

Matthew A. Reilly, Ph.D.  
Assistant Professor of Biomedical Engineering  
The Ohio State University

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## EDUCATION

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### WASHINGTON UNIVERSITY IN ST. LOUIS

Doctor of Philosophy in Energy, Environmental, and Chemical Engineering May 2008

### UNIVERSITY OF DAYTON

Bachelor of Chemical Engineering May 2003

Master of Science in Chemical and Materials Engineering August 2004

## PROFESSIONAL EXPERIENCE

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ASSISTANT PROFESSOR 2016-present

Department of Biomedical Engineering

Department of Ophthalmology and Visual Science (courtesy)

Ohio State University

ASSISTANT PROFESSOR 2011-2015

Department of Biomedical Engineering

University of Texas at San Antonio

VISITING ACADEMIC 2010

Department of Engineering Science

University of Oxford

ADJUNCT PROFESSOR 2009-2011

Energy, Environmental, and Chemical Engineering

Washington University in St. Louis

POST-DOCTORAL FELLOW 2008-2011

Ophthalmology and Visual Sciences

Washington University in St. Louis

HEALTH SCIENCE SPECIALIST 2008-2011

Department of Veterans Affairs St. Louis Medical Center

## AWARDS AND HONORS

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**Lumley Research Award**, College of Engineering, Ohio State 2019

**Rhett Buckler Award**, American Society of Retina Specialists 2017

**Travel Award**, American Association of Anatomists 2014

**Post-Doctoral Associateship**, National Research Council 2009

**Pre-Doctoral Fellowship**, Department of Veterans Affairs 2005-2006

## Funded and Pending Research Proposals

Total grant support: \$2,111,590 as PI (total: \$10,097,318 as key personnel)

### ***Current Support***

- Lion's Vision Gift - Barbara L. Crow Investigator-Concept Grant, *A Multiscale Investigation of Ocular Tissue Properties and Biomechanical Response*: 2019-2021, \$15,000. Role: Co-PI
- Ohio State College of Veterinary Medicine, *Pre-Clinical Model of Traumatic Optic Neuropathy (TON)*: 2019-2020, \$7,500. Role: PI
- NEI 1R01EY029130-01, *Structural, mechanical, and cell biological properties of the ciliary zonule*: 2018-2022, \$1,521,709. Role: Co-investigator
- NEI 5R01EY027399-02, *Corneal biomechanics in ocular disease*: 2017-2022, \$1,925,000. Role: Co-investigator
- DOD Vision Research Program Translational Research Award W81XWH-15-1-0074, *Torsional Indirect Traumatic Optic Neuropathy (TITON): Animal Model for Diagnostics, Drug Delivery, and Therapeutics for Central Nervous System Injury*: 2015-2021, \$1,000,000. Role: PI

### ***Completed Support***

- Indiana University School of Optometry - *Lens Compression Instrument*: 2019-2020, \$14,394. Role: PI
- Ohio State Discovery Theme Seed Grant, *Age-Related Differences in Torsional Indirect Traumatic Optic Neuropathy*: 2017-2018, \$50,080. Role: PI
- NIH SBIR Phase II 2-R44 GM113284-02A1, *Novel Debridement for Necrotic Tissue*: 2016-2017, \$1,482,825. Role: co-investigator
- NIH SBIR Phase II 2-R44 GM108070-02, *Injectable microgel for soft tissue repair*: 2014-2016, \$1,207,615. Role: co-investigator
- DOD Vision Research Program W81XWH-12-2-0055, *Sub-Lethal Ocular Trauma (SLOT): Establishing Standardized Blast Thresholds to Facilitate Diagnostic, Early Treatment, and Recovery Studies for Blast Injuries to the Eye and Optic Nerve*: 2012-2015, \$999,795. Role: PI (dual-PI project with Walt Gray)
- NIH SBIR Phase I 1-R43 GM113284-01, *Novel Debridement for Necrotic Tissue*: 2015, \$216,045. Role: co-investigator
- San Antonio Area Foundation Biomedical Research Grant, *Contribution of Retinal and Choroidal Endothelium in Diabetic Retinopathy*: 2014-2015, \$24,821. Role: PI
- NIH SBIR Phase I 1-R43 GM108070-01, *Injectable Microgel for Soft Tissue Repair*: 2013-2014, \$149,988. Role: co-investigator
- NSF SBIR Phase II IIP-1228399, *Correlation of Surface Free Energy and Cytocompatibility of Amphiphilic Biomaterials*: 2012-2014, \$659,367. Role: co-investigator
- UTSA Collaborative Research Seed Grant, *Iterative Computational Modeling of Primate Spermatogenesis Educated by Wet-Lab Experimentation*: 2012-2013, \$30,000. Role: co-PI
- Department of Veterans Affairs Rehabilitation Basic Science Merit Review Grant, *Viscoelastic Characterization of the Ocular Lens*: 2008-2011, \$638,000. Role: co-investigator

- Department of Veterans Affairs Pre-Doctoral Associated Health Rehabilitation Research Fellowship, *Optomechanical Characterization of the Ocular Lens*: 2005-2006, \$30,000. Role: PI

## Publications

### *Refereed Articles*

39. Yousefi, A., Roberts, C., **Reilly, M.A.**, Influence of Dynamic Changes in Corneal Curvature on the Load During Air-Puff Induced Deformation. Submitted.
38. Shi, Y., Jones, W., Beatty, W., Tan, Q., Mecham, R., **Reilly, M.A.**, Rodriguez, J., Bassnett, S., Latent-transforming growth factor beta-binding protein-2 (LTBP-2) is required for longevity but not for development of zonular fibers. Submitted.
37. Kumar, B., Rich, W., Chandler, H.L., **Reilly, M.A.**, Spatial Distribution of Lens Epithelial Cell Proliferation in Response to Lens Stretching. Submitted.
36. Asemota, B.I., Glickman, R.D., Rodriguez, L., **Reilly, M.A.**, Torsional Indirect Traumatic Optic Neuropathy (TITON): A Physiologically Relevant Animal Model of Traumatic Optic Neuropathy. Submitted.
35. Kumar, B., **Reilly, M.A.**, The Development, Growth, and Regeneration of the Crystalline Lens: A Review. *Current Eye Research*, 2020;45(3):313-326.
34. Nguyen, B.A., **Reilly, M.A.**, Roberts, C.J., Biomechanical contribution of the sclera to dynamic corneal response in air-puff induced deformation in human donor eyes. *Experimental Eye Research*, 2020;191:107904 (5 pages).
33. Tram, N.K., Jiang, P., Jacobs, K.M., Ruzga, M.N., Allen, M.G., Prieto, R.P., Carus, S.A., **Reilly, M.A.**, Swindle-Reilly, K.E., Biomechanical Influence of Accommodative Tissues on Corneal Morphogenesis. *Journal of Biomechanics*, 2020;100:109582 (9 pages).
32. Gu, S., Biswas, S., Rodriguez, L., Li, Z., Li, Y., Riquelme, M.A., Shi, W., Wang, K., White, T.W., **Reilly, M.A.**, Lo, W.-K., Jiang, J.X., Connexin 50 and AQP0 are Essential in Maintaining Organization and Integrity of Lens Fibers. *Investigative Ophthalmology and Visual Science*, 2019;60:4021-4032.
31. Kumar, B., Chandler, H., Plageman, T., **Reilly, M.A.**, Lens Stretching Modulates Lens Epithelial Cell Proliferation via YAP Regulation. *Investigative Ophthalmology and Visual Science*, 2019;60:3920–3929.
30. Rios, J.D., Choi, J.H., McDaniel, J., Becera, S., Bice, L., Johnson, P., Cleland, J.M., Glickman, R.D., **Reilly, M.A.**, Gray, W., Sponsel, W.E., Lund, B.J., Altered Expression of Aquaporin 1 and Aquaporin 5 in the Cornea After Primary Blast Exposure. *Molecular Vision*, 2019;25:283-294.

29. Nguyen, B.A., Roberts, C.J., **Reilly, M.A.**, Biomechanical impact of the sclera on corneal deformation response to an air-puff: a finite element study. *Frontiers in Bioengineering and Biotechnology*, 2019;6:210 (8 pages).
28. Hoglebe, N., Reinhardt, J.W., Tram, N., **Reilly, M.A.**, Gooch, K.J., Independent control of matrix adhesiveness and stiffness within a 3D self-assembling peptide hydrogel. *Acta Biomaterialia*, 2018;70:110-119.
27. Sponsel, W.E., Johnson, S.L., Trevino, R., Gonzalez, A., Groth, S.L., Majcher, C., Fulton, D.C., **Reilly, M.A.**, Pattern Electroretinography and Visual Evoked Potentials Provide Clinical Evidence of CNS Modulation of High- and Low-Contrast VEP Latency in Glaucoma. *Translational Vision Science and Technology*, 2017;6(6.6):1-11.
26. **Reilly, M.A.**, Cleaver, A., Inverse Elastographic Method for Analyzing the Ocular Lens Compression Test. *Journal of Innovative Optical Health Sciences*, 2017;10(6):1742009 (12 pages).
25. Balikov, D.A., Crowder, S.W., Boire, T.C., Lee, J.B., Gupta, M.K., Fenix, A.M., Lewis, N.L., Ambrose, C.M., Short, P.A., Kim, C.S., Burnette, D.T., **Reilly, M.A.**, Murthy, S., Kang, M.L., Kim, W.S., Sung, H.-K., Tunable Surface Repellency Maintains Stemness and Redox Capacity of Human Mesenchymal Stem Cells. *ACS Applied Material Interfaces*, 2017;9(27):22994-23006.
24. Bonugli, E., Cormier, J., **Reilly, M.A.**, Reinhart, L.H., Replicating Real-World Friction of Motorcycle Helmet Impacts and its Effects on Head Injury Metrics. *SAE Technical Papers*, 2017;1:1433 (17 pages).
23. Kotzur, T., Benavides-Garcia, R., Mecklenburg, J., Sanchez, J.R., **Reilly, M.A.**, Hermann, B.P., Granulocyte Colony-Stimulating Factor (G-CSF) Promotes Spermatogenic Regeneration From Surviving Spermatogonia After High-Dose Alkylating Chemotherapy. *Reproductive Biology and Endocrinology*, 2017; 15(1):7 (12 pages).
22. Jones, K.R., Choi, J.H., Sponsel, W.E., Gray, W., Groth, S.L., Glickman, R.D., Lund, B.J., **Reilly, M.A.**, Low-Level Primary Blast Causes Significant Ocular Injuries in Rabbits. *Journal of Neurotrauma*, 2016, 33(13):1194-1201.
21. **Reilly, M.A.**, Martius, P., Kumar, S., Burd, H.J., Stachs, O., The Mechanical Response of the Young Porcine Lens to a Spinning Test. *Zeitschrift für Medizinische Physik*, 2016, 26(2):127-135.
20. Marinkovic, M., Block, T.J., Rakian, R., Li, Q., Wang, E., **Reilly, M.A.**, Dean, D.D., Chen, X.D., One size does not fit all: Developing a cell-specific niche for in vitro study of cell behavior. *Matrix Biology*, 2016, 44-45:426-441.
19. Wilkes, R.P., **Reilly, M.A.**, A pre-tensioned finite element model of ocular accommodation and presbyopia. *International Journal of Advances in Engineering Sciences and Applied Mathematics*, 2016, 8(1):25-38.

18. Watson, R., Gray, W., Sponsel, W.E., Lund, B.J., Glickman, R.D., **Reilly, M.A.**, Simulations of Porcine Eye Exposure to Primary Blast Insult. *Translational Vision Science and Technology*, 2015, 4(4):1-11.
17. **Reilly, M.A.**, Villareal, A., Maddess, T., Sponsel, W.E., Refined Frequency Doubling Perimetry Analysis Affirms Central Nervous System Control of Chronic Glaucomatous Neurodegeneration. *Translational Vision Science and Technology*, 2015, 4(3):1-12.
16. Rex, T., **Reilly, M.A.**, Sponsel, W.E., Elucidating the effects of primary blast on the eye. *Clinical and Experimental Ophthalmology*, 2015;43(3):197–199.
15. Benavides-Garcia, R., Joachim, R.C., Pina, N.A., Mutoji, K.N., **Reilly, M.A.**, Hermann, B.P. Granulocyte colony-stimulating factor prevents loss of spermatogenesis after sterilizing busulfan chemotherapy. *Fertility and Sterility*, 2015, 103(1):270-280.
14. **Reilly, M.A.**, A Quantitative Geometric Mechanics Lens Model: Insights into the Mechanisms of Accommodation and Presbyopia. *Vision Research*, 2014, 113:20-31.
13. Sponsel, W.E., Groth, S.L., Satsangi, N., Maddess, T., **Reilly, M.A.**, Refined Data Analysis Provides Clinical Evidence for Central Nervous System Control of Chronic Glaucomatous Neurodegeneration. *Translational Vision Science and Technology*, 2014, 3(3):1-13.
12. Sherwood, D., Sponsel, W.E., Lund, B.J., Gray, W.M., Watson, R., Groth, S., Thoe, K., Glickman, R.D., **Reilly, M.A.**, Anatomical Manifestations of Primary Blast Ocular Trauma Observed in a Postmortem Porcine Model. *Investigative Ophthalmology and Visual Science*, 2014, 55(2):1124-1132.
11. Du, H., Hamilton, P., **Reilly, M.A.**, Ravi, N., Injectable in situ Physically and Chemically Crosslinkable Gellan Hydrogel. *Macromolecular Biosciences*, 2012, 12(7):952-961.
10. **Reilly, M.A.**, Andley, U.P., Quantitative Biometric Phenotype Analysis in Mouse Lenses. *Molecular Vision*, 2010, 16:1041-1046.
9. Andley, U.P., **Reilly, M.A.**, In Vivo Lens Deficiency of the R49C  $\alpha$ A-Crystallin Mutant. *Experimental Eye Research*, 2010, 90(6):699-702.
8. **Reilly, M.A.**, Ravi, N., A Geometric Model of Ocular Accommodation. *Vision Research*, 2010, 50:330-336.
7. Du, H., Hamilton, P.D., **Reilly, M.A.**, d'Avignon, A., Ravi, N., A Facile Synthesis of Highly Water-Soluble, Core-Shell Organo-Silica Nanoparticles with Controllable Size via Sol-Gel Process. *Journal of Colloid and Interface Science*, 2009, 340:202-208.
6. **Reilly, M.A.**, Hamilton P.D., Perry G., Ravi N., Comparison of the Behavior of Natural and Refilled Porcine Lenses in a Robotic Lens Stretcher. *Experimental Eye Research*, 2009, 88(3):483-494.

5. **Reilly, M.A.**, Ravi N., Microindentation of the Young Porcine Ocular Lens. *Journal of Biomechanical Engineering*, 2009, 131(4):044502 (4 pages).
4. **Reilly, M.A.**, Perry G., Ravi N., A Dynamic Microindentation Device with Electrical Contact Detection. *Review of Scientific Instruments*, 2009, 80(1):015105 (9 pages).
3. **Reilly, M.A.**, Rapp B., Hamilton P.D., Shen A.Q., Ravi N., Material Characterization of Porcine Lenticular Soluble Proteins. *Biomacromolecules*, 2008, 9(6):1519-1526.
2. **Reilly, M.A.**, Hamilton P.D., Ravi N., Dynamic Multi-Arm Radial Lens Stretcher: A Machine Analog of the Ciliary Body. *Experimental Eye Research*, 2008, 86(1):157-164.
1. **Reilly, M.A.**, Fultz G.W., Gschwender L., An Analysis of Weight Change in Filters. *Air Force Materiel Command*, 2006, AFRL-ML-WP-TP-2006-460.

### ***Book Chapters***

3. **Reilly, M.A.**, Accommodation and Presbyopia, in: *Biomechanics of the eye*. C.J. Roberts, W.J. Dupps, and J.C. Downs, ed., Kugler Publications, Amsterdam, The Netherlands, 2018.
2. Swindle-Reilly, K.E., **Reilly, M.A.**, Ravi, N., Current Concepts in the Design of Hydrogels as Vitreous Substitutes, in: *Biomaterials and regenerative medicine in ophthalmology*, 2<sup>nd</sup> edition; T.V. Chirila, ed., Woodhead Publishing Ltd., Cambridge, UK, 2016.
1. **Reilly, M.A.**, Swindle-Reilly, K.E., Ravi, N., Hydrogels for Intraocular Lenses and Other Ophthalmic Prostheses, in: *Biomedical hydrogels: Biochemistry, manufacture, and medical applications*. S. Rimmer, ed., Woodhead Publishing Ltd., Cambridge, UK, 118-148, 2011.

### ***Invited Lectures***

24. *Biomechanical Analysis of the Eye as a Result of Aging and Trauma*, School of Optometry, Indiana University, Bloomington, Indiana, January 2020.
23. *Engineering Approaches in Presbyopia and Ocular Trauma*, Skaggs Institute of Molecular Medicine, The Scripps Research Institute, San Diego, California, June 2018.
22. *Biomechanics of Presbyopia and Ocular Trauma*, Auckland Bioengineering Institute, University of Auckland, Auckland, New Zealand, April 2018.
21. *Pathophysiology of Presbyopia and Ocular Trauma*, New Zealand National Eye Center Seminar Series, Faculty of Medical and Health Sciences, University of Auckland, Auckland, New Zealand, March 2018.
20. *Ocular Biomechanics of Aging and Trauma*, Department of Biological Sciences, University of Delaware, Newark, Delaware, February 2018.

19. *Integrating Molecular and Tissue-Level Biomechanics in the Aging Ocular Lens*, Department of Physics Biophysics Seminar Series, Ohio State University, February 2018.
18. *Biomechanics of Presbyopia, Cataract, and Ocular Trauma*, Department of Biomedical Engineering, University of Akron, Akron, Ohio, February 2018.
17. *Bio-chemo-mechanics of Presbyopia, Cataract, and Ocular Trauma*, Department of Bioengineering, University of Maryland, College Park, Maryland, December 2016.
16. *Biomechanics of Presbyopia and Ocular Trauma*, College of Optometry, Ohio State University, Columbus, Ohio, May 2016.
15. *Biomechanics of Presbyopia and Ocular Trauma*, Grand Rounds, Havener Eye Institute, Ohio State University, Columbus, Ohio, May 2016.
14. *My Love/Hate Relationship With Pig Eyes*, Biodynamic Research Corporation, San Antonio, Texas, May 2015.
13. *Biomechanics of Presbyopia and Ocular Trauma*, Biomedical Engineering, Ohio State University, Columbus, Ohio, March 2015.
12. *Blast and Torsional Trauma to the Eye and Optic Nerve*, US Army Institute of Surgical Research, Battlefield Health and Trauma Research Institute, San Antonio, Texas, October 2013.
11. *Importance of Dynamic Mechanical Properties in Ocular Biomechanics*, Mechanical and Industrial Engineering, Northeastern University, Boston, Massachusetts, August 2013.
10. *The Role of Mechanical Properties in Understanding Ocular Biomechanics*, Wellman Center for Photomedicine, Massachusetts General Hospital, Cambridge, Massachusetts, August 2013.
9. *Biomechanical Mechanisms of Presbyopia and Ocular Trauma*, Civil, Environmental, and Architectural Engineering, University of Colorado-Boulder, Boulder, Colorado, June 2013.
8. *Real-Time Monitoring of Full-Scale Trickling Filter Performance*, Civil and Environmental Engineering, University of Texas at San Antonio, San Antonio, Texas, November 2012.
7. *Interaction of Optics, Mechanics, and Growth in the Eye*, Institut für Physik, Universität Rostock, July 2012.
6. *Biomechanical Driving Forces in the Pathogenesis of Presbyopia and Cataracts*, Department of Biomedical Engineering, University of Texas at San Antonio, San Antonio, Texas, January 2012.
5. *An Overview of the Mechanics of Lens Refilling*, Augenklinik in der Medizinische Fakultät, Universität Rostock, March 2010.

4. *Improving Biomechanics Experiments With Automated Instrumentation*, Department of Biomedical Engineering, St. Louis University, St. Louis, Missouri, February 2010.
3. *Restoring Ocular Accommodation: Lessons From the Lens*, Institute for Medicine and Engineering, University of Pennsylvania, June 2008.
2. *Accommodation: What Is It, Why Do We Lose It, and How Can We Fix It?*, Engineering Sciences Center, Sandia National Laboratories, November 2007.
1. *Development of Full-Scale, Real-Time Trickle Filter Effluent Monitoring System*, Environmental Protection Agency, Cincinnati, Ohio, June 2004.

### **Conference Proceedings**

12. Amezcua, K.-L.H., Patnaik, S., Thirugnanasambandam, M., **Reilly, M.A.**, Finol, E.A., Assessment of material properties of thin film wound-treatment polymers. *Summer Biomechanics, Bioengineering, and Biotransport Conference*, National Harbor, Maryland, July 2017.
11. Jones, K.R., **Reilly, M.A.**, Glickman, R.D., Identification and localization of trauma-related biomarkers using matrix assisted laser desorption/ionization imaging mass spectrometry. *SPIE Proceedings*, Photonics West, San Francisco, California, January-February 2017.
10. **Reilly, M.A.**, Is Presbyopia Caused by Lens Growth-Induced Residual Stresses? *American Society of Mechanical Engineers*, Summer Bioengineering Conference, Sunriver, Oregon, June 2013.
9. **Reilly, M.A.**, Wilkes, R., Whole Eye Model for Estimating Accommodation-Induced Strains in the Trabecular Meshwork, *American Society of Mechanical Engineers*, Summer Bioengineering Conference, Sunriver, Oregon, June 2013.
8. **Reilly, M.A.**, Sherwood, D., Watson, R., Gray, W.M., Sponsel, W.E., Thoe, K., Lund, B.J., Glickman, R., Manifestations of Primary Blast-Induced Ocular Trauma, *American Society of Mechanical Engineers*, Summer Bioengineering Conference, Sunriver, Oregon, June 2013.
7. **Reilly, M.A.**, Perry, G., Ravi, N., A Robot for Biaxial Characterization of Bioviscoelastic Solids, *American Institute of Chemical Engineers, Annual Meeting*, Nashville, Tennessee, November 2009.
6. **Reilly, M.A.**, Zhang, J., Ravi, N., Transient Elasticity Gradients for Studying Cell Mobility, *American Institute of Chemical Engineers, Annual Meeting*, Nashville, Tennessee, November 2009.
5. **Reilly, M.A.**, Zhang, J., Ravi, N., Designing transient mechanical property gradients in ionic hydrogels, *Polymeric Material Science and Engineering*, 2009, 97:12.
4. Zhang, J., **Reilly, M.A.**, Ravi, N., Synthesis of hydrogels with mechanical property gradients, *Polymeric Material Science and Engineering*, 2009, 97:303.



3. **Reilly, M.A.**, Ravi, N., Equibiaxial Stretching Device for the Determination of Polymeric Film Properties. *Polymeric Material Science and Engineering*, 2006, 94:547.
2. Rapp, B., **Reilly, M.A.**, Hamilton, P.D., Ravi, N., A Comparison of the Viscoelastic Properties of Porcine Crystallins and OH Terminal PAMAM Dendrimers. *Polymer Preprint*, 2006, 94:62.
1. **Reilly, M.A.**, Fultz, G.W., Gschwender, L., AFRL-ML-WP-TP-2006-460: An Analysis of Weight Change in Filters. *Society of Tribologists and Lubrication Engineers, Annual Meeting*, Postprint report, 2006.

### ***Conference Presentations***

117. **Reilly, M.A.**, Kumar, B., Biomechanical model of lens growth and stretching, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Baltimore, Maryland, May 2020.
116. Kumar, B., Rich, W.W., **Reilly, M.A.**, Changes in the localization of lens epithelial cell proliferation in response to stretching, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Baltimore, Maryland, May 2020.
115. Rich, W., Kumar, B., Mackessy, D.J., Croarkin, S., Valenzuela, D., Jamora, B., Swindle-Reilly, K.E., **Reilly, M.A.**, Effects of Ascorbic Acid on Cataract Formation in *in vitro* Porcine Lenses, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Baltimore, Maryland, May 2020.
114. Croarkin, S., **Reilly, M.A.**, Ultraviolet-Radiation Based Changes to Lens Proteins Raman Spectra in Porcine Lens Tissue, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Baltimore, Maryland, May 2020.
113. Koupaei, A.Y., **Reilly, M.A.**, Roberts, C.J., Impact of post-applanation deformation curvature on the air-puff pressure temporal profile at the corneal apex, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Baltimore, Maryland, May 2020.
112. Azimian, A., **Reilly, M.A.**, Roberts, C.J., Numerical modeling and characterization of eye deformation response to an air-puff with varying corneal and scleral moduli, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Baltimore, Maryland, May 2020.
111. Croarkin, S.T., Rich, W., **Reilly, M.A.**, Normal Aging and Pathological Conditions Of Lens Crystallin Proteins In Vitro, *Biomedical Engineering Society*, Annual Meeting, Philadelphia, Pennsylvania, October 2019.
110. **Reilly, M.A.**, Croarkin, S.T., Pennza, N., In Vitro Models of Lens Stiffening, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Vancouver, British Columbia, April 2019.

109. Nguyen, B.A., **Reilly, M.A.**, Roberts, C.J., Effect of prostaglandin-analogs on corneal biomechanical response and whole-eye motion under loading by dynamic Scheimpflug analyzer, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Vancouver, British Columbia, April 2019.
108. Kumar, B., **Reilly, M.A.**, YAP Inhibition Halts Mechanotransductive Regulation of Lens Growth, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Vancouver, British Columbia, April 2019.
107. Soltisz, A.M., Ruzga, M.N., **Reilly, M.A.**, Swindle-Reilly, K.E., Spatial Variations in Optic Nerve Mechanical Properties, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Vancouver, British Columbia, April 2019.
106. Soltisz, A.M., Thobe, S.M., Ruzga, M.N., **Reilly, M.A.**, Swindle-Reilly, K.E., Evaluation of Semi-Interpenetrating Network for Treating Traumatic Optic Neuropathy, *Society for Biomaterials*, Annual Meeting, Seattle, Washington, April 2019.
105. Hazen, N., **Reilly, M.A.**, Variations in Lens Mechanical Properties with Position, Age, and Genotype, *Biomedical Engineering Society*, Annual Meeting, Atlanta, Georgia, October 2018.
104. Kumar, B., Dasari, R., **Reilly, M.A.**, Lens Epithelial Cell Proliferation is Modulated by Lens Capsule Strain, *Biomedical Engineering Society*, Annual Meeting, Atlanta, Georgia, October 2018.
103. **Reilly, M.A.**, The Role of Lens Capsule Remodeling in Age-Related Morphogenesis, *Biomedical Engineering Society*, Annual Meeting, Atlanta, Georgia, October 2018.
102. Croarkin, S., Pennza, N., **Reilly, M.A.**, Thermal And Ultraviolet Acceleration Of Bio-Chemo-Mechanical Aspects Of Lens Lens Aging, *Biomedical Engineering Society*, Annual Meeting, Atlanta, Georgia, October 2018.
101. Fernandez-Rivera, B., Kumar, B., Dasari, R., **Reilly, M.A.**, Lens Epithelial Cell Proliferation Correlates with Lens Size Between Species, *Society for Advancement of Chicanos/Hispanics and Native Americans in Science*, San Antonio, Texas, October 2018.
100. **Reilly, M.A.**, Kumar, B., Pennza, N., Croarkin, S., Dasari, R., Rich, W., Fernandez-Rivera, B., Biomechanics of the Aging Lens, *International Society for Eye Research*, Biennial Meeting, Belfast, Northern Ireland, September 2018.
99. Nguyen, B.A., **Reilly, M.A.**, Roberts, C.R., A nonlinear viscoelastic model of corneal and whole-eye motion under air-puff loading by a dynamic Scheimpflug analyzer, *International Society for Eye Research*, Biennial Meeting, Belfast, Northern Ireland, September 2018.

98. Higueta-Castro, N., Wier, C., Moore, J., Sunyecz, A., Cho, R., **Reilly, M.A.**, Sen, C.K., Kolb, S., Gallego-Perez, D., In Vivo Non-Viral Delivery of Gene and Cell Therapies to Mangled Nerves, Military Health System Research Symposium, Annual Meeting, Kissimmee, Florida, August 2018.
97. Watson, R., **Reilly, M.A.**, Computational Comparison of the Biomechanical Response of Human and Porcine Eyes to Primary Blast and Blunt Impact, *World Congress of Biomechanics*, Quadrennial Meeting, Dublin, Ireland, July 2018.
96. **Reilly, M.A.**, Hazen, N., Pennza, N., Croarkin, S., In Vitro and In Silico Modeling of the Bio-chemo-mechanical Aging of the Ocular Lens, *World Congress of Biomechanics*, Quadrennial Meeting, Dublin, Ireland, July 2018.
95. Kumar, B., Dasari, R., **Reilly, M.A.**, Lens Capsule Strain Modulates Lens Epithelial Cell Proliferation, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Honolulu, Hawaii, May 2018.
94. Nguyen, A., Roberts, C.J., **Reilly, M.A.**, Preliminary study on biomechanical contribution of the sclera to dynamic corneal response in air-puff induced deformation, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Honolulu, Hawaii, May 2018.
93. Swindle-Reilly, K.E., Thobe, S., Jiang, P., Soltisz, A.M., Tram, N.K., **Reilly, M.A.**, Development of Therapeutic Hydrogels for Traumatic Optic Neuropathy, *Society for Biomaterials*, Annual Meeting, Atlanta, Georgia, April 2018.
92. **Reilly, M.A.**, Croarkin, S., Pennza, N., Hazen, N., In Vitro Models of Lens Aging, *International Conference on the Lens*, Biennial Meeting, Kona, Hawaii, December 2017.
91. Jiang, J.X., Hu, Z., Biswas, S., Lo, W.-K., Shiels, A., White, T.W., Rodriguez, L.A., **Reilly, M.A.**, Gu, S., Adhesive Function of Connexin 50 and Aquaporin 0 in Lens Structure and Lens Fiber Differentiation, *International Conference on the Lens*, Biennial Meeting, Kona, Hawaii, December 2017.
90. Singer, M.A., Conston, S., **Reilly, M.A.**, A Novel Injection Technique for Dexamethasone Intravitreal Implant, *The American Society of Retina Specialists*, Annual Meeting, Boston, Massachusetts, August 2017.
89. Glickman, R., Gray, W., **Reilly, M.A.**, Sponsel, W.E., Emerging Threats with Ocular Trauma Challenges Panel, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Baltimore, Maryland, May 2017.
88. Groth, S.L., Sponsel, W.E., **Reilly, M.A.**, Johnson, S.L., Trevino, R., Majcher, C., Binocular Inverse Correlation of Low- vs. High-Contrast VEP Latency in Glaucoma Shows Association with Pericentral vs. Midperipheral Visual Field Loss, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Baltimore, Maryland, May 2017.

87. Trevino, R., Sponsel, W.E., Johnson, S.L., **Reilly, M.A.**, Majcher, C., Positive Correlation of High- and Low-Contrast ERG in Glaucoma Patients with Negative Correlation of High- and Low-Contrast VEP Latency, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Baltimore, Maryland, May 2017.
86. **Reilly, M.A.**, Cleaver, A., Rede, A., Rodriguez, L., Rice, G., Best Practices for Estimating Lens Mechanical Properties Using a Compression Test, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Baltimore, Maryland, May 2017.
85. Kumar, B., **Reilly, M.A.**, Maintaining Epithelial Cell Viability and Proliferative Capacity in Whole Lens Cultures ex vivo, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Baltimore, Maryland, May 2017.
84. Tram, N.K., **Reilly, M.A.**, Swindle-Reilly, K.E., The Presence of Accommodative Tissues Influences the Shape of the Developing Eye, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Baltimore, Maryland, May 2017.
83. Johnson, S.L., Sponsel, W.E., Trevino, R., Majcher, C., **Reilly, M.A.**, Inverse Relationship between  $H_c$  &  $L_c$  VEP Latency in Paired Glaucomatous Eyes, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Baltimore, Maryland, May 2017.
82. Jones, K.R., **Reilly, M.A.**, Glickman, R.D., Identification and Localization of Trauma-Related Biomarkers using Matrix Assisted Laser Desorption/Ionization Imaging Mass Spectrometry, *SPIE Biomedical Optics*, Annual Meeting, San Francisco, California, January-February 2017.
81. Sponsel, W.E., Maddess, T., **Reilly, M.A.**, CNS Control of Glaucomatous Neurodegeneration, *American Academy of Ophthalmology*, Annual Meeting, Anaheim, California, November 2016.
80. **Reilly, M.A.**, Thermal Acceleration of Bio-Chemo-Mechanical Aspects of Lens Aging, *Biomedical Engineering Society*, Annual Meeting, Minneapolis, Minnesota, October 2016.
79. Watson, R., **Reilly, M.A.**, Mechanistic Differentiation Between Blunt Impact and Primary Blast in Causing Ocular Injury, *Biomedical Engineering Society*, Annual Meeting, Minneapolis, Minnesota, October 2016.
78. Swindle-Reilly, K.E., Tram, N.K., **Reilly, M.A.**, Jones, K.R., Glickman, R.D., *Biomedical Engineering Society*, Annual Meeting, Minneapolis, Minnesota, October 2016.
77. Kumar, B., **Reilly, M.A.**, Predicting Elastic and Shear Moduli of Regions of the Lens from Lens Fiber Cell Morphology, *Biomedical Engineering Society*, Annual Meeting, Minneapolis, Minnesota, October 2016.

76. Zhang, D., **Reilly, M.A.**, Regional Residual Stress Analysis of Human Lens Capsule as a Function of Age, *Biomedical Engineering Society*, Annual Meeting, Minneapolis, Minnesota, October 2016.
75. Tram, N.K., Swindle-Reilly, K.E., **Reilly, M.A.**, The Role of Annular Tissues and Intraocular Pressure in Ocular Morphogenesis, *Biomedical Engineering Society*, Annual Meeting, Minneapolis, Minnesota, October 2016.
74. **Reilly, M.A.**, Rice, G., Cleaver, A., Rodriguez, L.A., Thermal Induction of Murine Lens Stiffening, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Seattle, Washington, May 2016.
73. Schnegg, A., Sponsel, W.E., **Reilly, M.A.**, Leon, S., Cervantes, S., Bilateral Macular Protection Pigment and Lens Density Status in Recently Operated Unilateral Pseudophakic Patients, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Seattle, Washington, May 2016.
72. Leon, S., Sponsel, W.E., Groth, S.L., Satsangi, N., Maddess, T., **Reilly, M.A.**, Schnegg, A., Trevino, R., Majcher, C., Probable Central Nervous System Mediated Enhancement of Perimacular Visual Function, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Seattle, Washington, May 2016.
71. Cleaver, A., Rodriguez, L.A., **Reilly, M.A.**, Inverse Finite Element Analysis of Mouse Lens Compression for Determining Elastic Moduli, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Seattle, Washington, May 2016.
70. Jones, K., Glickman, R.D., **Reilly, M.A.**, Torsional Indirect Traumatic Optic Neuropathy (TITON): Identifying Biomarkers of Trauma using Matrix Assisted Laser Desorption/Ionization (MALDI), *Association for Research in Vision and Ophthalmology*, Annual Meeting, Seattle, Washington, May 2016.
69. Swindle-Reilly, K.E., Asemota, B.I., Rodriguez, L., Jones, K.R., Glickman, R.D., **Reilly, M.A.**, Development of Animal Model and Hydrogel Delivery System to Treat Traumatic Optic Neuropathy. Translational to Clinical (T2C) Regenerative Medicine Wound Care Conference, March, 2016.
68. **Reilly, M.A.**, Bio-chemo-mechanical Model of Lens Aging, *International Conference on the Lens*, Biennial Meeting, Kona, Hawaii, December 2015.
67. Cleaver, A., Rodriguez, L.A., **Reilly, M.A.**, Inverse Finite Element Analysis of Compressed Mouse Lens for Determining Elastic Moduli, *International Conference on the Lens*, Biennial Meeting, Kona, Hawaii, December 2015.
66. Cleaver, A., Rodriguez, L.A., **Reilly, M.A.**, Inverse Finite Element Analysis of Compressed Mouse Lens for Determining Elastic Moduli, *Society for Advancement of Chicanos/Hispanics and Native Americans in Science*, Annual Meeting, Washington, D.C., October 2015.

65. Hamalainen, K.A., Wechsler, M.E., Bizios, R., **Reilly, M.A.**, Choroidal Endothelial Cell Functions Under Elevated Pressure and High Glucose Concentration, *Biomedical Engineering Society*, Annual Meeting, Tampa, Florida, October 2015.
64. **Reilly, M.A.**, Gray, W., Sponsel, W.E., Sherwood, D., Glickman, R.D., Lund, B.J., A Numerical Estimate of Visual Incapacitation Due to Primary Blast Exposure, San Antonio Military Health System and University Research Forum, San Antonio, Texas, July 2015.
63. Jones, K., **Reilly, M.A.**, Effects of Elevated Pressure and High Glucose Concentrations on Select Eye Cell Functions, San Antonio Military Health System and University Research Forum, San Antonio, Texas, July 2015.
62. Hernandez, J., **Reilly, M.A.**, Gray, W., Lund, B., Sponsel, W.E., Glickman, R., Ocular Trauma-Induced Changes in Aqueous and Plasma Biomarker Expression Levels, San Antonio Military Health System and University Research Forum, San Antonio, Texas, July 2015.
61. Hamalainen, K.A., Wechsler, M.E., Bizios, R., **Reilly, M.A.**, Select Choroidal Endothelial Cell Functions Under Elevated Pressure and High Glucose Concentrations, *Society for Biomaterials*, Biomaterials Day, Houston, Texas, June 2015.
60. **Reilly, M.A.**, Finite Element Analysis of Oxidative Stress-Induced Changes in the Mechanical Properties of the Lens, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Denver, Colorado, May 2015.
59. Asemota, B.I., Rodriguez, L., **Reilly, M.A.**, Assessment of the Potential for Introducing Bilateral Injury Using the TITON Apparatus, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Denver, Colorado, May 2015.
58. Rodriguez, L., **Reilly, M.A.**, Characterization of Mechanical Properties of Murine Lenses for Biomolecular Insights into Presbyopia, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Denver, Colorado, May 2015.
57. Jones, K., Choi, J.H., Sponsel, W., Gray, W.M., Groth, S., Glickman, R., Lund, B., **Reilly, M.A.**, Effects of in vivo Isolated Low-level Primary Blast Overpressure in Dutch Belted Rabbit: Corneal and Retinal Tomographic Responses, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Denver, Colorado, May 2015.
56. Hernandez, J., **Reilly, M.A.**, Gray, W.M., Lund, B., Sponsel, W.E., Glickman, R., Ocular Trauma-Induced Changes in Aqueous and Plasma Biomarker Expression Levels, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Denver, Colorado, May 2015.
55. Glickman, R., Gray, W.M., Lund, B., Sponsel, W., Sherwood, D., Reilly, M.A., Risk of Injury to Ocular Tissues from Primary Blast Overpressure Exposure, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Denver, Colorado, May 2015.

54. Watson, R., Gray, W.M., Sponsel, W., Lund, B., Glickman, R., Groth, S., **Reilly, M.A.**, Simulations of Porcine Eye Exposure to Primary Blast Insult, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Denver, Colorado, May 2015.
53. Schnegg, A., Sponsel, W.E., **Reilly, M.A.**, Maddess, T., Annual Meeting, "Complementarity of Binocular Nerve Fiber Layer Loss on Optical Coherence Tomography in Bilateral Glaucoma, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Denver, Colorado, May 2015.
52. Sponsel, W.E., Villareal, A., Maddess, T., **Reilly, M.A.**, Refined Frequency Doubling Perimetry Analysis Reaffirms Central Nervous System Control of Chronic Glaucomatous Neurodegeneration, *American Glaucoma Society*, Annual Meeting, Coronado, California, February 2015.
51. Marinkovic, M., Block, T.J., Rakian, R.A., Wang, X., Dean, D.D., **Reilly, M.A.**, Chen, X.-D., Tissue-specific ECMs Form the Stem Cell Niche and Display Differences in Physical, Mechanical, and Chemical Properties, *World Stem Cell Summit*, San Antonio, Texas, December 2014.
50. Marinkovic, M., Block, T., Rakian, R., Dean, D., **Reilly, M.A.**, Chen, X.D., Native Tissue-Specific ECMs Exhibit Distinct Mechanical Properties Affecting the Fate of hM-SCs, *Tissue Engineering International & Regenerative Medicine Society*, Washington, D.C., December 2014.
49. Rodriguez, L., Asemota, B.I., Glickman, R.D., Sponsel, W.E., **Reilly, M.A.**, Determination of Bilateral Symmetry of Injury for Torsional Indirect Traumatic Optic Neuropathy (TITON) in a Rat Model, *Annual Biomedical Research Conference for Minority Students*, Annual Meeting, San Antonio, Texas, November 2014.
48. Marinkovic, M., Block, T., Rakian, R., Dean, D., **Reilly, M.A.**, Chen, X.D., Native Tissue-Specific ECMs Exhibit Distinct Mechanical Properties Affecting the Fate of hM-SCs, *Biomedical Engineering Society*, Annual Meeting, San Antonio, Texas, October 2014.
47. **Reilly, M.A.**, Kumar, S., Rapp, B., Ravi, N., Hamilton, P., Leroux, M., Shiels, A., Marchand, B., The Role of Ocular Lens-Specific Proteins In Determining Lens Optical and Mechanical Properties, *Biomedical Engineering Society*, Annual Meeting, San Antonio, Texas, October 2014.
46. Sherwood, D., Lund, B.J., Glickman, R.D., Sponsel, W.E., Gray, W., Watson, R., Thoe, K., **Reilly, M.A.**, Primary Blast Influences Incidence and Severity of Ocular Injury in a Porcine Eye Model, *Biomedical Engineering Society*, Annual Meeting, San Antonio, Texas, October 2014.
45. Watson, R., Gray, W., Glickman, R.D., Lund, B.J., Sponsel, W.E., **Reilly, M.A.**, A Computational Model of the Porcine Eye, *Biomedical Engineering Society*, Annual Meeting, San Antonio, Texas, October 2014.

44. Jones, K., Lund, B.J., Glickman, R.D., Sponsel, W.E., Gray, W., **Reilly, M.A.**, Blast Induced Traumatic Brain Injury: Detection Through Immunocytochemistry and MALDI, *Biomedical Engineering Society*, Annual Meeting, San Antonio, Texas, October 2014.
43. Asemota, B.I., Glickman, R.D., **Reilly, M.A.**, Identification of Trauma-Related Biomarkers Following Torsional Indirect Traumatic Optic Neuropathy (TITON), *Biomedical Engineering Society*, Annual Meeting, San Antonio, Texas, October 2014.
42. Wilkes, R.P., **Reilly, M.A.**, Volume Decrease of Schlemm's Canal in an FEA Model of Elevated IOP in the Human Eye, *Biomedical Engineering Society*, Annual Meeting, San Antonio, Texas, October 2014.
41. Marchand, B., Kumar, S., **Reilly, M.A.**, Environmental and Storage Effects on Measurements of Porcine Lens Stiffness, *Biomedical Engineering Society*, Annual Meeting, San Antonio, Texas, October 2014.
40. Sponsel, W.E., **Reilly, M.A.**, Clinical Utility of Short-Duration Transient Visual Evoked Potential (SD-tVEP) Pathologic Indicators in Chronic Glaucoma, *American Academy of Ophthalmology*, Annual Meeting, San Francisco, California, October 2014.
39. **Reilly, M.A.**, Kumar, S., Leroux, M., Shiels, A., Marchand, B., Direct and Indirect Measurements of Lens Mechanical Properties, *International Society for Eye Research*, Annual Meeting, San Francisco, California, July 2014.
38. Glickman, R.D., Stidger, D., Lund, B.J., Back, S., Kelley, A., Gray, W., Sponsel, W.E., **Reilly, M.A.**, Identification of Trauma-Related Biomarkers Following Blast Injuries to the Eye, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Orlando, Florida, May 2014.
37. Asemota, B.I., Glickman, R.D., Sponsel, W.E., **Reilly, M.A.**, Determination of Injury Thresholds for Torsional Indirect Traumatic Optic Neuropathy in a Rat Model, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Orlando, Florida, May 2014.
36. Watson, R., Gray, W.M., Glickman, R.D., Lund, B.J., Sponsel, W.E., **Reilly, M.A.**, Computational Modeling of Internal Eye Injury due to Primary Blast, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Orlando, Florida, May 2014.
35. Sponsel, W.E., **Reilly, M.A.**, Lund, B.J., Gray, W.M., Watson, R., Groth, S.L., Thoe, K., Sherwood, D., Probability of Ocular Tissue Damage in Primary Blast, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Orlando, Florida, May 2014.
34. **Reilly, M.A.**, A Facile Model of Lens Growth and Senescence, *National Foundation for Eye Research*, Biennial International Conference on the Lens, Kona, Hawaii, January 2014.



33. Sponsel, W.E., **Reilly, M.A.**, Groth, S., McKinnon, S., Clinical Evidence for CNS Control of Visual Field Loss in Chronic Glaucoma, *American Academy of Ophthalmology*, Annual Meeting, New Orleans, Louisiana, October 2013.
32. **Reilly, M.A.**, Sherwood, D., Watson, R., Lund, B.J., Sponsel, W.E., Thoe, K., Glickman, R.D., Gray, W.M., Primary Blast-Induced Ocular Trauma, *Biomedical Engineering Society*, Annual Meeting, Seattle, Washington, September 2013.
31. **Reilly, M.A.**, Sponsel, W.E., Glickman, R.D., Torsion-Induced Traumatic Optic Neuropathy, *Biomedical Engineering Society*, Annual Meeting, Seattle, Washington, September 2013.
30. Wilkes, R.P., **Reilly, M.A.**, Estimation of Ciliary Muscle Forces Required to Induce Corneal Deformation, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Seattle, Washington, May 2013.
29. Sponsel, W.E., Satsangi N., **Reilly, M.A.**, Groth, S., McKinnon, S., The Jigsaw Effect: Clinical Evidence for CNS Control of Visual Field Loss in Chronic Glaucoma, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Seattle, Washington, May 2013.
28. **Reilly, M.A.**, Sponsel, W.E., Glickman, R.D., Non-Invasive Model for Torsion-Induced Traumatic Optic Neuropathy, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Seattle, Washington, May 2013.
27. Sherwood, D., Lund, B.J., Glickman, R.D., Sponsel, W.E., Gray, W.M., Watson, R., Thoe, K., **Reilly, M.A.**, Primary Blast-Induced Ocular Trauma Modulated by Peak Pressure, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Seattle, Washington, May 2013.
26. Sponsel, W.E., Satsangi, N., **Reilly, M.A.**, Groth, S.L., McKinnon, S., The Jigsaw Effect: Clinical Evidence for CNS Control of Chronic Glaucomatous Neurodegeneration, American Glaucoma Society, Annual Meeting, San Francisco, California, February 2013.
25. **Reilly, M.A.**, Biopolysaccharides self-assemble with material property gradients in presence of cation gradients, *Biomedical Engineering Society*, Annual Meeting, Atlanta, Georgia, October 2012.
24. Gray, W., **Reilly, M.A.**, Lund, B., Glickman, R., Sponsel, W., Sub-Lethal Ocular Trauma (SLOT): Establishing Standardized Blast Thresholds to Facilitate Diagnostic, Early Treatment, and Recovery Studies for Blast Injuries to the Eye and Optic Nerve, *Military Vision Research Symposium*, Schepens Eye Research Institute, Massachusetts Eye and Ear, Harvard Medical School, Boston, Massachusetts, September 2012.
23. **Reilly, M.A.**, The Hydrostatic Skeleton Model of Accommodation, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Ft. Lauderdale, Florida, May 2012.

22. **Reilly, M.A.**, Ravi, N., The Role of the Lens Elasticity Gradient in Accommodation, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Ft. Lauderdale, Florida, May 2010.
21. Ravi, N., **Reilly, M.A.**, An Improved Geometric Model of Accommodation, *Association for Research in Vision and Ophthalmology*, Annual Meeting, Ft. Lauderdale, Florida, May 2010.
20. **Reilly, M.A.**, Perry, G., Ravi, N., Robotic Equibiaxial Stretching Device for Bio-viscoelastic Characterization, *Biomedical Engineering Society*, Annual Meeting, Pittsburgh, Pennsylvania, October 2009.
19. **Reilly, M.A.**, Ravi N., A Simple Geometric Mechanics Model of Accommodation. *Association for Research in Vision and Ophthalmology*, Annual Meeting, Ft. Lauderdale, Florida, May 2009.
18. Sistla, P., **Reilly, M.A.**, Andley, U.R., Ravi, N., The Effect of R120G Mutation in  $\alpha$ B-Crystallin on the Mechanical Properties of Mouse Lenses. *Association for Research in Vision and Ophthalmology*, Annual Meeting, Ft. Lauderdale, Florida, May 2009.
17. Ravi, N., Hamilton, P.D., **Reilly, M.A.**, Evaluation of Poly (Sodium Methacrylate) Materials as Potential Vitreous and Lens Substitutes. *Association for Research in Vision and Ophthalmology*, Annual Meeting, Ft. Lauderdale, Florida, May 2009.
16. Zhang, J., **Reilly, M.A.**, Ravi N., Designing Lens Refill Materials With Mechanical Property Gradients. *Association for Research in Vision and Ophthalmology*, Annual Meeting, Ft. Lauderdale, Florida, May 2009.
15. **Reilly, M.A.**, Ravi, N., Maximizing Function of Ocular Lens Prosthesis, *Biomedical Engineering Society*, Annual Meeting, St. Louis, MO, October 2008.
14. **Reilly, M.A.**, Hamilton, P.D., Ravi, N., Comparison of Accommodative Amplitude in Natural and Refilled Porcine Lenses. *Association for Research in Vision and Ophthalmology*, Annual Meeting, Ft. Lauderdale, Florida, May 2008.
13. **Reilly, M.A.**, Ravi, N., Viscoelastic Behavior of Ocular Lens Soluble Proteins. *Society of Rheology*, Annual Meeting, Salt Lake City, Utah, October 2007.
12. **Reilly, M.A.**, Ravi, N., The Mechanical Properties of the Porcine Lens. *Association for Research in Vision and Ophthalmology*, Annual Meeting, Ft. Lauderdale, Florida, May 2007.
11. Ravi, N., Hamilton, P.D., **Reilly, M.A.**, Characterization of a New Nanocomposite Projected as an Accommodative Lens Refilling Material. *Association for Research in Vision and Ophthalmology*, Annual Meeting, Ft. Lauderdale, Florida, May 2007.
10. Hamilton, P.D., **Reilly, M.A.**, Ravi, N., Viscoelastic Behavior of the Lens Soluble Proteins. *Association for Research in Vision and Ophthalmology*, Annual Meeting, Ft. Lauderdale, Florida, May 2007.

9. **Reilly, M.A.**, Ravi, N., Microstretching of the Ocular Lens, a Biconvex Shell: In Vitro and In Silico. *Biomedical Engineering Society*, Annual Meeting, Chicago, Illinois, October 2006.
8. **Reilly, M.A.**, Ravi N., Dynamic Eight-Arm Lens Stretcher. *Accommodation Club*, Biennial Meeting, Miami, Florida, May 2006.
7. Ravi, N., Rapp B., **Reilly, M.A.**, Damping Effects of Lens Crystallins in Accommodation. *Accommodation Club*, Biennial Meeting, Miami, Florida, May 2006.
6. **Reilly, M.A.**, Szabo, B., Ravi, N., Finite Element Analysis of a Single Lens Fiber. *Association for Research in Vision and Ophthalmology*, Annual Meeting, Ft. Lauderdale, Florida, May 2006.
5. Ravi, N., **Reilly, M.A.**, In Vitro Characterization of Natural and Prosthetic Ocular Lens Material. *Interdisciplinary Club for Biomaterials and Regenerative Medicine in Ophthalmology*, San Francisco, California, April 2006.
4. **Reilly, M.A.**, Ravi, N., Determination of Multi-arm Radial Stretcher Strain Field Homogeneity and Material Properties of Copolymer Membranes. *American Chemical Society, Midwestern Regional Meeting*, Joplin, Missouri, October 2005.
3. Hamilton, P.D., Ravi, N., **Reilly, M.A.**, Perry, G., The Quantitative Effects of Zonular Stretching on the Topography of the Anterior Surface of Porcine Lenses. *Association for Research in Vision and Ophthalmology*, Annual Meeting, Ft. Lauderdale, Florida, May 2005.
2. **Reilly, M.A.**, Fultz, G.W., Gschwender, L., Dulsky, G., Vowell, D., Snyder, C.E., Analysis of Weight Change in Filters for Gravimetric Measurements. *Society of Tribologists and Lubrication Engineers*, Annual Meeting, Toronto, Canada, May 2004.
1. **Reilly, M.A.**, Fultz, G.W., Gschwender, L., Snyder, C.E., Prediction of ASTM-D972-02 Evaporation Loss of Lubricating Greases via Thermogravimetric Analysis. *American Institute of Chemical Engineers*, Regional Conference, Houghton, Michigan, March 2003.

## Intellectual Property

2. Methods and Compositions for an Anti-Oxidant-Releasing Hydrogel Vitreous Substitute, US Patent Application 62/665,154, Katelyn Reilly, Matthew Reilly, and Archie Tram, 5/1/2018
1. Expanding Ring Device for the Equibiaxial Deformation of Substrates, US Patent Application 62/803,419, Bharat Kumar and Matthew Reilly, 2/8/2019

## SERVICE

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### University Service Activities

#### *The Ohio State University, 2016-present*

- Judge, Edward F. Hayes Graduate Research Forum
- Member, Graduate Studies Committee (Department)
- Member, Biomedical Engineering Research Committee (Department)\*
- Member, Space and Facilities Committee (Department)\*

\*Currently serving

#### *University of Texas at San Antonio, 2011-2015*

- Member, Research Advisory Board (University)
- Member, Faculty Senate (University)
  - Research Committee
- Member, Parking Appeals Panel (University)
- Alternate, Graduate Studies Committee (University)
- Chair, College Executive Advisory Committee (College)
- Member, Faculty Development Leave Committee (College)
- Member, Dean Search Committee (College)
- Member, Department Chair Search Committee (Department)
- Member, Departmental Facilities Allocation Committee (Department)
- Member, Undergraduate Admissions Committee (Department)
- Member, ABET Accreditation Committee (Department)
- Member, Faculty Search Committee (Department)
- Member, Ph.D. Qualifying Examination Committee (Department)
- Chair, Graduate Admissions and Recruitment Committee (Department)
- Chair, Fundraising Committee (Department)

### Professional Service Activities

- **Editorial Board Member:** Current Eye Research, Frontiers in Bioengineering and Biotechnology
- **Session Organizer/Chair:** American Chemical Society, Association for Research in Vision and Ophthalmology, Biomedical Engineering Society, International Society for Eye Research, World Congress of Biomechanics
- **Abstract Reviewer:** ASME SB<sup>3</sup>C Conference, Biomedical Engineering Society, World Congress of Biomechanics
- **Book Reviewer:** Materials Research Society
- **Grant Proposal Reviewer:** Congressionally-Directed Medical Research Program (CDMRP), National Academy of Engineering, National Science Foundation, Ontario Research Foundation, US Army Medical Research and Materiel Command
- **Journal Article Reviewer:** Annals of Biomedical Engineering, Asia Pacific Journal of Ophthalmology, Biomechanics and Modeling in Mechanobiology, Clinical Ophthalmology, Experimental Eye Research, International Journal of Advances in Engineering Sciences and Applied Mathematics, Investigative Ophthalmology and Visual Science,

Jacobs Journal of Ophthalmology, Journal of Biomechanical Engineering, Journal of Biomaterials Research Part B: Applied Biomaterials, Journal of Fluids and Structures, Journal of Ophthalmology, Journal of Refractive Surgery, Journal of the Mechanical Behavior of Biomedical Materials, Journal of Visualized Experiments, Medical Research Archives, Molecular Vision, PLOS One, Progress in Retinal and Eye Research, Reviews in Biomedical Engineering

- **Poster Judge:** Association for Research in Vision and Ophthalmology (2014-present), Society for Advancement of Chicanos/Hispanics and Native Americans in Science (2014-2015)
- **Member:** Scientific Research and Development Committee, The Health Cell (2013-2015), ARVO Member Communications Working Group (2014-2016), ARVO Members-in-Training Committee (2014-2017), BMES Awards Committee (2017-present)

### **Professional Societies**

- ASEE - American Society of Engineering Education
- ASME - American Society of Mechanical Engineers
- ISER - International Society for Eye Research
- BMES - Biomedical Engineering Society
- ARVO - Association for Research in Vision and Ophthalmology
- AIChE - American Institute for Chemical Engineers