKnight Vision Research Center Research Training Program Lecture; Bascom Palmer Eye Institute, Miami, February 8, 2007.
8. *Wavefront-guided laser refractive surgery: Background and Principles*; Bascom Palmer Eye Institute CME Cataract and Refractive Surgery Congress; Fontainebleau Hotel, Miami Beach, FL; February 21, 2004.
7. *Applying high-resolution OCT technology in ophthalmology*; Bascom Palmer Eye Institute Research Retreat; Koubek Memorial Center, Miami, FL; January 10, 2004.
6. *Imaging of the lens and accommodation*; Bascom Palmer Eye Institute CME Course on *Ocular Imaging 2004*, Palm Beach, FL; December 5-6, 2003.
5. *Thermokeratoplasty and the dynamics of corneal thermal shrinkage*; McKnight Vision Research Center Laboratory Conference, Bascom Palmer Eye Institute, University of Miami, April 11, 2003.
4. *Laser-trabecular meshwork interactions during laser trabeculoplasty*; Bascom Palmer Eye Institute Research Retreat, Biltmore Hotel, Coral Gables; February 22, 2003.
3. *Where is refractive surgery headed?: The correction of presbyopia*; Bascom Palmer Eye Institute 40th Anniversary CME Course, Coral Gables, FL, February 21, 2002.
2. *Theoretical basis for thermokeratoplasty*; Course on New Horizons on the Treatment of Hyperopia, Bascom Palmer Eye Institute Course, University of Miami, July 7, 2001.
1. *Theoretical and practical approaches to the identification and prevention of optical aberrations after LASIK*; Grand Rounds Research Presentation, Department of Ophthalmology, University of Miami; June 16, 2001.

Presentations at Bascom Palmer Eye Institute Cornea Conference

13. *Corneal power and IOL calculations*; December 8, 2006.
12. *Ocular aberrations, PSF, MTF and the Topcon PSFAS system*; July 23, 2004.
11. *Principles of wavefront-guided vision correction*; September 12, 2003.
10. *Wavefront-guided refractive surgery: Refresher and Remaining Issues*; June 27, 2003.
9. *Wavefront-guided refractive surgery III: Interpretation of Aberration Coefficients*; January 25, 2002.
8. *Wavefront-guided refractive surgery II: Aberrometers*; May 25, 2001.
7. *Thermokeratoplasty and the dynamics of corneal thermal shrinkage*; March 9, 2001.
6. *Wavefront-guided laser refractive surgery I: Principles*; February 16, 2001.
5. *Laser interactions with the cornea*; August 11, 2000.
4. *Optics of PRK and LASIK*; Cornea Conference, January 14, 2000.
3. *Corneal optics and its implications*; March 5, 1999.
2. *213nm Scanning photorefractive keratectomy*; May 1, 1998.
1. *Corneal diagnostics by low-coherence interferometry*; August 11, 1996.

Other lectures and presentations at University of Miami

7. Core Research Resources and Facilities at the College of Engineering, UM Research Resources Expo, March 18, 2025.
6. Panel member, University of Miami 2nd annual Computing Day 2024, April 23, 2024.
5. Core Research Resources and Facilities at the College of Engineering, UM Research Resources Expo, March 12, 2024.
4. Engineering for the ear and eye, and imaging of ocular accommodation. 26th annual Chandler Society research forum, Department of Otolaryngology, University of Miami Miller School of Medicine; June 9, 2018.
3. Mechanism of accommodation and presbyopia: Imaging studies; Seminar, Department of Physiology and Biophysics; June 8, 2015.
2. Biomedical optics and lasers, Neural Engineering Institute Meeting; May 11, 2015.
1. Optical imaging, Collaborative Research and Exchange Forum (CREF), May 6, 2008.

Issued Patents (12 US Patents):

7. Title: *Ophthalmic refractor and method of ophthalmic refractor signal analysis*.
Inventors: **Manns F**, Bacci M, Borja D, Delgado S, Parel JM, Ho A, Shelby RA, Andersohn L, Bernal A.
US Patent 10,219,690 B2; Issue date: March 5, 2019.
6. Title: *Retinal imaging system for the mouse or rat or other small animals*
Inventors: Kocaoglu OP, Uhlhorn S, Hernandez E; Porciatti V; Parel JM; **Manns F**.
US Patent 8,974,059 B2; Issue date: March 10, 2015.
5. Title: *Adjusted index of refraction of ocular replacement material*
Inventors: Ho Arthur, Holden Brien, **Manns F**, Parel JM.
US Patent 8,439,974; Issue date: May 14, 2013.
4. Title: *Intraoperative imaging system and apparatus*
Inventors: Uhlhorn S, Ruggeri M, **Manns F**, Parel JM.
US Patent 8,425,037; Issue date: April 23, 2013
US Patent 9,050,027; Issue date: June 9, 2015
US Patent 9,492,080; Issue date: November 15, 2016

US Patent 10,213,101 B2; Issue date: February 26, 2019

3. Title: *Supplemental endo-capsular lens and method of implantation*
 Inventors: Ho, A, Erickson P, **Manns F**, Parel J-M.
 US Patent 7,060,095; Issue date: June 13, 2006
 Japanese Patent Application 2001-581725; Granted March 13, 2007.
2. Title: *Otic probe for neuro-cochlear monitoring.*
 Inventors: Telischi FF, Ozdamar OO, Parel JM, **Manns F**.
 US Patent 6,640,121; Issue Date: Oct 28, 2003.
1. Title: *Intraoperative monitoring of temperature-induced tissue changes with a high resolution digital X-ray system during thermotherapy.*
 Inventors: Parel JM, **Manns F**, Robinson DS, Milne P, Denham DB, Gonzalez-Cirre X.
 US Patent 6,684,097; Issue Date: Jan 27, 2004.
 US Patent 8,099,147; Issue Date: Jan 17, 2012.
 US Patent 8,606,346; Issue Date: Dec 10, 2013.
 Republic Of China Letters Patent #155300; Duration term: 5/1/2002-7/3/2020.
 Licensed to AblaTX, May 2005.

Patent applications pending

2. Title: *Dosimetry system for photodynamic antimicrobial therapy device of infectious keratitis*
 Inventors: Peterson JC, Parel JM, **Manns F**, Ruggeri M
 US Patent Application 20230064504-A1; Publication Date: June 22, 2023. (PCT filed May 21, 2021)
 Licensed to Provectus, April 2024.
1. Title: *System for combined intraoperative aberrometry and optical coherence tomography.*
 Inventors: Ruggeri M, **Manns F**, Durkee H
 US Patent Application 20230064504-A1; Publication Date: March 2, 2023. (PCT filed Jan 29, 2021)_

Invention Disclosures:

22. Jaimes N, Avila Alvarez A, Bohorquez J, Manns F. Footscope; Invention disclosure UM-IP 886; submitted 9/2023.
21. Ruggeri M, Chang YC, Gonzalez A, Parel JM, Aguilar M, **Manns F**. Objective photosensitivity threshold detection concept and software. Invention Disclosure D2021-0112; submitted 3/2021. Provisional patent submitted 5/18/2021, #63189992.
20. Peterson J, Parel JM, Ruggeri M, **Manns F**. Dosimeter for rose bengal photodynamic antimicrobial therapy (RB-PDAT) for treatment of infectious keratitis. UM IP-525. Submitted 4/9/20. Provisional patent submitted 9/28/21.
19. **Manns F**, Ruggeri M, Parel JM. Improved predictability of pseudophakic eye refraction using patient-customized paraxial eye models. Provisional patent submitted 2/12/2021, #63149140.
18. Ruggeri M, **Manns F**, Durkee H. Intraoperative OCT-based wavefront aberrometry. UMIP-411 (Submission 2020-31). Submitted August 16, 2019. Patent application submitted 01/29/2021.
17. Williams S, **Manns F**, Gregori G, Ruggeri M. Automated segmentation algorithm for OCT images. UMIP 387 (Submission D2020-0011). Submitted June 21, 2019. Provisional patent submitted.
16. **Manns F**, Ruggeri M, Cabot F, Chang YC, Yoo S. Parel JM.. Computational algorithm for intraocular lens power calculation using personalized eye models Invention disclosure. UM IP 146. Submitted February 2017.
15. **Manns F**, Borja D, Ho A, Bacci M, Delgado S, Parel JM. Real-time intraoperative refractor for ocular and lens refilling surgery: optical system and data processing technique; Vision CRC Invention Disclosure; UMUU-105d. Submitted July 10, 2010. Provisional patent filed March 2011: Ophthalmic Refractor and method of ophthalmic refractor signal analysis. Patent Application 20120238904A1 Filed September 20, 2012.
14. Uhlhorn S, Ruggeri M, **Manns F**, Parel JM. Intraoperative imaging system and apparatus for ocular and lens refilling surgery; Vision CRC Invention Disclosure; UMUU-105c; Patent Application US20120026462A1: Intraoperative imaging system and apparatus. Filed July 29, 2011.

13. Kocaoglu OP, **Manns F**, Parel JM, Uhlhorn S, Hernandez E; Retinal imaging system for the mouse or rat or other small animals; Invention Disclosure UM08-75; 2008. Patent application 20110234976 Filed September 29, 2011.
12. Ho Arthur, Holden Brien, **Manns F**, Parel JM. Eye Treatment. US Patent Application 20090076602A1 Filed March 19, 2009.
11. A Ho, P Erickson, **F Manns**, JM Parel; Supplementary endo-capsular lens (SECL); Invention Disclosure CRCERT2000-004 (Co-operative Research Centre for Eye Research and Technology, University of New South Wales, Sidney, Australia); 2000. US Patent Application Filed 5/01.
10. PJ Milne, RJ Leveillee, **F Manns**, JM Parel, P Rol; Intraoperative Raman spectroscopic control of energy delivery during medical laser procedures involving disruption or processing of hard tissues; Invention Disclosure UM99-22; 1999.
9. FF Telischi, O Ozdamar, JM Parel, **F Manns**; Otic probe for neuro-cochlear monitoring; Invention Disclosure UM99-16; 1999. US Patent Application Filed 8/00.
8. P Milne, JM Parel, **F Manns**, DB Denham, DS Robinson; Intraoperative Raman spectroscopic sensing fiber-optic delivery probe for detection of tumors and in-situ monitoring of temperature-induced tissue changes during their treatment by laser interstitial thermotherapy; Invention Disclosure UM98-18; 1998.
7. JM Parel, **F Manns**, J Comander, P Rol, T Murray, X Gonzalez-Cirre; Fiber-optic delivery system for laser transscleral treatment of ocular tumors (TTTOT); Invention Disclosure UM97-12; 1997.
6. JM Parel, **F Manns**, DS Robinson, P Milne, DB Denham, X Gonzalez-Cirre; Intraoperative monitoring of temperature-induced tissue changes with a high resolution digital X-ray system during laser thermotherapy; Invention Disclosure UM96-24; 1996. US Patent application filed 4/00.
5. J-M Parel, **F Manns**, P Rol; New Optical Delivery Systems and Probes for Laser Scleral Buckling; Invention Disclosure UM95-34; 1995.
4. J-M Parel, **F Manns**, P Rol; New Optical Delivery System for Scanning Photo Refractive Keratectomy and Photo Therapeutic Keratectomy; Invention Disclosure UM95-33; 1995.
3. JM Parel, D Robinson, D Denham, **F Manns**; Novel laser and mechanical instruments for breast tumor endoablation and treatment of surrounding tissues and use thereof; Invention Disclosure UM94-33; 1994.
2. **F Manns**; A non-contact optical pachometer using stationary low-coherence reflectometry and use thereof; Invention Disclosure UM94-06; 1994.
1. **F Manns**; An algorithm for photo-refractive keratectomy with a scanning beam delivery system; Invention Disclosure UM94-04; 1994.

Copyrights:

1. JM Parel, **F Manns**, P Rol; *Biomedical Optics and Lasers for Engineers and Physicians* (Table of Contents, Chapters 1, 9 and 20). US Copyright Application filed 8/24/99

20. Other works accepted for publication (includes submitted articles pending review)

N/A

PROFESSIONAL

21. Funded research performed:

Current funded research as PI/Sponsor:

2. Drug effects on ciliary muscle accommodative response
Orasis Pharmaceuticals
6/1/24-5/31/25; Direct costs: \$59,290; Total costs: \$91,010
PI; 3% CY; (with Florence Cabot, Marco Ruggeri, Jean-Marie Parel)
Submitted Sept 28, 2023; Contract executed May 2024.

1. Biomechanics of accommodation
 NIH – National Eye Institute - 1 R01 EY030063-01A1
 09/30/20 - 06/30/25; No-cost extension until 06/30/26.
 UM portion: \$465,791 (DC) + \$249,200 (IDC) = \$714,991 (TC)
 Total grant amount: \$2,498,701 (DC) + \$501,296 (IDC) = \$2,999,997 (TC)
 Co-PI, with Kirill Larin (University of Houston, Contact PI) and Giuliano Scarcelli (University of Maryland)
 5% for Year 1-4; 8% for Year 5
 Year 1 UM subaward, 9/30/20-6/30/25: \$48,917 (DC:\$31,867; F&A: \$17,049); Account #GR017138
 Year 2 UM subaward, 7/1/21-6/30/22: \$59,549 (DC:\$38,794; F&A:\$20,755); Account #GR017138
 Year 3 UM subaward, 7/1/22-6/30/23: \$185,480 (DC:\$120,834; F&A:\$64,646); Account #GR017138
 Year 4 UM subaward, 7/1/23-6/30/24: \$211,441 (DC:\$137,747; F&A:\$73,694); Account #GR017138
 Year 5 UM subaward, 7/1/24-6/30/25: \$207,762 (DC:\$135,350; F&A:\$72,412); Account #GR017138

Current funded research as key-investigator:

1. Wide-field corneal microlayer tomography for keratoconus
 NIH – National Eye Institute – 1R01EY030891-01A1
 01/01/2022-12/31/2027; Direct costs: \$1,384,296; Total costs: \$2,017,660
 Key investigator; 5% CY; PI: Marco Ruggeri (Ophthalmology)
 Submitted February 5, 2021; Score: 20; Percentile:4%
 Year 1 Award, 1/1/22-12/31/22: \$403,700 (DC:\$299,523; F&A: \$104,177); Account #: GR019745
 Year 2 Award, 1/1/23-12/31/23: \$403,627 (DC:\$285,122; F&A: \$118,505); Account #: GR019745
 Year 3 Award, 1/1/24-12/31/24: \$403,516 (DC:\$266,488; F&A: \$137,028); Account #: GR019745
 Year 4 Award, 1/1/25-12/31/25: \$ (DC:\$; F&A: \$); Account #: GR019745
2. In vivo high definition corneal imaging
 NIH – National Eye Institute – 2 R44 EY029906-02
 02/01/2023-02/28/2025; Direct costs: \$1,604,712; UM Subcontract: \$396,712 (DC: \$258,444; IDC: \$138,268)
 Key investigator; Y1: 3%, Y2: 5% CY; PI: Cristina Canavesi – UM subcontract PI: Marco Ruggeri (Ophthalmology)
 Submitted April 5, 2023; Score: 24
 Year 1 Award UM Subcontract, 03/01/2023 - 02/28/2024, \$98,417 (DC:\$64,115.\$34,302); Account #: GR022280
 Year 2 Award UM Subcontract, 03/01/2024 - 02/28/2025, \$298,295 (DC:\$194,329.\$103,966); Account #: GR022280

Proposals submitted (pending review or funding decision):

2. Optics of the crystalline lens in childhood
 NIH – National Eye Institute - 1R01EY034236A1
 12/01/2025-11/30/2030; Direct costs: \$3,088,280; Total costs: \$3,714,224;
 PI; 15% CY; (with Susana Marcos, University of Rochester)
 Submitted March 19, 2025. Score: 30; Percentile: 9%.
1. Biomechanics of accommodation
 NIH – National Eye Institute - 2R01EY030063
 07/01/2025-06/30/2030; Direct costs: \$3,407,202; Total costs: \$3,841,148.
 PI; 8.3%-12% effort CY
 Submitted November 19, 2024. Score: 33; Percentile: 8%.

Recent Proposals submitted (2021-2024, not funded):

8. Mechanism of lens remodeling in childhood myopia
 Research to Prevent Blindness – Fall 2024 RPB Stein Innovation Award
 12/01/2024-11/30/2027; Direct costs: \$300,000; No IDC.
 PI; 10% effort CY
 Submitted July 1, 2024; Not funded.
7. Technology for active triage of acral melanoma
 CoE-SCCC Engineering Cancer Cures Call for Proposals(internal award)
 2024-2025; Total costs: \$88,512 (Direct only)
 Co-PI (with Natalia Jaimes and Jorge Bohorquez)
 Submitted 2/26/2024
6. Optics of the crystalline lens in childhood
 NIH – National Eye Institute - 1R01EY034236

12/01/2024-11/30/2029; Direct costs: \$3,077,170; Total costs: \$3,684,988;
 PI; 15% CY; (with Susana Marcos, University of Rochester and Pavan Verkicharla, LV Prasad Eye Institute)
 Submitted February 20, 2024. Study Section in June 2024; Not discussed.

5. In the Search of Acral Melanoma: The Role of the FootScope as an Accessible Triage Device
 DOD – USAMRAA – FY 23 Melanoma Idea Award
 2024-2026; Budget unknown (~\$500K)
 Co-I, 5% CY; PI: Natalia Jaimés, Department of Dermatology and Cutaneous Surgery
 Submitted September 22, 2023; Not funded.
4. Optics of the crystalline lens in childhood
 NIH – National Eye Institute - 1R01EY034236
 07/01/2022-06/30/2027; Direct costs: \$2,225,078; Total costs: \$3,144,913;
 PI; 25% AY;
 Submitted July 19, 2022; Unscored.
 Not funded
3. Optics of the crystalline lens in childhood
 NIH – National Eye Institute - 1R01EY034236
 07/01/2022-06/30/2027; Direct costs: \$2,225,078; Total costs: \$3,144,913;
 PI; 25% AY;
 Submitted October 5, 2021; Score: 39; Percentile: 28%
 Not funded
2. Title: Improving cataract surgery outcomes post-refractive surgery
 NIH – National Eye Institute - 1R01 EY033048-01A1
 04/01/2022 - 03/31/2027; Direct costs: \$1,873,510; Total cost: \$2,809,668.00
 Key investigator; 20% CY; PI: Marco Ruggeri (Ophthalmology)
 Submitted July 6, 2021- Not discussed
1. Optics of the growing crystalline lens
 NIH – National Eye Institute - 1R01EY021834-06A1
 09/01/2021-08/31/2026; Direct costs: \$2,225,067; Total costs: \$3,099,363;
 PI; 20% AY, 35% Summer;
 Submitted March 5, 2021; Score: 46; Percentile: 44% - Not funded

Past funded research:

As Principal Investigator / Sponsor

18. *Optomechanical characteristics of lens accommodation*
 NIH - National Eye Institute (2R01 EY014225-13, competing renewal)
 9/30/17 - 8/31/20; \$1,005,809 – No cost extension until 8/31/21.
 PI, AY:30%; Summer: 40%; Score: 26; Percentile: 19%.
 Year 1 Award, 9/30/17-8/31/18: \$317,443 (DC:\$250,001; F&A: \$67,432); Account #GR009247
 Year 2 Award, 9/30/18-8/31/19: \$336,184 (DC:\$244,210; F&A: \$91,974); Account #GR009247
 Year 3 Award, 9/30/19-8/31/20: \$352,192 (DC:\$243,642; F&A: \$108,550); Account #GR009247
17. *Age-related changes in the dynamics of the ciliary muscle with accommodation*
 NIH National Eye Institute
 F30 Predoctoral Fellowship (F30EY027162)
 08/25/17-08/24/2021; \$196,176 (Original award notice)
 PI: Yu-Cherng Chang
 Sponsor
 Submitted 12/8/15; Score: 39. Resubmitted 8/16; Score 20.
 Year 1 Award, 8/25/17-8/24/18: \$49,044;Account #669362
 Year 2 Award, 8/25/18-8/24/19: \$49,524;Account #669362
 Year 3 Award, 8/25/19-8/24/20: \$50,016;Account #669362
 Year 4 Award, 8/25/20-8/24/20: \$50,520;Account #669362
16. *Test of drug effects on lens elasticity in aged mouse lens*
 Allergan R&D contract
 8/21/17-5/31/20; TC: \$256,883; DC: \$167,777; IDC: \$89,106

Multiple PI Project; Contact PI; AY: 5%; Summer: 5%
 Co-PIs: Parel JM, Ruggeri MR, Ziebarth N

15. *Optics of the growing crystalline lens*
 NIH National Eye Institute; RO1-Bioengineering Research Grant (1R01EY021834-01A1)
 06/01/2012-05/31/2017; DC: \$1,666,460; TC:\$2,313,231 (original award notice)
 PI; 30% AY, 50% Summer; Score: 28; Percentile: 18%
 Year 1 Award, 6/1/12-5/31/13: \$446,078 (DC:\$352,934; F&A: \$93,144); Account #66934T
 Year 2 Award, 6/1/13-5/31/14: \$437,738 (DC:\$305,528; F&A: \$132,210); Account #66934T
 Year 3 Award, 6/1/14-5/31/15: \$468,474 (DC:\$329,973; F&A: \$138,501); Account #66934T
 Year 4 Award, 6/1/15-5/31/16: \$459,493 (DC:\$325,207; F&A: \$134,286); Account #66934T
 Year 5 Award, 6/1/16-5/31/17: \$459,470 (DC: \$323,366; F&A: \$136,104); Account #66934T
 No cost extension 06/01/2017-05/31/2018

14. *Optomechanical characteristics of lens accommodation*
 NIH - National Eye Institute (2RO1 EY014225)
 2/01/13-1/31/17; DC: \$1,166,198; TC: \$1,620,117 (original award notice)
 PI, AY:30%; Summer: 40%; Score: 41; Percentile: 41%.
 Year 1 Award, 2/1/13-1/31/14: \$493,069 (DC:\$364,801; F&A: \$128,268); Account #660458
 Year 2 Award, 2/1/14-1/31/15: \$400,684 (DC:\$281,719; F&A: \$118,965); Account #660458
 Year 3 Award, 2/1/15-1/31/16: \$358,401 (DC:\$254,447; F&A: \$103,954); Account #660458
 Year 4 Award, 2/1/16-1/31/17: \$352,472 (DC:\$254,290; F&A: \$98,182); Account #660458
 No cost extension until 9/30/2017.

13. *Crystalline lens optics in accommodation and presbyopia*
 NIH-National Eye Institute Ruth L Kirschstein NRSA
 Predoctoral Minority Fellowship, Bianca Maceo, 1F31EY021444-01; Account #66767A
 1/01/2011-12/31/2015; TC: \$178,764
Sponsor
 Year 1 Award, 1/1/11-12/31/11: \$34,980; Account #66767A
 Year 2 Award, 1/1/12-12/31/12: \$35,400; Account #66767A
 Year 3 Award, 1/1/13-12/31/13: \$35,832; Account #66767A
 Year 4 Award, 1/1/14-12/31/14: \$36,276; Account #66767A
 Year 5 Award, 1/1/15-12/31/15: \$36,276; Account #66767A

12. *Predoctoral Minority Fellowship Supplement, David Borja;*
 NIH, National Eye Institute (3F31EY015395-04S1);
 4/1/08-3/31/09; TC:\$23,822 (Fee:\$300; Stipend:\$20,772; Institutional Allowance: \$2,750);
PI (Sponsor); Dept of Biomedical Engineering.

11. *Predoctoral Minority Fellowship, David Borja;*
 NIH, National Eye Institute (1F31EY015395);
 3/1/04-2/29/08; TC:\$129,537 (Tuition:\$24,665; Stipend:\$90,872; Institutional Allowance: \$14,000);
PI (Sponsor); Dept of Biomedical Engineering.

10. *Measurement of the posterior corneal curvature: Preliminary studies*
 University of Miami General Research Support Award
 6/1/06-5/31/07; \$4,000
Principal Investigator

9. *Graduate Research Fellowship, Noel Ziebarth;*
 National Science Foundation;
 9/1/03-8/31/06; Stipend: \$82,500; Institutional Allowance: \$31,500;
Co-Sponsor; Dept. of Biomedical Engineering

8. *Predoctoral Minority Fellowship, Nelson Salas (Competitive Supplements);*
 NIH, National Cancer Institute; (1F31CA085169-04S1 and 1F31CA085169-04S2);
 9/1/04-2/28/06; TC:\$43322 (Tuition and Fees: \$8039; Stipend:\$31,158; Institutional Allowance: \$5,500)
PI (Sponsor); Dept of Biomedical Engineering.

7. *Measurement of ocular aberrations in Eye-Bank eyes;*
 Whitaker Foundation Transitional Funding Grant;
 03/01/04-08/31/05; DC:\$63,058; TC:\$73,688;

PI, 20%AY/30%Summer.

6. *Predoctoral Minority Fellowship, Nelson Salas;*
NIH, National Cancer Institute; (1F31CA085169-04);
9/1/00-8/31/04; TC:\$105,136 (Tuition and Fees: \$24,952; Stipend:\$69684; Institutional Allowance: \$10,500)
PI (Sponsor); Dept of Biomedical Engineering.
5. *Dynamics of laser-induced thermal shrinkage of collagenous tissue;*
The Whitaker Foundation, Biomedical Engineering Research Grants;
6/1/00-5/31/03 - No cost extension to 12/31/03; TC:\$201,592;
PI, 30%; Dept of Biomedical Engineering.
4. *Optics of laser corneal reshaping;*
Bascom Palmer Eye Institute Ophthalmic Research Foundation Grant;
6/1/00-5/31/01; DC:\$45,000, IDC:\$0;
PI; Dept of Ophthalmology.
3. *Design of a monitoring system for visualization of SF6 leaks with a portable thermal imaging system;*
Florida Power and Light Company Equipment Reliability Center, Miami, FL;
6/15/00-10/1/00 - Extended until 1/31/00; Total Costs: \$18,231;
PI, 15%; Dept. of Biomedical Engineering.
2. *Instrumentation and Laboratory Enhancement in Biomedical Optics;*
NSF - Division of Undergraduate Education - Instrumentation and Laboratory Improvement Grant;
6/1/98-6/30/00; extended until 6/30/01; DC:\$39,553, IDC:\$0 (NSF:\$19,776 + UM:\$19,777);
PI. Dept. of Biomedical Engineering.
1. *Measurement of corneal layers' refractive index and effect of hydration;*
Fight for Sight, The Research Division of Prevent Blindness America;
06/96-06/97; DC:\$14,000, IDC:\$0;
Post-Doctoral Fellowship.

As Co-Principal Investigator

10. *Extended Depth SDOCT Imaging for Clinical and Surgical Applications*
NIH-National Eye Institute Phase II SBIR (2R44EY018021) - Bioptigen, Inc. (Score: 10)
08/01/2010-07/31/2013; TC:\$1,300,000; UM Subcontract TC: \$155,724
Co-PI of UM Subcontract (Parel/Manns); 5%; PI: Eric Buckland. Account #66856H
9. *Pediatric Spectral Domain Optical Coherence Tomography*
NIH National Eye Institute Phase II SBIR (R44EY01900-02) - Bioptigen Inc. (Score: 20)
03/01/2012-8/31/2013; TC: \$2,490,441; UM Subcontract TC \$93,461 (Year1) +\$99,514 (Year2).
No-cost extension until 8/31/2014.
Co-PI of UM Subcontract (Parel, Manns); 9%; PI: Bradley Bower, Bioptigen Inc.; Account #66978A
8. *Alcon ex vivo AIOL evaluation*
Alcon Laboratories, Fort Worth, TX
12/15/2011-12/31/2012; \$98,900
co-PI; 15%.
7. *MRI: Acquisition and development of atomic force microscopy technologies for biophysical studies*
National Science Foundation - Directorate for Biological Sciences, Division of Biological Infrastructure
08/15/07-08/14/10; \$336,939
Co-PI; PI: Dr. Vincent Moy, Department of Physiology and Biophysics
6. *Experimental and clinical evaluation of the Topcon PSFAS System;*
Topcon Corp, Tokyo, Japan - University of Miami R&D contract;
1/1/04-09/30/06; \$17,595;
Co-PI, 5%.
5. *Interdisciplinary Cross-Campus Mentored Research Program for Undergraduate Students in Biomedical Engineering;*
University of Miami Innovative Teaching and Technology Initiative;
1/1/03-1/1/05; \$61,400;

Co-PI.

4. *Feasibility of monitoring laser interstitial thermotherapy (LITT) of breast cancer with a Fisher Mammotest unit;*
Senolase/Fisher Imaging, Denver, CO - University of Miami R&D contract;
5/1/99-3/31/00 - extended until 2/28/02; TC:\$63,741;
Co-PI, 35%. Dept. of Ophthalmology.
3. *Laser endoablation of breast cancer, Phase II;*
William T Kemper Foundation, Kansas City, MO;
4/1/98-3/31/01; DC:\$241,564, IDC:\$0;
Co-PI, 30%. Dept of Ophthalmology.
2. *Spectroscopy of urinary calculi for the optimization of laser lithotripsy;*
University of Miami Office of the Provost - Support for Innovative Projects and/or Technology Renewal;
2/1/98-2/1/99; DC:\$60,000; IDC:\$0;
Co-PI; Dept. of Ophthalmology.
1. *213 nm scanning photorefractive keratectomy;*
Quantel SA, Les Ulis, France - University of Miami R&D contract;
6/1/97-5/31/00; DC+IDC:\$85,407;
Co-PI, 20%; Department of Ophthalmology.

As Key Investigator

22. *Algorithm for cataract surgery planning*
Wallace H Coulter Center for Translational Research - FY 2018 Commercialization Grant
6/1/18-5/31/19; \$99,602 – No cost extension until 5/31/20
Co Investigator, 10% effort (cost-shared);
PI: Marco Ruggeri, PhD (Ophthalmology)
21. *Intraoperative OCT-based wavefront aberrometer*
NIH National Eye Institute (R21EY027957A1)
03/01/2018-02/28/2020; \$422,125; DC: \$275,000; IDC: \$147,125 – No-cost extension until 02/28/2021
Key Investigator, 5%; Score: 28.
PI: Marco Ruggeri, PhD (Ophthalmology)
20. *Endothelium/Descemet's Membrane Complex Optical Tomography*
NIH-National Eye Institute
K23 Mentored Patient-Oriented Research Career Development Award (KEY 0266118A)
01/01/2016-12/31/2020; TC: \$1,207,151 (DC:\$1,122,368; IDC: \$84,783)
PI: Mohamed Abou Shousha, Department of Ophthalmology
Co-Sponsor (with Victor Perez, MD, and Sonia Yoo, MD)
19. *Visual impact of ocular pathologies assessed using Optical Coherence Tomography*
Bascom Palmer Eye Institute Audacious Project Program
Co-investigator
PI: Sonia Yoo, Department of Ophthalmology
6/1/15-6/31/18, \$45,000 DC
18. *Enhanced diagnosis and management of pediatric retinal diseases with multimodal imaging*
Stanley J. Glaser Foundation Research Award (UM)
Co-Investigator
PI: Marco Ruggeri, Department of Ophthalmology
6/1/14-5/31/15; no cost extension to 5/31/16; \$40,000.
17. *Collaborative Development and Application of Distributable, Internet Accessible, Interactive Medical Imaging Teaching Software and Dynamic Tracking System.*
NSF-DUE 1022750
9/15/2010 – 8/31/2013; \$598,804
Co-investigator; PI: Weizhao Zhao, Biomedical Engineering.
16. *Dynamic Vision Project;*
Vision Cooperative Research Centre, Sydney, Australia - University of Miami R&D contract;

- 8/15/06-8/31/13; TC: \$1,650,000
Investigator, 20%; PI: Jean-Marie Parel; Dept. of Ophthalmology.
15. *Retinal Ganglion Cell Plasticity in Glaucoma*
NIH-National Eye Institute (R01EY019077-01A2)
09/01/09-08/31/11; DC: \$500,000; TC Year: \$747,102 – Extended until 08/31/12
Co-Investigator, 5%; PI: Vittorio Porciatti, Department of Ophthalmology.
 14. *The Bascom Palmer Eye Institute Center for Ophthalmic Innovation*
USAMRMC - Department of Defense
09/21/09-10/20/11; TC: \$1,697,000; IDC: \$479,780
Investigator, 5%; PI: Byron Lam (Department of Ophthalmology)
 13. *Optomechanical characteristics of lens accommodation*
NIH - National Eye Institute (2R01 EY014225)
04/01/07-03/31/12; \$1,743,980
Co-Investigator, 16%; (PI: Dr. Jean-Marie Parel, Department of Ophthalmology)
 12. *Physical performance, testing and evaluation of IOLs in an eye model*
AMO - University of Miami R&D contract
8/1/06 - 4/30/08; \$96,850
Investigator, 5% (PI: Jean-Marie Parel, Department of Ophthalmology)
 11. *SIBS in Ophthalmology*
InnFocus/Innovia - University of Miami R&D contract
6/1/06-5/30/08, \$590,742
Investigator, 5%; (PI: Jean-Marie Parel, Department of Ophthalmology)
 10. *Life and death of retinal ganglion cells in DBA/2J mice;*
NIH, National Eye Institute (1 R03 EY016322-010);
5/1/05-4/30/08; TC:\$150,000;
Investigator, 5%; (PI: Vittorio Porciatti, Department of Ophthalmology).
 9. *Restoring Accommodation Project;*
CRCERT/ Vision Cooperative Research Centre, Sydney, Australia - University of Miami R&D contract;
8/15/97-8/14/06; TC:\$1,350,000;
Investigator, 20%; PI: Jean-Marie Parel; Dept. of Ophthalmology.
 8. *Optomechanical characteristics of lens accommodation;*
NIH, National Eye Institute-Bioengineering Research Grant (1R01EY14225-01);
10/01/02-9/30/05; No cost-extension until 9/30/06; DC:\$750,000, IDC:\$283,250;
Investigator, 25%; PI: Jean-Marie Parel; Department of Ophthalmology
 7. *Otic probe for neurocochlear intraoperative monitoring;*
NIH SBIR Phase II (2R44DC004344-02), Intelligent Hearing Systems (PI: Rafael Delgado);
09/01/02-08/31/05; DC:\$709,509, TC:\$747,279;
Investigator, 15%; UM PI: Fred Telischi, Department of Otolaryngology.
 6. *Titanium Sapphire and Alexandrite laser Trabeculoplasty, Phase I;*
SOLX, Boston, MA; - University of Miami R&D contract;
7/1/01-6/30/02; TC:\$127,640;
Investigator, 10%; PI: Jean-Marie Parel; Dept. of Ophthalmology.
 5. *Antiproliferative gel to prevent fibrosis in Anterior Ciliary Sclerotomy;*
Corneal SA, Annecy, France - University of Miami R&D contract;
3/1/01-2/28/02; DC:\$42,124, IDC:\$10,531;
Investigator, 8%; PI: Jean-Marie Parel, Department of Ophthalmology.
 4. *Otic probe for neurocochlear intraoperative monitoring;*
NIH-STTR Phase I (1R41DC04344-01A1), Intelligent Hearing Systems, Inc. (PI: Rafael Delgado);
9/1/00-6/31/01; DC+IDC:\$140,000;

Investigator, 8%; UM PI: Fred Telischi, Department of Otolaryngology.

3. *Raman sensing optical biopsy for optimized laser lithotripsy;*
NIH-SBIR Phase I (1R43DK055953-01), Detection Limits, Inc. (PI: Chris Schoen);
4/15/99-4/12/00; DC+IDC:\$29,306;
Investigator, 10%; UM PI: Jean-Marie Parel; Dept. of Ophthalmology.
2. *X-ray guided interstitial thermotherapy system for breast cancer;*
NIH-SBIR Phase I (1R43CA074675-01A1), Rare Earth Medical Inc. (PI: Edward Sinofsky);
9/15/98-3/1/99, extended until 4/1/00; DC+IDC:\$29,771;
Investigator, 10%; UM PI: David Robinson; Dept. of Surgical Oncology.
1. *Surgery, corneal shape, hydration and IOP;*
Corneal SA, Annecy, France - University of Miami R&D contract;
10/1/97-9/30/98; DC+IDC:\$29,661; *Investigator; PI: Jean-Marie Parel; Dept. of Ophthalmology.*

As Investigator

5. *Acquisition of a Nikon A1-R-SI Confocal Laser Microscope for an Integrated Confocal-AFM System*
James and Esther King Biomedical Research Program - Shared Instrumentation Grant
1/1/10-12/31/11; TC: \$489,496
User (No effort); PI: Vincent Moy (Department of Physiology and Biophysics)
4. *Exploratory development of module-based interactive teaching software for medical imaging, signal and optics curriculum*
National Science Foundation - Division of Undergraduate Education (NSF DUE-0632752)
1/1/07 - 12/31/08; \$150,000
Co-Investigator, AY:0%; Summer: 6%; PI: Dr. WeiZhao Zhao; Department of Biomedical Engineering.
3. *Continuous-wave 980 nm diode laser for breast and ocular hyperthermia;*
Institutional Equipment Funds, University of Miami School of Medicine;
1996; DC:\$18,500, IDC:\$0;
Investigator; PI: Jean-Marie Parel; Dept. of Ophthalmology.
2. *Development of microsurgical and laser instrumentation for stereotactically directed endoablation of small breast cancers;*
Department of Defense Breast Cancer Research Program;
10/94-10/96; DC+IDC:\$143,554;
Optical Physicist; PI: David Robinson; Dept. of Surgical Oncology.
1. *Integrated Laser Microsurgical System;*
Enterprise Florida Innovation Partnership;
1994; DC+IDC:\$57,000;
Optical Physicist; PI: Jean-Marie Parel; Dept. of Ophthalmology.

22. Editorial responsibilities:

Associate Editor, Biomedical Optics Express, May 2014-2020

Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XXX*; SPIE Proceedings 11218; 2020.
Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XXIX*; SPIE Proceedings 10858; 2019.
Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XXVIII*; SPIE Proceedings 10474; 2018.
Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XXVII*; SPIE Proceedings 10045; 2017.
Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XXVI*; SPIE Proceedings 9693; 2016.
Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XXV*; SPIE Proceedings 9307; 2015.
Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XXIV*; SPIE Proceedings 8930; 2014.
Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XXIII*; SPIE Proceedings 8567; 2013.
Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XXII*; SPIE Proceedings 8209; 2012.
Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XXI*; SPIE Proceedings 7885; 2011.

Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XX*; SPIE Proceedings 7550; 2010.
 Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XIX*; SPIE Proceedings 7163; 2009.
 Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XVIII*; SPIE Proceedings 6844A; 2008.
 Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XVII*; SPIE Proceedings 6426A; 2007.
 Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XVI*; SPIE Proceedings 6138; 2006.
 Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XV*; SPIE Proceedings 5688; 2005.
 Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XIV*; SPIE Proceedings 5314; 2004.
 Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XIII*; SPIE Proceedings 4951; 2003.
 Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XII*; SPIE Proceedings 4611; 2002.
 Editor, with A Ho and P Soederberg; *Ophthalmic Technologies XI*; SPIE Proceedings 4245; 2001.
 Editor, with P Rol and K Joos; *Ophthalmic Technologies X*; SPIE Proceedings 3908; 2000.
 Editor, with P Rol and K Joos; *Ophthalmic Technologies IX*; SPIE Proceedings 3591; 1999.
 Editor, with P Rol and K Joos; *Ophthalmic Technologies VIII*; SPIE Proceedings 3246; 1998.
 Editor, with P Rol and K Joos; *Ophthalmic Technologies VII*; SPIE Proceedings 2971; 1997.

23. Professional and Honorary Organizations:

American Institute for Medical and Biological Engineering, Fellow member, 2019-present
 American Society for Engineering Education (ASEE); member; 2000-present.
 Biomedical Engineering Society (BMES); member; 2000-present.
 American Society for Lasers in Medicine and Surgery (ASLMS); member; 1996-2004.
 Optical Society of America (OSA); member; 1995-present.
 Society for Photo-Instrumentation Engineers (SPIE); member; 1994-2018; Senior member: 2018-present.
 Biomedical Optics Society (BiOS); member; 1994-present.
 Association for Research in Vision and Ophthalmology (ARVO); member; 1993-present.
 ENSERB alumni association; member; 1991-present.

24. Honors and Awards:

Fellow of ARVO (2021 Silver fellow class)
 Fellow of SPIE, (Class of 2021)
 Fellow, American Institute for Medical and Biological Engineering, Inducted March 2019
 Senior Member; SPIE, 2018
 2017 Provost Scholarly Productivity Award; University of Miami, 3/17.
 2016 Johnson A. Edosomwan Researcher of the Year Award; University of Miami College of Engineering, 12/16
 2016 Outstanding Faculty Leadership Award, University of Miami Department of Biomedical Engineering, 4/16
 2016 Provost Funding Award, University of Miami, April 2016
 2013 Johnson A. Edosomwan Researcher of the Year Award; University of Miami College of Engineering, 12/13
 College of Engineering Banner Marshall, University of Miami Graduate Commencement; May 13, 2004.
 Section New Faculty Research Award Runner Up; ASEE Southeastern Section Annual Conference; April 2002.
 Travel Grant; ASEE - Biomedical Engineering Division Annual Conference; May 2000.
 Member, University of Miami Graduate Faculty; 12/99-present.
 Award of Academic Merit; University of Miami Graduate School; 5/96.

25. Post-Doctoral Fellowships:

Fight for Sight, The Research Division of Prevent Blindness America; 6/96-6/97.

26. Other Professional Activities

Founding Member, External Advisory Board, University of South Florida Department of Medical Engineering; Jul 1, 2020 -present

International Society for Imaging in the Eye (ISIE)

Program Committee, Annual ISIE Meeting 2008-present.
 Fort Lauderdale, FL 2008-2012; Seattle, WA, 2013, 2016; Orlando, FL, 2014; Denver 2015; Seattle 2016; Baltimore 2017; Honolulu, 2018; Vancouver, 2019; Baltimore 2020 (moved online due to COVID); Online 2021; New Orleans 2023; Seattle, 2024; Salt-Lake City, 2025.

SPIE – International Society for Optical Engineering

Conference Chair, Ophthalmic Technologies conference, SPIE Photonics West Meeting, 1997-2020.

Ophthalmic Technologies XXX, San Francisco, CA, 2020 (with A Ho and P Söderberg).
Ophthalmic Technologies XXIX, San Francisco, CA, 2019 (with A Ho and P Söderberg).
Ophthalmic Technologies XXVIII, San Francisco, CA, 2018 (with A Ho and P Söderberg).
Ophthalmic Technologies XXVII, San Francisco, CA, 2017 (with A Ho and P Söderberg).
Ophthalmic Technologies XXVI, San Francisco, CA, 2016 (with A Ho and P Söderberg).
Ophthalmic Technologies XXV, San Francisco, CA, 2015 (with A Ho and P Söderberg).
Ophthalmic Technologies XXIV, San Francisco, CA, 2014 (with A Ho and P Söderberg).
Ophthalmic Technologies XXIII, San Francisco, CA, 2013 (with A Ho and P Söderberg).
Ophthalmic Technologies XXII, San Francisco, CA, 2012 (with A Ho and P Söderberg).
Ophthalmic Technologies XXI, San Francisco, CA, 2011 (with A Ho and P Söderberg).
Ophthalmic Technologies XX, San Francisco, CA, 2010 (with A Ho and P Söderberg).
Ophthalmic Technologies XIX, San Jose, CA, 2009 (with A Ho and P Söderberg).
Ophthalmic Technologies XVIII, San Jose, CA, 2008 (with A Ho and P Söderberg).
Ophthalmic Technologies XVII, San Jose, CA, 2007 (with A Ho and P Söderberg).
Ophthalmic Technologies XVI, San Jose, CA, 2006 (with A Ho and P Söderberg).
Ophthalmic Technologies XV, San Jose, CA, 2005 (with A Ho and P Söderberg).
Ophthalmic Technologies XIV, San Jose, CA, 2004 (with A Ho and P Söderberg).
Ophthalmic Technologies XIII, San Jose, CA, 2003 (with A Ho and P Söderberg).
Ophthalmic Technologies XII, San Jose, CA, 2002 (with A Ho and P Söderberg).
Ophthalmic Technologies XI, San Jose, CA, 2001 (with A Ho and P Söderberg).
Ophthalmic Technologies X, San Jose, CA, 2000 (with K Joos and P Rol).
Ophthalmic Technologies IX, San Jose, CA, 1999 (with K Joos and P Rol).
Ophthalmic Technologies VIII, San Jose, CA, 1998 (with K Joos and P Rol).
Ophthalmic Technologies VII, San Jose, CA, 1997 (with K Joos and P Rol).

Program Committee and Session Chair, Ophthalmic Technologies conference, SPIE Photonics West Meeting

Ophthalmic Technologies XXXV, SPIE Photonics West, San Francisco, CA, 2026.
Ophthalmic Technologies XXXV, SPIE Photonics West, San Francisco, CA, 2025.
Ophthalmic Technologies XXXIV, SPIE Photonics West, San Francisco, CA, 2024.
Ophthalmic Technologies XXXIII, SPIE Photonics West, San Francisco, CA, 2023.
Ophthalmic Technologies XXXII, SPIE Photonics West, San Francisco, CA, 2022.
Ophthalmic Technologies XXXI, SPIE Photonics West, San Francisco, CA, 2021.
Ophthalmic Technologies VI, SPIE Photonics West, San Jose, CA, 1996.

ARVO – Association for Research in Vision and Ophthalmology

Session Moderator, ARVO Annual Meeting

Poster Session 505; Intraocular lenses and Presbyopia; Salt Lake City, UT; May 8, 2025.
SIG Moderator – Global Eye Optics: 2020 and beyond; May 6, 2021 (Virtual).
Paper Session 214; Accommodation: Morphology and Mechanisms; Vancouver, Canada; April 29, 2019
Paper Session 216; IOL and presbyopia correction; Baltimore, MA, May 8, 2017.
Poster Session 318; IOL Optical Properties and Presbyopia Correction; Seattle, WA, May 3, 2016.
Paper Session 216; IOL Optics and Visual Performance; Denver, CO, May 4, 2015.
Paper Session 403; IOL and Presbyopia Correction; Orlando, FL; May 7, 2014.
Poster Session 417; Accommodation and Presbyopia Correction; Seattle, WA; May 8, 2013.
Poster Session 147 Imaging of the Healthy and Diseased Retina I; Fort Lauderdale, FL; May 1, 2011.
Paper Session 439 Accommodation: In vivo and In vitro; Fort Lauderdale, FL; May 6, 2009.
Paper Session 530 Imaging: Structural; Fort Lauderdale, FL; May 7, 2009.

Other conference organization/moderation

International Congress of Wavefront Sensing and Aberration-free Refractive Surgery

"Cross-examine Attorney", Revealing Company Secrets (Session VII), Third International Congress of Wavefront Sensing and Aberration-free Refractive Surgery, Interlaken, Switzerland, February 16, 2002.

Moderator, Congrès Annuel de la SAFIR (Société de l'Association Française d'Implants et de Chirurgie Réfractive), Paris, France, May 2001.

Chair, 4th Biomedical Optics and Implants Colloquium, University of Miami, 5/15-5/16/98 (with JM Parel and P Milne).

Chair, 3rd Biomedical Optics and Implants Colloquium, University of Miami, 5/19/97 (with JM Parel and S Gautier).

Chair, 2nd Biomedical Optics and Implants Mini-Symposium, University of Miami, 4/29/96 (with JM Parel).

Chair, Ophthalmic Optics and Polymer Seminar, University of Miami, 5/22/95 (with JM Parel).

Workshop participation:

Biomedical Engineering Educational Summit V; Newark,NJ; May 29-31, 2024
Biomedical Engineering Educational Summit IV; Cleveland, OH; May 3-6, 2019
IEEE Grand Challenges in the Life Sciences; Washington, DC; October 4-5, 2012
Whitaker Biomedical Engineering Educational Summit II; Landsowne, VA; March 3-6, 2005
Whitaker Foundation Biomedical Engineering Research Conference, LaJolla, CA, August 7-10, 2003.
Whitaker Foundation Biomedical Engineering Research Conference, LaJolla, CA, August 8-11, 2002.
How to write a successful NSF proposal; ASEE-SE Section Meeting, Gainesville, FL; April 7, 2002
Whitaker Biomedical Engineering Educational Summit; Landsowne, VA; December 7-10, 2000

Grant proposal reviews - Study section participation as ad-hoc member or chair:

Special Emphasis Study Section Chair; NIH-CSR Sensory Technologies SBIR Panel

ZRG1 ETTN-G 12, Small Business: Aging and Development, Auditory, Vision and Low Vision Technologies;
Torrance, CA; 03/08/18-03/09/18
ZRG1 ETTN-G 12, Small Business: Aging and Development, Auditory, Vision and Low Vision Technologies;
Washington, DC; 11/16/17-11/17/17
ZRG1 ETTN-G 12, Small Business: Aging and Development, Auditory, Vision and Low Vision Technologies;
Washington, DC; 06/22/17-06/23/17
ZRG1 ETTN-G 12, Small Business: Aging and Development, Auditory, Vision and Low Vision Technologies;
San Diego, CA; 03/09/17-03/10/17
ZRG1 ETTN-G 12, Small Business: Aging and Development, Auditory, Vision and Low Vision Technologies;
Washington, DC; 11/03/16-11/04/16
ZRG1 ETTN-G 12, Small Business: Aging and Development, Auditory, Vision and Low Vision Technologies;
Washington, DC; 6/22/16-06/23/16

NIH ARRA Grant Reviews

ZRG1 ETTN C-53; ARRA RC3 BRDG-SPN and R43 CATALYST Panel, Bethesda, MD, 11/19/09
ZRG1 ETTN-A58R; Challenge Grants Panel #12 (Mail reviews); 6/19/09.

Adhoc Study Section Member; NIH CSR, NEI and NIBIB Panels:

ZEY1 VSN(01) National Eye Institute Special Emphasis Panel; NEI Clinical Applications; Online; 12/05/2024;
Review of clinical trial applications: U44, R34, UG1.
ZRG1 NV-P(81) Imaging and Bioengineering Technology for Visual Systems (IBV); Washington, DC;
11/04/24-11/05/24.
ZRG1 NV-P(81) Vision Imaging, Bioengineering and Low Vision Technology Development; Online;
06/06/24-06/07/24.
PED 2 (Pathophysiology of Eye Disease 2); Online, 06/16/22-06/17/22.
ZEY1 VSN06, R13/R24 proposals; Online; 7/30/2020.
ZRG1 F03B-E (20), Fellowships: Biophysical, Physiological, Pharmacological and Bioengineering
Neuroscience, Phone Reviewer, 03/05/18 (F31 grant application).
ZEY1 VSN (05), NEI Audacious Goal Initiative RFA, Bethesda, MD, 12/11/14 (U01 Grant Applications)
ZEB1 OSR-B-M1, Reducing Health Disparity SBIR Review, NIBIB, 6/6/14 (SBIR Phase I/II)
ZRG1 ETTN-E12B, Visual System Small Business, Mail Reviews, 06/02/11 (SBIR/STTR Phase I)
ZEY1 VSN-05 NEI SBIR Special Emphasis Panel, Washington, DC, 4/8/10 (SBIR Phase I/II RFA)
ZEY1 VSN-04 NEI SBIR Special Emphasis Panel, Washington, DC, 8/3/09 (SBIR Phase I/II RFA)
ZRG1 ETTN-R92M, Vision Enhancement and Technology, AED Review, 2/17/09-2/18/09
ZRG1 BDCN-T92S, Myopia and Vision Technology, AED Review, 10/15/08 (RO1, R21)
ZRG1 BDCN-F55, Bethesda, MD, 3/21/06 (RO1, Bioengineering Research Partnership Study Section)
ZRG1 SS-R(01); Rockville, MD, 7/17/00 (RO1-Bioengineering Research Grants -BRG)

Special Emphasis Study Section Member; NIH-CSR Sensory Technologies SBIR Panel; 2013-2016:

ZRG1 ETTN-G 12, Small Business: Aging and Development, Auditory, Vision and Low Vision Technologies;
Washington, DC; 03/10/16-03/11/16

ZRG1 ETTN-G 12, Small Business: Sensory Technologies; Washington DC; 06/25/15-06/26/15
ZRG1 ETTN-G 12, Small Business: Sensory Technologies; Washington DC; 02/26/15-02/27/15
ZRG1 ETTN-G 12, Small Business: Sensory Technologies; Washington DC; 10/23/14-10/24/14
ZRG1 ETTN-G 12, Small Business: Sensory Technologies; Washington DC; 6/19/14
ZRG1 ETTN-G 12, Small Business: Sensory Technologies; San Antonio, TX; 2/27/14
ZRG1 ETTN-G 12, Small Business: Sensory Technologies; Teleconference; 11/21/13-11/22/13
ZRG1 ETTN-G 12, Small Business: Sensory Technologies; San Francisco, CA; 6/19/13
ZRG1 ETTN-G 12, Small Business: Sensory Technologies; Washington, DC; 2/21/13-2/22/13

Special Emphasis Study Section Member; NIH-CSR Visual System SBIR and Devices Panel; 2002-2009:

ZRG1 ETTN-E12B, Visual System Small Business, San Francisco, CA, 10/24/08 (SBIR/STTR Phase I/II)
ZRG1 ETTN-E12, Visual System Small Business, Washington, DC, 06/30/08 (SBIR/STTR Phase I/II)
ZRG1 BDCN-F12B, Visual System Small Business, Washington, DC, 02/11/08 (RO1, R21, SBIR Phase I/II)
ZRG1 BDCN-F12, Washington, DC, 11/02/07 (SBIR Phase I/II)
ZRG1 BDCN-F12B, Washington, DC, 3/12/07 (RO1, R21, SBIR Phase I/II)
ZRG1 BDCN-F12, Bethesda, MD, 11/17/06 (RO1, R21, SBIR Phase I)
ZRG1 BDCN-F12 - F02(M), Bethesda, MD, 3/20/06-3/21/06 (SBIR Phase I, RO1, R21)
ZRG1 BDCN-F12, Bethesda, MD, 11/10/05-11/11/05 (SBIR Phase I/II, R01)
ZRG1 BDCN-F12B, Bethesda, MD, 7/11/05-7/12/05 (SBIR Phase I/II, R21)
ZRG1 BDCN-F12, Bethesda, MD, 3/21/05-3/22/05 (SBIR Phase I, RO1, R21)
ZRG1 BDCN-F12, Bethesda, MD, 11/15/04-11/16/04 (SBIR/STTR Phase I/II, RO1, R21)
ZRG1 BDCN-F10B-E14B, Bethesda, MD, 6/27/04-6/28/04 (SBIR/STTR Phase I/II, RO1)
ZRG1 BDCN-F10, Bethesda, MD, 3/22/04-3/23/04 (SBIR/STTR Phase I/II, RO1, R21)
ZRG1 DBD10, DBD11, Washington, DC, 11/24/03-11/25/03 (SBIR/STTR Phase I/II, RO1, R21)
ZRG1 VISA10B, VISA11B, Washington, DC, 7/7/03-7/8/03 (SBIR/STTR Phase I/II, RO1, R21)
ZRG1 BDCN5(10,11), Washington, DC, 3/24/03-3/25/03 (SBIR/STTR Phase I/II)
ZRG1 BDCN5(10,12), Washington, DC, 11/20/02 (SBIR/STTR Phase I/II)
ZRG1 SS-R(10,11); Washington, DC, 4/9/02 (SBIR/STTR Phase I/II)

Other Proposal Reviews:

Department of Defense, CDMRP panel, January 27-28, 2019; Tysons Corner, VA
Unites States-Israel Binational Science Foundation; February 2014
Raine Medical Research Foundation, The University of Western Australia; July 2008.
International Science and Technology Center (ISTC); 12/03.
Air Force Office of Scientific Research Chemistry and Life Sciences Directorate; 8/00.

Manuscript reviews:

Applied Optics
Biomedical Optics Express
Cornea
Experimental Eye Research
Graefe's Archives of Clinical and Experimental Ophthalmology
Investigative Ophthalmology and Visual Science
Journal of Biomedical Optics
Journal of Cataract and Refractive Surgery
Journal of Ophthalmology
Journal of the Optical Society of America, A
Journal of Refractive Surgery
Lasers in Surgery and Medicine
Medical Engineering and Physics
Ophthalmic and Physiological Optics
Ophthalmic Surgery, Lasers and Imaging
Optics Express
Optics Letters
Optometry and Vision Science
Physics in Medicine and Biology
Progress in Retinal and Eye Research

Scientific Reports
 Vision Research
 Micron
 Surgical Laparoscopy, Endoscopy and Percutaneous Techniques
 Translational Vision Science and Technology

TEACHING

27. **Teaching Awards Received:** None.

28. **Teaching Specialization:**

New courses developed (Department of Ophthalmology):

OPH9 (2cr), Vision and Optics (Spring 2017) - MS in Vision Science and Investigative Ophthalmology

New courses developed (Department of Biomedical Engineering):

BME 732 (3 cr), Ophthalmic Optics and Imaging (Spring 2017)

BME 545 (3cr), Optics and Biomedical Applications (Fall 1996-Fall 2007)

BME 546 (3cr), Medical Applications of Lasers (Spring 1997-Spring 2007)

BME 547 (3cr), Special Projects in Biomedical Optics (Fall 1996-Spring 2001)

BME 645 (3cr), Biomedical Optical Imaging and Diagnostics (Fall 2002; Fall 2005; Fall 2009; Spring 2011)

BME 330 (3cr), Foundations of Medical Imaging (Fall 2006-present)

Innovative/ Experimental Teaching (Department of Biomedical Engineering)

Fall 2021: Global Challenges in Engineering course – New team-taught course for engineering and non-engineering freshmen.

Spring 1997 / Spring 1998: Introduction to Engineering II (BME 112, Impact Project)
 Supervised 5 (1997) and 8 (1998) BME freshmen students in the experimental phase of the College of Engineering Impact program

Courses taught (Department of Biomedical Engineering):

Spring 2025 BME 330 (3 cr), Foundation of Medical Imaging (10 UG students)

OPH 640 (2 cr), Vision and Optics (4 G students)

Fall 2024 BME 330 (3 cr), *Foundation of Medical Imaging* (28 UG students)

Spring 2024 BME 330 (3 cr), *Foundation of Medical Imaging* (15 UG students)

OPH 640 (2 cr), *Vision and Optics* (4 G students)

Fall 2023: BME 330 (3 cr), *Foundation of Medical Imaging* (37 UG students)

Spring 2023 BME 707 (1 cr) / 708 (2 cr) *MS Project I/II* (4/13 G students) – Joined session with Ozcan Ozdamar

EGN114 (3 cr), *Global Challenges in Engineering* Team-taught, 4 lectures (31 UG students)

OPH 640 (2 cr), *Vision and Optics* (3 G students)

Fall 2022 BME 545/645 (3 cr) *Biomedical Optical Instrumentation* (7UG, 7G students)

EGN114 (3 cr), *Global Challenges in Engineering*, Team-taught

4 lectures per section – 2 Sections (53/55 UG students).

Spring 2022 BME 402 (2 cr), Senior Project I (8 UG students)

BME 403 (1 cr), Senior Project II (54 UG students)

Fall 2021 BME 706 (3 cr), *MS Project* (14 G students) -4.1/5.0

EGN114 (3 cr), *Global Challenges in Engineering* Team-taught

4 lectures (58 UG students) – 4.4/5.0

Spring 2021 OPH 640 (2 cr), *Vision and Optics* (3 G students)

Fall 2020 BME 545 (3 cr) *Biomedical Optical Instrumentation* (1UG, 5G students)

BME 706 (3 cr) *MS Project* (12 G students) – Joined session with Fotios Andreopoulos

Spring 2020 OPH640 (2cr), *Vision and Optics* (7 G students)

BME403 (1 cr), *Senior Design Project II* (47 UG students) – Joined session with Jorge Bohorquez

Spring 2019 OPH640 (2cr), *Vision and Optics* (2 G students)

BME728 (3cr), *Special Topics: Ophthalmic Optics and Imaging* (6 G students)

Spring 2018: BME403 (1 cr), *Senior Design Project II* (11 UG students)
 Fall 2017: OPH640 (2cr), *Vision and Optics* (2 G students)
 Spring 2017: BME 545 (3 cr) *Biomedical Optical Instrumentation* (4UG, 3G students)
 BME 732 (3 cr), *Ophthalmic Optics and Imaging* (8 G students)
 OPH9 (2cr), *Vision and Optics* (3 G students)
 Fall 2016: BME330 (3cr), *Foundations of Medical Imaging* (40 UG students)
 Spring 2016: BME330 (3cr), *Foundations of Medical Imaging* (27 UG students)
 Fall 2015: BME330 (3cr), *Foundations of Medical Imaging* (36 UG students)
 Spring 2015: BME330 (3cr), *Foundations of Medical Imaging* (12 UG students)
 Fall 2014: BME330 (3cr), *Foundations of Medical Imaging* (39 UG students)
 BME645 (3cr), *Biomedical Optical Imaging and Diagnostics* (10 G students)
 Spring 2014: None (Acting chair)
 Fall 2013: None (Acting chair)
 Spring 2013: BME330 (3cr), *Foundations of Medical Imaging* (26 UG students)
 Fall 2012: BME330 (3cr), *Foundations of Medical Imaging* (36 UG students)
 BME645 (3cr), *Biomedical Optical Imaging and Diagnostics* (9 G students)
 Spring 2012: BME330 (3cr), *Foundations of Medical Imaging* (10 UG students)
 Fall 2011: BME330 (3cr), *Foundations of Medical Imaging* (25 UG students)
 Spring 2011: BME330 (3cr), *Foundations of Medical Imaging* (14 UG students)
 BME645 (3cr), *Biomedical Optical Imaging and Diagnostics* (9 G students)
 Fall 2010: BME330 (3cr), *Foundations of Medical Imaging* (22 UG students)
 Spring 2010: BME330 (3cr), *Foundations of Medical Imaging* (12 UG students)
 Fall 2009: BME330 (3cr), *Foundations of Medical Imaging* (30 UG students)
 BME645 (3cr), *Biomedical Optical Imaging and Diagnostics* (11 G students)
 Spring 2009: BME330 (3cr), *Foundations of Medical Imaging* (16 UG students)
 Fall 2008: BME330 (3cr), *Foundations of Medical Imaging* (31 UG students)
 Spring 2008: BME330 (3cr), *Foundations of Medical Imaging* (18 UG Students)
 Fall 2007: BME545 (3cr), *Biomedical Optical Instrumentation*
 BME330 (3cr), *Foundations of Medical Imaging*
 Spring 2007: BME546 (3cr), *Medical Applications of Lasers*
 BME401 (1cr), *Senior Design Project I* (Coordinator)
 BME402 (2cr), *Senior Design Project II* (Coordinator)
 Fall 2006: BME545 (3cr), *Biomedical Optical Instrumentation*
 BME330 (3cr), *Foundations of Medical Imaging*
 Spring 2006: BME546 (3cr), *Medical Applications of Lasers*
 Fall 2005: BME545 (3cr), *Biomedical Optical Instrumentation*
 BME645 (3cr), *Biomedical Optical Imaging and Diagnostics*
 Spring 2005: BME546 (3cr), *Medical Applications of Lasers*
 BME680 (0 cr), *Graduate Seminar*
 Fall 2004: BME545 (3cr), *Biomedical Optical Instrumentation*
 Spring 2004: BME546 (3cr), *Medical Applications of Lasers*
 Fall 2003: BME545 (3cr), *Biomedical Optical Instrumentation*
 Spring 2003: BME546 (3cr), *Medical Applications of Lasers*
 Fall 2002: BME545 (3cr), *Biomedical Optical Instrumentation*
 BME645 (3cr), *Biomedical Optical Imaging and Diagnostics*
 Spring 2002: BME546 (3cr), *Medical Applications of Lasers*
 Fall 2001: BME545 (3cr), *Biomedical Optical Instrumentation*
 Spring 2001: BME546 (3cr), *Medical Applications of Lasers*
 BME401 (1cr), *Senior Design Project I* (Coordinator)
 BME402 (2cr), *Senior Design Project II* (Coordinator)
 Fall 2000: BME545 (3cr), *Biomedical Optical Instrumentation*
 BME401 (1cr), *Senior Design Project I* (Coordinator)
 BME402 (2cr), *Senior Design Project II* (Coordinator)
 Spring 2000: BME546 (3cr), *Medical Applications of Lasers*
 Fall 1999: BME545 (3cr), *Biomedical Optical Instrumentation*
 Spring 1999: BME546 (3cr), *Medical Applications of Lasers*
 Fall 1998: BME545 (3cr), *Biomedical Optical Instrumentation*

Spring 1998:	BME546 (3cr), <i>Medical Applications of Lasers</i>
Fall 1997:	BME545 (3cr), <i>Biomedical Optical Instruments and Tissue Optics</i>
Spring 1997:	BME546 (3cr), <i>Physical Optics, Lasers and Biomedical Applications</i>
Fall 1996:	BME545 (3cr), <i>Biomedical Optical Instruments and Tissue Optics</i>
Spring 1996:	BME545 (3cr), <i>Special Projects in Optics and Lasers</i>
Fall 1995:	BME545 (3cr), <i>Introduction to Biomedical Optics</i>
Spring 1995:	BME529 (3cr), <i>Special Projects in Optics and Lasers</i>
Fall 1994:	BME529 (3cr), <i>Introduction to Biomedical Optics</i>
Spring 1994:	BME527 (3cr), <i>Special Projects in Optics and Lasers</i>

Guest Lectures

27. *Undergraduate Research*; First Year Directions course; Fall 2024; November 11, 2024
26. *Introduction to Biomedical Engineering*. Presented at *ECE110: Introduction to Innovation: Learning About Innovation by Innovating* –University of Miami College of Engineering; Fall 2018.
25. *MD/PhD Journal Club*, University of Miami, March 22, 2017.
24. *Mirrors, Prisms, Filters, Coatings*; Presented at BME 545- Biomedical Optical Instrumentation, Department of Biomedical Engineering, University of Miami, September 28, 2015.
23. *Engineering the eye*; Presented at BME112-Introduction to Biomedical Engineering, Department of Biomedical Engineering, University of Miami, February 11, 2014.
22. *Optics of the eye*; Presented at BME112-Introduction to Biomedical Engineering, Department of Biomedical Engineering, University of Miami, April 11, 2013.
21. *Laser applications in Ophthalmology*; Presented at BME546-Medical Applications of Lasers; Department of Biomedical Engineering, University of Miami, April 9, 2013.
20. *Optics of the eye and microscope*; Presented at BME545-Biomedical Optical Instrumentation, University of Miami, November 2012.
19. *Laser applications in Ophthalmology*; Presented at BME546-Medical Applications of Lasers; Department of Biomedical Engineering, University of Miami, April 10, 2012.
18. *Optics of the eye*; Presented at BME112-Introduction to Biomedical Engineering, Department of Biomedical Engineering, University of Miami, February 09, 2012.
17. *Ophthalmic Laser-Tissue Interactions*; Presented at BME546-Medical Applications of Lasers; Department of Biomedical Engineering, University of Miami, April 2011.
16. *Life-long learning and scholarship skills*; Presented at BME112-Introduction to Biomedical Engineering, Department of Biomedical Engineering, University of Miami, January 27, 2011.
15. *Medical Applications of Lasers*; College of Engineering Summer Scholar Program (High School Students), Department of Biomedical Engineering, University of Miami, July 2, 2010.
14. *Optics of the eye*; Presented at BME112-Introduction to Biomedical Engineering, Department of Biomedical Engineering, University of Miami, February 25, 2010.
13. *Life-long learning and scholarship skills*; Presented at BME112-Introduction to Biomedical Engineering, Department of Biomedical Engineering, University of Miami, January 28, 2010.
12. *Ophthalmic Laser-Tissue Interactions*; Presented at BME546-Medical Applications of Lasers; Department of Biomedical Engineering, University of Miami, April 2009.
11. *Life-long learning and scholarship skills*; Presented at BME112-Introduction to Biomedical Engineering, Department of Biomedical Engineering, University of Miami, February 15, 2008.
10. *Optics of the Eye and Visual Instruments (2 lectures)*; Presented at BME545-Biomedical Optical Instrumentation; Department of Biomedical Engineering, University of Miami, November 2008.
9. *Ophthalmic Laser-Tissue Interactions*; Presented at BME546-Medical Applications of Lasers; Department of Biomedical Engineering, University of Miami, April 2008.
8. *Life-long learning and scholarship skills*; Presented at BME112-Introduction to Biomedical Engineering, Department of Biomedical Engineering, University of Miami, February 15, 2008.
7. *Laser Applications in Medicine*; Presented at BME112-Introduction to Biomedical Engineering, Department of Biomedical Engineering, University of Miami, February 15, 2007.
6. *The architecture of the human zonular apparatus*; Presented in BIL299-Research Seminar, Department of Biology, University of Miami, February 13, 2007
5. *Laser Applications in Medicine*; Presented at BME112-Introduction to Biomedical Engineering, Department of Biomedical Engineering, University of Miami, January 30, 2006.

4. *Laser Applications in Medicine*; Presented at BME112-Introduction to Biomedical Engineering, Department of Biomedical Engineering, University of Miami, March 29, 2005.
3. *The Restore Accommodation Project (Phaco-Ersatz)*; Presented at the Graduate Seminar, Department of Biomedical Engineering, University of Miami; September 25, 2002.
2. *The Phaco-Ersatz project*; Presented in BIL299-Research Seminar, Department of Biology, University of Miami, March 19, 2002
1. *Optics and Laser Research at the Ophthalmic Biophysics Center*; Presented to First Year Residents, Bascom Palmer Eye Institute; July 16, 2001

Introduction to Engineering II (BME112) Projects Supervised

12. Ryan Magee, Armando Cuello, Megan Faulkberry. *Measurement of tissue ablation rates with a pulsed Er:YAG laser*; Fall 2002
11. Veronica Fortino, Juan Carlos Infante, Mario Rueda, Brad Keller. *Design of a system for measuring thermal damage on tissue*; Spring 2002.
10. Christine Cook, Shannon Keating, Jared Kirk, David Chin Yee. *Design of a system to measure thermal laser-tissue ablation rates*; Spring 2002.
9. Vanesa Dabul, Joana Lee, Vivianne Kassin, Jean Chery; *Measurement of carbon dioxide laser-tissue ablation rates*; Fall 2001.
8. Fahad Alobaid, Julie Beltz, Dennis Dixon, Jessica Hixon, Selma Majid, Harry Salinas; *Analysis of carbon dioxide laser radiation on soft tissue type in relation to ablation threshold*; Spring 2001.
7. Norman Olibrice, Ali Malik, Rohan Sen, Omar Babun; *Basic anatomy and optics of the human eye*; Spring 2000.
6. Ankita Kulhari, Kevin Farabaugh, Justin Muskovich, William Shaughnessy; *Optical model of the eye*; Spring 2000.
5. Steve Gumbs, Mohammed Lofti, Tony Sama, Yenvy Trong; *Measurement of the optical transmission of tissue phantoms at 633 nm*; Fall 1999.
4. Roth Kchao, Shaun Smart, Terrance Hunt; *A feedback system for controlling the fiber optic probe to tissue distance during laser irradiation of tissue*; Spring 1999.
3. Robert Bowman, Matthew Juliano, Dalia Luka, Adriana Vega; *Optical measurement of corneal thickness or refractive index*; Spring 1998
2. Elan Jennings-Jones, Jevere Howell, Angela Novak, Trent Trueper; *Measuring the thickness of a transparent sample*; Spring 1998.
1. Wael Ramadan, Trudy Ramjattan, Brijesh Patel, Andres Dominguez, Monique Jenkins; *Transmission measurements*; Spring 1997.

Senior Design Projects Mentored (BME 401-402, 3 credits and FGAMP):

34. Yue Yao, Jennifer Rodriguez; *Design of a tissue chamber for laser-ray-tracing system*; 8/13-5-14.
33. Lauren Marrusich; *Design of a distortion correction program for optical coherence tomography images of the crystalline lens*; 08/10-05/12.
32. Dana Robinson, Tyler Wiederhold; *Design of a slit-illumination system for crystalline lens biometry*; 08/10-05/11.
31. Ryan McClure; *Design of a laser beam delivery system for experimental traumatic optic neuropathy*; 05/10-05/11.
30. Dan Messick, Karli Pease; *Design of an interferometric retinal stimulation system for PERG*; 09/09-05/10.
29. Victor Hernandez (co-mentor); *Design of an optokinetic system for the mouse*; 09/08-05/09.
28. Cynthia Donna; *Design of an improved Scheiner system using LEDs*; 09/08-05/09.
27. Stephanie Bottaioli; *Design of a photorefractometer for intraoperative assessment of refractive error*; 09/08-05/09.
26. Bianca Maceo (co-mentor); *Design of a tissue mounting system for the EVAS II lens stretcher*; 09/07-05/09 (FGAMP).
25. Jared Smith; *Design of a shadowphotography cell for imaging the crystalline lens*; 04/07-05/08.
24. Stephanie Delgado; *Design of an optical system to measure the power of intraocular and isolated crystalline lenses*; 04/07-05/08.
23. Ashlee Daigle and Lynsey Crandall; *Design of an optical system to measure the posterior corneal radius of curvature, Phase III*; 2/06-12/07 (AD) - 2/07-12/07 (LC).
22. Daniel Fisher, *Design of an optical system to measure the posterior corneal radius of curvature, Phase II: Component selection*; 2/06-5/07.
21. Howard Feld, *Design of a computer program for data analysis of Ex-Vivo Accommodation Simulator (EVAS) results*; 10/05-05/06.

20. Karla Johnson, *Design of an optical system to measure the posterior corneal radius of curvature*; 09/05-05/06.
19. Minh Nhat Hoang, *Design of a fiber-guidance assembly for stereotactic laser interstitial thermotherapy of breast tumors*; 10/04-05/06 (FGAMP project)
18. Freda Addo, Undergraduate-BME; *Design of a laser ray-tracing system to measure the imaging properties of explanted crystalline lenses*; 06/03-12/04
17. Russell Will, *Design of a software based demodulation algorithm for optical coherence tomography*, 6/03-12/04.
16. Deborah Castillo, *Design of an optical system to measure crystalline lens power*, 2003-2004.
15. Roger Juarez, *Design of an optical and physical model of the mouse eye for retinal imaging*, 1/2003-12/2003.
14. Moises Perez, *Studies on thermal laser-tissue interactions at 1930 nm*, FGAMP, 8/2001-5/2003.
13. Alexandre Rosen; *Modification of an optical comparator and design of methods for assessing changes in lens volume during immersion in tissue preserving media*, 01-02
12. Chad Pecot; *Design of an image-guided optical fiber insertion system for the MAMTAT project*, 01-02
11. Noel Ziebarth, *Measurement of the lens capsule thickness using a focus detection method*, 01-02
10. Roth Kchao; *Design of a 1885 nm diode laser system*; 01-02
9. Monique Jenkins, *Design and evaluation of aspheric optical models of the eye with OSLO*, 99-03.
8. David Borja, *Design of a fiber-optic delivery system for a 1.9 μm laser diode*, 99-00
7. Carlos Arana, *Measurement of laser ablation depth with a confocal optical system*, 98-99
6. Jo Evaristo, *Measurement of the refractive index of the human lens by liquid immersion*, 98-99 (Incomplete)
5. Hai Ming Peng, *Design of a diffusing optical fiber for medical laser delivery*, 98-99
4. Zaily Pascual, *Design of a miniature ophthalmic fiber-optic delivery probe using GRIN lenses*, 97-98
3. Armando Acevedo, *Measurement of refractive indexes*, 97-98.
2. Juan Carlos Millon, *Delivery system of high-power lasers into optical fibers*, 96-97.
1. Xochitl Gonzalez-Cirre, *Corneal thickness and refractive index measurement by low-coherence interferometry*, 94-95.

BS-MS Projects supervised (BME605/606 or 705/706)

6. Avery Duncan; Ciliary muscle OCT image processing; 5/2024-5/2025
5. Colette Shea; *Optical Coherence Elastography of the lens*; 4/2024-5/2025.
4. Tiago De Almeida Graf; *Beam Delivery System for Swept-Source OCT imaging of the ciliary muscle*; 2023-2024
3. Heather Durkee; *Re-design of a miniature shadowphotogrammetry system*; 2012-2013. Co-supervised with JM Parel.
2. Eileen Pedraza; *Development of a breast tissue phantom for laser interstitial thermotherapy*; 08/05-05/06.
1. Monique Weller, *Design of a MATLAB program to calculate crystalline lens aberrations from Point Spread Function measurements* (FGAMP), 8/2001-12/2003.

MS projects or Graduate Independent Studies Supervised (BME 615/625/706, 3 credits):

22. Priyanka Poojari, MS Project, MS in Vision Science and Investigative Ophthalmology; 8/23-5/24. Co-mentored with Marco Ruggeri (Ophthalmology).
21. Ardita Hasalami, MS Project, MS in Vision Science and Investigative Ophthalmology; 8/20-5/21. Co-mentored with Marco Ruggeri (Ophthalmology).
20. Kelly Mote, MS Project (BME 706); *Design of an elastometer for measurement of mouse lens elasticity measurement* (co-supervised with Jean-Marie Parel and Marco Ruggeri) 9/2017-12/2018.
19. Siobhan Williams, BME PhD student; BME 625 (1 credit); *Modelling the gradient refractive index distribution of the crystalline lens*. Fall 2014.
18. Carolina de Freitas, *Effect of viscoelastic refractive index on femtosecond laser capsulotomy*; 09/13 to 05/14.
17. Bianca Maceo, *Effect of temperature on the optomechanical response in a lens stretcher*. 01/11 to 05/14.
16. Andres Gola; MS BME student; *Analysis of Hartmann-Shack spot patterns using a Fourier transform technique*; 01/11-12/11.
15. Marco Ruggeri, *Correction of optical distortions in mouse anterior segment OCT images*; 01/09-05/10.
14. Noel Ziebarth, *Determining the best aspheric intraocular lens design as a function of corneal aberrations*; 01/06-06/08.
13. Raksha Urs, *Analysis of human lenses using shadowphotogrammetric images: A comparison of two methods*; 06/07-08/07.
12. Hassan Wehbe, *Retinal image simulation software*, 01/05-12/05.
11. Ingrid Gambrell, *Accuracy of keratometry after refractive surgery*, 08/00-12/05.
10. Noel Ziebarth, *Analysis of crystalline lens power change versus load and stretch*; Spring 2003-Summer 2003.

9. Alexandre Rosen, *Techniques for measuring the amplitude of accommodation in nonhuman primates*, Spring 2003
8. Samith Sandadi, *Topographical analysis of eye-bank eyes after anterior ciliary sclerotomy*, Spring-Fall 01
7. Lidet Abiy, *Evaluation of laser Doppler probes for cochlear blood flow monitoring*, Spring 01
6. Suresh Atapattu, *Measurement of pressure transients during in vitro laser lithotripsy*, 98-00
5. David Gabbai, *Models for the time-temperature dependence of cell necrosis by hyperthermia*, Spring 00
4. Ed Baluyot, *Calculation of cell kill during laser thermal therapy of breast cancer*, 98-99
3. Guillermo Smart, *Analytical model for subablative thermal laser tissue-interaction*, 97-99.
2. Nish Pandya, *Experimental diode laser hyperthermia with the MAMTAT system*, 97-98.
1. Xochitl Gonzalez-Cirre, *Comparison of single and multi zone photorefractive keratectomy*, 96-97

External Dissertation Examination /Thesis Supervision:

9. **External PhD Dissertation Committee Member**, Doctoral dissertation, Multimodal Optical Coherence Elastography and Brillouin microscopy to evaluate in vivo lens biomechanics in presbyopia; Justin Schumacher, Department of Bioengineering, University of Maryland College Park; Defense Date: February 20, 2025.
8. **External PhD dissertation committee member**; Honqiu Zhang; Department of Biomedical Engineering, University of Houston; Advisor: Kirill Larin. Proposal Defense: February 3, 2021. Dissertation Defense: December 3, 2021.
7. **External dissertation examiner**; Mengchan Sun; Institute of Applied Ophthalmology (IOBA) (Visual Science), University of Valladolid; March 2017. (Mentor: Prof. Susana Marcos).
6. **Dissertation Committee Member and External dissertation examiner**; Alberto de Castro; *Reconstruction of the gradient refractive index of the crystalline lens with optimization methods*. Institute of Applied Ophthalmology (IOBA) (Visual Science), University of Valladolid; March 2012. Defense Date: July 6, 2012. (Mentor: Prof. Susana Marcos).
5. **External dissertation examiner**; Ravi Bakaraju; *Optical performance of simultaneous vision multifocal contact lenses using schematic and physical eye models*. School of Optometry and Vision Science, University of New South Wales, Sydney, Australia; 11/2010.
4. **MS Thesis Mentor**; Manuel Bacci; *Design of a Hartmann-Shack autorefractor*; Department of Electronics and Automation, University of Modena, Italy 09/09-06/10.
3. **Dissertation Committee Member**; Carlos Dorrondo Diaz; *Corneal ablation and contact lens fitting: Physical, Optical and Visual Implications*; Institute of Applied Ophthalmology (IOBA) (Visual Science), University of Valladolid; Defense date: 2009/12/21 (Mentor: Prof. Susana Marcos)
2. **External dissertation examiner**; Geoffrey Dair, *Investigation of high pulse energy solid-state UV laser sources for ablation of corneal tissue*. PhD Dissertation, Centre for Ophthalmology and Visual Science, The University of Western Australia, Crawley, Australia; 11/2002.
1. **MS Thesis Mentor**; Stan Zipper, *Analysis of corneal topography measured with the PAR-CTS*; Department of Engineering Physics, Cornell University; 8/00-5/01.

Special Projects Supervised (BME 525, 529, 3 credits):

5. Stephen Uhlhorn, *Fiber-optic Michelson interferometer*, Spring 96
4. Mark Rodriguez, *Fiber-optic coupling of a Q-switched Nd:YAG laser*, Spring 96
3. Michael Langlais, *Optical models of the eye using BEAM 4*, Spring 95
2. Dan Flagler, *Thermomechanical model of Laser Scleral Buckling*, Spring 95
1. William Tapia, *Non-contact optical pachometry*, Spring 94

Undergraduate Independent Studies Supervised (BME 395, BME 415, BME525)

14. Larissa Meza, BME 395 (1 credit); *Measurement of IOL shape using optical coherence tomography*; Spring 2020.
13. Morgan Benson, BME 395 (3 credits); *High-speed measurement of dynamic accommodative changes in crystalline lens thickness using optical coherence tomography*; Spring 2019.
12. Ashley Zulueta, BME 395 (3 credits); *Effect of spatial frequency on accommodative subject response*; Spring 2018.
11. Alex Pham, BME 395 (3 credits); *Quantification of changes in lens shape with age and accommodation using Optical Coherence Tomography*; Spring 2018
10. Ethan Adre, BME 395 (3 credits); *Quantification of changes in lens internal structure with accommodation*; Spring 2018.
9. Keke Liu, BME 395 (3 credits); *Variability of ciliary muscle segmentation in optical coherence tomography*; Spring 2017.

8. Lauren Marussich, BME 395 (3 credits); Changes in primate crystalline lens volume during simulation of accommodation in a lens stretcher; Spring 2011.
7. Bianca Maceo and Janice Dias, BME 415 (3 credits); *A comparison of EVASI and EVASII: 4 Monkeys*; Spring 2009.
5. Daniel Fisher, *Design of an optical system to measure the posterior corneal radius of curvature. Phase I: Calculations*, 2006-2007.
4. Eileen Pedraza; *Measurement of the optical properties of breast tissue phantoms*; 10/04-03/06 (FGAMP project)
3. Cadman Leggett, *Measurement of thermal coagulation zones after experimental laser interstitial thermotherapy in ex vivo porcine tissue*; Spring/Summer 2003 (BME525, 3 cr).
2. Alexandre Rosen, *Measurement of lens stretching forces during simulated accommodation ex vivo*, Spring 01-Summer 01 (BME525, 3 cr)
1. Monique Jenkins, *Measurement of low power laser beams with the Photon Inc beam profiler*, 2000 (BME415, 1 cr)

Other Undergraduate Student Research Supervised / Hosted in the laboratory:

39. Morgan Vyckarious; Undergraduate Research; *Accommodation biometry* (supervised by Gabriele Van Meter; 5/2024-present)
38. Natalie Zaleski, Undergraduate Research, *Optical Coherence Elastography of the human lens* (supervised by Leana Rohman); 9/23-present.
37. Valerie Truong, Undergraduate Research, *LRT-OCT data analysis* (supervised by Bianca Heilman and Gabrielle Van Meter); 9/19-5/22.
36. Felipe Echeverri, Undergraduate Research, *Accommodation measurements* (supervised by Heather Durkee); 1/20-12/20.
35. Isabelle Akinyemiju, Undergraduate Research, *LRT-OCT data analysis* (supervised by Bianca Heilman); 1/20-5/20.
34. Meaghan Wheeler, Undergraduate Research, *OCT image analysis* (supervised by Bianca Heilman and Yu-Cherng Chang); 5/19 and 8/19.
33. Carolyn Niosi, Undergraduate Research, *LRT-OCT data analysis* (supervised by Bianca Heilman); 11/18-5/20.
32. Disha Patel, Undergraduate Research, *OCT image processing and scleral attenuation coefficient* (supervised by Yu-Cherng Chang and Gabrielle Monterano); 1/18 – 5/20.
31. Larissa Meza, Undergraduate Research, *Intraocular lens characterization and Solidworks designs* (Co-supervised with Bianca Maceo and Marco Ruggeri) 1/19-3/20.
30. Morgan Benson, Undergraduate Research, *Accommodation imaging* (supervised by Marco Ruggeri), 4/18-5/19.
29. Ashley Zulueta, Undergraduate research, *Analysis of lens OCT images*, 1/17-5/18 (supervised by Channing Chang).
28. Alex Pham, Undergraduate research, *Analysis of lens OCT images*, 5/16-5-18 (supervised by Channing Chang).
27. Ethan Adre, Undergraduate research, *Analysis of lens OCT images*, 5/16-5/18 (supervised by Channing Chang).
26. Gabrielle Monterano Mesquita, Undergraduate research, *Measurement of the scleral attenuation coefficient from OCT images*, 9/15-5/17 (supervised by Channing Chang).
25. Keke Liu, Undergraduate Research, *Analysis of Laser-Ray Tracing Data*, 1/15- 5/17 (supervised by Channing Chang)
24. Daniel Lopez, Undergraduate Research, *Analysis of Laser-Ray Tracing Data*, 10/14-05/15.
23. Juan Sigaldo, Undergraduate Research, *Evaluation of a wavefront sensor*, 06/12-12/14
22. Yue Yao, Undergraduate Research, *Analysis of crystalline lens stretching data*, 09/12-05/14
21. Jennifer Rodriguez; Undergraduate BME; *Analysis of laser ray-tracing data*; 08/11-07/14.
20. Karam Alawa; Undergraduate BME; *Analysis of lens stretching data; LabView program for OCT system; Image analysis software for photosensitivity tester and other projects*; 05/11-07-14.
19. Nate Hess, Undergraduate Research, *Analysis of crystalline lens stretching data*, 09/12-05/13
18. Heather Durkee; Undergraduate BME; *Imaging of the zonular architecture*; 08/11-05/13.
17. Alejandro Arboledo; Undergraduate BME; *Analysis of lens stretching data*; 04/11-05/13.
16. Nancy Si; Undergraduate BME; *Optical modeling of the eye*; 09/11-05/12
15. Pardis Esfandiari; Undergraduate BME; *Analysis of lens stretching data*; 10/10-05/12.
14. Adam Bofill; Undergraduate BME; *Optical modeling of the lens power*; 09/11-12/11.
13. Lauren Marrusich; Undergraduate BME; *Analysis of crystalline lens volume change during simulated accommodation in a lens stretcher*; 05/10-05/12
12. Matthew Clemente, Undergraduate BME; *Fiber-optic insertion system for X-ray guided LITT of breast cancer*; 02/06-05/07.

11. Minh Nhat Hoang, Undergraduate BME; *Design of a lensmeter for isolated crystalline lenses*; 05/06-08/06.
10. Russell Will, Undergraduate BME; *Design of a pediatric OCT system*; 01/05-08/06.
9. Ashlee Daigle, Undergraduate BME; *In vivo monitoring of thermal coagulation during laser interstitial thermotherapy*; 3/05-9/05.
8. Stephanie Delgado, Undergraduate-BME; *Quantification of thermal coagulation in gross anatomical sections of laser-irradiated tissue*; 10/04-9/05.
7. Roger Juarez, Undergraduate-BME; *Design of a mouse fundus imaging system*; 06/04-08/04.
6. Noel Ziebarth, *Determination of the lens capsule thickness in situ*, Summer Honors Research Project, 2001
5. Lidet Abiy, *Optical system for measurement of ptosis*, Hughes Scholarship, Fall 2000-Spring 2001
4. David Borja, Undergraduate-BME; *Laser thermal shrinkage of the cornea*; 5/00-8/00.
3. Matthew Cunningham, Undergraduate-BME; *Design of laboratory experiments in optics*; 9/99-5/00.
2. Yemi Fasakin, Undergrad (Hughes Scholar); *Laboratory exercises in biomedical optics*; 1/99-5/99
1. Ahmed Minhaj, Undergraduate-BME; *Evaluation of the Photon Inc. beam profiler*; 1/99-5/99

Other Graduate Student Research Supervised:

4. Sean Kelly, BS/MS Research, *Analysis of crystalline lens stretching data*, 09/12-05/13
3. Sara Rose Mendelson; *Evaluation of zonular architecture*; 08/08-05/09.
2. Ralph Saettele, MS-BME; *Scanning beam delivery system for photorefractive keratectomy at 213 and 266 nm*; 7/00-12/00.
1. Nish Pandya, MS-BME; *Scanning photorefractive keratectomy at 213 nm*; 5/98-8/98

National Visiting Students/Scholars Supervised:

4. Rex Tien; Undergraduate Mechanical Engineering; Princeton University; *Simulation and analysis of Hartmann-Shack spot patterns from an ocular wavefront sensor*; 06/10-08/10.
3. Manuel Figueroa, Undergraduate, Department of Biomedical Engineering, Tulane University; *Laser hyperthermia experiments*; 06/01-08/01 and 06/02-08/02
2. Stan Zipper, Undergraduate, Cornell University (Engineering Physics); *Aspheric analysis of PAR-CTS topography data using MATLAB*; 6/15/00-8/15/00.
1. Sergio Mendoza, Undergrad, Cornell University (Engineering {Physics}); *Laser thermal therapy for breast cancer treatment with a diode laser*; Summer 1997 and *Measurement of the optical properties of breast tissues*; Summer 1999.

International Visiting Students/Scholars Supervised:

7. Iulen Cabeza-Gil; PhD student; University of Zaragoza; 8/21-12/21
6. Johanna Engerlage; Undergraduate BME (Senior); University of Hamburg, Germany; Internship; 02/12-07/12
5. Judith Birkenfeld, Institute of Optics, Madrid, Spain (Prof. Marcos); Summer internship 10/11-12/11; 5/12-7/12.
4. Manuel Bacci; MS Thesis Project, Department of Electronics and Automation, University of Modena, Modena, Italy; *Design of a Hartmann-Shack autorefractor*; 09/09-06/10.
3. Alberto de Castro, Institute of Optics, Madrid, Spain (Prof. Marcos); Summer internship 5/10/07-7/5/07; 5/08-7/08.
2. Gabriela Franco Barbosa and Luciano Dos Santos Rocha, PUCRS, Porto Alegre, Brazil; *Visiting students*; 02/01.
1. Martin Wosnitza, MSEE; University of Bremen, Germany; 11/98-5/99

29. Thesis and Dissertation Advising/Post-doctoral student supervision:

Postdoctoral fellow supervision

4. Bianca Maceo (PhD, Biomedical Engineering, University of Miami); 1/18-1/19
3. Florence Cabot (MD, Ophthalmology, France); 8/13-9/17
2. Marco Ruggeri (PhD, Biomedical Engineering, University of Miami); 1/12-6/13
1. Stephen Uhlhorn (PhD, Biomedical Engineering, Vanderbilt University, Nashville, TN); 4/02-2007

Doctoral Dissertation Advising:

15. **Chair**, Doctoral Dissertation; *Ciliary muscle and lens interaction dynamics*; Gabrielle Mesquita, Department of Biomedical Engineering, University of Miami; 01/18-present. Proposal defense: March 11, 2022.
14. **Chair**, Doctoral Dissertation; *Quantification of accommodation dynamics using OCT*; Leana Rohman, Department of Biomedical Engineering, University of Miami; 08/20-05-24. Defense date: 05/14/24.

13. **Co-Chair**, Doctoral Dissertation; *Development of a portable and remotely controlled slitlamp imaging system for extended reality headsets*; Ana Diego, Department of Biomedical Engineering, University of Miami; 5/18-8/24. Proposal defense: March 11, 2022. Dissertation Defense: August 23, 2023; Graduation: Fall 2023
12. **Co-Chair**, Doctoral Dissertation; *Biometry of accommodation*; Heather Durkee, Department of Biomedical Engineering, University of Miami; 08/14-present. Dissertation defense: June 15, 2021.
11. **Chair**, Doctoral Dissertation; *Image processing for three-dimensional biometry of the anterior segment using Optical Coherence Tomography*; Siobhan Williams, Department of Biomedical Engineering, University of Miami; 01/12-8/19. Defense date: 07/01/19.
10. **Chair**, Doctoral Dissertation (MD-PhD student); *Quantitative imaging of the ciliary muscle using Optical Coherence Tomography*; Channing Yu-Cheng Chang, Department of Biomedical Engineering, University of Miami; 08/15-08/19. Defense date: 06/04/19. (Co-mentor with Jean-Marie Parel and Marco Ruggeri).
9. **Co-Chair**, Doctoral Dissertation; *Evaluation of the crystalline lens gradient refractive index using laser ray-tracing and optical coherence tomography*; Bianca Maceo, Department of Biomedical Engineering, University of Miami; 8/09-12/15. Defense date: 10/27/15. (Co-Mentor with Jean-Marie Parel) (Outstanding PhD student award, CoE+BME)
8. **Co-Chair**, Doctoral Dissertation; *Simultaneous dynamic optical refraction and biometry of the human accommodative response*; Victor Hernandez, Department of Biomedical Engineering, University of Miami; 01/11-08/15. Proposal Date: ; Defense date: 08/17/15. (Co-Mentor with Jean-Marie Parel)
7. **Co-Mentor**, Doctoral Dissertation; *Numerical Investigation of Visual Accommodation Process*; Hooman Mohammad Pour; School of Optometry and Vision Sciences, University of New South Wales, Sydney, Australia. Graduation Date: December 2014. (Co-Mentor with Arthur Ho).
6. **Co-Chair**, Doctoral Dissertation; *Extended depth optical coherence tomography for anterior segment and accommodation imaging in real-time*; Marco Ruggeri, Department of Biomedical Engineering, University of Miami; 01/2009-12/2011; Proposal date: 8/22/11; Defense date: 12/2/11. (Outstanding PhD student award, BME) (Co-Mentor with Jean-Marie Parel)
5. **Co-Chair**, Doctoral Dissertation; *Theoretical evaluation of the optical performance of accommodative intraocular lenses*; Jit Ale; School of Optometry and Vision Sciences, University of New South Wales, Sydney, Australia. Graduation Date: December 2010.
4. **Co-Chair**, Doctoral Dissertation; *Investigation of accommodation and presbyopia using ultrasound during ex-vivo simulated accommodation*; Raksha Urs, Department of Biomedical Engineering, University of Miami; 09/07-02/10; Defense date: 2009/12/19. Graduation date: May 2010. (Co-Mentor with Jean-Marie Parel)
3. **Chair**, Doctoral Dissertation; *Accommodation and age dependent optical model of the crystalline lens*; David Borja, Department of Biomedical Engineering, University of Miami; 1/04-12/08; Defense date: November 19, 2008. Graduation date: December 2008.
2. **Chair**, Doctoral Dissertation; *Retinal imaging in mouse models of glaucoma*; Omer Kocaoglu, Department of Biomedical Engineering, University of Miami; 10/03-5/08; Defense date: April 9, 2008. Graduation date: May 2008.
1. **Chair**, Doctoral Dissertation; *Delivery system for laser interstitial thermotherapy of breast cancer*; Nelson Salas, Department of Biomedical Engineering, University of Miami; 8/01-10/07; Defense date: October 24, 2007. Graduation date: December 2007.

Doctoral Dissertation Committees:

38. **Committee Member**, Doctoral dissertation, Development of Atomic Force Microscopy techniques for continuous measurement of intraocular pressure in an *in vitro* model of the cornea; Noa Desateth, Department of Biomedical Engineering; University of Miami; Proposal Defense: November 13, 2024.
37. **Committee Member**, Doctoral dissertation, Erin Williams, Department of Biomedical Engineering; University of Miami; Proposal Defense: June 5, 2024; Dissertation Defense: June 4, 2025
36. **Committee Member**, Doctoral dissertation, Multifunctional Magnetolectric Nanoparticles for Cancer Theragnostics and Neurological Applications: A New Approach for Targeted Diagnosis and Therapy, Victoria Andre, Department of Biomedical Engineering; University of Miami; Proposal Defense: April 17, 2024. Dissertation Defense: October 17, 2024.
35. **Committee Member**, Doctoral dissertation, An Investigation into the Fundamental Properties of Magnetolectric Nanoparticles and their Interactions, Max Shotbolt, Department of Biomedical Engineering; University of Miami; Proposal Defense: May 1, 2024; Dissertation Defense: November 15, 2024.
34. **Committee Member**, Doctoral dissertation, Engineering fluidic platforms for optimizing retinal organoids and eye transplants; Emma Drabbe, Department of Biomedical Engineering; University of Miami; Proposal Defense: October 31, 2022. Defense date: December 6, 2024.

33. **Committee Member**, Doctoral dissertation, MRI-based Investigations of Brain Structure and Cerebral Blood Flow and Their Associations with Sleep Quality and Cognitive Performance in the Aging Brain, Che Liu, Department of Biomedical Engineering; University of Miami; Proposal Defense: December 22, 2022; Defense date: June 23, 2023.
32. **Committee Member**, Doctoral Dissertation, MRI studies of the cardiac and respiratory modulations of the cardio-spatial CSF oscillation. Ritambhar Burman, Department of Biomedical Engineering; University of Miami; Proposal Defense: December 22, 2022; Defense Date: May 23, 2023.
31. **Committee Member**, Doctoral dissertation, Wireless brain stimulation using magnetoelectric nanoparticles, Mostafa Abdel-Mottaleb, Department of Biomedical Engineering; University of Miami; Proposal Defense: August 5, 2022. Dissertation Defense: April 20, 2023. Graduation: Fall 2023.
30. **Committee Member**, Doctoral Dissertation, *Biomechanical Characterization of Crystalline Lens by Optical Coherence Elastography*. Hongqui Zhang, Department of Biomedical Engineering; University of Houston; Proposal Defense: February 3, 2021. Dissertation Defense: December 3, 2021.
29. **Committee Member**, Doctoral Dissertation, *Modular tissue engineering of bone microenvironment for propagating circulating tumor cells*. Vera Mayo, Department of Biomedical Engineering; University of Miami; Proposal Defense: February 19, 2018. Dissertation Defense: November 6, 2020.
28. **Committee Member**, Doctoral Dissertation, *Dosimetry of corneal rose Bengal photodynamic antimicrobial therapy*. Jeffrey Peterson, Department of Biomedical Engineering; University of Miami; Proposal Defense: October 7, 2019. Dissertation Defense: June 23, 2020.
27. **Committee Member**, Doctoral Dissertation, The development of a microwave ablation model for treatment of small renal masses. Karli Pena, Department of Biomedical Engineering; University of Miami; Proposal Defense: February 19, 2018. Dissertation Defense: April 9, 2019.
26. **Committee Member**, Doctoral Dissertation, *Characterization of lens capsule dynamic and structural properties using confocal and scanning probe microscopy techniques*. Vivian Sueiras, Department of Biomedical Engineering; University of Miami; Proposal Defense: April 27, 2016; Dissertation Defense: July 25, 2018.
27. **Committee Member**, Doctoral Dissertation, *Pulsed infrared radiation for stimulation of vestibular system in vivo: Evoked eye movement responses*. Weitao Jiang, Department of Biomedical Engineering; University of Miami; Proposal Defense: May 27, 2016. Dissertation Defense: December 20, 2017.
25. **Committee Member**, Doctoral Dissertation, *Bascom Palmer Eye Institute ocular photosensitivity assessment: A novel quantification of symptoms and light sensitivity threshold*. Jennifer D. Verriotto, Department of Biochemistry, Industrial PhD Program; University of Miami; Proposal Defense: July 30, 2014. Dissertation Defense: 3/1/2017.
24. **Committee Member**, Doctoral Dissertation, *Development of an imaging/therapy integrated system by using radionuclide ¹⁹²Ir for breast cancer*. Jian Fang, Department of Biomedical Engineering; University of Miami; Proposal Defense: December 15, 2015. Dissertation Defense: June 9, 2016.
23. **Committee Member**, Doctoral Dissertation, *Reflectometry and optical coherence tomography for noninvasive high resolution tear film thickness evaluation and ophthalmic imaging*. Hui Lu, Department of Electrical and Computer Engineering; University of Miami; Proposal Defense: December 12, 2013. Defense Date: April 1, 2016.
22. **Committee Member**, Doctoral Dissertation, *An optical tracking system for radiosurgery of uveal melanoma by Cyberknife*. Hairong Chen, Department of Biomedical Engineering; University of Miami; Proposal Defense: April 22, 2014. Defense date: November 17, 2014
21. **Committee Member**, Doctoral Dissertation, *Characterization of corneal biomechanics using customized Atomic Force Microscopy techniques*. Janice Dias, Department of Biomedical Engineering; University of Miami; Proposal Defense: August 21, 2012. Defense date: November 14, 2014.
20. **Committee Member**, Doctoral Dissertation, *Mechanisms of infrared neural stimulation*. Vicente Lumbreras Cruz, Department of Biomedical Engineering; University of Miami; Proposal Defense: September 4, 2013. Defense Date: Thursday, October 16, 2014.
20. **Committee Member**, Doctoral Dissertation, *Quantitative assessment of the optical nerve head morphology in idiopathic intracranial hypertension using spectral-domain optical coherence tomography images*. Sudarshan Ranganathan, Department of Biomedical Engineering; University of Miami; Proposal Defense: October 11, 2013. Project was terminated on September 24, 2014 due to lack of progress. Student left program.
19. **Committee Member**, Doctoral Dissertation, *Reflectance and ultrastructure of the retinal nerve fiber layer in normal and glaucomatous retinas*. Ye Zhou, Department of Biomedical Engineering; University of Miami; Proposal Defense: December 14, 2012. Defense Date: December 11, 2013.
18. **Committee Member**, Doctoral Dissertation, *Improving the quantitative assessment of intraretinal features by determining both structural and optical properties of the retinal tissue with optical coherence tomography*. Wei

- Gao, Department of Biomedical Engineering; University of Miami; Proposal Defense: July 2011; Defense Date: July 12, 2012.
17. **Committee Member**, Doctoral Dissertation, *Acquisition and analysis of high rate transient and steady-state flash and pattern electroretinograms*, Jonathon Toft-Nielsen, Department of Biomedical Engineering; University of Miami; Proposal Defense: August 20, 2010; Defense Date: June 29, 2012.
 16. **Committee Member**, Doctoral Dissertation, *Web-based medical imaging simulation system for education and research*, Xiping Li, Department of Biomedical Engineering; University of Miami; Defense date: November 18, 2011.
 15. **Committee Member**, Doctoral Dissertation, *Age-related structural and functional changes of the mouse eye: Role of intraocular pressure and genotype*, Tsung-Han Chou, Department of Biomedical Engineering; University of Miami; Defense date: March 17, 2011.
 14. **Committee Member**, Doctoral Dissertation; *Evaluation of an optimized flow diverting device on intra-aneurysmal flow and a newly developed adjuvant therapy*; Asher Trager, Department of Biomedical Engineering; University of Miami; Defense: August 2, 2010.
 13. **Committee Member**, Doctoral Dissertation; *Array waveguide evanescent coupler for card-to backplane optical interconnections*; Angel Flores, Department of Electrical and Computer Engineering; University of Miami; Defense: June 18, 2009.
 12. **Committee Member**, Doctoral Dissertation; *Atomic Force Microscopy measurement of the elastic properties of the lens*; Noel Ziebarth, Department of Biomedical Engineering; University of Miami; June 04-Dec 08; Defense date: November 19, 2008.
 11. **Committee Member**, Doctoral Dissertation; *3D A-Mode ultrasound calibration and registration of the tibia and femur for computer-assisted robot assisted surgery*; Alon Mozes, Department of Biomedical Engineering; University of Miami; Defense date: May 6, 2008.
 10. **Committee Member**, Doctoral Dissertation; *Diffraction lens with extended depth of focus and its applications*; Zhiqiang Liu, Department of Electrical and Computer Engineering; University of Miami; Defense date: April 17, 2007.
 9. **Committee Member**, Doctoral Dissertation; *Arc binary intensity modulated radiation therapy (AB IMRT)*; Jun Yang, Department of Biomedical Engineering; University of Miami; Defense date: February 28, 2006.
 8. **Committee Member**, Doctoral Dissertation; *All optical controlled photonic integrated circuits using AZO Dye functionalized sol-gel material*; XianJun Ke, Department of Electrical and Computer Engineering; University of Miami; Defense date: November 28, 2005.
 7. **Committee Member**, Doctoral Dissertation; *A novel method for the simultaneous acquisition of auditory transient and steady-state responses*; Erdem Yavuz, Department of Biomedical Engineering; University of Miami; Defense date: July 21, 2005.
 6. **Committee Member**, Doctoral Dissertation; *Fractal analysis of ischemic stroke: From microscale to macroscale from simulation to real laboratory experiments*; ChunYan Wu, Department of Biomedical Engineering; University of Miami; Defense date: April 19, 2005.
 5. **Committee Member**, Doctoral Dissertation; *Closing the loop of mechanical respiratory support for preterm infants*; Nelson Claure, Department of Biomedical Engineering; University of Miami; Defense date: June 8, 2004.
 4. **Committee Member**, Doctoral Dissertation; *Laser direct write optical waveguides for optical interconnection and optical isolation*; Namkhun Srisanit, Department of Electrical Engineering; University of Miami; Defense date: November 10, 2003.
 3. **Committee Member**, Doctoral Dissertation; *Analysis and modeling of click and chirp evoked auditory steady-state responses*; Yuce Hekimoglu, Department of Biomedical Engineering; University of Miami; Defense date: April 10, 2003.
 2. **Committee Member**, Doctoral Dissertation; *Polarization properties of the retinal nerve fiber layer investigated with multispectral imaging micropolarimetry*; Xiangrun Huang, Department of Biomedical Engineering; University of Miami; Defense date: May 10, 2000.
 1. **Committee Member**, Doctoral Dissertation; *Portable ABR recording and analyzing system using dry electrodes*; Yuying Song, Department of Biomedical Engineering; University of Miami; 5/00.

Master thesis advising

5. **Chairman**, Master Thesis; *Zernike wavefront reconstruction of in vitro crystalline lenses from Laser-Ray Tracing spot patterns*; Yue Yao, Department of Biomedical Engineering, University of Miami; 8/2014-5/2016. Defense Date: April 22, 2016.

4. **Co-Chairman**, Master Thesis; *A second generation ex-vivo accommodation simulator: Design and calibration*; Derek Nankivil, Department of Biomedical Engineering, University of Miami; Defense Date: November 12, 2008.
3. **Chairman**, Master Thesis; *Dynamics of corneal thermal shrinkage*; David Borja, Department of Biomedical Engineering, University of Miami; 01/01-12/03; Defense Date: November 20, 2003.
2. **Chairman**, Master Thesis; *Feasibility of thermal monitoring of laser interstitial thermotherapy (LITT) of breast cancer using high resolution digital mammography*; Ahmed Minhaj, Department of Biomedical Engineering, University of Miami; 9/99-6/01. Defense date: May 25, 2001.
1. **Chairman**, Master Thesis; *Studies of thermal laser-tissue interactions during experimental laser interstitial thermotherapy for breast cancer*; Nelson Salas, Department of Biomedical Engineering, University of Miami; 9/98-6/01. Defense date: May 25, 2001.

Master thesis committee

10. **Committee Member**, Master Thesis; *Control unit for an optical switch to extend the axial range of a spectral-domain Optical Coherence Tomography System*; Carolina De Freitas, Department of Biomedical Engineering, University of Miami; Defense Date: November 25, 2014.
9. **Committee Member**, Master Thesis; *Endocapsular hyperthermia for the treatment of posterior capsular opacification*; Marcia Orozco, Department of Biomedical Engineering, University of Miami; Defense Date: November 15, 2006.
8. **Committee Member**, Master Thesis; *The optimization of the control and algorithm of the spectral domain optical coherence tomography*; Hassan Wehbe, Department of Biomedical Engineering, University of Miami; Defense Date: November 21, 2005.
7. **Committee Member**, Master Thesis; *Design and development of a screening diagnostic probe for multi-function ear testing*; Moses Perez, Department of Biomedical Engineering, University of Miami; Defense date: July 23, 2004.
6. **Committee Member**, Master Thesis; *Non-contact micron resolution optical thickness measurement of the lens capsule during simulated accommodation*; Noel Ziebarth, Department of Biomedical Engineering, University of Miami; 08/02-06/04; Defense date: June 10, 2004.
5. **Committee Member**, Master Thesis; *Achromatic hybrid refractive-diffractive lenses with extended depth of focus*; Angel Flores, Department of Electrical and Computer Engineering, University of Miami. Defense date: May 13, 2004.
4. **Committee Member**, Master Thesis; *Biometry of the primate crystalline lens*; Alexandre Rosen, Department of Biomedical Engineering, University of Miami. Defense date: June 30, 2003.
3. **Committee Member**, Master Thesis; *Study of mitochondrial NADH in the two subregions of the hippocampus by optical methods*; Ajinkya Joglekar, Department of Biomedical Engineering; University of Miami; Defense date: 9/21/00.
2. **Committee Member**, Master Thesis; *Flat-top and non-diffracting beam shaping for optical instrumentation and interconnection*; Changyuan Yu, Department of Electrical Engineering; University of Miami; 8/99.
1. **Committee Member**, Master's Thesis; *Corneal diagnostics by low-coherence interferometry*; Stephen Uhlhorn Department of Biomedical Engineering, University of Miami; 8/96-12/97.

Senior thesis advising and committees

3. **Committee Member**, Summa Cum Laude Senior Thesis; *Deconvolution of evoked potentials obtained at high stimulation rates using pseudo-random binary sequences*; Mark Anderson, Department of Biomedical Engineering; University of Miami; Defense Date: June 4, 2003.
2. **Committee Member**, Summa Cum Laude Senior Thesis; *Non-contact in situ measurement of lens capsule thickness*; Noel Ziebarth, Department of Biomedical Engineering; University of Miami; Defense Date: July 2002.
1. **Committee Member**, Summa Cum Laude Senior Thesis; *Scenic design from page to stage*; Armando A Acevedo, Department of Theatre Arts, University of Miami; Defense Date: May 1998.

SERVICE

30. University Committee and Administrative Responsibilities:

University Committee

CTSI Connection Advisory Board, 3/18-5/23

University of Miami Conflict of Interest Committee, 8/17-8/23 (two 3 year terms)

University of Miami Committee on Professional Conduct, 8/14-pres.
University of Miami Research Review Board, 2019-2020.
CTSI Executive Committee, Dean alternate, 12/2017-10/2019
University of Miami Research Council, 8/13-8/16
University of Miami SACS Executive Committee, 12/12-5/18
University of Miami MD-PhD Admissions Committee, 9/15-7/17
University of Miami Faculty Senator (College of Engineering representative), 4/15-3/17
University of Miami Curriculum Committee, 1/11-5/16 (two 3 year terms)
University of Miami Patent and Copyright Committee, 4/03-5/16 (PCC was discontinued in 2016)
University of Miami Research Misconduct Committee Pool, 10/15/08-6/30/11; 7/1/12-6/30/15 (3 year terms)
University of Miami STEM (Science, Technology, Engineering and Mathematics) Education Committee, 11/06-04/08.

Other University-level Service

Faculty search committee, Cardiac imaging, Division of Cardiology; 05-2021
Department of Physics Graduate Program Review, Internal Review Committee member 2020-2021
Provost Award for Scholarly Activity review committee, 3/13/2018
External member, Faculty Search Committee (Experimental Optics), Department of Physics; 2016-2017.
Grant proposal review, University of Miami – FAPESP (University of Sao Paolo) program; 8/2015
Grant proposal review, University of Miami CTSI-KL2 awards program FY16; 3/2015
Fullbright Interview Committee, Fall 2014 (9/18/2014)
Faculty participant, UConnect meeting, Spring 2014 (3/26/2014)
-Panel discussion "Future Roles of Biomedical Imaging and Bioengineering in Medicine" Roderic Pettigrew, Director, National Institute of Biomedical Imaging and Bioengineering, February 6, 2012.
Osher Life-long Learning Institute, Exploring Science and Technology (S4-201, Summer 2011 Session) Class on "Optics of the eye and Vision Correction", June 14, 2001.
Model class - "Optics of the eye", Family Weekend 2010, October 8, 2010.
Preparing Future Faculty Workshop (Conducting an Academic Job Search; Panel Member, 10/10/09
Singer/STAMPS Scholarship Interviews, March 2009; February 27, 2010; March 27, 2010; February 26, 2011; April 2, 2011; March 3, 2012; April 6, 2013; January 29, 2014; February 12, 2014; April 5, 2014; March 28, 2015; February 20, 2016
FGAMP Student Mentor, 2001-2013

College of Engineering Service

Workshop on Engineering the Eye; December 2025
Chair, Department of Electrical and Computer Engineering Chair Search Committee; 2024-2025.
Artificial Intelligence and Machine Learning Working Group, Engineering Cancer Cures™ Initiative; 2021
Chair, Department of Chemical, Environmental and Materials Engineering Chair Search Committee; 2021-2022.
College of Engineering Health Engineering Thrust Coordinator, 8/20-present
Research administration review group (with Drs. Solo-Gabriele, Kizhroev); Fall 2021
College of Engineering Entrepreneurship Initiative Committee, 2/21-12/21
Department of Industrial Engineering, Faculty Promotion Committee, 10/21/20
Session Co-Chair (with Noel Ziebarth), Healthcare engineering; Inaugural CoE Research Day; September 7, 2018.
CoE Roadmap – Group leader, Committee on Agile Administration initiative; Fall 2018.
CoE Roadmap – Working Group 2: Problem-based interdisciplinary collaboration, 03/01/16-03/18/16
STEM Building Task Force, 9/15-11/15
Department of Industrial Engineering, Faculty Reappointment and Mid-term Review Committee, 05/29/13
Sabbatical Committee, 01/21/2013
Freshman Advising, College of Engineering, 08/24/2009; 08/23/2010; 08/22/2011
Search Committee, College of Engineering Dean, 11/06-09/07.
SACS Accreditation Committee, 2005-2006
Scholastic Standards and Advising Committee, College of Engineering, 2002-2003.
Biomedical Engineering Representative, College of Engineering Open House
University Scholars Day, 4/5/2008; 4/17, 4/20
Open House for Accepted Students, 4/6/2003; 4/2/2006; 3/28/2010; 4/6/2014; 03/2018; 3/19; Spring 23 (2 sessions), Spring 24 (3 sessions)
Winter Open House, 2/11/2001; 2/21/1999; 2/15/09; 2/14/10; 2/18; 2/19; 2/20
Fall Open House, 11/12/2000; 11/11/2001; 11/10/2002

Scholarship Award Committee, College of Engineering; Fall 1999.
Strategic Planning Committee, College of Engineering; 1997-1998; 2006-2007
BME Liaison, College of Engineering "Adopt a Community College" Program; 1997-1998.

Departmental Service (Department of Biomedical Engineering)

Neural Engineering Institute Steering Committee; 5/15-present
Acting Chair, 2013-2014
Faculty Awards Committee; 09/2009-02/2017
Graduate Program Director; 09/2009-02/2017
Associate Chairman; 03/2008-2/2017
Graduate Admissions Committee; 2001-2017
Faculty Search Committee, Fall 2000; Fall 2002; Spring 2003; Spring 2008; Spring 2010; Fall 2010/Spring 2011; Spring 2012
Coordinator, PhD Qualifying Examination, 1998-2017.
BME Representative, Graduate Deans and Graduate Program Director's Meeting, 4/12/01
Academic Advisor (Undergraduate and Graduate Students); Department of Biomedical Engineering; 9/98-present
Faculty Advisor, Biomedical Engineering Society (BMES); 1997-1999; 2002-2009.

Departmental Service (Department of Ophthalmology)

BPEI Research Retreat Planning Committee, November 9, 2024
BPEI AI committee, 4/2020 to 5/2021.
AI research day organizing committee, 10-11/2019
Scientific co-director of experimental imaging laboratory, October 2009-pres
Retina OCT working group, Jan 2003-Jan 2008.
Presentation on *Research use of donated eyes at the Ophthalmic Biophysics Center*, Funeral Director's Course of Instruction in Eye Enucleation, Florida Lions' Eye Bank, 2/7/03

Administrative Responsibilities

Graduate Program Director, Department of Biomedical Engineering; 9/09-3/17
Associate Chairman, Department of Biomedical Engineering; 3/08-3/17
Co-Director, Ophthalmic Biophysics Center, Department of Ophthalmology; 1/01-present.
Director, Biomedical Optics and Laser Laboratory, Department of Biomedical Engineering; 8/97-present
Manager, Laser Research Laboratories; Ophthalmic Biophysics Center, Department of Ophthalmology; 1/95-1/01.

Other service

Judge, Graduate School Research Day; 3/7/19; 3/21/23
Manuscript reviews, Eastern-Atlantic Student Research Forum, School of Medicine; 1/2014
Judge, Eastern-Atlantic Student Research Forum, School of Medicine; 2/25/11; 2/24/12; 3/1/2013
Judge, University of Miami Research and Creativity Forum; 4/6/10; 4/09; 4/2/08; 4/6/06; 4/7/05; 4/15/04; 3/31/15; 4/21/16; 4/4/17; 3/27/18; 4/10/2024
Judge, University of Miami Undergraduate Research Day; March 27, 2003.

Participation in the *Concept Map Study on Biomedical Engineering Design Expertise* ("What is the current conceptual understanding of what is involved in the biomedical engineering design process?"), Vanderbilt University Department of Biomedical Engineering, 2002-2003.

31. Community Activities:

Student supervisor, Dade County Laboratory Internship Program
Elizabeth Velasquez, 9/08-5/09
Shane McKey, 9/07-5/09
Elizabeth Leavitt, 9/06-5/07
Guillermo Tinoco, 9/06-5/07
Jason Lunne, 9/05-5/06
Andre Castillo, 9/05-5/06
Vanessa Cabrera, 9/01-12/01
Nivit Poochareon, 9/98-12/00
Orlando Sarduy, 9/97-9/98

Other high school student project mentoring

Saramati Narasimhan, 08/08-08/09

Francisco Fantes, Jr, High School; *Laboratory Exercises in Geometrical Optics*; 7/00-8/00.