

Columbia University Fu Foundation School of Engineering and Applied Science Faculty Personnel Record

KRISTIN M. MYERS

Associate Professor
Department of Mechanical Engineering
Columbia University
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Date: April 2019

Education

Massachusetts Institute of Technology, Department of Mechanical Engineering

- Ph.D. 02/2008
- M.S. 05/2005

University of Michigan - Ann Arbor, Department of Mechanical Engineering

- B.S. Mechanical Engineering, *Summa Cum Laude* 05/2002

Title of Ph.D. Thesis

- *An Investigation of the Structure-Function Relationship in Human Cervical Tissue*
- Doctoral Advisor: Simona Socrate, Ph.D.
- February 20, 2008

Principal Fields of Interest

- Mechanics of Materials
- Biomechanics
- Mechanobiology
- Reproductive Sciences
- Pregnancy

Career History

- Columbia University, Associate Professor of Mechanical Engineering (with tenure) 7/18-present
- Columbia University, Associate Professor of Mechanical Engineering (without tenure) 7/15-6/18
- Columbia University, Assistant Professor of Mechanical Engineering 7/10-6/15
- Johns Hopkins University, Mechanical Engineering, Post-doctoral Researcher 3/08-6/10
- MIT, Mechanical Engineering, Graduate Research Assistant 9/02-2/08
- University of Michigan, Mechanical Engineering, Undergraduate Research Assistant 6/01-8/02
- General Motors Powertrain, Design Release Engineer (Summer Intern) 5/00-8/00
- General Motors Powertrain, Summer Intern 5/99-8/99
- General Motors Research & Development, Summer Intern 6/98-8/98
- General Motors Research & Development, Summer Intern 6/97-8/97

Current Professional Organization Membership

1. American Society of Mechanical Engineers (ASME)
2. Society for Reproductive Investigation (SRI)

Awards Received

Internal

1. Mechanical Engineering Junior Faculty Teaching Prize, Columbia University 2017
2. The Kim Award for Faculty Involvement, School of Engineering and Applied Science (SEAS) Columbia University 2013
3. The Rodriguez Family Junior Faculty Award, SEAS Columbia University 2012

External

1. American Society of Mechanical Engineers (ASME), Y. C. Fung Young Investigators Award 2017
2. National Science Foundation CAREER Award 2015-2020
3. Short-list for best presentation for the conference talk, *Finite element models of the pregnant pelvis based on magnetic resonance imaging* at the 12th International Symposium, Computer Methods in Biomechanics and Biomedical Engineering, Amsterdam, The Netherlands October 15, 2014.
4. 1st Place Ph.D. Student Poster Competition, *The anisotropy and tension/compression behavior of human cervical tissue* at the ASME Summer Bioengineering Conference June 24, 2007.
5. National Science Foundation Graduate Research Fellowship 2003-2006
6. MIT-Dupont Alliance Fellowship, Mechanical Engineering, MIT 2002-2003
7. Clare Boothe Luce Fellowship, School of Engineering, University of Michigan 2000-2002

Awards Received by Myers Students and Post Docs

1. Charles Jayyosi, Ph.D., Collaborative Research Travel Grant, Burroughs Wellcome Fund May 19, 2017
2. Kyoko Yoshida, 1st Place Ph.D. Student Paper Competition, *Measurements of collagen network remodeling in cervical tissue using osmotic loading in normal and disrupted mouse models* at the ASME Summer Bioengineering Conference June 29, 2013.
3. Michael Fernandez, 1st Place Ph.D. Student Paper Competition, *Direct measurement of human cervical tissue permeability* at the ASME Summer Bioengineering Conference June 23, 2012.

Service

Department of Mechanical Engineering, School of Engineering and Applied Science (SEAS), Columbia University

1. Undergraduate Committee
 - Director 2018-present
 - Member 2014-2018
2. ABET Design Sub-committee
 - Chair 2017-present
 - Member 2011-2012
3. Colloquium Organizer 2012-2014
4. Graduate Committee
 - Member 2010-2014
5. Speaker, Engineering Women's Forum 2013, 2012
6. Scribe at faculty meetings 2011-2012
7. Advisor, Graduate Women in Mechanical Engineering Club 2010-2017

Department of Biomedical Engineering, SEAS, Columbia University

1. Faculty search committee 01/17-04/17

SEAS, Columbia University

1. Mentor, Egelston Scholars Program 2014-present
2. Advisor, SEAS Engineering the Next Generation Program 2015-2017
3. Speaker, Faculty Round Table, Engineering Women's Forum 2017
4. Speaker, SEAS Family Weekend 2016, 2013
5. Speaker, SEAS Alumni Weekend 2016
6. Speaker, SEAS Parent's Council 2015
7. Panelist, Society of Women Engineers (SWE) 2014
8. Advisor, Amgen Scholars Summer Research Program 2013
9. Speaker, Louisiana State University LA-STEM Research Scholars Program Visit 2013
10. Speaker, SEAS event for undecided majors 2012
11. Speaker, SWE End of Year Banquet 2012
12. Panelist Speaker, Women in Science & Engineering and SWE 2012
13. Speaker, Admissions Days on Campus: Women of Columbia Engineering 2012
14. Speaker, Admissions Days on Campus: Women of Columbia Engineering 2011
15. Mentor, SWE Speed Networking Event 2011

Columbia University

1. Reviewer, Junior Faculty Grants Program Office of the Provost 04/2019
2. Panelist, Columbia University's Forum on Maternal Health 01/2019
3. Panelist, Junior Faculty Career Development Session: Navigating the Tenure Process 09/2018
4. Speaker, Columbia University Board of Trustees discussion on diversity 2015
5. Speaker, Columbia College and SEAS diversity recruitment event 2011

Professional Services

Federal Grant Proposal Review

1. National Institutes of Health (NIH), Small Business Innovation Research (SBIR) Grants on Endocrinology, Metabolism, Nutrition and Reproduction Sciences 03/2019
2. National Science Foundation (NSF), Panel Review 2018
3. NIH, Pregnancy and Neonatology (PN) Study Section 10/2017
4. NSF, Panel Review 2017
5. NSF, Panel Review 2015

Professional Society

1. Theme Leader, American Society of Mechanical Engineerings (ASME), Bioengineering Division (BED), Solids Technical Committee, Other Solids 2018-present
2. Participant, National Academy of Engineering's (NAE) 2018 US Frontiers of Engineering Symposium (US FOE), hosted by MIT Lincoln Laboratory, Lexington, MA 09/2018

Journals

1. co-Editor, Special Issue on Bioengineering in Women's Health, *Journal of the Royal Society Interface Focus* 2019

Journal Paper Review

American Journal of Obstetrics and Gynecology, ASME Applied Mechanics Reviews, ASME Journal of Biomechanical Engineering, Biomechanics and Modeling in Mechanobiology, Computer Methods in Biomechanics and Biomedical Engineering, Experimental Eye Research, Experimental Mechanics, International Journal of Structural Changes in Solids, Investigative Ophthalmology & Visual Science, Journal of Biomechanics, Journal of Biomedical Optics, Journal of Microscopy, Journal of the Mechanical Behavior of Biomedical Materials, Journal of the Mechanics and Physics of Solids, Journal of the Royal Society Interface, Journal of the Royal Society Interface Focus, Materials Research Society, Placenta, PLoS ONE, Reproductive Sciences, Scientific Reports

Conference Organization

Conference Chair

1. Local Arrangements Chair, 16th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering and the 4th Conference on Imaging and Visualization, New York, NY, 08/2019
2. Track Chair, 8th World Congress of Biomechanics, Dublin, Ireland 07/2018

Symposia Organizer

1. *Urinary Tract and Reproductive Biomechanics*, 16th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering and the 4th Conference on Imaging and Visualization, New York, NY,08/2019
2. *Growth and Remodeling of Living Matter*, 55th Annual Technical Meeting of the Society of Engineering Science, Madrid, Spain10/2018
3. *US National Committee on Biomechanics Global Women's Health*, 8th World Congress of Biomechanics, Dublin, Ireland07/2018
4. *Engineering in Female Pelvic Health*, 5th International Conference on Computational and Mathematical Biomedical Engineering, Pittsburgh, PA 2017
5. *Reproductive Biomechanics*, Summer Biomechanics, Bioengineering, and Biotransport Conferences 2016,2017
6. *Reproductive Biomechanics*, ASME Summer Bioengineering Conferences2012,2013

Conference Paper Review

1. Society for Reproductive Investigation Annual Scientific Meeting 2019,2018
2. Summer Biomechanics, Bioengineering, and Biotransport Conference.....2019, 2017, 2015
3. 8th World Congress of Biomechanics 2018
4. 7th World Congress of Biomechanics2014
5. ASME Summer Bioengineering Conference 2013,2011, 2010

Teaching Experience

Term	Course Number	Course Title	Role	Number Students	Instructor Evaluation (5 max)	Course Evaluation (5 max)
Fall 2018	MECE E6422	Introduction to the Theory of Elasticity	Instructor	12	4.30	4.44
Spring 2018	MECE E8501	Advanced Continuum Biomechanics	Instructor	9	4.25	4.04
Spring 2018	MECE E3450	Computer Aided Design	Instructor	19	NA	NA
Fall 2017	MECE E6422	Introduction to the Theory of Elasticity	Instructor	15	4.50	3.93
Spring 2017	MECE E3408	Computer Graphics and Design	Instructor	42	4.50	4.23
Fall 2016	MECE E3408	Computer Graphics and Design	Instructor	42	4.35	3.87
Fall 2015	MECE E1001	Mechanical Engineering; Micromachines to Jumbo Jets	Instructor	22	4.19	3.64
Spring 2015	MECE E3408	Computer Graphics and Design	Instructor	38	4.11	4.44
Fall 2014	MECE E1001	Mechanical Engineering; Micromachines to Jumbo Jets	Instructor	22	4.34	4.21

Term	Course Number	Course Title	Role	Number Students	Instructor Evaluation (5 max)	Course Evaluation (5 max))
Spring 2014	MECE E8501	Advanced Continuum Biomechanics	Instructor	13	N/A	N/A
Fall 2013	MECE E1001	Mechanical Engineering: Micromachines to Jumbo Jets	Instructor	63	4.60	4.35
Fall 2013	ENGI E1102	Art of Engineering	Instructor	30	N/A	N/A
Spring 2013	MECE E3408	Computer Graphics and Design	Instructor	22	4.12	4.31
Fall 2012	MECE E1001	Mechanical Engineering: Micromachines to Jumbo Jets	Instructor	43	4.36	4.22
Fall 2011	MECE E1001	Mechanical Engineering: Micromachines to Jumbo Jets	Instructor	39	4.17	4.07
Fall 2010	MECE E1001	Mechanical Engineering: Micromachines to Jumbo Jets	Instructor	34	4.55	4.57

Teaching Innovations

1. Developed and taught MECE 8501 Advanced Continuum Biomechanics Spring 2014, 2018.

Publications

(★ = Myers is corresponding author, students or postdocs supervised by Myers)

ISI Web of Science h-index = 13, Google Scholar h-index = 19

Papers in Refereed Journals (Listed in Chronological Order)

- J1 Kristin Myers** and Alan Wineman. A pressurized spherical elastomeric membrane undergoing temperature induced scission and crosslinking. *Mathematics and Mechanics of Solids*, 8(3):299–314, June 2003
- J2 Kristin Myers**, Anastassia Paskaleva, Michael House, and Simona Socrate. Mechanical and biochemical properties of human cervical tissue. *Acta Biomaterialia*, 4(1):104–116, January 2008
- J3** Michael House, Rafeeqe A Bhadelia, **Kristin Myers**, and Simona Socrate. Magnetic resonance imaging of three-dimensional cervical anatomy in the second and third trimester. *European Journal of Obstetrics, Gynecology, and Reproductive Biology*, 144 Suppl 1:S65–9, May 2009
- J4 Kristin Myers**, Simona Socrate, Dimitrios Tzeranis, and Michael House. Changes in the biochemical constituents and morphologic appearance of the human cervical stroma during pregnancy. *European Journal of Obstetrics, Gynecology, and Reproductive Biology*, 144 Suppl 1:S82–9, May 2009
- J5 Kristin M Myers**, Simona Socrate, Anastassia Paskaleva, and Michael House. A study of the anisotropy and tension/compression behavior of human cervical tissue. *Journal of Biomechanical Engineering*, 132(2):021003, February 2010
- J6** Scott Gelman, Frances E Cone, Mary E Pease, Thao D Nguyen, **Kristin Myers**, and Harry A Quigley. The presence and distribution of elastin in the posterior and retrobulbar regions of the mouse eye. *Experimental Eye Research*, 90(2):210–215, February 2010
- J7 Kristin M Myers**, Baptiste Coudrillier, Brad L Boyce, and Thao D Nguyen. The inflation response of the posterior bovine sclera. *Acta Biomaterialia*, 6(11):4327–4335, November 2010
- J8 Kristin M Myers**, Frances E Cone, Harry A Quigley, Scott Gelman, Mary E Pease, and Thao D Nguyen. The *in vitro* inflation response of mouse sclera. *Experimental Eye Research*, 91(6):866–875, December 2010
- J9** Baptiste Coudrillier, Jing Tian, Stephen Alexander, **Kristin M. Myers**, Harry A Quigley, and Thao D Nguyen. Biomechanics of the human posterior sclera: age- and glaucoma-related changes measured

using inflation testing. *Investigative Ophthalmology & Visual Science*, 53(4):1714–1728, April 2012

Columbia Papers

- J10** Michael Fernandez, Joy Vink, Kyoko Yoshida, Ronald Wapner, and **Kristin M. Myers***. Direct measurement of the permeability of human cervical tissue. *Journal of Biomechanical Engineering*, 135(2):021024, February 2013
- J11** **Kristin Myers** and Gerard A Ateshian. Interstitial growth and remodeling of biological tissues - Tissue composition as state variables. *Journal of the Mechanical Behavior of Biomedical Materials*, 29(C):544–556, January 2014
- J12** Kyoko Yoshida, Claire Reeves, Joy Vink, Jan Kitajewski, Ronald Wapner, Hongfeng Jiang, Serge Cremers, and **Kristin Myers***. Cervical collagen network remodeling in normal pregnancy and disrupted parturition in antxr2 deficient mice. *Journal of Biomechanical Engineering*, 136(2):021017, February 2014
- J13** Wang Yao, Kyoko Yoshida, Michael Fernandez, Joy Vink, Ronald J Wapner, Cande V Ananth, Michelle L Oyen, and **Kristin M Myers***. Measuring the compressive viscoelastic mechanical properties of human cervical tissue using indentation. *Journal of the Mechanical Behavior of Biomedical Materials*, 34(C):18–26, June 2014
- J14** Kyoko Yoshida, Hongfeng Jiang, Joy Vink, Ronald Wapner, Serge Cremers, Mala Mahendroo, and **Kristin Myers***. Measurements of divalent and trivalent cervical collagen crosslinks with gestation in mice. *PLoS ONE*, 9(11):e112391, 2014
- J15** Noelia Zork, **Kristin Myers***, Kyoko Yoshida, Serge Cremers, Hongfeng Jiang, Cande Ananth, Ronald Wapner, Jan Kitajewski, and Joy Vink. A systematic evaluation of collagen cross-links in the human cervix (PMID 25281365). *American Journal of Obstetrics and Gynecology*, 212(3):321.e1–321.e8, March 2015
- J16** Yu Gan, Wang Yao, **Kristin Myers**, Joy Vink, Ronald Wapner, and Christine Hendon. Analyzing three-dimensional ultrastructure of human cervical tissue using optical coherence tomography. *Biomedical Optics Express*, 6(4):1090–1108, 2015
- J17** **Kristin Myers***, Helen Feltovich, Edoardo Mazza, Joy Vink, Michael Bajka, Ronald Wapner, Tim Hall, and Michael House. The mechanical role of the cervix in pregnancy. *Journal of Biomechanics*, 48(9):1511–1523, June 2015
- J18** **Kristin Myers***, Christine Hendon, Yu Gan, Wang Yao, Kyoko Yoshida, Michael Fernandez, Joy Vink, and Ronald Wapner. A continuous fiber distribution material model for human cervical tissue. *Journal of Biomechanics*, 48(9):1533–1540, June 2015
- J19** Michael Fernandez, Michael House, Sachin Jambawalikar, Noelia Zork, Joy Vink, Ronald Wapner, and **Kristin Myers***. Investigating the mechanical function of the cervix during pregnancy using finite element models derived from high-resolution 3D MRI. *Computer Methods Biomechanics Biomedical Engineering*, 19(4):404–417, 2016
- J20** Kyoko Yoshida, Mala Mahendroo, Joy Vink, Ronald Wapner, and **Kristin Myers***. Material properties of mouse cervical tissue in normal gestation. *Acta Biomaterialia*, 36:195–209, May 2016
- J21** Joy Y Vink, Sisi Qin, Clifton O Brock, Noelia M Zork, Helen M Feltovich, Xiaowei Chen, Paul Urie, **Kristin Myers**, Timothy J Hall, Ronald Wapner, Jan K Kitajewski, Carrie J Shawber, and George Gallos*. A new paradigm for the role of smooth muscle cells in the human cervix. *American Journal of Obstetrics and Gynecology*, 215(4):478.e1–478.e11, October 2016
- J22** Wang Yao, Yu Gan, **Kristin Myers**, Joy Vink, Ronald Wapner, and Christine Hendon*. Collagen fiber orientation and dispersion in the upper cervix of non-pregnant and pregnant women. *PLoS ONE*, 11(11):e0166709, 2016
- J23** Shanmugasundaram Nallasamy, Kyoko Yoshida, Meredith Akins, **Kristin Myers**, Renato Iozzo, and Mala Mahendroo*. Steroid hormones are key modulators of tissue mechanical function via regulation of collagen and elastic fibers. *Endocrinology*, 158(4):950–962, April 2017
- J24** Andrea Westervelt, Michael Fernandez, Michael House, Joy Vink, Chia-Ling Nhan-Chang, Ronald Wapner, and **Kristin Myers***. A parameterized ultrasound-based finite element analysis of the mechanical environment of pregnancy. *Journal of Biomechanical Engineering*, 139(5), May 2017
- J25** **Kristin Myers*** and David Elad. Biomechanics of the human uterus. *Wiley interdisciplinary reviews. Systems biology and medicine*, 9(5):e1388, September 2017
- J26** Andrea Westervelt and **Kristin Myers***. Computer modeling tools to understand the causes of preterm birth. *Seminars in Perinatology*, 41(8):485–492, September 2017

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- J27** Bouchra Koullali, Andrea Westervelt, **Kristin Myers**, and Michael House. Prevention of preterm birth: Novel interventions for the cervix. *Seminars in Perinatology*, 41(8):505–510, December 2017
- J28** Jia Hao, Wang Yao, William-Barton R Harris, Joy Vink, **Kristin Myers**, and Eve Donnelly. Characterization of the collagen microstructural organization of human cervical tissue. *Reproduction*, 156(1):71–79, January 2018
- J29** Charles Jayyosi, Nicole Lee, Alexandra Willcockson, Shanmugasundaram Nallasamy, Mala Mahendroo, and **Kristin Myers***. The mechanical response of the mouse cervix to tensile cyclic loading in term and preterm pregnancy. *Acta Biomaterialia*, 78:308–319, September 2018
- J30** Joy Vink and **Kristin Myers**. Cervical alterations in pregnancy. *Best Practice & Research Clinical Obstetrics & Gynaecology*, 52:88–102, October 2018
- J31** Pengcheng Yao, Bin Zhu, Haowei Zhai, Xiangbiao Liao, Yuxiang Zhu, Weiheng Xu, Qian Cheng, Charles Jayyosi, Jia Zhu, **Kristin Myers**, Xi Chen, and Yuan Yang. PVDF/Palygorskite Nanowire Composite Electrolyte for 4 v Rechargeable Lithium Batteries with High Energy Density. *Nano Letters*, 18(10):6113–6120, October 2018
- J32** Qingquan Song, Aijun Li, Lei Shi, Qian Cheng, Yanke Fu, Hanrui Zhang, Zeyuan Li, Haowei Zhai, Zheng Li, Martin Dontigny, Karim Zaghbi, **Kristin Myers**, Xiuyun Chuan, and Yuan Yang. Thermally Stable, Nano-porous and Eco-friendly Sodium Alginate/Attapulgit Separator for Lithium-ion Batteries. *Journal of Materials Chemistry A*, 2019 *in-review*
- J33** Kyoko Yoshida, Charles Jayyosi, Nicole Lee, Mala Mahendroo, and **Kristin Myers***. Mechanics of Cervical Remodeling: Insights from Rodent Models of Pregnancy. *Interface Focus*, 2019 *in-review*
- J34** Lei Shi, Wang Yao, Yu Gan, Lily Zhao, W. Eugene McKee, Joy Vink, Ronald Wapner, Christine Hendon, and **Kristin Myers***. Anisotropic Material Characterization of Human Cervix Tissue based on Indentation. *Journal of Biomechanical Engineering*, 2019 *in-review*

Conference proceedings and presentations (Listed in Chronological Order)

- C1** House M, **Myers K**, Paskaleva A, and Socrate S, *A quantitative model of uterine growth and cervical funneling*, Proceedings of the New England Perinatal Society Annual Meeting, Manchester Village, VE, Mar 19-21, 2004
- C2** House M, Paskaleva A, **Myers K**, Febvay S, and Socrate S, *The biomechanics of cervical funneling: the effect of stroma properties, anatomic geometry and pelvic forces on funnel formation*, Am J Obstet Gynecol 191 (6): S17, Dec 2004 (2005 Award for Research Excellence, Society for Maternal Fetal Medicine, Oral Concurrent Session 3, 25th Annual Meeting, Reno, Nevada)
- C3** **Myers K** and Socrate S, *Mechanical and biochemical properties of human cervical tissue*, Proceedings of the 2005 Joint ASME/ASCE/SES Conference on Mechanics and Materials (McMat), Baton Rouge, LA, June 1-3 2005
- C4** **Myers K**, House M, and Socrate S, *Mechanical and biochemical characteristics of human cervical tissue*, Proceedings of the ASME Summer Bioengineering Conference, Vail, CO, June 22-26, 2005
- C5** **Myers K** and Socrate S. *Investigation of structure-property relations in human cervical tissue*, Proceedings of the Materials Research Society Fall Meeting, Boston, MA, Nov 28-Dec 2, 2005
- C6** **Myers K**, Paskaleva A, House M, and Socrate S, *The mechanical and biochemical properties of human cervical tissue*, Proceedings of the First International Conference on Mechanics of Biomaterials & Tissues, Waikoloa, HI, Dec 11-14, 2005
- C7** Socrate S, Paskaleva A, **Myers K**, and House M, *Connection between uterine contractions and cervical dilation: A biomechanical theory of cervical deformation*, Proceedings of the First International Conference on Mechanics of Biomaterials & Tissues, Waikoloa, HI, Dec 11-14, 2005
- C8** Paskaleva A, **Myers K**, House M, and Socrate S, *Biomechanics of cervical insufficiency*, Proceedings of the First International Conference on Mechanics of Biomaterials & Tissues, Waikoloa, HI, Dec 11-14, 2005
- C9** House M, Paskaleva A, **Myers K**, Craig S, and Socrate S, *The connection between uterine contractions and cervical dilation: The biomechanics of cervical deformation*, Am J Obstet Gynecol 193 (6): S55, Suppl, Dec 2005
- C10** House M, Paskaleva AP, **Myers K**, Craig S, and Socrate S, *The effect of uterine volume, uterine pressure and maternal position on cervical stress: The biomechanics of common static loads*, Am J Obstet Gynecol 193 (6): S112, Suppl, Dec 2005
- C11** House M, Paskaleva AP, **Myers K**, Craig S, and Socrate S, *The biomechanics of cervical anatomy:*

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- the effect of cervical length and orientation on cervical stress*, Am J Obstet Gynecol 193 (6): S112, Suppl, Dec 2005
- C12** House M, Paskaleva AP, **Myers K**, Craigo S, and Socrate S, *The biomechanics of cerclage placement: The effect of cerclage position and stress relaxation on cervical stress*, Am J Obstet Gynecol 193 (6): S21, Suppl, Dec 2005. (2006 Award for Research Excellence, Society for Maternal Fetal Medicine, Oral Concurrent Session 4, 26th Annual Meeting, Miami, Florida)
- C13** **Myers K**, House M, Paskaleva A, and Socrate S, *Investigation of structure-property relationships in human cervical tissue*, J Soc Gynecol Investig 13 (2): 331A-332A 808 Suppl Feb 2006
- C14** **Myers K**, Paskaleva A, House M, and Socrate S, *Tension experiments on human cervical tissue using digital image correlation*, Proceedings of the ASME Summer Bioengineering Conference, Amelia Island, FL, June 21-25, 2006
- C15** Socrate S, Paskaleva A, **Myers K**, House M, *The cervical function in pregnancy*, Proceedings of the 5th World Congress of Biomechanics, Munich Germany, Jul 29th - Aug 4th 2006
- C16** Socrate S, **Myers K**, Paskaleva A, *The constitutive response of human cervical tissue*, Proceedings of the 2006 Annual Fall Meeting of the Biomedical Engineering Society, Chicago IL, Oct 11-14, 2006
- C17** **Myers K**, Paskaleva A, House M, and Socrate S, *The anisotropy and tension/compression behavior of human cervical tissue*, Proceedings of the ASME Summer Bioengineering Conference, Keystone, CO, June 20-24, 2007
- C18** Johnson J, Guduru P, **Myers K**, Socrate S, House M, Ji H, Long V, Chien EK, *Measurement of the stress relaxation response to tension in the pregnant rat cervix*, Reprod Sci 15 (2): 263A, Suppl, Mar 2008
- C19** **Myers K**, and Nguyen T, *The bulge inflation response of bovine sclera*, Proceedings of the ASME Summer Bioengineering Conference, Lake Tahoe, CA, June 17-21, 2009
- C20** **Myers K**, Cone F, Quigley H, and Nguyen T, *Age effects on the inflation response of C57BL/6 mouse sclera*, The Association for Research in Vision and Ophthalmology, ARVO Abstract, Ft. Lauderdale, FL, May 2-6, 2010
- C21** **Myers K**, Cone F, Quigley H, Coudrillier B, and Nguyen T, *The inflation response of mouse sclera: age effects on the mechanical properties of scleral tissue*, Proceedings of the ASME Summer Bioengineering Conference, Naples, FL, June 16-19, 2010
- C22** **Myers K**, Quigley H, and Nguyen T, *Ocular biomechanics of rodent models of glaucoma*, Oral Presentation, Biennial Meeting of the International Society of Eye Research, Montreal, Canada, Jul 18, 23, 2010
- C23** **Myers K**, Cone F, Quigley H, and Nguyen T, *Modeling the inflation response of C57BL/6 mouse sclera*, The Association for Research in Vision and Ophthalmology, ARVO Abstract, Ft. Lauderdale, FL, May 1-5, 2011
- C24** **Myers K**, Cone F, Quigley H, Coudrillier B, and Nguyen T, *The inflation response of mouse sclera: age effects on the mechanical properties of scleral tissue*, Proceedings of the Society of Experimental Mechanics Conference, Uncasville, CT June 13-16, 2011
- C25** **Myers K** and Nguyen T, *Modeling the inflation response of C57BL/6 mouse sclera*, Proceedings of the ASME Summer Bioengineering Conference, Farmington, PA, June 22-25, 2011
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- Columbia Proceedings**
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- C26** Yoshida K, Vink J, Wapner R, Reeves C, Kitajewski J, and **Myers K***, *Anthrax toxin receptor 2 knock-out and wild-type mouse cervix exhibit time-dependent mechanical properties*, Reprod Sci 19 (3): 300A, F-244, Suppl, Mar 2012
- C27** Fernandez M, Vink J, Wapner R, Reeves C, Kitajewski J, and **Myers K***, *Direct measurements of the permeability of pregnant and nonpregnant human cervical tissue*, Reprod Sci 19 (3): 300A, F-243 Suppl, Mar 2012
- C28** Fernandez M, Vink J, Wapner R, Yoshida K, and **Myers K***, *Direct measurement of human cervical tissue permeability*, Proceedings of the ASME Summer Bioengineering Conference, Farjardo, Puerto Rico, June 20-23, 2012 (1st Place Ph.D. Student Paper Competition)
- C29** Yoshida K, Reeves C, Kitajewski J, Wapner R, Vink J, Fernandez M, and **Myers K***, *Anthrax toxin receptor 2 knock-out and wild-type mouse cervix exhibit time-dependent mechanical properties*, Proceedings of the ASME Summer Bioengineering Conference, Farjardo, Puerto Rico, June 20-23, 2012
- C30** **Myers K***, Oyen M, Yoshida K, Fernandez M, Vink J, and Wapner R, *Time-dependent indentation response of human cervical tissue*, Proceedings of the ASME Summer Bioengineering Conference, Far-

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- jardo, Puerto Rico, June 20-23, 2012
- C31 Myers K*** and Oyen M, *Indentation response of human cervical tissue*, Conference presentation at the 8th European Solid Mechanics Conference, Graz, Austria, Jul 9-13, 2012
- C32 Yoshida K**, Reeves C, Kitajewski J, Zork N, Vink J, Wapner R, Kim M, Paik D, and **Myers K***, *Correlation between cervical tissue strength and collagen crosslink density in normal and disrupted parturition mouse models*, *Reprod Sci* 20(S3): 243A, F-173, Suppl, Mar 2013
- C33 Myers K***, Zork N, Vink J, Yoshida K, Yao W W, Oyen M, Kim M, Paik D, Wapner R, *Biomechanical and collagen crosslinking relationships in human cervical tissue*, *Reprod Sci* 20 (S3): 289A, F-163, Suppl, Mar 2013
- C34 Myers K*** and Yoshida K, *FEBio parameter optimization for spherical indentation of human cervical tissue*, Conference presentation at the 11th International Symposium, Computer Methods in Biomechanics and Biomedical Engineering, Salt Lake City, Utah, Apr 3 - 7, 2013
- C35 Yoshida K**, Reeves C, Kitajewski J, Zork N, Vink J, Wapner R, Kim M, Paik D, and **Myers K***, *Measurements of collagen network remodeling in cervical tissue using osmotic loading in normal and disrupted mouse models*, Proceedings of the ASME Summer Bioengineering Conference, Sun River, OR Jun 26-29, 2013 (1st Place Ph.D. Student Paper Competition)
- C36 Myers K***, Yao W, Yoshida K, Vink J, Zork N, Wapner R, and Oyen M, *Inverse finite element analysis of the indentation response of human cervical tissue*, Proceedings of the ASME Summer Bioengineering Conference, Sun River, OR Jun 26-29, 2013
- C37 Zork N**, Vink J, Yoshida K, Cremers S, Jiang H, Ananth C, Wapner R, Kitajewski J, and **Myers K***, *745: The first systematic evaluation of collagen crosslinks in the human cervix*, *Am J Obstet Gynec* 210(1): S365, Suppl, Jan 2014
- C38 Zork N**, Vink J, Yoshida K, Cremers S, Jiang H, Ananth C, Wapner R, Kitajewski J, and **Myers K***, *746: The affect of parity on the distribution of collagen crosslinks in the human cervix*, *Am J Obstet Gynec* 210(1): S365, Suppl, Jan 2014
- C39 Fernandez M**, Jambawalikar S, and **Myers K***, *Toward quantitative biomarkers of cervical structural health: development of MRI tools for in-vivo mechanical property measurement*, Poster presentation at the Joint Annual Meeting ISMRM-ESMRMB, Milan, Italy, May 10-16, 2014
- C40 Myers K***, Yao W, Yoshida K, Fernandez M, Vink J, and Wapner R, *Measuring the anisotropic and time-dependent material response of human cervical tissue with compressive indentation and tension*, Conference presentation at the Society of Experimental Mechanics, Greenville, SC, Jun 2, 2014
- C41 Myers K***, Yoshida K, Vink J, Wapner R, and Mahendroo M, *Tissue Remodeling and Collagen Crosslink Turnover in Pregnancy*, Conference presentation at the 17th U.S. National Congress on Theoretical and Applied Mechanics, East Lansing, MI, Jun 19, 2014
- C42 Myers K***, Yoshida K, Fernandez M, Yao W, Vink J, Wapner R, Gan Y, and Hendon C, *The constitutive modeling of human cervical tissue*, Conference presentation at the World Congress of Biomechanics, Boston, MA Jul 7, 2014
- C43 Fernandez M**, Jambawalikar S, Zork N, Vink J, Wapner R, and **Myers K***, *A finite element model of the pregnant pelvis region during pregnancy*, Conference presentation at the World Congress of Biomechanics, Boston, MA Jul 10, 2014
- C44 Yoshida K**, Jiang H, Mahendroo M, Cremers S, Vink J, Wapner R, Paik D, and **Myers K***, *Cervical tissue remodeling and collagen crosslinks in infection and non-Infection based preterm birth mouse models*, Poster presentation at the World Congress of Biomechanics, Boston, MA Jul 10, 2014
- C45 Gan Y**, Yao W, **Myers K**, and Hendon C, *An Automated 3D registration method for optical coherence tomography volumes*, Proceedings of the 36th Annual International Conference of the IEEE Engineering in Medicine & Biology Society, Chicago, IL, Aug 26-30, 2014
- C46 Myers K***, Fernandez M, Jambawalikar S, Zork N, Vink J, and Wapner R, *Finite element models of the pregnant pelvis based on magnetic resonance imaging* (short-listed for best presentation of conference), Conference presentation at 12th International Symposium, Computer Methods in Biomechanics and Biomedical Engineering, Amsterdam, The Netherlands, Oct 13-15th, 2014
- C47 Yoshida K**, Vink J, Wapner R, Mahendroo M, and **Myers K***, *A biomechanical material model for cervical tissue dependent on collagen content and collagen crosslink density*, Conference presentation at Mechnotransduction in the Reproductive Tract, Durhman, NC, Oct 12, 2014
- C48 Vink J**, Davis G, Zork N, Yoshida K, Jiang H, Cremers S, Ananth C, Kitajewski J, Wapner R, and **Myers K***, *Non-pregnant women with previous premature cervical remodeling have weaker cervical*

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- collagen crosslink maturity ratios*, Am J Obstet Gynec 212(1): S393, Jan 2015
- C49 Gan Y, Yao W, **Myers K**, Vink JY, Wapner RJ, and Hendon CP, *Three-dimensional ultrastructure study of cervical collagen fibers using optical coherence tomography*. Platform Presentation at SPIE Photonics West BiOS, San Francisco, CA, Feb 2015
- C50 Shanmugasundaram N, Akins A, Yoshida K, Lin J, **Myers K**, and Mahendroo M, *Loss of Decorin: A Risk Factor for Cervical Insufficiency?*, Reprod Sci 22: 330A, S-099 Supp 1, Mar 2015
- C51 Fernandez M, House M, Jambawalikar S, Vink J, Zork N, Wapner R, and **Myers K***, *Biomechanical simulations of pregnancy: the effect of collagen stiffness and membrane adhesion on cervical deformation and shortening*, Reprod Sci 22: 326A S-089 Supp 1, Mar 2015
- C52 Fernandez M, House M, Zork N, Vink J, Wapner R, Jambawalikar S, and **Myers K***, *Finite element model of cervical pessary in use: evaluating mechanical interventions for preterm birth*, Conference poster at the Summer Biomechanics, Bioengineering, and Biotransport Conference, Snowbird Resort, UT, Jun 17-20, 2015
- C53 Yoshida K, Mahendroo M, Vink J, Wapner R, and **Myers K***, *Tensile equilibrium material response of pregnant mouse cervical tissue during normal remodeling*, Conference presentation at the Summer Biomechanics, Bioengineering, and Biotransport Conference, Snowbird Resort, UT, Jun 17-20, 2015
- C54 Yao W, Gan Y, Hendon C, Vink J, Wapner R, and **Myers K***, *The collagen directionality and dispersion and mechanical indentation response in nonpregnant human cervical tissue*, Conference presentation at the Summer Biomechanics, Bioengineering, and Biotransport Conference, Snowbird Resort, UT, Jun 17-20, 2015
- C55 Fernandez M, Ehret A, Mazza E, House M, Vink J, Wapner R, **Myers K***, *The effect of fetal membrane prestretch on cervical loading during pregnancy*, Conference presentation at the 39th Annual Meeting of the American Society of Biomechanics, Columbus, OH, Aug 5-8, 2015
- C56 Yoshida K, Mahendroo M, Vink J, Wapner R, and **Myers K***, *A porous fiber composite material model to capture cervical tissue remodeling in mouse pregnancy*, Conference presentation at the 52nd Annual Technical Meeting of the Society of Engineering Science, Texas A&M University, TX, Oct 26-28, 2015
- C57 Vink J, Qin S, Praditpan P, Ananth C, Yoshida K, **Myers K**, Kitajewski J, Wapner R, Sheetz M, Gallos G, *Human cervical smooth muscle stretch increases matrix metalloproteinase secretion: a new mechanism to explain premature cervical remodeling*, Am J Obstet Gynec 214(1); S122, Jan 2016
- C58 Gan Y, Yao W, **Myers KM**, Vink JY, Wapner RJ, and Hendon CP, *Dispersion analysis of collagen fiber networks in cervical tissue using optical coherence tomography* Presentation at SPIE Photonics West BiOS, San Francisco, CA, Feb 2016
- C59 Westervelt A, Fernandez M, Vink J, Nhan-Chang C, Fan M, Wapner R, House M, **Myers K***, *Patient-specific computer simulations of the uterus and cervix in pregnancy: How does cervical angle influence cervical tissue stretch at the internal os?*, Reprod Sci 23: 298A, S-093 Supp 1, Mar 2016
- C60 Fernandez M, Westervelt A, Vink J, House M, Nhan-Chang C, Fan M, Wapner R, Elovitz M, **Myers K***, *Biomechanical Computer Simulation of the Arabin Cervical Pessary*, Reprod Sci 23: 130A, T-093 Supp 1, Mar 2016
- C61 Qin S, Praditpan P, Ananth C, **Myers K**, Gallos G, Wapner R, Kitajewski J, Vink J, *Cervical smooth muscle cells from women with a history of premature cervical remodeling exhibit higher rates of apoptosis and altered cell cycle progression*, Reprod Sci 23: 214A, F-091, Supp 1, Mar 2016
- C62 Qin S, Gallos G, Ananth C, **Myers K**, Wapner R, Kitajewski J, Sheetz M, Vink J, *Temporal expression of focal adhesion proteins (paxillin, focal adhesion kinase and integrin subunits $\alpha 1$, $\alpha 2$, $\alpha 5$, $\beta 1$) in pregnant mouse uterine and cervical tissue*, Reprod Sci 23: 297A, S-089, Supp 1, Mar 2016
- C63 Willcockson A, Nallasamy S, Yoshida K, **Myers K**, Mahendroo M, *Elastic fibers are disrupted in infection-mediated preterm cervical ripening*, Reprod Sci 23: 298A, S-092, Supp 1, Mar 2016
- C64 Yoshida K, Willcockson A, Nallasamy S, Mahendroo, M and **Myers K***, *Mechanical properties of pregnant cervix from mouse models of infection- and hormone-mediated preterm birth*, Conference presentation at the Summer Biomechanics, Bioengineering, and Biotransport Conference, National Harbor, MD, Jun 29- Jul 2, 2016
- C65 Westervelt A, Fernandez M, Vink J, Nhan-Chang CL, Fan M, Wapner R, House M, and **Myers K***, *A parameterized ultrasound-based finite element analysis of the mechanical environment of pregnancy*, Conference presentation at the Summer Biomechanics, Bioengineering, and Biotransport Conference, National Harbor, MD, Jun 29- Jul 2, 2016
- C66 Westervelt A, Fernandez M, Vink J, Nhan-Chang CL, and **Myers K***, *Patient-specific biomechanical*

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- simulations of pregnancy*, Conference presentation at the Computer Methods in Biomechanics and Biomedical engineering, Tel Aviv, Isreal, Sep 20-22, 2016
- C67** Mourad M, Qin S, Ananth C, Yoshida K, **Myers K**, Kitajewski J, Shawber C, Wapner R, Sheetz M, and Vink J, *Human Cervical Smooth Muscle Stretch Increases Pro-Inflammatory Cytokine Secretion*, Am J Obstet Gynec 214(1); S77-S78, Jan 2017
- C68** Gan Y, Yao W, **Myers K**, Vink J, Wapner R, Hendon C, *Depth analysis of collagen directionality on axial human uterine cervical tissue using optical coherence tomography*, Platform Presentation at SPIE Photonics West BIOS. San Francisco, CA, Feb 2017
- C69** Perez Colon M, Westervelt A, Vink J, Wapner R, Gallos G, House M, and **Myers K***, *Uterine tissue orientation and stiffness influence cervical tissue stretch*, Reprod Sci 24(1): 171A, F-005, Supp, Mar 2017
- C70** Westervelt A, Fernandez M, Mazza E, Ehret A, Vink J, Wapner R, House M, and **Myers K***, *Biomechanical Simulations of Pregnancy: Fetal Membrane Properties Influence Cervical Tissue Stretch at the Internal Os*, Reprod Sci 24(1): 243A-244A, S-027, Supp, Mar 2017
- C71** **Myers K***, Westervelt A, Perez Colon M, Vink J, Wapner R, and House M, *The effects of maternal anatomy on the mechanical loading of the soft tissue that support the fetus* Conference presentation at the 5th International Conference on Computational and Mathematical Biomedical Engineering, Pittsburg, PA, Apr 10-12, 2017
- C72** **Myers K***, Yao W, Vink J, Wapner R, Gan Y, and Hendon C, *Inverse finite element analysis of soft anisotropic collagenous tissue* Conference presentation at the Conference and Exposition on Experimental and Applied Mechanics, Indianapolis, IN, Jun 12-15, 2017
- C73** Yoshida K, Mahendroo, M and **Myers K***, *Changes in the time-dependent mechanical behavior of the cervix in a normal mouse pregnancy*, Conference presentation at the Summer Biomechanics, Bioengineering, and Biotransport Conference, Tucson, AZ, Jun 21-24, 2017
- C74** Westervelt A, Mazza E, Ehret A, Vink J, Nhan-Chang CL, Wapner R, Gallos G, House M, and **Myers K***, *Biomechanical simulations of pregnancy: the influence of fetal membrane mechanics on uterine and cervical tissue stretch*, Conference presentation at the Summer Biomechanics, Bioengineering, and Biotransport Conference, Tucson, AZ, Jun 21-24, 2017
- C75** Gan Y, Yao W, **Myers K**, Vink J, Wapner R, Hendon C, *Heterogeneity study of the human cervix between the internal os and external os using optical coherence tomography*, Platform Presentation at SPIE Photonics West BIOS. San Francisco, CA, Feb 2018
- C76** Jayyosi C, Lee N, Nallasamy S, Willcockson, A, Mahendroo M, **Myers K***, *A biomechanical signature to assess cervical extracellular components in term and preterm birth*, Reprod Sci 25: 103A, O-139, Supp 1, Mar 2018
- C77** Nallasamy S, Lee N, Jayyosi C, **Myers K**, Mahendroo M, *Decorin and biglycan are required for cervical extracellular matrix structure in pregnancy*, Reprod Sci 25: 113A, T-010, Supp 1, Mar 2018
- C78** Nishikawa M, Dahal S, Feltovich H, Hall T, Gallos G, **Myers K**, Wapner R, Sheetz M, Vink J, *Innervation of the human cervix - do regional differences exist between the internal and external os?*, Reprod Sci 25: 260A, S-021, Supp 1, Mar 2018
- C79** Zyablitskaya M, Amponin DE, Takaoka A, Jayyosi C, **Myers K**, Chen C, Suh L, Nagasaki T, Troke SL, and Paik DC, *Sodium hydroxymethylglycinate via viscous eyedrop for corneal cross-linking in Dutch-belted rabbits: a comparison of 40mM (0.5%) vs 80mM (1%) concentrations*, The Association for Research in Vision and Ophthalmology, ARVO Abstract, Honolulu, HI, Apr 29-May 3, 2018
- C80** Westervelt A, Drehfal L, Feltovich H, Hall T, and **Myers K***, *Biomechanical simulations of pregnancy using human ultrasound data*, Conference presentation at the 8th World Congress of Biomechanics, Dublin, Ireland, Jul 9-12, 2018
- C81** Jayyosi C, Lee N, Nallasamy S, Madhukaran P, Mahendroo M, and **Myers K***, *Swelling behavior of the pregnant mouse cervix in physiological and hyperosmotic solutions*, Poster presentation at the 8th World Congress of Biomechanics, Dublin, Ireland, Jul 9-12, 2018
- C82** **Myers K***, Westervelt A, Carlson L, Nhan-Chang CL, Hall T, Feltovich H, *Patient-specific finite element models of normal pregnancy derived from time-course maternal ultrasound scans*, Conference presentation at 13th World Congress of Computational Mechanics, New York, NY, Jul 23, 2018
- C83** **Myers K***, Jayyosi C, Yoshida K, Mahendroo M, *The experimental characterization of the material remodeling behavior of the mouse cervix in normal pregnancy*, Conference presentation at the 55th Annual Technical Meeting of the Society of Engineering Science, IMDEA Materials, Madrid, Spain

Oct 12, 2018

- C84** Vink J, Dahal S, Li H, Mourad M, Ndubisi C, **Myers K**, Kitajewski J, Sheetz M, Wapner R, Gallos G, *Progesterone decreases human cervical smooth muscle cell contractility*, Am J Obstet Gynecol 220 (1): Supp, PG S372, Jan 2019, Poster Presentation at Society for Maternal Fetal Medicine 39th Annual Pregnancy Meeting, Las Vegas, Nevada, Feb 15, 2019

Invited Lectures

1. *An Investigation of the Structure-Function Relationship in Human Cervical Tissue* by Kristin M. Myers. Department of Engineering, University of Cambridge, Cambridge, UK. Aug 21, 2007.
2. *The Mechanical Behavior of Collagenous Soft Tissue: Reproductive and Ocular Tissues* by Kristin M. Myers. School of Computing & Engineering, University of Missouri, Kansas City, Kansas City, MO, Sep 17, 2009.
3. *Understanding the Mechanical Role of the Cervix During Pregnancy* by Kristin M. Myers. Department of Mechanical Engineering and Material Science, Washington University, St. Louis, MO, Nov 7, 2013.
4. *Understand the Mechanical Role of the Cervix During Pregnancy* by Kristin M. Myers. Department of Mechanical Engineering and Industrial Engineering, New Jersey Institute of Technology, Newark, NJ, Apr 2, 2014.
5. *The Biochemical and Mechanical Etiologies of Spontaneous Preterm Birth* by Joy Vink, George Gallos, and Kristin Myers. Department of Obstetrics and Gynecology Grand Rounds, Columbia University Medical Center, New York, NY, Mar 20, 2014.
6. *Cervical Tissue Remodeling and Collagen Crosslink Turnover in Pregnancy* by Kristin Myers. Symposium in honor of Alan Wineman on the occasion of his 50th year at the University of Michigan, 2014 US National Congress of Theoretical and Applied Mechanics (USNCTAM) Conference, Michigan State University, East Lansing Michigan, Jun 4, 2014.
7. *The Constitutive Modeling of Human Cervical Tissue* by Kristin Myers. Reproductive Biomechanics Symposium, World Congress Biomechanics, Boston, MA, Jul 8, 2014.
8. *A Finite Element Model of the Female Pelvic Region during Pregnancy* by Kristin Myers, FeBio Symposium, World Congress Biomechanics, Boston, MA, Jul 10, 2014.
9. *Understanding the Mechanical Role of the Cervix During Pregnancy* by Kristin M. Myers. Departments of Mechanical Engineering and Biomedical Engineering, Columbia University, New York, NY, Sep 19, 2014.
10. *Understanding the Mechanical Role of the Cervix During Pregnancy* by Kristin M. Myers. Department of Mechanical Engineering, Cornell University, Ithaca, NY, Sep 30, 2014.
11. *Understanding the Mechanical Role of the Cervix During Pregnancy* by Kristin M. Myers. Institute for Mechanics, Department of Mechanical Engineering, ETH Swiss Federal Institute of Technology, Zurich, Switzerland, Oct 17, 2014.
12. *Understanding the Mechanical Role of the Cervix During Pregnancy* by Kristin M. Myers. Department of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, Nov 19, 2014.
13. *Understanding the Mechanical Role of the Cervix During Pregnancy* by Kristin M. Myers. Program in Integrated Physiology/Reproductive Sciences, Department of Obstetrics and Gynecology, University of Colorado Denver Anschutz Medical Campus, Denver, CO, Dec 9, 2014.
14. *Understanding the Mechanical Role of the Cervix During Pregnancy* by Kristin M. Myers. Department of Mechanical Engineering, University of Colorado, Boulder, CO, Dec 10, 2014.
15. *The Effect of the Fetal Membrane Prestretch on Cervical Loading During Pregnancy* by Kristin M. Myers. Reproductive Biomechanics Symposium, American Society of Biomechanics, Columbus, OH, Aug 8, 2015.
16. *The Mechanical Environment of Pregnancy* by Kristin M. Myers. Department of Biomedical Engineering, Tulane University, New Orleans, LA, Sep 8, 2016.
17. *The Mechanical Environment of Pregnancy* by Kristin M. Myers. Department of Biomedical Engineering, Vanderbilt University, Nashville, TN, Sep 13, 2016.
18. *The Mechanical Environment of Pregnancy* by Kristin M. Myers. Department of Mechanical Engineering, University of Wisconsin, Madison, WI Oct 17, 2016.
19. *The Mechanical Environment of Pregnancy* by Kristin M. Myers. Department of Mechanical Engineering, Harvard University, Cambridge, MA Oct 26, 2016.

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20. *The Mechanical Environment of Pregnancy* by Kristin M. Myers. Department of Biomedical Engineering, University of Pittsburg, Pittsburg, PA Nov 3, 2016.
 21. *The Biomechanical Environment of Pregnancy* poster presentation by Kristin M. Myers. Burroughs Wellcome Fund/ March of Dimes 6th biennial symposium entitled *Preventing Prematurity: Establishing a Network for Innovation and Discovery*, Research Triangle Park, NC, Dec 5-6, 2016.
 22. *The Mechanical Environment of Pregnancy* by Kristin M. Myers. Y. C. Fung Young Investigators Award Lecture at the Summer Biomechanics, Bioengineering, and Biotransport Conference, Tucson, AZ, Jun 22, 2017.
 23. *Cervical Etiologies Of Spontaneous Preterm Birth Where Are We Now?* by Joy Vink and Kristin Myers. Department of Obstetrics and Gynecology Grand Rounds, Columbia University Medical Center, New York, NY, Jun 29, 2017.
 24. *The Biomechanical Evaluation of Soft Tissue Stress and Stretch in Pregnancy* by Kristin M. Myers. Departments of Mechanical and Biomedical Engineering, Washington University, St. Louis, MO, Sep 7, 2017.
 25. *The Biomechanical Evaluation of Soft Tissue Stress and Stretch in Pregnancy* by Kristin M. Myers. Department of Mechanical Engineering, University of Michigan, Ann Arbor, MI, Oct 31, 2017.
 26. *The Biomechanical Evaluation of Soft Tissue Stress and Stretch in Pregnancy* by Kristin M. Myers. Department of Mechanical Engineering, Michigan State University, East Lansing, MI, Nov 2, 2017.
 27. *Personalized Biomechanical Models of Pregnancy - An Engineering Perspective of Preterm Birth* by Kristin M. Myers. Department of Obstetrics and Gynecology Grand Rounds, University of Pennsylvania, PA, Nov 16, 2017.
 28. *The Biomechanical Evaluation of Soft Tissue Stress and Stretch in Pregnancy* by Kristin M. Myers. Department of Biomedical Engineering, Rice University, Houston, TX, Nov 28, 2017.
 29. *Personalized Biomechanical Models of Human Pregnancy - Integrating with Clinical Care* by Kristin M. Myers. Reproductive Biomechanics Symposium, 8th World Congress Biomechanics, Dublin, Ireland, Jul 12, 2018.
 30. *Growth and Remodeling Soft Tissue Mechanics in Pregnancy* by Kristin M. Myers. Department of Mechanical Engineering, Stevens Institute of Technology, Hoboken, NJ, Nov 8, 2018.
 31. *Growth and Remodeling Soft Tissue Mechanics in Pregnancy* by Kristin M. Myers. Department of Mechanical & Aerospace Engineering, George Washington University, Washington, DC, Nov 15, 2018.
 32. *Growth and Remodeling Soft Tissue Mechanics in Pregnancy* by Kristin M. Myers. Department of Biomedical Engineering & Mechanics, Virginia Tech, Blacksburg, VA, Feb 12, 2019.
 33. *Computational Biomechanical Models of Human Pregnancy - Evaluating the Risk of Preterm Birth* by Kristin M. Myers. Solid Mechanics & Materials Engineering Group, Department of Engineering Science, University of Oxford, Oxford, UK, Mar, 2019.
 34. *Personalized Biomechanical Models of Pregnancy - An Engineering Perspective of Preterm Birth* by Kristin M. Myers. Reproduction Meets Engineering Symposium, 66th Annual Meeting of the Society of Reproductive Investigators, Paris, France, Mar 15, 2019.

Theses Supervised

Summary

	Total	Completed	In Progress
S.M. as Reader	2	2	0

Doctoral	Total	Completed	In Progress
As Supervisor	8	3	5
As Reader	22	22	0

Doctoral Theses (completed), Supervisor

- Wang Yao, Ph.D.

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- *Compressive Mechanical Properties and Collagen Fiber Orientation and Dispersion in the Cervix of Non-Pregnant and Pregnant Women*
 - Defended: April 14, 2017
 - Current Position: Consultant, Boston Consulting Group
 - Michael Fernandez, Ph.D.
 - *The biomechanics of pregnancy: Simulating pregnancy mechanics, evaluating preterm delivery interventions, and measuring in vivo mechanical properties*
 - Defended: April 21, 2016
 - Current Position: Lead Systems Engineer, AeroFarms, Newark, NJ
 - Kyoko Yoshida, Ph.D.
 - *Characterizing the structure-function relationships of the mouse cervix in pregnancy: Towards the development of a hormone-mediated material model for cervical remodeling.*
 - Defended: April 27, 2016
 - Current Position: Postdoctoral Associate, Cardiac Biomechanics Group (PI: Jeff Holmes, Ph.D.), University of Virginia

Doctoral Theses (completed), As Reader (On Thesis Committee)

1. Muin Öztop
 - *Multiscale Experimental Analysis in Plasticity : Linking Dislocation Structures to Continuum Fields*
 - 2011
2. Oya Okman
 - *Nanoporous Gold: Mechanics of Fabrication and Actuation*
 - 2012
3. Bhavick Nathwani
 - *Structural characterization of primary cilia using accelerated piezoelectrically driven STED nanoscopy*
 - 2012
4. Ryan Cooper
 - *Thin Film Mechanics*
 - 2014
5. Mirkó Palla
 - *Novel Engineering Approaches for DNA Sequencing and Analysis*
 - 2014
6. Yuan Zhang
 - *Identification of Key Structural Elements of ATP-Dependent Molecular Motors*
 - 2014
7. Jaeyoung Yang
 - *Micro and Nanoscale Aptasensors for Detection of Low Molecular Weight Biomarkers Towards Clinical Diagnostic Applications*
 - 2014
8. Abdulhamit Sarac
 - *Net Burgers Density Vector Fields in Crystal Plasticity: Characteristic Length Scales and Constitutive Validation*
 - 2014
9. Nicholas Petrone
 - *Large-area Graphene Synthesized by Chemical Vapor Deposition for High-Performance, Flexible Electronics*
 - 2014
10. Sevan Oungoulian

-
- *Friction and Wear Measurements of Bovine Articular Cartilage Against Non-Native Materials*
 - 2014
11. Sabrina Badir (ETH Zurich)
 - *Towards a Diagnostic Device - Mechanical Characterization of the Uterine Cervix in Pregnancy*
 - 2015
 12. Charles Yongpravat
 - *Pre-Surgical Planning of Total Shoulder Arthroplasty and Glenohumeral Instability Repair Using Patient-Specific Computer Modeling*
 - 2015
 13. Xian Zhang
 - *Nano-fabrication and Physical Properties of Nano-materials (CNTS and TMDs)*
 - 2015
 14. Sung Joo An
 - *The Characterization of Mechanical Behaviors of Two Dimensional Nanomaterials with Grains and Grain Boundaries*
 - 2015
 15. Mufeng Hu
 - *Biomaterial-based cell culture platform for podocyte phenotype study with shape and substrate rigidity control*
 - 2016
 16. Brian Jones
 - *Articular Cartilage Contact Mechanics and Development of a Bendable Osteochondral Allograft*
 - 2016
 17. Robert Nims
 - *Optimizing Cartilage Tissue Engineering through Computational Growth Models and Experimental Culture Protocols*
 - 2016
 18. Yu Gan
 - *Image analytic tools for tissue characterization using optical coherence tomography*
 - 2017
 19. Jay (Chieh) Hou
 - *Implementation and validation of finite element framework for passive and active membrane transport in deformable multiphasic models of biological tissues and cells*
 - 2017
 20. Timothy R. Olsen
 - *Selection of Aptamers for Precision Medicine Biomarkers*
 - 2018
 21. Junyi Shang
 - *Experimentation and Multiphysical Modeling of Bioanalytical Microdevices*
 - 2019
 22. Theresa Huang Lye
 - *Characterization and Modeling of the Human Left Atrium using Optical Coherence Tomography*
 - 2019

M.S. Graduate Students Advised

1. Veronica Over.....June 2018 to present
2. John Lin (Dept. of Biomedical Engineering) September 2013 to September 2014

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3. Richa Batra September 2013 to September 2014
 4. Virginia Franco September 2010 to May 2011

Undergraduate Students, High School Students and Teachers in Laboratory (RET refer to NSF-funded Research Experience for Teachers program.)

- Taylor Chaintreuil (2010-2012), Eli Mondragon (2011-2013), Thomas McManus (RET, 2013), Andreas Gandolfo (2013), Kim Milam (2013), Jessica Cohen (2013-2014), Noah Zweben (2014), Alexandra Pan (2014), Ayela Ginette Ayih (high school student SEAS Engineering the Next Generation Program 2015), Raushan Rupa (high school student SEAS Engineering the Next Generation Program 2015), Nathan Werner (2015-2016), Katie Vollen (high school student SEAS Engineering the Next Generation Program 2016), Roselkis Morla (high school student SEAS Engineering the Next Generation Program 2016), Martin Luis Perez Colon (2015-2017), Mia Saade (2017), William Eugene McKee (2015-2017), Lily Zhao (2016-present)

Current Research Group (students and postdoctoral associates who are in progress)

1. Andrea Westervelt, Ph.D. Candidate September 2014 to present
 - Proposed thesis title: *Ultrasound-based Parametric Finite Element Models of Pregnancy*
2. Nicole Lee, Ph.D. Candidate September 2016 to present
 - Proposed thesis title: *Hormone-mediated Growth and Remodeling of the Uterine Cervix*
3. Lei Shi, Ph.D. Candidate September 2016 to present
 - Proposed thesis title: *The Viscoelastic Material Response of Soft Biological Tissue*
4. Shuyang Fang, Ph.D. Candidate March 2017 to present
 - Proposed thesis title: *The Mechanical Environment of a Macaque Pregnancy*
5. Charles Jayyosi, Ph.D., Post-Doctoral Researcher August 2016 to present
6. Erin Louwagie, Ph.D. Candidate January 2019 to present
 - Proposed thesis title: *Growth and Remodeling of Human Pregnancy*

Educational Outreach

1. Faculty mentor for a high school student from English Language Learners And International Support Preparatory Academy and The Columbia Secondary School for Math, Science, & Engineering as a part of Columbia University SEAS Engineering the Next Generation Program. 06/17-08/17
2. Faculty mentor for a high school student from English Language Learners And International Support Preparatory Academy and The Columbia Secondary School for Math, Science, & Engineering as a part of Columbia University SEAS Engineering the Next Generation Program. 06/16-08/16
3. Faculty mentor for two high school students from English Language Learners And International Support Preparatory Academy as a part of Columbia University SEAS Engineering the Next Generation Program. 06/15-08/15
4. Workshop host for the SWE Engineering Exploration Experience (EEE) at Columbia University SEAS. The Myers Soft Tissue lab conducted a hands-on workshop for local high school girls to demonstrate the principals of biomechanics. 03/28/15
5. Research Mentor for Thomas McManus, a teacher from the Melrose School PS/MS 29, which is a pre-kindergarten to eighth grade elementary and middle school in the southern Bronx neighborhood of Melrose for the NSF RET (Research Experience for Teachers) program. 06/13-08/13
6. Keynote Speaker and Workshop Leader at the Math Science Technology Symposium for Middle School Girls at the Macomb Intermediate School District, Michigan. Over 400 high school and middle school girls participated. 05/13
7. Workshop leader at the Women’s Innovation Symposium in Engineering at Poly Prep Country Day School in Brooklyn, New York. Over 40 high school and middle school girls participated. 04/12