Jun Liu

PH.D. 614-247-8904, liu.314@osu.edu

Education

The Ohio State University
Doctor of Philosophy, Biomedical Engineering, 2002
Dissertation: A nanomechanical approach for ultrasonic tissue analysis

Zhejiang University, China
Master of Science, Biomedical Engineering and Instrumentation, 1997

Zhejiang University, China
Bachelor of Science, Biomedical Engineering and Instrumentation, 1994

Academic Appointments

2012 – Present	The Ohio State University Associate Professor with tenure, Department of Biomedical Engineering Courtesy Associate Professor, Department of Ophthalmology
2014 – Present	The Ohio State University Graduate Faculty, College of Optometry
2005 - 2012	The Ohio State University Assistant Professor, Department of Biomedical Engineering Courtesy Assistant Professor, Department of Ophthalmology
2003 - 2005	The Ohio State University Research Scientist (with PI status), Department of Ophthalmology Research Scientist (with PI status), Department of Veterinary Biosciences
2003	The Ohio State University Senior Research Associate, Davis Heart and Lung Research Institute

Honors

- 2012, Lumley Research Award, Ohio State University College of Engineering, $2000
- 2002, Business Plan Competition Award, Ohio State University, $80,000
- 1997, University Fellowship Award, Ohio State University

Grants

1. 2015-2017, "Matrix stiffness and cardiac fibroblast phenotype," $154,000, **American Heart Association**, PI: Keith Gooch and Pam Lucchesi. **Consultant.**

2. 2011-2016, "Corneoscleral Biomechanics and Intraocular Pressure," $1,188,385, **National Institutes of Health,** R01EY020929. **PI**

3. 2012-2015, Diversity Supplement to RO1 "Corneoscleral Biomechanics and Intraocular Pressure," $190,203, **National Institutes of Health,** R01EY020929. PhD Candidate: Benjamin Cruz Perez. **PI**

4. 2009-2014, "In Vivo Evaluation of Presbyopia," $854,855, **National Institutes of Health,** K23 EY019097, PI: Kathryn Richdale, OD, PhD. **Consultant**

5. 2014, "Collagen Microstructure Basis for the Correlation between Acoustic and Biomechanical Properties of the Cornea," $3,000. OSU College of Engineering Undergraduate Research Scholarship. Undergraduate student: Martin Spang. **Research Adviser**

6. 2013, "Effects of Eye-Rubbing on Corneal Biomechanical Properties," $3,000. OSU College of Engineering Undergraduate Research Scholarship. Undergraduate student: Mengyu Liu. **Research Adviser**

7. 2013, "Effect of Prostaglandin on Corneal Stiffness and Intraocular Pressure Measurement," $3,000. OSU College of Engineering Undergraduate Research Scholarship. Undergraduate student: Yijuin Liew. **Research Adviser**

8. 2010-2012, "Corneal Stiffness and Tonometric Measurement of IOP," $100,000, **American Health Assistance Foundation**. **PI**

9. 2011-2012, "Novel Ultrasonic Method for the Characterization of the Corneoscleral Shell Visoelastic Mechanical Properties," $25,038, **OSU Medical Center Medical Student Research Scholarship**. Medical Student: Joel Palko. **Research Adviser**

10. 2010, "Characterization of corneal and scleral biomechanical properties in bovine, porcine, and canine eyes in the study of glaucoma," $4,500, Medical Student: Joel Palko, **Research Adviser**

11. 2010, "Corneal biomechanical properties in glaucoma," $4,500, Medical Student: Folasade Imeokparia, **Research Adviser**

12. 2010, "Ultrasound enhanced imaging and drug delivery using polymeric nanoparticles," $40,341, subcontract from "NSEC: Center for Affordable Nanoengineering of Polymer Biomedical Devices (CANPBD)," **National Science Foundation**, PI: L. James Lee, **Co-Investigator**

13. 2008-2009, "The Impact of Corneal Elasticity on IOP and CCT Measurements," $91,996, **Columbus Foundation, PI**

14. 2005–2008, "Imaging Breast Cancer Markers with Nanoparticle Enhanced Ultrasound," $249,604, **Susan G. Komen Breast Cancer Foundation, PI**

15. 2005-2006, "Ultrasound Characterization of Ocular Biomechanical Properties for Glaucoma Screening," $83,750, **Columbus Foundation, PI**

16. 2003-2004, "Instrumentation grant for a high resolution ultrasound system," $167,670, **National Institutes of Health**, CA016058-28, PI: Clara Bloomfield. **Co-I.**

Peer-Reviewed Journal Articles (*: corresponding author)

1. JK Pijanka, MT Spang, T Sorensen, **J Liu**, TD Nguyen, HA Quigley, C Boote*, Depth-dependent changes in collagen organization in the human peripapillary sclera, *PLOS ONE*, 2015;10(2):e0118648.

2. JR Palko, J Tang, B Cruz-Perez, X Pan, **J Liu*,** Spatially heterogeneous corneal mechanical responses before and after riboflavin/UVA cross-linking, *Journal of Cataract and Refractive Surgery*, 40(6): 1021-31, 2014

3. K Metzler, A M. Mahmoud, **J Liu**, CJ Roberts*, Biomechanical response of paired donor corneas to an air puff: isolated cornea vs intact whole globe, *Journal of Cataract and Refractive Surgery,* 40(6): 888-96, 2014

4. B Cruz Perez, J Tang, HJ Morris, JR Palko, X Pan, RT Hart, **J Liu***, Biaxial mechanical testing of posterior sclera using high-resolution ultrasound speckle tracking for strain measurements, *Journal of Biomechanics*, 47:1151–1156, 2014

5. B Cruz Perez, HJ Morris, RT Hart, **J Liu***, Finite element modeling of the viscoelastic responses of the eye during microvolumetric changes, *Journal of Biomedical Science and Engineering*, 6: 29-37, 2013

6. HJ Morris, J Tang, B Cruz-Perez, X Pan, RT Hart, PA Weber, **J Liu*,** Correlation between biomechanical responses of posterior sclera and IOP elevations during micro intraocular volume change, *Investigative Ophthalmology and Visual Science,* 54(12):7215-7222*,* 2013 **Featured on MDLinx.com**

7. Joel R. Palko, Simone Iwabe, Xueliang Pan, Gunjan Agarwal, András M. Komáromy*, and **Jun Liu***, Biomechanical Properties and Correlation With Collagen Solubility Profile in the Posterior Sclera of Canine Eyes With an ADAMTS10 Mutation, *Investigative Ophthalmology and Visual Science*, 54(4): 2685-2695, 2013

8. J Tang and **J Liu***, Ultrasonic measurement of scleral cross-sectional strains during elevations of intraocular pressure: method validation and initial results in posterior porcine sclera, *Journal of Biomechanical Engineering*, 134(9) 091007-1, 2012

9. ER Ritchey, CP Zelinka, J Tang, **J Liu**, AJ Fischer*, The combination of IGF1 and FGF2 and the induction of excessive ocular growth and extreme myopia, *Experimental Eye Research*, 99: 1-16, 2012

10. ER Ritchey, C Zekinka, J Tang, **J Liu**, KA Code, S Petersen-Jones, AJ Fischer*, Vision-guided ocular growth in a mutant chicken model with diminished visual acuity, *Experimental Eye Research* 102: 59-69, 2012

11. J Tang, X Pan, PA Weber, and **J Liu***, Effect of corneal stiffening on Goldmann Applanation Tonometry and Tonopen measurements in canine eyes, *Investigative Ophthalmology and Visual Science* 53(3): 1397- 1405, 2012.

12. X Jiang, X Liu*, X Gong, F Zhang, R Wu, J Wu, and **J Liu**, Model and experimental analysis of oblique incident ultrasound in a tissue layer using doublet mechanics theory. *Journal of the Acoustical Society of America,* 130(6): 4117-4125, 2011.

13. J Palko, X Pan and J Liu*, Dynamic testing of regional viscoelastic behavior of canine sclera, *Experimental Eye Research*, 93: 825-832, 2011

14. J Tang, X Pan, PA Weber, and J Liu*, Corneal modulus and IOP measurements in canine eyes using Goldmann applanation tonometry and Tonopen, *Investigative Ophthalmology and Visual Science*, 52(11): 7866-7871, 2011

15. J Tang and **J Liu***, Variance of speed of sound and correlation with acoustic impedance in canine corneas, *Ultrasound in Medicine and Biology*, 37(10): 1714-1721, 2011

16. X He and **J Liu***, Correlation of corneal acoustic and elastic properties in a canine eye model, *Investigative Ophthalmology and Visual Science*, 52(2): 731-736, 2011

17. X He, E Spoerl, J Tang, and **J Liu***, Measurement of corneal changes after collagen cross-linking by a non-invasive ultrasound system, *Journal of Cataract and Refractive Surgery*, 36(7): 1207-1212, 2010

18. X He and **J Liu***, A quantitative ultrasonic spectroscopy method for non-invasive determination of corneal biomechanical properties, *Investigative Ophthalmology and Visual Science* 50(11):5148-5154, 2009 **Featured on MDLinx.com**

19. **J Liu*** and X He, Corneal stiffness affects IOP elevation during rapid volume change in the eye, *Investigative Ophthalmology and Visual Science,* 50(5): 2224-2229, 2009

20. **J Liu***, J Li, TJ Rosol, X Pan, and JL Voorhees, Biodegradable Nanoparticles for Targeted Ultrasound Imaging of Breast Cancer Cells in Vitro, *Physics in Medicine and Biology*, 52:4739-4747, 2007 **Included in Institute of Physics Select List chosen for its "novelty, significance, and potential impact on future research."**

21. **J Liu***, X He, X Pan and C Roberts, Ultrasonic Model and System for Measurement of Corneal

Biomechanical Properties and Validation on Phantoms, *Journal of Biomechanics*, 40(5):1177-82, 2007

22. **J Liu***, AL Levine, JS Mattoon, M Yamaguchi, RJ Lee, X Pan, TJ Rosol, Nanoparticles as Image Enhancing Agents for Ultrasonography, *Physics in Medicine and Biology*, 51, 2179-2189, 2006 **Included in Institute of Physics Select List chosen for its "novelty, significance, and potential impact on future research."**

23. **J Liu*** and CJ Roberts, Quantitative Analysis of Influence of Corneal Biomechanical Properties on Intraocular Pressure Measurement, *Journal of Cataract and Refractive Surgery*, 31(1): 146-155, 2005

24. J Wu*, C Layman and **J Liu**, Wave Equations, Dispersion Relations and van Hove Singularities for Applications of Doublet Mechanics to Ultrasound Propagations in Bio- and Nano- Materials, *Journal of Acoustical Society of America*, Vol. 115, No. 2, pp. 893-900, 2004. **Selected for the Virtual Journal of Biological Physics Research chosen by editors for "reporting frontier research."**

25. **J Liu** and M Ferrari*, A Discrete Model for the High Frequency Elastic Wave Examination on Biological Tissue, *CMES - Computer Modeling in Engineering and Sciences,* 4(3&4): 421-430, 2003

26. **J Liu** and M Ferrari*, Mechanical Spectral Signatures of Malignant Disease? A Small-Sample, Comparative Study of Continuum vs. Nano-Biomechanical Data Analyses, *Disease Markers*, 18 (4): 175-183, 2002

Conference Proceedings (*: corresponding author)

1. B Cruz-Perez, HJ Morris, J Tang, RT Hart, X Pan, and **J Liu*** (2013), Biaxial mechanical testing of porcine sclera using ultrasound speckle tracking for strain measurements, Proceeding of American Society of Mechanical Engineering Summer Bioengineering Conference, SBC2011-14253
2. J Tang and **J Liu*** (2011), "Ultrasonic speckle tracking for measurement of scleral cross-sectional strains due to intraocular pressure elevation," Proceeding of American Society of Mechanical Engineering Summer Bioengineering Conference, SBC2011-53726
3. X He and **J Liu*** (2006), "Measurements of Ocular Properties in Response to Intraocular Pressure Changes Using an Ultrasonic System", Proceedings of IEEE Engineering in Medicine and Biology Conference, pp. 5076 – 5079
4. R Xu*, B Qiang and **J Liu** (2005), Ultrasound-guided near-infrared spectroscopy for brain functional study: feasibility analysis and preliminary work, Proceedings of the SPIE, Volume 5686, pp. 464-472

5. Cooper L, **Liu J**, Huang K* (2005), Spatial segmentation of temporal texture using mixture linear models, In: Proceedings of the Dynamical Vision Workshop in the International Conference of Computer Vision. Editors: Ma Y, Vidal R, Heyden A. Volume 4358/2007 142-150.

Lecture Notes in Computer Science. *Springer-Verlag*, Beijing, China. (Cited 16 times)

Conference Participation

Conference Organizing Committees

2013 Chair, American Society for Mechanical Engineering Summer Bioengineering Conference, Ocular Biomechanics Session, Portland, Oregon

2010 Co-Chair, World Congress of Biomechanics, ("Ocular Biomechanics - Anterior Segment" Session), Singapore

2008 Technical Committee for the Bioengineering Division of the American Society of Mechanical Engineers

2007 Co-Chair, the Sixth International Conference on the Ultrasonic Measurement and Imaging of Tissue Elasticity ("Mechanical Measurement Techniques for Tissue" Session), Santa Fe, New Mexico

Invited Talks

2015 "Biomechanics in the Health and Disease of the Eye", OSU College of Optometry

2014 "Biomechanics in the Health and Disease of the Eye", OSU Biophysics Program

2014 "Corneal and Scleral Strains Measured from Ultrasound Speckle Tracking," World Congress of Biomechanics, Ocular Biomechanics Symposium, Boston

2014 "Characterizing Heterogeneous Tissue Deformation using Ultrasound Speckle Tracking," World Congress of Biomechanics, Inverse Methods Symposium, Boston

2014 "Corneoscleral Biomechanics and Intraocular Pressure," The COBB Rich Lecture, University of Alabama at Birmingham Department of Ophthalmology

2012 "High Resolution Ultrasound for Through-Thickness Strain Mapping of the Posterior Sclera During IOP Elevation," Annual meeting of the International Society of Eye Research, "Ocular Biomechanics Symposium," Berlin, Germany

2012 "Corneoscleral Biomechanics and Intraocular Pressure," OSU College of Optometry

2012 "Ocular Biomechanics: The Quest Continued," OSU Department of Ophthalmology

2011 "Ocular Biomechanics: Clinical Implications and Beyond," OSU Department of Ophthalmology

2010 "Correlation between Acoustic Properties and Young's Modulus in Canine Corneas," World Congress of Biomechanics, Ocular Biomechanics Symposium, Singapore

2010 "Viscoelastic Properties of Human Sclera and Influence on Acute IOP Elevation," World Congress of Biomechanics, Ocular Biomechanics Symposium, Singapore

2009 "Detection by New Immersion Ultrasonic Device," Annual Meeting of the American Society of Cataract and Refractive Surgery, "JCRS Symposium: Controversies in Corneal Collagen Crosslinking," San Francisco

2008 "Ultrasound detection of corneal cross-linking," International Congress of Corneal Crosslinking," Dresden, Germany (did not attend due to logistic issues)

2008 "Corneal Stiffness and IOP Measurement," OSU College of Optometry

2007 "Nanoparticles as Molecular Imaging Agents for Ultrasound," OSU Biophysics Center

2007 "Nanoparticles as Molecular Imaging Agents for Ultrasound," OSU College of Veterinary Medicine

2006 "Biomedical Ultrasound and Imaging Laboratory for Disease Diagnosis", OSU Biophysics Center

2006 "Targeted Nanoparticles for Ultrasound Imaging", OSU Mini-Symposium of the Nanospectroscopy Consortium, Department of Astronomy

2005 "Quantitative Analysis of Corneal Effect on IOP Measurement," OSU Department of Ophthalmology

Paper and Poster Presentations (*: Corresponding Author)

- B Cruz-Perez, HJ Morris, J Tang, RT Hart, X Pan, and J Liu* (2013), Through-thickness Measurement of Porcine Sclera Deformation under Biaxial Loading Using High Resolution Ultrasound. *ARVO*
- Junhua Tang, Richard Hart, Cynthia Roberts, Paul Weber, Xueliang Pan, and Jun Liu*, Regional variation of scleral strains measured on human whole globes using ultrasound speckle tracking. *ARVO*
- Hugh Morris, Benjamin Cruz Perez, Junhua Tang, Xueliang Pan, Richard Hart, Paul Weber, and Jun Liu*, Correlation of Posterior Scleral Strains with IOP Increase by Volume Controlled Infusion. *ARVO*
- Jun Liu*, Junhua Tang, Richard Hart, Cynthia Roberts, Paul Weber, and Xueliang Pan, Through-thickness variation of human scleral strains in response to IOP elevation measured by ultrasound speckle tracking. *ARVO*
- Joel Palko, Xueliang Pan, and Jun Liu*, Effect of UVA-Rb cross-linking on through-thickness strains in canine corneas. *ARVO*
- J Palko, AM Komaromy, S Iwabe, X Pan, and J Liu*, (2012) Scleral viscoelastic properties in a canine POAG model with ADAMTS10 mutation. ARVO
- B Cruz-Perez, RT Hart, PA Weber, and J Liu*, (2012) Influence of Corneal Diameter on GAT Readings and Corneal Inflation, ARVO
- J Tang and J Liu*, (2012) Ultrasonic Measurement of Human Scleral Strains under Physiological Loadings, ARVO
- J Liu*, J Tang, X Pan, and PA Weber, (2012) Correlation between Corneal Acoustic Impedance and Tonometry Errors in Enucleated Human Eyes: Initial Results, ARVO
- J Liu* and J Tang, (2012) High Resolution Ultrasound for Through-Thickness Strain Mapping of the Posterior Sclera During IOP Elevation, International Society for Eye Research
- K Metzler, AM Mahmoud, J Liu, D Lee, SJ Shiao, CJ Roberts, (2012) Biomechanical Response of Paired Donor Corneas to An Air Puff: Isolated Cornea vs Intact Whole Globe, ARVO
- CJ Roberts*, AM Mahmoud, J Liu, Z Sharalaya, TF Mauger, RG Lembach, AJ Hendershot, R Kuennen, SD Klyce, (2012) Conservation of Arclength in Keratoconic and Normal Corneas with Air Puff Induced Deformation, ARVO
- Sue Shiao, Ashraf M. Mahmoud, Jun Liu, David Lee, Kimberly Metzler, Chris Minning, and Cynthia J. Roberts, Influence of Internal Pressure and Distance from Air Nozzle on Maximum Deformation Depth under an Air Puff of Pig Corneas *ARVO*
- J Tang and J Liu*, (2011) Human sclera strains under physiological loadings using ultrasonic speckle tracking, International Tissue Elasticity Conference
- J Liu*, J Tang, X Pan, and P Weber, (2011) Effect of corneal modulus and thickness on tonometric measurements of IOP – experimental studies in enucleated canine eyes, ARVO
- J Tang and J Liu*, (2011) Measurement of scleral strains under physiological loadings

using ultrasonic speckle tracking, ARVO

- J Palko and J Liu*, (2011) Dynamic testing of regional viscoelastic behavior of canine sclera, ARVO
- J Tang and J Liu*, (2010) Measurement of scleral compressive strain and modulus using ultrasound speckle tracking, World Congress of Biomechanics
- J Tang, X He and J Liu*, (2010) Effect of Ocular Tissue Viscoelasticity on Intraocular Pressure Elevation under Injection at Different Rates, ARVO
- J Li and J Liu*, (2009) Targetable nanoparticles for enhanced ultrasound imaging in breast cancer, Annual Fall Meeting of Biomedical Engineering Society (BMES)
- X He and J Liu*, (2009) Noninvasive measurement of corneal biomechanical properties and validation in porcine eye model, Annual Fall Meeting of Biomedical Engineering Society (BMES)
- J Tang and J Liu*, (2009) Comparison of corneal thickness measured by ultrasound pachymeter and a novel ultrasound system, Annual Fall Meeting of Biomedical Engineering Society (BMES)
- J Tang, X He, and J Liu* (2009) Corneal Stiffening is Significantly Correlated with the Increase of Tonopen Readings in a Porcine Eye Model, ARVO
- X He, E Spoerl, and J Liu* (2009) Ultrasonically Detected Changes in Corneal Properties due to Riboflavin-UV Induced Collagen Crosslinking, ARVO
- J Liu*, X. He, J Tang, AE Knellinger, KF Baston, and X Pan. (2009) Corneal stiffness may influence the IOP/CCT relationship. ARVO
- P-F Zhang, J Li, A Moiseev, MA Vannan, **J Liu*** (2009) Biodegradable polylactic acid nanoparticles for targeted imaging by ultrasound: in vitro and in vivo experimental studies. J Am Soc Echocardiography, 22(5): 560.
- J Liu*, X He, K Richdale, M Bullimore, and K Zadnik (2008) In vivo measurements of corneal speed of sound and stiffness, ARVO.
- X He and J Liu* (2008), Stiffened cornea is associated with higher IOP elevation, ARVO
- B Costin, X He, J Liu*, and WJ Dupps, Jr.*, (2008) A comparison of two ultrasonic systems for non-invasive measurements of corneal biomechanical properties before and after collagen cross-linking, ARVO
- J Li and J Liu* (2008) Surface conjugated nanoparticles for specific ultrasonic enhancement of breast cancer cells. Nanomedicine Summit, Cleveland OH
- J Liu*, CJ Roberts and X He (2007) Ultrasonic detection of changes in corneal biomechanical properties associated with hydration effects, the sixth International Conference on Ultrasonic Measurement and Imaging of Tissue Elasticity
- J Liu*, X He, C Roberts, and X Pan, (2007) Ultrasonic Detection of Changes in Corneal Biomechanical Properties Associated With IOP Elevation, ARVO
- X He, C Roberts, X Pan, and J Liu*, (2007) Repeatability and Validation of an Ultrasonic System for Non-Invasive Measurements of Corneal Biomechanical Properties, Invest. Ophthalmol. Vis. Sci. 2007 48: E-Abstract 1858.
- J Li and J Liu* (2007) Targeted polyester nanoparticles affect ultrasonic reflectivity of breast cancer cells, the Annual Fall Meeting of Biomedical Engineering Society (BMES)
- J Liu*, J Li, A Marcetich, and T Rosol (2006), "Herceptin-Conjugated PLA Nanoparticles Targeting Breast Cancer Cells for Ultrasound Imaging", the Annual Meeting of the Society for Molecular Imaging
- J Liu*, X He and CJ Roberts (2006), "Validation of Ultrasonic Measurements of Corneal

Phantoms", ARVO

- X He and J Liu* (2006), "Nonlinearity of Cornea Biomechanical Properties Measured by an Ultrasonic System," the fifth International Conference on Ultrasonic Measurement and Imaging of Tissue Elasticity
- J Liu*, CJ Roberts and X He (2005) "Differentiating Mechanical Properties of Corneal Phantoms Using an Ultrasound Method", the fourth International Conference on Ultrasonic Measurement and Imaging of Tissue Elasticity
- J Liu*, A Levine, T Rosol (2005), "Solid Nanoparticles as Molecular Imaging Agents for High Frequency Ultrasound", the Joint Conference of World Congress on Ultrasonics and Ultrasonics International
- J Liu* and CJ Roberts, (2005), "Ultrasound Characterization on Cornea Phantoms", ARVO
- J Liu*, CJ Roberts (2004), "Feasibility studies of model and system for ultrasonic characterization of cornea biomechanics", ARVO
- J Liu*, A Levine, J Mattoon and T Rosol (2004), "Nanoparticles as Molecular Imaging Agents for Enhanced Ultrasound", *The Third Annual Meeting of the Society of Molecular Imaging*
- J Liu* and CJ Roberts (2004), "Biomechanical Properties of Corneal Tissue Determined by Applanation and Thin Shell Model*", the Third International Conference on Ultrasonic Measurement and Imaging of Tissue Elasticity*
- J Liu* and CJ Roberts (2004), "Feasibility Studies of Model and System for Ultrasonic Characterization of Cornea Biomechanics", ARVO
- J Liu* and TJ Rosol (2003), "Preliminary studies on nanoparticle elasticity contrast, " the Second *International Conference on Ultrasonic Measurement and Imaging of Tissue*
- J Liu* and CJ Roberts (2003), "An ultrasound propagation model for characterizing biomechanical properties of ocular tissue", The *Second International Conference on Ultrasonic Measurement and Imaging of Tissue Elasticity*
- J Liu and M Ferrari* (2002), "Quantitative ultrasound method for microstructure-accounting analysis on thin sections of breast tissue", the *First International Conference on Ultrasonic Measurement and Imaging of Tissue Elasticity*

Service

University and departmental service

2012 – present	OSU Honors and Scholars Faculty Advisory Committee
2007 – present	OSU Comprehensive Engineering & Science of Biomedical Images (CESBMI) Committee
2005 – present	OSU Oversight Committee for High-Resolution Ultrasound Imaging System
2010 – present	College of Engineering Undergraduate Honors Committee
2010	College of Engineering Curriculum Committee
2013 – present	Biomedical Engineering Executive Committee
2013 – present	Biomedical Engineering Undergraduate Studies Committee
2012 – present	Biomedical Engineering Promotion and Tenure Committee
2009 – present	Biomedical Engineering Curriculum Committee
2012 – 2013	Biomedical Engineering Graduate Studies Committee
2007 – 2013	Biomedical Engineering Facilities and Space Committee
2007 – 2008	Biomedical Engineering Faculty Search Committee

Professional service

Journal reviewer:

- Investigative Ophthalmology and Visual Science
- Experimental Eye Research
- Biomechanics and Modeling in Mechanobiology
- Journal of Cataract and Refractive Surgery
- Journal of Biomechanical Engineering
- Annals of Biomedical Engineering
- PLOS ONE
- Physics in Medicine and Biology
- Journal of Refractive Surgery
- Survey of Ophthalmology
- Cornea
- Ultrasound in Medicine and Biology
- Journal of Biomechanics
- Medical Physics
- Journal of the Royal Society Interface
- Investigative Radiology
- IEEE Transactions in Biomedical Engineering
- Clinical Ophthalmology
- Journal of Clinical and Experimental Cardiology
- Journal of Biorheology

Proposal reviewer:

2015 National Institutes of Health, Emerging Technologies and Training in Neurosciences (ETTN)
2014 National Institutes of Health, Diseases and Pathophysiology of the Visual System (DPVS)
2013 National Institutes of Health, Bioengineering in Vision, Neurosciences and Engineering (BVNT)
2012 National Science Foundation, Division of Civil, Mechanical and Manufacturing Innovation
2011 National Science Foundation, Division of Civil, Mechanical and Manufacturing Innovation
2008 Maryland Technology Transfer Fund
2008 Sweden Research Council
2007 The American Association of Advancement of Science Life Sciences Discovery Fund
2006 British Fight for Sight Eye Research Foundation

Community service

2010 – present Reviewer for OSU College of Engineering Undergraduate Honors Research Scholarship Proposals.
2011 – present Judge for OSU College of Engineering Undergraduate Research Forum
2011 Judge for OSU Denman Undergraduate Research Forum
2012 Faculty volunteer for High School Student Career Shadowing
2012 Faculty volunteer for Reynoldsburg High School Student Internship
2008 Faculty volunteer for OSU STEM Summer Leadership Camp
2008 Faculty volunteer for OSU Engineering in Motion Summer Workshop

2006 Faculty adviser for Career Exploration Internship for High School Students.

Patents

Issued

System and Method for Screening Tissue; Inventors: Jun Liu, Mauro Ferrari, Stanislav Rokhlin and Daniel Sedmak; U.S. Patent No. 7,993,271 B2, Issued August 9, 2011

Pending

Ophthalmic Elastography, Inventors: Jun Liu and Hong Chen, Filed: May 1, 2015

Ultrasound Method and System for Measurement of Ocular Biomechanics; Inventors: Jun Liu and Cynthia Roberts; Serial number: PCT/US08/061540

Honors and Awards

2012 OSU College of Engineering Lumley Research Award. $3,000
2004 First Prize of the OSU Fisher College Business Plan Competition. $80,000
1997 OSU University Fellowship Award
1997 Outstanding Graduate Student Award. Zhejiang University.
1994 Outstanding Undergraduate Student Award. Zhejiang Province

Teaching

Courses taught

2014 Biomedical Instrument and Measurement, Undergraduate, Class size: 60
2013 Biomedical Ultrasound, Graduate and Undergraduate, Class size: 13
2013 Biomedical Instrument and Measurement, Undergraduate, Class size: 64
2012 Biomedical Instrument and Measurement, Undergraduate, Class size: 62
2011 Biomedical Ultrasound, Graduate and Undergraduate, Class size: 12
2011 Biomedical Instrument and Measurement, Undergraduate, Class size: 32
2010 Biomedical Instrumentation, Graduate, Class size: 11
2010 Biomedical Ultrasound, Graduate and Undergraduate, Class size: 15
2010 Biomedical Instrument and Measurement, Undergraduate, Class size: 17
2009 Biomedical Ultrasound, Graduate and Undergraduate, Class size: 12
2009 Biomedical Instrumentation, Graduate, Class size: 11
2009 Biomedical Engineering Seminar (2 quarters), Class size: 23, 24
2008 Biomedical Ultrasound, Graduate, Class size: 6
2008 Biomedical Instrumentation, Graduate, Class size: 17
2008 Biomedical Engineering Seminar, Class size: 26
2007 Biomedical Ultrasound, Graduate, Class size: 3
2006 Biomedical Instrumentation, Graduate, Class size: 16
2005 Biomedical Instrumentation, Graduate, Class size: 20
2004 Biomedical Instrumentation, Graduate, Class size: 13

Dissertation adviser for doctoral students

2015 – present Keyton Clayson, OSU Biophysics
2014 – present Elias Pavlatos. OSU Department of Biomedical Engineering.
2011 – 2014 Benjamin Cruz Perez. OSU Department of Biomedical Engineering. (Passed Candidacy; Quit for accepting an industrial job)
2007 – 2012 Junhua Tang. Dissertation Title: Ultrasonic Characterization of Corneal and Scleral Biomechanical Properties. OSU Department of Biomedical Engineering
2005 – 2010 Xiaoyin He. Dissertation Title: Characterization of Corneal Biomechanical Properties Using Experimental and Numerical Methods. OSU Department of Biomedical Engineering.

Thesis adviser for master's students

2011 – 2014 Kimberly Metzler. Thesis Title: The Influence of IOP, Stiffness, and Scleral Contribution on Corneal Deformation Response to Air Puff Deformation Using the CorVis ST.
2007 – 2010 Jie Li. Thesis Title: Polymeric Nanoparticles in Ultrasonic Enhancement and Targeted Drug Delivery. OSU Department of Biomedical Engineering.
2005 – 2006 Adam Marcetich. Thesis Title: Ultrasonic Spectral Parameters of Micro- and Nano- particles: Measurement Software and Modeling. OSU Department of Biomedical Engineering.

Defense, dissertation or candidacy committee member for doctoral students

2015 Daniel Clark. Dissertation Title: Chemical Exchange Saturation Transfer and Quantitative MRI Methods: Applications for Osteoarthritis and Cartilage Injury
2015 Juliet Varghese. Novel MRI techniques for measuring blood flow in congenital heart disease
2013 Ann Mallory. Dissertation Title: Measurement of Meningeal Motion Using B-Mode Ultrasound as a Step Toward Understanding the Mechanism of Subdural Hematoma. Department of Mechanical Engineering.
2013 Daniel Clark. Multi-parametric Quantitative MRI for Non-invasive Diagnosis of Renal Cell Carcinoma. Department of Biomedical Engineering.
2012 Xiaoye Ma. Dissertation Title: Finite Element Modeling of Collagen Fibers in the Mechanical Interaction between Cells and the Extracellular Matrix. Department of Biomedical Engineering.
2012 Leilei Zhang. Dissertation Title: Drug Loaded Multifunctional Microparticles for Anti-VEFG Therapy of Exudative Age-Related Macular Degeneration. Department of Biomedical Engineering.
2012 Henry Chang. Magnetic Resonance Imaging (MRI) to Quantify Pathophysiologic Changes in the Heart due to Ischemia. Department of Biomedical Engineering.
2011 Qian Wang. Integrated Chip for Cellular Level Mechanotransduction Study. Department of Biomedical Engineering.
2010 (Candidacy Examination Committee Chair) Junhua Tang. Scleral Biomechanics and Influence on Optic Nerve Head Mechanical Environment. Department of Biomedical Engineering.
2010 Chenguang Zhou. Lipid and surfactant nanocarriers of siRNA: differences in the formulation, cellular uptake, and functional siRNA delivery. College of Pharmacy Department of Pharmaceutics.
2009 Jiwei Huang. Heat-sensitive microbubbles for imaging and assessment of cancer ablation

margins. Department of Biomedical Engineering.
2009 Hansong Zeng. Development of a Liquid Droplet-based Motion Sensing System for Prosthesis of Human Vestibular Systems. Department of Biomedical Engineering.
2009 Xiaoyue Ma. 3D Finite Element Modeling of Reciprocal Mechanical interaction between Cells and Collagen Matrix. Department of Biomedical Engineering.
2009 Leilei Zhang. Retinal Oxygen Tension Measurement by Oxygen Sensitive Micro/nano Bubble. Department of Biomedical Engineering.
2009 (Candidacy Examination Committee Chair) Xiaoyin He. The Influence of Ocular Biomechanical Properties on Intraocular Pressure Dynamics and Glaucoma Risk. Department of Biomedical Engineering.
2007 Dianne Glass. Characterization of the Biomechanical Properties of the in vivo Human Cornea. Department of Biomedical Engineering.

Thesis committee for master's students

2010 Shang-Hsien Meng. Receiver for Medical Ultrasound Imaging. Department of Electrical and Computer Engineering.
2008 Jill Mari Embry. Feasibility of a Non-Contact Measurement Method to Determine Changes in Corneal Mechanical Properties. Department of Biomedical Engineering.

Research adviser for undergraduate students

2014 – present Jared Artz. Department of Biomedical Engineering.
2013 – 2014 David Youssef. OSU Eminence Fellow. Department of Biomedical Engineering.
2012 – 2014 Martin Sprang. Department of Biomedical Engineering.
2012 – 2013 Nicholas Stephens. Department of Biomedical Engineering.
2012 – 2013 Stephanie Telek. Department of Biomedical Engineering.
2012 – 2013 Yi Juin Liew. Department of Biomedical Engineering.
2010 - 2013 Mengyu Liu. Department of Biomedical Engineering.
2011 Chris Fechner. Department of Biomedical Engineering.
2011 Austen Thomas. Department of Biomedical Engineering.
2010 Lauren Cechini. Department of Biomedical Engineering.

Research adviser for medical students and residents

2014 – 2015 Vinny Keshav. Medical Student.
2010 – 2014 Joel Palko. Medical Student.
2012 – 2013 Ryan Short. Medical Student.
2012 – 2013 Megan Chambers. Resident. Department of Ophthalmology.
2010 Folasade Imeokparia. Medical Student.
2009 Daniel Torrent. Medical Student.
2008 Matthew Koehler. Medical Student.
2007 – 2009 Katie Baston. Resident. Department of Ophthalmology.
2007 – 2009 Andrea Sawchyn. Resident. Department of Ophthalmology.