

# CURRICULUM VITAE



## **Hongli Yang, Ph.D.**

**Research Scientist,**

**Devers Eye Institute / Legacy Research Institute / Legacy Health**

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### **Education:**

**2017 Biostatistical Graduate Certificate**, Oregon Health and Science University

**2009 PhD in Biomedical Engineering**, Tulane University, New Orleans, LA

**2000 MS in Mechanical Engineering**, Harbin Institute of Technology, China

**1998 BS in Mechanical Engineering**, Harbin Institute of Technology, China

### **Professional Experience:**

**2018 – present** Research Scientist/Optic Nerve Head Research

Laboratory, Devers Eye Institute, Legacy Health System, Portland, OR

**2010 – 2018** Research Associate/Bioengineering/Data Analyst, Optic Nerve Head Research Laboratory, Devers Eye Institute, Legacy Research Institute, Portland, OR

**2009 – 2010** Postdoctoral research fellow, Optic Nerve Head Research Laboratory, Devers Eye Institute, Legacy Research Institute, Portland, OR

**2005 – 2009** Graduate Research Assistant, Optic Nerve Head Research Laboratory, Devers Eye Institute, Legacy Research Institute Portland, OR, and Biomedical Engineering Department, Tulane University, New Orleans, LA

**2003 – 2005** Graduate Research Assistant Optic Nerve Head Research Laboratory, Louisiana State University Eye Center and Biomedical Engineering Department, Tulane University, New Orleans, LA

**2000 – 2002** Software Engineer, Zhongxing Telecommunication Equipment Co., Ltd., China

### **Honors and Awards**

**2024 ARVO Silver Fellowship**

**2018 International Talent Award**, Beijing Oversea Study Center, Beijing, China

**2008 First author of the Lewis Rudin Glaucoma Prize Paper (Claude Burgoyne, MD - Awardee):**

Yang H, Downs JC, Bellezza A, Thompson H, Burgoyne CF. 3-D histomorphometry of the normal and early glaucomatous monkey optic nerve head: prelaminar neural tissues and cupping. Invest Ophthalmol Vis Sci. 2007 Nov;48(11):5068-84.

**2008 Young Investigator Award**, Casey & Devers Eye Research Day 2008

**2007 ARVO International Travel Grant Award**, Association for Research in Vision and Ophthalmology

**2000 Excellent Software Engineer Award**, Zhongxing Telecommunication Equipment Co., Ltd., China

**1998 Honored Graduate** for bachelor degree, Harbin Institute of Technology, China

**1998 Academy and Sports Graduate Scholarship**, Harbin Institute of Technology, China

- 1997 Hai Wang Outstanding Student scholarship** Top 1 scholarship of Harbin Institute of Technology, China, issued once every four year by Hai Wai National Education Foundation
- 1997 National Excellent College Student**, National Department of Education, China

## **Memberships**

- 2015 – present International Society for Eye Research  
2003 – present Association for Research in Vision and Ophthalmology  
2003 – 2010 Biomedical Engineer Society  
2003 – 2009 – Member of Tulane University Chapter of National Biomedical Engineering Honor Society Alpha Eta Mu Beta

## **Scientific and Clinical Journal Reviewer**

American Journal of Ophthalmology  
Archives of Ophthalmology  
Current Eye Research  
Experimental Eye Research  
Graefes Archives of Ophthalmology  
Investigative Ophthalmology and Visual Science  
Journal of Biomechanical Engineering  
Journal of Glaucoma  
Ophthalmology  
British Journal of Ophthalmology  
Acta Biomaterialia  
Intelligent Medicine  
Scientific Report  
BMC Ophthalmology  
JAMA Ophthalmology  
Eye  
Editor Frontiers In Medicine

## **Industry Support: Active (Funded) Grants**

**2023 – present Heidelberg Engineering, Heidelberg, Germany (Hongli Yang, PI)**  
“Spectralis OCT imaging in Glaucoma” unrestricted research support.  
Role: Principal Investigator

## **Research Grants (Active):**

**2020 - 2024 NIH/NEI R01 EY031686-01 (years 20-24) (Stuart Gardiner, PI)**

“Blood Flow and Hemodynamics in Glaucoma”

Co – Investigator

**2022 - 2026 NIH/NEI R01EY032621 (Jun Liu, PI)**

“Biomechanical Interplay between Optic Nerve Head and Peripapillary Sclera”

Co – Investigator

**2024 - 2026 NIH/NEI R21EY036560 ( MPI Chaudhary, P; Yang, H and El Hamdaoui, M.)**

“Novel correlations in cellular, molecular and structural alterations in experimental juvenile myopia”

## **Research Grants (Completed):**

### **2017 – 2021 NIH/NEI R01 EY011610 (Claude Burgoyne, PI)**

“IOP-Related Force and Failure in the Optic Nerve Head”

Co - Investigator

### **2011 – 2019 NIH/NEI R01 EY021281 (Claude Burgoyne, PI)**

“Optic Nerve Head OCT Imaging in Glaucoma”

Co – Investigator

### **2008 – 2011 NIH/NEI R01EY019333 (C Downs, C Girkin, Co-Principal Investigators)**

“Racial Variations in Optic Nerve Head Structure and Biomechanics”

Research Associate The renewal of this grant has been folded into the renewal of NIH/NEI R01

**R01 EY018926** - “Age-related Changes in Optic Nerve Head Structure and Biomechanics”

at the request of the NEI Glaucoma Program Officer

Research Scientist

### **2022 – 2024 Bright Focus Foundation National Glaucoma Research award (MPI Hongli Yang, PhD and Priya Chaudary, PhD - Co-Principal Investigators) –July 1, 2022 – June 30, 2024**

“Novel Techniques to Correlate Structural and Molecular Alterations in Non-human Primate Early Glaucoma” , \$ 20,0000 for two years

## **Normative Early Glaucoma, Highly Myopic Oct Database Studies**

Glaucoma/Myopia OCT Phenotyping Consortium

Investigator Initiated Study supported in part by Heidelberg Engineering

Principal Investigators (PIs) - (Bal Chauhan, PhD; and Linda Zangwill, PhD)

### **Role:**

**GMOPC Morphometric and Anatomic Consultant**

**Portland Oregon Site Co-Investigator (PI Stuart Gardiner)**

Data Acquisition: 2022 through 2025

Cohort 1: Healthy Highly Myopic ( $SE \leq -6D$ ) - 360 subjects from 13 international sites

Cohort 2: Highly Myopic with Glaucoma - 360 subjects from 13 international sites

Cohort 3: Non-Highly Myopic ( $SE > -6D$ ) with early Glaucoma ( $VF MD \geq -4 dB$ ) - 360 subjects from 13 international sites

## **Supervised Research Students**

2011 Jingjing Qi

2012 Ziyang Liu

2013 Miaomiao Wu

2014 Heather Lovelace

2015 Connor Welty

2015 - 2019 Lirong Qin

2018 Anna Booman

2023 Nikola Merier

2024 Andy Ng, Steven Peng, Tony Yu, Jason Zhao

## **Supervised Technicians**

2007 – present Galen Williams

2016 – 2019 Luke Reyes BS

2117 – 2018 Danielle Milay

2017 – 2022 Dawn Jennings

2018 – 2019 Ping Wei

2020 – present Xiue Jiang

## **Co-Supervised or Co-Trained Post-doctoral and Clinical Research Fellows**

2012 – 2014 Ruojin Ren MD, PhD  
2012 – 2013 Helen Koenigsman, MD  
2013 – 2014 Pui Yi, Boey, MD  
2013 – 2014 Lin He Ph.D post-doc  
2014 – 2015 Kevin Ivers Ph.D post-doc  
2014 – 2015 Eliesa Ing, MD  
2016 – 2018 Haomin Luo, MD  
2017 – 2018 Seungwoo Hong, MD, PhD  
2018 – Yaxing Wang MD  
2018 – 2019 Jin Wook Jeoung, MD, PhD  
2022 – 2023 Anuwat Jiravarnsirikul, MD, PhD

## **Invited Lectures**

1. Invited Lecture: “The Connective Tissue Components of Glaucomatous Cupping in the Non-Human Primate Eye”. International Intra-cranial Pressure Gradient Disease (IIPGD) Summit. Beijing, China. 27-28 August, 2016.
2. Invited Lecture: “In Vivo Detection of Lamellar and Peripapillary Scleral Hypercompliance in Early Monkey Experimental Glaucoma” Beijing Institute of Ophthalmology, Tongren Hospital, Beijing, China. 25 August, 2016
3. Invited Lecture: “Deep Optic Nerve Head Phenotyping in Glaucoma”, Beijing Institute of Ophthalmology, Tongren Hospital, Beijing, China. June, 2017.
4. Invited Lecture: “Deep Optic Nerve Head Phenotyping in Glaucoma”, Ophthalmology Department, Harbin Medical School, Harbin, China. June, 2017.
5. Invited Lecture: “Optic Nerve Head Biomechanics in Glaucoma: Translation from experimental study to clinical care” ZhenZhi Bioengineering Conference, Biomedical Imaging Symposium, Beijing, China. June, 2017.
6. Invited Lecture: “Optic Nerve Head Biomechanics in Glaucoma”, Ophthalmology Department, Harbin Medical School, Harbin, China. July, 2018.
7. Invited Lecture: “Optic Nerve Head Biomechanics”, Computer Science Department, Bei Hang University, Beijing, China. July, 2019.
8. Invited Speaker and co-chair: “OCT Optic Nerve Head Morphology in Myopia: Scleral and Neural Canal Scleral Flange Remodeling in Highly Myopic Eyes”, ISER 2024, Buenos Aires, Argentina

## **Invited Scientific Meeting Paper (Podium) Presentations**

1. Invited Speaker: “Neural Canal and Peripapillary Scleral Alterations Within Three-Dimensional (3D) Reconstructions of Early Glaucoma (EG) Monkey Optic Nerve Heads (ONH),” Association for research in vision and ophthalmology (ARVO) 2005, Fort Lauderdale, Florida, USA
2. Invited Speaker: “Laminar Cupping and Prelaminar Neural Tissue Thickening (not thinning) are present at the onset of Confocal Scanning Laser Tomographic (CSLT) detected Optic Nerve Head (ONH) surface change in Early Monkey Experimental Glaucoma (EG)”. ARVO 2007, Fort Lauderdale, Florida, USA
3. Invited Speaker: “Optic Nerve Head (ONH) Lamina Cribrosa Insertion Migration and Pialization in Early Non-Human Primate (NHP) Experimental Glaucoma”. ARVO 2010, Fort Lauderdale, Florida, USA.
4. Invited Speaker: “Longitudinally detected, SDOCT Optic Nerve Head (ONH) Structural Change occurs early and suggests age-related structural stiffness differences in one young and one old monkey with unilateral early Experimental Glaucoma (EEG)”. International Society for imaging in the eye (ISIE) 2010, Fort Lauderdale, Florida, USA.
5. Invited Speaker: “Outward Migration of the Anterior and Posterior Lamina Cribrosa Insertions are Core Components of early Cupping in Non-Human Primate Experimental Glaucoma”. AGS 2011

6. Invited Speaker: "Spectral Domain Optical Coherence Tomography (SDOCT) Detected Optic Nerve Head (ONH) Change Demonstrates Age-Related Differences in Young vs Old Monkey Early Experimental Glaucoma (EEG)". ARVO 2011, Fort Lauderdale, Florida, USA
7. Invited Speaker: "Optic Nerve Head (ONH) Lamina Cribrosa Insertion Migration and Pialization in Moderate and Severe Non-human Primate (NHP) Experimental Glaucoma (EG)". ARVO 2013, Seattle, 2013
8. Invited Speaker: "Longitudinal Detection of Optic Nerve Head Changes by Spectral Domain Optical Coherence Tomography in Early Experimental Glaucoma" AGS, 2104
9. Invited Speaker: "Eye-specific Onset and Spatial Pattern of Longitudinal Change Detected by Spectral Domain Optical Coherence Tomography (SDOCT) Sectoral Analysis in Non-human Primate (NHP) Early Experimental Glaucoma (EG)". ARVO 2015, Fort Lauderdale, Florida, USA
10. Invited Speaker: "The Proportion of Individual Eyes Demonstrating Spectral Domain Optical Coherence Tomography Change in Early Experimental Glaucoma and its Eye-Specific Character". AGS 2015
11. Invited Speaker: "Global Lamina Cribrosa Microarchitectural Change in Monkey Experimental Glaucoma (EG) from Early through Advanced Axon Loss". ARVO 2016, Seattle, WA
12. Invited Speaker: "Improved Detection of Optical Coherence Tomography (OCT) Structural Abnormality in Glaucoma (GL) with Combined Sectoral Rim and Retinal Nerve Fiber Layer (RNFL) Criteria", ARVO 2019
13. Invited Speaker: "OCT Optic Nerve Head (ONH) Peripapillary Scleral Bowing (PSB) in Highly Myopic and Age-Matched Healthy Eyes", ISER 2019, Atlantic
14. Invited Speaker: "Diagnostic accuracy of individual and combined retinal layer thickness measurements assessed at each pixel within posterior pole OCT scans of healthy and glaucomatous eyes", ARVO 2020, Meeting cancelled
15. Invited Speaker: "Correlating structural and molecular alterations using colocalized data in early experimental glaucoma model", ARVO 2022, Dever, Colorado

## **Invited Scientific Meeting Poster Presentations**

1. "Physiologic, Inter-Eye Differences (PID) in Optic Nerve Head (ONH) Architecture within Normal Non-human primate (NHPs) by Three Dimensional (3D) Histomorphometry". ARVO 2008, Fort Lauderdale, Florida, USA
2. "The influence of material properties and geometry on optic nerve head biomechanics". Proceedings of ASME 2009 Summer Bioengineering Conference. Lake Tahoe, CA.
3. "The Effect of Local Lamina Cribrosa Beam Orientation on Optic Nerve Head Biomechanics", ARVO 2009, Fort Lauderdale, Florida, USA.
4. "Spectral Domain Optical Coherence Tomography (SDOCT) BMO Minimum Rim Area Predicts Functional Status better than HRT Rim Area in Human Ocular Hypertension and Early Glaucoma". AGS 2012
5. "Spectral Domain Optical Coherence Tomography 870 vs 1050 nm Enhanced Depth Imaging Optic Nerve Head (ONH) Visualization in Normal and Glaucomatous Non-Human Primate Eyes". ARVO 2014
6. "Eye-Specific Lamina Cribrosa (LC) Microarchitectural (LMA) Change in Non-Human Primate (NHP) Early Experimental Glaucoma (EG) by Region. " ARVO 2015,
7. "Factors Influencing OCT Peripapillary Choroidal Thickness (ppCT) in a Normal Population: A Multi-Center Study". ARVO 2017, Baltimore, USA.
8. "The Relative Ability of Optical Coherence Tomography (OCT) Structural Parameters to Detect Structural Abnormality in Glaucoma Suspect (GLS) and Glaucoma (GL) Eyes", ARVO 2018
9. "Diagnostic accuracy of inner retinal layer thickness and reflectance intensity measurements assessed in posterior pole OCT scans of healthy and glaucomatous eyes", ARVO 2018 Online
10. "Ocular pulse waveform in the ONH differs between glaucomatous (GL) and glaucoma suspect (GLS) eyes in individuals with similar systemic pulse waveforms". IOCS,2021 Online

## **Book Chapters**

1. Ren R, **Yang H**, Gardiner SK, Hardin C, Demirel S, Burgoyne CF. Aging Effect of Lamina Cribrosa Depth in Ocular Hypertension and Glaucoma. In: Wang N, editor. Intraocular and Intracranial Pressure Gradient in Glaucoma. Singapore: Springer Nature; 2019. p. 205-9.
2. **Yang H**, Reynaud J, Lockwood H, Williams G, Hardin C, Reyes L, Gardiner SK, Burgoyne CF. 3D Histomorphometric Reconstruction and Quantification of the Optic Nerve Head Connective Tissues. In: Methods in Glaucoma Research, Jacobs T (ed) New York, NY: Springer; Accepted for publication Nov 2016, Forthcoming 2017.
3. Burgoyne CF, Ivers KM, **Yang H**, Chauhan BC, Fortune, B. OCT Anatomy for Glaucoma – Emerging Relationships of Interest. In: Optic Nerve Head and Retinal Nerve Fibre Analysis, 2nd Edition. Lester M, Lemij H, Garway-Heath D (eds). Italy: PubliComm. 2017.
4. Burgoyne CF, **Yang H**, Downs JC. Chapter 16 - Clinical Cupping: Laminar and Prelaminar Components. In: Schacknow PN, Samples JR (eds), The Glaucoma Book: A Practical, Evidence-Based Approach to Patient Care. New York, NY: Springer 2010.

## **Additional Conference Proceedings**

1. **Hongli Yang**, Ian Sigal, Michael Roberts, Claude Burgoyne, J. Crawford Downs. The influence of material properties and geometry on optic nerve head biomechanics. Proceedings of ASME 2009 Summer Bioengineering Conference. Lake Tahoe, CA.
2. Ian Sigal, **Hongli Yang**, Michael Roberts, J. Crawford Downs. Using mesh morphing to study the influence of geometry on biomechanics: An example in ocular biomechanics. Proceedings of the ASME 2008 Summer Bioengineering Conference.
3. Ian Sigal, **Hongli Yang**, Michael Roberts, Claude Burgoyne, J. Crawford Downs. BIOMECHANICS OF THE POSTERIOR POLE During THE REMODELING Progression from Normal to Early Experimental Glaucoma. Proceedings of the ASME 2009 Summer Bioengineering Conference.

## **Peer Reviewed Publications**

1. **Downs JC, Yang H**, Girkin C, Sakata L, Bellezza A, Thompson H, Burgoyne CF. Three-dimensional histomorphometry of the normal and early glaucomatous monkey optic nerve head: neural canal and subarachnoid space architecture. Invest Ophthalmol Vis Sci. 2007 Jul;48(7):3195-208. **Downs and Yang are co-first authors and contribute equally to the work.**
2. **Yang H**, Downs JC, Girkin C, Sakata L, Bellezza A, Thompson H, Burgoyne CF. 3-D histomorphometry of the normal and early glaucomatous monkey optic nerve head: lamina cribrosa and peripapillary scleral position and thickness. Invest Ophthalmol Vis Sci. 2007 Oct;48(10):4597-607.
3. **Yang H**, Downs JC, Bellezza A, Thompson H, Burgoyne CF. 3-D histomorphometry of the normal and early glaucomatous monkey optic nerve head: prelaminar neural tissues and cupping. Invest Ophthalmol Vis Sci. 2007 Nov;48(11):5068-84.
4. Strouthidis NG, **Yang H**, Fortune B, Downs JC, Burgoyne CF. Detection of optic nerve head neural canal opening within histomorphometric and spectral domain optical coherence tomography data sets. Invest Ophthalmol Vis Sci. 2009 Jan;50(1):214-23.
5. **Yang H**, Downs JC, Burgoyne CF. Physiologic intereye differences in monkey optic nerve head architecture and their relation to changes in early experimental glaucoma. Invest Ophthalmol Vis Sci. 2009 Jan;50(1):224-34.
6. Strouthidis NG, **Yang H**, Downs JC, Burgoyne CF. Comparison of clinical and three-dimensional histomorphometric optic disc margin anatomy. Invest Ophthalmol Vis Sci. 2009 May;50(5):2165-74.
7. Fortune B, **Yang H**, Strouthidis NG, Cull GA, Grimm JL, Downs JC, Burgoyne CF. The effect of acute intraocular pressure elevation on peripapillary retinal thickness, retinal nerve fiber layer thickness, and retardance. Invest Ophthalmol Vis Sci. 2009 Oct;50(10):4719-26.

8. Strouthidis NG, **Yang H**, Reynaud JF, Grimm JL, Gardiner SK, Fortune B, Burgoyne CF. Comparison of clinical and spectral domain optical coherence tomography optic disc margin anatomy. Invest Ophthalmol Vis Sci. 2009 Oct;50(10):4709-18.
9. **Yang H**, Downs JC, Sigal IA, Roberts MD, Thompson H, Burgoyne CF. Deformation of the normal monkey optic nerve head connective tissue after acute IOP elevation within 3-D histomorphometric reconstructions. Invest Ophthalmol Vis Sci. 2009 Dec;50(12):5785-99.
10. Sigal IA, **Yang H**, Roberts MD, Downs JC. Morphing methods to parameterize specimen-specific finite element model geometries. J Biomech. 2010 Jan 19;43(2):254-62.
11. **Yang H**, Thompson H, Roberts MD, Sigal IA, Downs JC, Burgoyne CF. Deformation of the early glaucomatous monkey optic nerve head connective tissue after acute IOP elevation in 3-D histomorphometric reconstructions. Invest Ophthalmol Vis Sci. 2011 Jan 21;52(1):345-63.
12. Strouthidis NG, Fortune B, **Yang H**, Sigal IA, Burgoyne CF. Longitudinal change detected by spectral domain optical coherence tomography in the optic nerve head and peripapillary retina in experimental glaucoma. Invest Ophthalmol Vis Sci. 2011 Mar 2;52(3):1206-19.
13. Sigal IA, **Yang H**, Roberts MD, Burgoyne CF, Downs JC. IOP-induced lamina cribrosa displacement and scleral canal expansion: an analysis of factor interactions using parameterized eye-specific models. Invest Ophthalmol Vis Sci. 2011 Mar;52(3):1896-907.
14. **Yang H**, Williams G, Downs JC, Sigal IA, Roberts MD, Thompson H, Burgoyne CF. Posterior (outward) migration of the lamina cribrosa and early cupping in monkey experimental glaucoma. Invest Ophthalmol Vis Sci. 2011 Sep 9;52(10):7109-21.
15. Sigal IA, **Yang H**, Roberts MD, Grimm JL, Burgoyne CF, Demirel S, Downs JC. IOP-induced lamina cribrosa deformation and scleral canal expansion: independent or related?. Invest Ophthalmol Vis Sci. 2011 Nov 21;52(12):9023-32.
16. Strouthidis NG, Fortune B, **Yang H**, Sigal IA, Burgoyne CF. Effect of acute intraocular pressure elevation on the monkey optic nerve head as detected by spectral domain optical coherence tomography. Invest Ophthalmol Vis Sci. 2011 Dec 9;52(13):9431-7.
17. **Yang H**, Qi J, Hardin C, Gardiner SK, Strouthidis NG, Fortune B, Burgoyne CF. Spectral-domain optical coherence tomography enhanced depth imaging of the normal and glaucomatous nonhuman primate optic nerve head. Invest Ophthalmol Vis Sci. 2012 Jan 25;53(1):394-405
18. Reis AS, Sharpe GP, **Yang H**, Nicolela MT, Burgoyne CF, Chauhan BC. Optic disc margin anatomy in patients with glaucoma and normal controls with spectral domain optical coherence tomography. Ophthalmology. 2012 Apr;119(4):738-47.
19. Reis AS, O'Leary N, **Yang H**, Sharpe GP, Nicolela MT, Burgoyne CF, Chauhan BC. Influence of clinically invisible, but optical coherence tomography detected, optic disc margin anatomy on neuroretinal rim evaluation. Invest Ophthalmol Vis Sci. 2012 Apr 18;53(4):1852-60.
20. Chauhan BC, O'Leary N, AlMobarak FA, Reis ASC, **Yang H**, Sharpe GP, Hutchison DM, Nicolela MT, Burgoyne CF. Enhanced detection of open-angle glaucoma with an anatomically accurate optical coherence tomography-derived neuroretinal rim parameter. Ophthalmology. 2013 Mar;120(3):535-543.
21. He L, **Yang H**, Gardiner SK, Williams G, Hardin C, Strouthidis NG, Fortune B, Burgoyne CF. Longitudinal detection of optic nerve head changes by spectral domain optical coherence tomography in early experimental glaucoma. Invest Ophthalmol Vis Sci. 2014 Jan 29;55(1):574-86. **\*He L and Yang H contributed equally to this work.**
22. Gardiner SK, Ren R, **Yang H**, Fortune B, Burgoyne CF, Demirel S. A method to estimate the amount of neuroretinal rim tissue in glaucoma: comparison with current methods for measuring rim area. Am J Ophthalmol. 2014 Mar;157(3):540-9.e1-2.
23. Ren R, **Yang H**, Gardiner SK, Fortune B, Hardin C, Demirel S, Burgoyne CF. Anterior lamina cribrosa surface depth, age, and visual field sensitivity in the Portland Progression Project. Invest Ophthalmol Vis Sci. 2014 Mar 13;55(3):1531-9. **\*Ren R and Yang H contributed equally to this work.**
24. He L, Ren R, **Yang H**, Hardin C, Reyes L, Reynaud J, Gardiner SK, Fortune B, Demirel S, Burgoyne CF. Anatomic vs. acquired image frame discordance in spectral domain optical coherence tomography minimum rim measurements. PLoS One. 2014;9(3):e92225.

25. **Yang H**, He L, Gardiner SK, Reynaud J, Williams G, Hardin C, Strouthidis NG, Downs JC, Fortune B, Burgoyne CF. Age-related differences in longitudinal structural change by spectral-domain optical coherence tomography in early experimental glaucoma. Invest Ophthalmol Vis Sci. 2014 Sep 4;55(10):6409-20.
26. Lockwood H, Reynaud J, Gardiner S, Grimm J, Libertiaux V, Downs JC, **Yang H**, Burgoyne CF. Lamina cribrosa microarchitecture in normal monkey eyes part 1: methods and initial results. Invest Ophthalmol Vis Sci. 2015 Feb 3;56(3):1618-37.
27. Gardiner SK, Boey PY, **Yang H**, Fortune B, Burgoyne CF, Demirel S. Structural Measurements for Monitoring Change in Glaucoma: Comparing Retinal Nerve Fiber Layer Thickness With Minimum Rim Width and Area. Invest Ophthalmol Vis Sci. 2015 Oct;56(11):6886-91.
28. Pazos M, **Yang H**, Gardiner SK, Cepurna WO, Johnson EC, Morrison JC, Burgoyne CF. Rat optic nerve head anatomy within 3D histomorphometric reconstructions of normal control eyes. Exp Eye Res. 2015 Oct;139:1-12. **\*Pazos M and Yang H contributed equally to this work.**
29. **Yang H**, Ren R, Lockwood H, Williams G, Libertiaux V, Downs C, Gardiner SK, Burgoyne CF. The Connective Tissue Components of Optic Nerve Head Cupping in Monkey Experimental Glaucoma Part 1: Global Change. Invest Ophthalmol Vis Sci. 2015 Dec;56(13):7661-78.
30. Pazos M, **Yang H**, Gardiner SK, Cepurna WO, Johnson EC, Morrison JC, Burgoyne CF. Expansions of the neurovascular scleral canal and contained optic nerve occur early in the hypertonic saline rat experimental glaucoma model. Exp Eye Res. 2016 Apr;145:173-186. **\*Pazos M and Yang H contributed equally to this work.**
31. Ing E, Ivers KM, **Yang H**, Gardiner SK, Reynaud J, Cull G, Wang L, Burgoyne CF. Cupping in the Monkey Optic Nerve Transection Model Consists of Prelaminar Tissue Thinning in the Absence of Posterior Lamellar Deformation. Invest Ophthalmol Vis Sci. 2016 May 1;57(6):2914–2927.
32. Reynaud J, Lockwood H, Gardiner SK, Williams G, **Yang H**, Burgoyne CF. Lamina Cribrosa Microarchitecture in Monkey Early Experimental Glaucoma: Global Change. Invest Ophthalmol Vis Sci. 2016 Jun 1;57(7):3451-69.
33. Fortune B, Hardin C, Reynaud J, Cull G, **Yang H**, Wang L, Burgoyne CF. Comparing Optic Nerve Head Rim Width, Rim Area, and Peripapillary Retinal Nerve Fiber Layer Thickness to Axon Count in Experimental Glaucoma. Invest Ophthalmol Vis Sci. 2016 Jul 1;57(9):OCT404-12. doi: 10.1167/iovs.15-18667. PubMed PMID: 27409499; PubMed Central PMCID: PMC4968911.
34. Ivers KM, **Yang H**, Gardiner SK, Qin L, Reyes L, Fortune B, Burgoyne CF. In Vivo Detection of Lamellar and Peripapillary Scleral Hypercompliance in Early Monkey Experimental Glaucoma. Invest Ophthalmol Vis Sci. 2016 Jul 1;57(9):OCT388-403. **\*Ivers KM and Yang H contributed equally to this work.**
35. Girkin CA, Fazio MA, **Yang H**, Reynaud J, Burgoyne CF, Smith B, Wang L, Downs JC. Variation in the Three-Dimensional Histomorphometry of the Normal Human Optic Nerve Head With Age and Race: Lamina Cribrosa and Peripapillary Scleral Thickness and Position. Invest Ophthalmol Vis Sci. 2017 Jul 1;58(9):3759-3769.
36. **Yang H**, Reynaud J, Lockwood H, Williams G, Hardin C, Reyes L, Stowell C, Gardiner SK, Burgoyne CF. The connective tissue phenotype of glaucomatous cupping in the monkey eye - Clinical and research implications. Prog Retin Eye Res. 2017 Jul;59:1-52.
37. **Yang H**, Reynaud J, Lockwood H, Williams G, Hardin C, Reyes L, Gardiner SK, Burgoyne CF. 3D Histomorphometric Reconstruction and Quantification of the Optic Nerve Head Connective Tissues. Methods Mol Biol. 2018;1695:207-267.
38. Luo H, **Yang H**, Gardiner SK, Hardin C, Sharpe GP, Caprioli J, Demirel S, Girkin CA, Liebmann JM, Mardin CY, Quigley HA, Scheuerle AF, Fortune B, Chauhan BC, Burgoyne CF. Factors Influencing Central Lamina Cribrosa Depth: A Multicenter Study. Invest Ophthalmol Vis Sci. 2018 May 1;59(6):2357-2370. **\* Luo H and Yang H contributed equally to this work.**
39. Hong SW, Koenigsman H, Ren R, **Yang H**, Gardiner SK, Reynaud J, Kinast RM, Mansberger SL, Fortune B, Demirel S, Burgoyne CF. Glaucoma Specialist Optic Disc Margin, Rim Margin, and Rim Width Discordance in Glaucoma and Glaucoma Suspect Eyes. Am J Ophthalmol. 2018 Aug;192:65-76.



40. Schwaner SA, Kight AM, Perry RN, Pazos M, **Yang H**, Johnson EC, Morrison JC, Burgoyne CF, Ross Ethier C. A Methodology for Individual-Specific Modeling of Rat Optic Nerve Head Biomechanics in Glaucoma. J Biomech Eng. 2018 Aug 1;140(8).
41. **Yang H**, Luo H, Gardiner SK, Hardin C, Sharpe GP, Caprioli J, Demirel S, Girkin CA, Liebmann JM, Mardin CY, Quigley HA, Scheuerle AF, Fortune B, Chauhan BC, Burgoyne CF. Factors Influencing Optical Coherence Tomography Peripapillary Choroidal Thickness: A Multicenter Study. Invest Ophthalmol Vis Sci. 2019 Feb 1;60(2):795-806.
42. Hong SW, Koenigsman H, Yang H, Ren R, Reynaud J, Kinast RM, Mansberger SL, Fortune B, Demirel S, Gardiner SK, Burgoyne CF. Glaucoma Specialist Detection of Optical Coherence Tomography Suspicious Rim Tissue in Glaucoma and Glaucoma Suspect Eyes. Am J Ophthalmol. 2019 Mar;199:28-43.
43. Hong S, **Yang H**, Gardiner SK, Luo H, Hardin C, Sharpe GP, Caprioli J, Demirel S, Girkin CA, Liebmann JM, Mardin CY, Quigley HA, Scheuerle AF, Fortune B, Chauhan BC, Burgoyne CF. OCT-Detected Optic Nerve Head Neural Canal Direction, Obliqueness, and Minimum Cross-Sectional Area in Healthy Eyes. Am J Ophthalmol. 2019 Dec;208:185-205. \* **Hong S and Yang H contributed equally to this work.**
44. Cao XS, Peng XY, You QS, Liu F, Ding YJ, **Yang HL**. Genetic factors for idiopathic choroidal neovascularization. Ophthalmic Genet. 2019, Aug;40(4):309-312. doi10.1080/13816810.2019.1630844. Epub 2019 Sep 12. PMID:31512979.
45. **Yang H**, Luo H, Hardin C, Wang YX, Jeoung JW, Albert C, Vianna JR, Sharpe GP, Reynaud J, Demirel S, Mansberger SL, Fortune B, Nicoleta M, Gardiner SK, Chauhan BC, Burgoyne CF. Optical Coherence Tomography Structural Abnormality Detection in Glaucoma Using Topographically Correspondent Rim and Retinal Nerve Fiber Layer Criteria. Am J Ophthalmol. 2020 May;213:203-216.
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