

Chung-Hao (C.-H.) Lee, Ph.D.

School of Aerospace and Mechanical Engineering
Gallogly College of Engineering
The University of Oklahoma
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EDUCATION

Ph.D. Civil Engineering, December 2011, University of California, Los Angeles (UCLA),
Los Angeles, CA
M.S. Civil Engineering, June 2005, National Taiwan University, Taipei Taiwan
B.S. Civil Engineering, June 2003, National Taiwan University, Taipei Taiwan

PROFESSIONAL EXPERIENCE

08/2016–Present Assistant Professor, School of Aerospace and Mechanical Engineering,
The University of Oklahoma (OU), Norman, OK
01/2017–Present Affiliated Faculty Member, Institute for Biomedical Engineering, Science and
Technology (IBEST), The University of Oklahoma, Norman, OK
02/2012–07/2016 ICES Postdoctoral Fellow, Institute for Computational Engineering and Sciences
(ICES), The University of Texas at Austin, Austin, TX
09/2015–01/2016 Lecturer, Department of Aerospace Engineering and Engineering Mechanics,
The University of Texas at Austin, Austin, TX
01/2014–12/2015 American Heart Association Postdoctoral Fellow,
The University of Texas at Austin (UT Austin), Austin, TX

RESEARCH INTERESTS

1. Biomechanics of cardiovascular systems – cardiac heart valves & congenital heart defects
2. Multiscale characterization of structural and mechanical properties of soft tissues
3. Shape memory polymer-based embolization device development for intracranial aneurysms
4. Advanced finite element and meshfree methods for image-based computational biomechanics

HONORS AND AWARDS

1. Featured Cover Art: *Advanced Engineering Materials (AEM)*, Volume 23, Issue 6, 2021
2. OU Institute for the Study of Human Flourishing Teaching Intellectual Virtues Program Award, 2021
3. OU VPRP Strategic Equipment Investment Program Award, 2021
4. University Distinguished Teaching Award, 2020
5. Featured Cover Art: *International Journal for Numerical Methods in Biomedical Engineering (IJNMBE)*, Volume 36, Issue 7, 2020
6. OU VPR Faculty Investment Program Award FY2020, 2020
7. Nancy L. Mergler Faculty Mentor Award for Undergraduate Research, 2018
8. OU VPR Faculty Investment Program Award FY2018, 2018
9. OU VPR Faculty Investment Program Award FY2017, 2017
10. American Heart Association Scientist Development Grant (SDG), 7/2016–6/2021
11. American Heart Association Postdoctoral Fellowship, 1/2014–12/2015
12. First Place Winner for the Dimitris N. Chorafas Foundation Awards, 2011

13. UCLA Dissertation Year Fellowship, 9/2010–8/2011
14. Travel Award from the 1st Global Congress on NanoEngineering for Medicine and Biology, 2010
15. Travel Award from the 10th U.S. National Congress on Computational Mechanics, 2009
16. UCLA Chancellor's Prize Summer Mentorship, 2008 and 2009
17. UCLA Civil Engineering Graduate Student Fellowship, 2007, 2008 and 2009

Media Coverage

1. CellScale Company's Research Collection: "Dr. Chung-Hao Lee's Publications and Research," 2020
2. Story featured on OUDAILY "4 OU Students Named Finalists at 2019 Summer Bioengineering Conference," 2019
3. Story on AME Blog "Gaylord student produces video of Dr. Chung-Hao Lee's Research," 2018
4. Story featured on NewsWise "OU Researcher Uses Geometry for Affairs of the Heart," 2018
5. Faculty Research Highlight in OU AME Annual Newsletter "Development of Novel Medical Device for Intracranial Aneurysms," 2018
6. Faculty Research Highlight in OU AME Annual Newsletter "Computer-Assisted Management and Treatment of Functional Tricuspid Regurgitation," 2017
7. Cited in International Science Grid This Week (isgtw) "Developing models to predict long-term effects of heart repair," 4/16/2014
8. Story featured in Reporting Texas "Researchers work to see the heart more clearly and save lives," 12/3/2013

EXTERNAL FUNDING

1. **Co-PI**, "Probabilistic in-silico modeling-guided management of tricuspid regurgitation in hypoplastic left heart syndrome", the Presbyterian Health Foundation (PHF) Year Three Team Science Grant Program, \$100,000, 7/1/2021–6/30/2022 (subaward portion to OU Norman: \$38,493, PI: Dr. Harold M. Burkhart at OU Health Sciences Center), C-HL Portion: 100% Credit.
2. **Sponsor/Mentor**, "In-silico guided assessment and management of tricuspid regurgitation in patients with hypoplastic left heart syndrome," American Heart Association Predoctoral Fellowship – Children's Heart Foundation, \$63,040, 4/1/2021–3/31/2023 (advised trainee: Devin Laurence)
3. **Co-PI**, "Probabilistic in-silico modeling-guided management of tricuspid regurgitation in hypoplastic left heart syndrome", the Presbyterian Health Foundation (PHF) Year Two Team Science Grant Program, \$93,926, 7/1/2020–6/30/2021 (subaward portion to OU Norman: \$34,742, PI: Dr. Harold M. Burkhart at OU Health Sciences Center), C-HL Portion: 100% Credit.
4. **Co-PI**, "Probabilistic in-silico modeling-guided management of tricuspid regurgitation in hypoplastic left heart syndrome", the Presbyterian Health Foundation (PHF) Year One Team Science Grant Program, \$100,000, 7/1/2019–6/30/2020 (subaward portion to OU Norman: \$32,873, PI: Dr. Harold M. Burkhart at OU Health Sciences Center), C-HL Portion: 100% Credit.
5. **PI**, "Novel shape memory polymer devices for optimal endovascular embolization of intracranial aneurysms", Oklahoma Center for the Advancement of Science and Technology (OCAST) Health Research Program, \$135,000, 9/1/2018–1/31/2022, C-HL Portion: 45% Credit.
6. **PI**, "SMP-based devices for optimal endovascular embolization of intracranial aneurysms", Oklahoma Shared Clinical and Translation Resources (OSCTR) Pilot Research Program, \$74,000, 7/1/2017–6/30/2018, C-HL Portion: 50% Credit.
7. **PI**, "Computer-assisted management and treatment of functional tricuspid regurgitation", American Heart Association Scientist Development Grant (SDG), \$307,049, 7/1/2016–6/30/2021, C-HL Portion: 100% Credit.

INSTITUTIONAL FUNDING

1. **PI**, “*Envision One cDLM 3D printing system*”, OU VPRP Strategic Equipment Investment Program Award, \$41,643, 6/1/2021–12/1/2021
2. **PI**, “*A Multi-scale investigation of human brain aneurysm tissue*”, OU IBEST-OUHSC Funding for Interdisciplinary Research, \$30,000, 1/13/2020–10/27/2020
3. **PI**, “*Novel multiscale investigation of degenerative valvular heart disease: Combining tissue mechanics, microstructure, and morphology*”, OU VPR Faculty Investment Program Award FY2020, \$14,953, 10/1/2019–9/30/2020
4. **PI**, “*An investigation of tissue and structural remodeling during the development and progression of intracranial aneurysm*”, OU IBEST-OUHSC Funding for Interdisciplinary Research, \$30,000, 4/1/2018–3/31/2019
5. **PI**, “*Integration of an ex-vivo beating heart model with MRI for development of subject-specific computational models*”, OU VPR Faculty Investment Program Award FY2018, \$15,000, 12/1/2017–11/30/2018
6. **PI**, “*Computer simulation-guided 3D printing technology for fabricating biomaterials with applications to the treatment of cerebral aneurysms*”, OU VPR Faculty Investment Program Award FY2017, \$14,931, 6/1/2017–5/31/2018
7. **PI**, “*3D printing for fabricating biomaterials for personalized treatment of cerebral aneurysms*”, Gallogly College of Engineering SEED Funding, \$10,000, 05/01/2017–01/31/2018

COURSES TAUGHT

The University of Oklahoma (2016–Present): Total Class Enrollment: 567

Total Undergraduate Research Enrollment: 91

Mech. Eng. Senior Design Capstone Mentees: 31

Semester/Course			Enroll- ment	Preparedness (Q2)			Effectiveness (Q10)			
				CHL	Dpt.	Col.	CHL	Dpt.	Col.	
Fall '16	AME 3723	Numerical Methods for Engineering Computation	75	4.76	4.25	4.32	4.76	4.10	4.21	
Sp '17	AME 4213	Biomechanics I (Undergraduate/Graduate)	20	12	4.52	4.23	4.26	3.82	4.17	4.19
	AME 5213			8						
Fall '17	AME 3723	Numerical Methods for Engineering Computation	48	4.80	4.27	4.26	4.65	4.10	4.16	
Sp '18	AME 4213	Biomechanics I (Undergraduate/Graduate)	19	7	4.86	4.28	4.24	4.73	4.24	4.14
	AME 5213			12						
Sp '19	AME 4213	Biomechanics I (Undergraduate/Graduate)	24	12	4.77	4.09	4.24	4.50	4.01	4.17
	AME 5213 BME 5213			12						
Su '19	AME 3143	Solid Mechanics	11	4.60	4.54	4.45	4.80	4.67	4.52	
Fall '19	AME 3112	Solid Mechanics Laboratory	139	4.55	4.16	4.34	4.39	3.93	4.24	
Sp '20	AME 4213	Biomechanics I (Undergraduate/Graduate)	17	14	4.75	4.18	4.28	4.38	4.11	4.21
	AME 5213 BME 5213			3						
	AME 4553	Design Practicum	12	4.83	4.18	4.28	4.83	4.10	4.21	

Fall '20	AME 3112	Solid Mechanics Laboratory	144	3.72	4.04	4.29	3.16	3.73	4.18
	AME 3723	Numerical Methods for Engineering Computation	58	3.44	4.04	4.29	2.60	3.73	4.18
Fall '21	AME 3112	Solid Mechanics Laboratory	147	Current Teaching					
	AME 3723	Numerical Methods for Engineering Computation	55						
Overall Average (Fall '16 ~ Fall '20)			567	4.31	4.24	4.29	3.98	4.15	4.22

CHL: Dr. C.-H. Lee's Scores, Dpt.: Department Scores (School of AME), Coll.: College Scores (GCoE)

Question 2 (Q2): The instructor was well-organized and made adequate preparation for class.

Question 10 (Q10): In general, the instructor taught this course effectively.

The University of Texas at Austin (2015)

Fall '15 ASE 301

Introduction to Computer Programming, Enrollment 123
(Instructor Rating: 4.1, Department/College Average: 4.2/4.1)

AWARDS OF MENTORED STUDENTS

1. Katherine Casey, First Place Award for the B.S.-Level Student Poster Competition, 2021 Summer Biomechanics, Bioengineering, and Biotransport Conference, 2021
2. Luke Hudson, Finalist for the M.S.-Level Student Poster Competition, 2021 Summer Biomechanics, Bioengineering, and Biotransport Conference, 2021
3. Sergio Pineda-Castillo, 2nd Place Award for the Best Student Micrograph Contest, Oklahoma Microscopy Society Annual Spring Meeting, 2021
4. Seapehi Molise, Ryan Myers, and Ryan Kenny, First Place Award (Aerospace & Mechanical Engineering Category) at OU Undergraduate Research Day, 2021
5. Colton Ross, 3rd Place for the Best Paper Award, the 40th AIAA/ASME Regional Symposium, 2021
6. Devin Laurence and Colton Ross, Honorable Short-Listed Presenters, the 40th AIAA/ASME Regional Symposium, 2021
7. Devin Laurence, American Heart Association (AHA) Predoctoral Fellowship – Congenital Heart Defect Research Program, 2020
8. Devin Laurence, 2nd Place for the Student Paper Competition Ph.D.-Level Award, 2020 Summer Biomechanics, Bioengineering, and Biotransport Conference, 2020
9. Luke Hudson, 3rd Place for the Student Poster Competition B.S.-Level Award, 2020 Summer Biomechanics, Bioengineering, and Biotransport Conference, 2020
10. Colton Ross, Finalist for the M.S.-Level Student Poster Competition, 2020 Summer Biomechanics, Bioengineering, and Biotransport Conference, 2020
11. Grace Duginski, Finalist for the B.S.-Level Student Poster Competition, 2020 Summer Biomechanics, Bioengineering, and Biotransport Conference, 2020
12. Grace Duginski, OU Honors College Award for Distinction in Undergraduate Research, 2020
13. Allyson Echols, Honorable Mention at OU Undergraduate Research Day, 2020
14. Colton Ross, Graduate Research Fellowship Award, the National Science Foundation, 2020
15. Hunter Lau, OU AME Outstanding Junior in Mechanical Engineering, 2020
16. Colton Ross, Robberson Travel Award for Attending BMES Annual Meeting, 2019
17. Devin Laurence, Graduate Research Fellowship Award, the National Science Foundation, 2019

18. Devin Laurence, 1st Place for the Student Poster Competition M.S.-Level Award, Summer Biomechanics, Bioengineering, and Biotransport Conference, 2019
19. Samuel Jett, 3rd Place for the Student Poster Competition M.S.-Level Award, Summer Biomechanics, Bioengineering, and Biotransport Conference, 2019
20. Colton Ross and Cortland Johns, Finalists for the B.S.-Level Student Poster Competition, Summer Biomechanics, Bioengineering, and Biotransport Conference, 2019
21. Devin Laurence, 1st Place Award for the Student Poster Competition, 3rd Annual OU-OUHSC Biomedical Engineering Symposium, 2019
22. Samuel Jett, 3rd Place Awards for the Student Poster Competition, 3rd Annual OU-OUHSC Biomedical Engineering Symposium, 2019
23. Devin Laurence, Robberson Travel Award for Attending SB³C2019, 2019
24. Robert Kunkel, Robberson Travel Award for Attending SB³C2019, 2019
25. Devin Laurence, OU Foundation Harvey Memorial Scholarship, 2019
26. Luke Hudson, ASME Central Oklahoma Section Undergraduate Scholarship, 2019
27. Colton Ross, Ryan Bodlak, Luke Whitney, Wyatt Maney, Robert Beem, Presentation 3rd Place, ME Capstone Design, 2019
28. Devin Laurence and Colton Ross, OU AME Graduate Scholarships, 2019
29. Devin Laurence, Gallogly College of Engineering PhD Recruitment Excellence Fellowship, 2019
30. Devin Laurence, OU Alumni and Foundation Recruitment Fellowship, 2019
31. Cortland Johns, OU AME Outstanding Junior in Mechanical Engineering, 2019
32. Colton Ross, OU Honors College Award for Most Outstanding Project Grand Prize, 2019
33. Daniel Tsai, OU Honors College Award for Distinction in Undergraduate Research, 2019
34. Cortland Johns, Honorable Mention at OU Undergraduate Research Day, 2019
35. Katherine Kramer, Gallogly College of Engineering Outstanding Senior Award, 2018
36. Katherine Kramer, Devin Laurence, Colton Ross, Cortland Johns, and Leanna Corbett, Donna Shirley Engineering Award, 2018
37. Samuel Jett, Finalists for the B.S.-Level Student Poster Competition, 8th World Congress of Biomechanics, 2018
38. Samuel Jett, Octavio Serrano, Donnie Robinson, Zach Schuermann, Keaton Mullenix, 1st Place Outstanding Testing Category & 3rd Place Overall, ME Capstone Design Poster Fair, 2018
39. Katherine Kramer, OU Regent's Award for Outstanding Juniors, 2018
40. Devin Laurence, Grand Prize at 2018 Research Day at the Capitol, the Oklahoma State Regents for Higher Education & Oklahoma Established Program to Stimulate Competitive Research, 2018
41. Colton Ross, ASME Central Oklahoma Section Undergraduate Scholarship, 2018
42. Katherine Kramer, OU Foundation Harvey Memorial Scholarship, 2018
43. Colton Ross, OU AME Outstanding Junior in Mechanical Engineering, 2018
44. Devin Laurence, ASME Central Oklahoma Section Undergraduate Scholarship, 2017
45. Katherine Kramer, Stephenson School of Biomedical Engineering Outstanding Undergraduate Research Award, 2017
46. Honors Research Assistant Program, the Honors College:
 - Mulan Tang, Spring '21
 - Katherine Casey, Fall '20
 - Cortland Johns, Spring '19, Fall '19
 - Robert Kunkel, Fall '17, Spring '18
47. Undergraduate Research Opportunities Program (UROP), the Honors College:
 - Spring '21: Daniel Fitzpatrick, Kevin Pham, Michael Barber, Caylin Nimmo
 - Fall '20: Morgan Lau, Ryan Myers, Clare Hillshafer, Maddison Burns

- Spring '20: Hunter Lau, Brennan Mullins, Mulan Tang, Marwan Hashem
 - Fall '19: Katherine Casey, Payton Woolard, ME Capstone (Eleana Cabello, Marwan Hashem, Michael Barber, Payton Woolard), ME-BME Interdisciplinary Capstone (Luke Hudson, Grace Duginski, Cortland Johns)
 - Spring '19: Grace Duginski, Luke Hudson, Allyson Echols, ME Capstone Team (Colton Ross, Luke Whitney, Ryan Bodlak, Wyatt Maney)
 - Fall '18: Cortland Johns, Daniel Tsai, Grace Duginski, Ean Beyer
 - Spring '18: Colton Ross, Katherine Kramer, Devin Laurence
48. Mentored Research Fellowship (MRF), Office of Undergraduate Research:
- Fall '18: Lauren Evans, Cortland Johns, Ean Beyer, Daniel Tsai
 - Spring '18: Devin Laurence, Robert Kunkel, Samuel Jett, Colton Ross, Katherine Kramer, Jacob Richardson
 - Fall '17: Devin Laurence, Samuel Jett, Robert Kunkel, Octavio Serrano, McKenzie Makovec
49. Mentored Oklahoma Louis Strokes Alliance for Minority Participation (OK-LSAMP) Scholars: Octavio Serrano, Lauren Evans, Ean Beyer, Dylan Portillo, Eleana Cabello, Michael Barber

PUBLICATIONS

A. Peer-Reviewed Journal Publications (40 Papers since joining the University of Oklahoma)

(* denotes mentored student, # denotes mentored postdoctoral fellow/research scientist, and § denotes *corresponding author*)

1. Ross, C.J.* , Laurence, D.W.* , Echols, A.L., Babu, A.R., Gu, T., Duginski, G.A.* , Johns, C.H.* , Mullins, B.T.* , Casey, K.M.* , Laurence, K.A.* , Zhao, Y.D., Amini, R., Fung, K.-M., Mir, A., Burkhart, H.M., Wu, Y., Holzapfel, G.A., and Lee, C.-H.§, “Effects of enzyme-based removal of collagen and elastin constituents on the biaxial mechanical responses of porcine atrioventricular heart valve anterior leaflets.” *Acta Biomaterialia* (accepted), DOI: [10.1016/j.actbio.2021.08.043](https://doi.org/10.1016/j.actbio.2021.08.043).
2. Laurence, D.W.* , and Lee, C.-H.§, “Determination of a strain energy density function for the tricuspid valve leaflets using constant invariant-based mechanical characterizations.” *Journal of Biomechanical Engineering* (accepted for publication, Aug. 13, 2021).
3. Johnson, E.L., Laurence, D.W.* , Crisp, C.E., Whitney, L.C.* , Xu, F., Mir, A., Burkhart, H.M., Lee, C.-H.§, and Hsu, M.-C.§, “Parameterization, geometric modeling, and isogeometric analysis of tricuspid heart valves.” *Computer Methods in Applied Mechanics and Engineering*, 384, 113960 (28 pages), 2021.
4. Ross, C.J.* , Mullins, B.T.* , Hillshafer, C.E.* , Mir, A., Burkhart, H.M., and Lee, C.-H.§, “Evaluation of affine fiber kinematics in porcine tricuspid valve leaflets using polarized spatial frequency domain imaging and planar biaxial testing.” *Journal of Biomechanics*, 123, 110475, 2021.
5. Pineda-Castillo* , S., Luo, J., Lee, H., Bohnstedt, B.N., Liu, Y.§, and Lee, C.-H.§, “Effects of carbon nanotube infiltration on a shape memory polymer-based device for brain aneurysm therapeutics: Design and characterization of a Joule-heating triggering mechanism.” *Advanced Engineering Materials*, 2100322 (11 pages), 2021.
6. Laurence, D.W.* , Homburg, H., Yan, F., Tang, Q., Fung, K.-M., Bohnstedt, B.N., Holzapfel, G.A., and Lee, C.-H.§, “A pilot study on biaxial mechanical, collagen microstructural, morphological characterizations of a resected human intracranial aneurysm.” *Scientific Report*, 11: 3525 (15 pages), 2021.
7. He, Q., Laurence, D.W.* , Lee, C.-H., and Chen, J.-S.§, “Manifold learning based data-driven modeling for soft biological tissues.” *Journal of Biomechanics*, 117: 110124, 2021.

8. Lee, C.-H.[§], Liu, Y., Moore, M., Ge, X., and Siddique, Z. “Enhancement of stay-at-home learning for biomechanics laboratory course during COVID-19 pandemic.” *Biomedical Engineering Education*, 1: 149-154, 2021.
9. Ross, C.J.^{*}, Hsu, M.-C., Baumwart, R., Mir, A., Burkhart, H.M., Holzapfel, G.A., Wu, Y.[#], and Lee, C.-H.[§], “Quantification of load-dependent changes in the collagen fiber architecture for strut chordae tendineae-leaflet insertion of porcine atrioventricular heart valves.” *Biomechanics and Modeling in Mechanobiology*, 20: 223-241, 2021.
10. Ayoub, S., Howsmon, D.P., Lee, C.-H., and Sacks, M.S.[§], “On the role of predicted mitral valve interstitial cell deformation on its biosynthetic behavior.” *Biomechanics and Modeling in Mechanobiology*, 20: 135-144, 2021.
11. Fisher, H.N.^{*}, Woolard, P.^{*}, Ross, C.J.^{*§}, Kunkel, R.P.^{*}, Bohnstedt, B.N., Liu, Y., and Lee, C.-H.[§], “Thermomechanical data of polyurethane shape memory polymer: Considering varying compositions.” *Data in Brief*, 32: 106294, 2020.
12. Lee, C.-H.[§], and Liao, Jun, “Introduction to Special Issue on *Advances in Biological Tissue Biomechanics* (Editorial).” *Bioengineering*, 7(3): 95 (6 pages), 2020
13. Ross, C.J.^{*}, Zheng, J., Ma, L., Wu, Y.[#], and Lee, C.-H.[§], “Mechanics and microstructure of the atrioventricular heart valve chordae tendineae: A review.” *Bioengineering*, 7(1): 25 (15 pages), 2020.
14. Hudson, L.T.^{*}, Jett, S.V.^{*}, Kramer, K.E.^{*}, Laurence, D.W.^{*}, Ross, C.J.^{*}, Towner, R.A., Baumwart, R., Lim, K.M., Mir, A., Burkhart, H.M., Wu, Y.[#], and Lee, C.-H.[§], “A pilot study on linking tissue mechanics with load-dependent collagen microstructures in porcine tricuspid valve leaflets.” *Bioengineering*, 7(2): 60 (21 pages), 2020.
15. Laurence, D.W.^{*}, Johnson, E.L., Hsu, M.-C., Baumwart, R., Mir, A., Burkhart, H.M., Holzapfel, G.A., Wu, Y.[#], and Lee, C.-H.[§], “A pilot in-silico modeling-based study of the pathological effects on the biomechanical function of tricuspid valves.” *International Journal for Numerical Methods in Biomedical Engineering*, 36(7): e3346 (24 pages), 2020.
16. Jett, S.V.^{*}, Hudson, L.T.^{*}, Baumwart, R., Bohnstedt, B.N., Mir, A., Burkhart, H.M., Holzapfel, G.A., Wu, Y.[#], and Lee, C.-H.[§], “Integration of polarized spatial frequency domain imaging (pSFDI) with a biaxial mechanical testing system for quantification of load-dependent collagen architecture in soft collagenous tissues.” *Acta Biomaterialia*, 102: 149-168, 2020.
17. Heikhmakhtiar, A.K., Lee, C.-H., Song, K.S., and Lim, K.M.[§], “Computational prediction of the effect of D172N KCNJ2 mutation on ventricular pumping during sinus rhythm and reentry.” *Medical & Biological Engineering & Computing*, 58: 977-990, 2020.
18. Ross, C.J.^{*}, Laurence, D.W.^{*}, Hsu, M.-C., Baumwart, R., Zhao, Y.D., Burkhart, H.M., Mir, A., Holzapfel, G.A., Wu, Y.[#], and Lee, C.-H.[§], “Mechanics of porcine heart valves’ strut chordae tendineae investigated as a leaflet-chordae-papillary muscle entity.” *Annals of Biomedical Engineering*, 48(5): 1463-1474, 2020.
19. Duginski, G.A.^{*}, Ross, C.J.^{*}, Laurence, D.W.^{*}, Johns, C.H.^{*}, and Lee, C.-H.[§], “An investigation of the effect of freezing storage on the biaxial mechanical properties of excised porcine tricuspid valve anterior leaflets.” *Journal of the Mechanical Behavior of Biomedical Materials*, 101: 103438 (8 pages), 2020.
20. Jett, S.V.^{*}, Hudson, L.T.^{*}, Baumwart, R., Bohnstedt, B.N., Mir, A., Burkhart, H.M., Holzapfel, G.A., Wu, Y.[#], and Lee, C.-H.[§], “Load-dependent collagen fiber architecture data of representative bovine tendon and mitral valve anterior leaflet tissues as quantified by an integrated opto-mechanical system.” *Data in Brief*, 28: 105081 (7 pages), 2020.
21. Kramer, K.E.^{*}, Ross, C.J.^{*}, Laurence, D.W.^{*}, Babu, A.R.[#], Wu, Y.[#], Towner, R.A., Mir, A., Burkhart, H.M., Holzapfel, G.A., and Lee, C.-H.[§], “An investigation of layer-specific tissue biomechanics of porcine atrioventricular valve anterior leaflets.” *Acta Biomaterialia*, 96: 368-384, 2019.

22. Ross, C.J.^{*}, Laurence, D.W.^{*}, Richardson, J.^{*}, Babu, A.R.[#], Evans, L.E.^{*}, Beyer, E.G.^{*}, Childers, R.C., Wu, Y.[#], Towner, R.A., Fung, K.-M., Mir, A., Burkhart, H.M., Holzapfel, G.A., and Lee, C.-H.[§], “An investigation of the glycosaminoglycan contribution to biaxial mechanical behaviors of porcine atrioventricular heart valve leaflets.” *Journal of the Royal Society Interface*, 16(156): 20190069 (15 pages), 2019.
23. Lee, C.-H.[§], Laurence, D.W.^{*}, Ross, C.J.^{*}, Kramer, K.E.^{*}, Babu, A.R.[#], Johnson, E.L., Hsu, M.-C.[§], Aggarwal, A., Mir, A., Burkhart, H.M., Towner, R.A., Baumwart, B., and Wu, Y.[#], “Mechanics of the tricuspid valve—From clinical diagnosis/treatment, in-vivo and in-vitro investigations, to patient-specific biomechanical modeling.” *Bioengineering*, 6(2): 47 (40 pages), 2019.
24. Wang, J., Luo, J., Kunkel, R.P.^{*}, Saha, M., Bohnstedt, B.N., Lee, C.-H., and Liu, Y.[§], “Development of shape memory polymer nanocomposite foam for treatment of intracranial aneurysms.” *Materials Letters*, 250: 38-41, 2019.
25. Laurence, D.W.^{*}, Ross, C.J.^{*}, Jett, S.V.^{*}, Johns, C.H.^{*}, Echols, A.L.^{*}, Baumwart, R., Towner, R.A., Liao, J., Bajona, P., Wu, Y.[#], and Lee, C.-H.[§], “Regional biaxial mechanical data of the mitral and tricuspid valve anterior leaflets.” *Data in Brief*, 24: 103961 (6 pages), 2019.
26. Sacks, M.S.[§], Drach, A., Lee, C.-H., Khalighi, A., Rego, B., Zhang, W., Ayoub, S., Yoganathan, A.P., Gorman, R.C., and Gorman, J.H., III, “On the simulation of mitral valve function in health, disease, and treatment.” *Journal of Biomechanical Engineering*, 141(7): 070804 (22 pages), 2019.
27. Wang, J., Kunkel, R.P.^{*}, Luo, J., Li, Y., Liu, H., Bohnstedt, B.N., Liu, Y., and Lee, C.-H.[§], “Shape memory polyurethane with porous architectures for potential applications in intracranial aneurysm treatment.” *Polymers*, 11(4): 631 (14 pages), 2019.
28. Laurence, D.W.^{*}, Ross, C.J.^{*}, Jett, S.V.^{*}, Johns, C.H.^{*}, Echols, A.L.^{*}, Baumwart, R., Towner, R.A., Liao, J., Bajona, P., Wu, Y.[#], and Lee, C.-H.[§], “An investigation of regional variations in the biaxial mechanical properties and stress relaxation behaviors of porcine atrioventricular heart valve leaflets.” *Journal of Biomechanics*, 83: 16-27, 2019.
29. Ross, C.J.^{*}, Laurence, D.W.^{*}, Wu, Y.[#], and Lee, C.-H.[§], “Biaxial mechanical characterization of atrioventricular heart valves.” *Journal of Visualized Experiments*, 146: e59170 (15 pages), 2019.
30. Jett, S.V.^{*}, Laurence, D.W.^{*}, Kunkel, R.P.^{*}, Babu, A.R.[#], Kramer, K.E.^{*}, Baumwart, R., Towner, R.A., Wu, Y.[#], and Lee, C.-H.[§], “Biaxial mechanical data of porcine atrioventricular valve leaflets.” *Data in Brief*, 21: 358-363, 2018.
31. Kunkel, R.P.^{*}, Laurence, D.W.^{*}, Wang, J., Robinson, D.O.^{*}, Scherrer, J.H.^{*}, Wu, Y.[#], Bohnstedt, B.N., Chien, A., Liu, Y., and Lee, C.-H.[§], “Synthesis and characterization of bio-compatible shape memory polymers with potential applications to endovascular embolization of intracranial aneurysms.” *Journal of the Mechanical Behavior of Biomedical Materials*, 88: 422-430, 2018.
32. Jett, S.V.^{*}, Laurence, D.W.^{*}, Kunkel, R.P.^{*}, Babu, A.R.[#], Kramer, K.E.^{*}, Baumwart, R., Towner, R.A., Wu, Y.[#], and Lee, C.-H.[§], “An investigation of the anisotropic mechanical properties and anatomical structure of porcine atrioventricular heart valves.” *Journal of the Mechanical Behavior of Biomedical Materials*, 87: 155-171, 2018.
33. Chen, J., Zhou, B., Qiu, S., Ma, S., Lee, C.-H., Aggarwal, A., Zeng, J., Gao, M., Feng, Y.[§], Li, D., and Shan, H.[§], “Evaluation of the laser-induced thermotherapy (LITT) treatment effect of breast cancer based on tissue viscoelastic properties.” *Journal of Engineering and Science in Medical Diagnostics and Therapy*, 1(4): 041009 (9 pages), 2018.
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2. Liu, L.-W.[§], Lee, C.-H., Aggarwal, A., Chao, C.-M., and Ross, C.J., “Viscoelastic modelling of the tricuspid valve chordae tendineae tissue.” *Applied Mathematical Modeling* (revision under review).
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C. Book Chapters

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D. Technical Reports

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E. Patents

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F. Presentations in Conference Proceedings

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3. Pineda-Castillo, S.A., Bohnstedt, B.N., Liu, Y., and Lee, C.-H., “*Carbon nanotube infiltration effects in thermal properties of shape memory polymer foams – Design of a triggering mechanism for endovascular devices*”, 2021 Summer Biomechanics, Bioengineering, and Biotransport Conference, Virtual, June 14-18, 2021.
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11. Aparicio S., and Lee, C.-H., “*Investigation of the load-dependent collagen microstructure and biaxial mechanical properties of the coronary artery tissue*”, 33rd University of Oklahoma Undergraduate Research Day, Virtual, April 9-10, 2021.
12. Barber, M., and Lee, C.-H., “*Analyzing microstructural and mechanical properties of porcine tricuspid valve leaflets using a Bayesian statistics-based approach*”, 33rd University of Oklahoma Undergraduate Research Day, Virtual, April 9-10, 2021.
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 24. Pineda-Castillo, S., Luo, J., Bohnstedt, B.N., Liu, Y., and Lee, C.-H., “*Shape memory polymer foam with tunable properties for treatment of intracranial aneurysm.*” Paper Number: IMECE2020-24291, 2020 International Mechanical Engineering Congress & Exposition, Virtual, November 13-19, 2020.
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 28. Hudson, L.T., Mir, A., Burkhart, H.M., and Lee, C.-H., “*An investigation of the microstructural and mechanical properties of porcine aortic valve cusps.*” 2020 BMES Annual Meeting, Virtual, October 14-17, 2020.
 29. Duginski, G.A., Mir, A., Burkhart, H.M., and Lee, C.-H., “*Biaxial mechanical properties of collagen- and elastin-deficient porcine atrioventricular heart valves.*” 2020 BMES Annual Meeting, Virtual, October 14-17, 2020.
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 36. Cabello, E., Echols, A., Hardisty, P., Berryhill, C., Hashem, M., Welborn, M., and Lee, C.-H., “*Development of a drop-on-demand 3D printer for patient-specific aneurysm therapeutics*”, 32nd University of Oklahoma Undergraduate Research Day, Virtual, April 18, 2020.
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43. Kunkel, R.P., Wang, J., Luo, J., Bohnstedt, B.N., Liu, Y., and Lee, C.-H., “*Synthesis and characterization of porous shape memory polymer materials for use in the design of implantable medical devices.*” Summer Biomechanics, Bioengineering, and Biotransport Conference, Seven Springs, PA, June 25-28, 2019.
44. Ross, C.J., Laurence, D.W., Zhao, Y.D., Hsu, M.-C., Baumwart, R., Wu, Y., and Lee, C.-H., “*Investigations of the chordae tendineae’s mechanical properties of porcine atrioventricular heart valves.*” Summer Biomechanics, Bioengineering, and Biotransport Conference, Seven Springs, PA, June 25-28, 2019.
45. Johns, C.H., Kramer, K.E., Anju, B.R., and Lee, C.-H., “*An investigation of layer-specific tissue biomechanics of porcine atrioventricular valve anterior leaflets.*” Summer Biomechanics, Bioengineering, and Biotransport Conference, Seven Springs, PA, June 25-28, 2019.
46. Laurence, D.W., Johnson, E.L., Hsu, M.-C., Mir, A., Burkhart, H.M., Wu, Y., and Lee, C.-H., “*Finite element simulation framework for investigating pathological effects on organ-level tricuspid valve biomechanical function.*” Summer Biomechanics, Bioengineering, and Biotransport Conference, Seven Springs, PA, June 25-28, 2019.
47. Jett, S.V., Schuermann, Z., Mir, A., Burkhart, H.M., and Lee, C.-H., “*An integrated opto-mechanical system for quantification of dynamic microstructure and mechanics of heart valve tissues.*” Summer Biomechanics, Bioengineering, and Biotransport Conference, Seven Springs, PA, June 25-28, 2019.
48. Lee, C.-H., Ross, C.J., Laurence, D.W., Evans, L.E., Richardson, J., Babu, A.R., Beyer, E.G., Wu, Y., Holzapfel, G.A., Mir, A., Burkhart, H.M., “*Role of glycosaminoglycans in biaxial mechanical behaviors of porcine atrioventricular heart valve leaflets.*” Summer Biomechanics, Bioengineering, and Biotransport Conference, Seven Springs, PA, June 25-28, 2019.
49. Ayoub, S., Graves, J., Lee, C.-H., and Sacks, M.S., “*A physiologically-driven biaxial bioreactor system to investigate valve interstitial cell phenotypic state after surgical repair.*” Summer Biomechanics, Bioengineering, and Biotransport Conference, Seven Springs, PA, June 25-28, 2019.
50. Laurence, D.W., Johnson, E.L., Hsu, M.-C., Mir, A., Burkhart, H.M., Wu, Y., and Lee, C.-H., “*Finite element biomechanical investigations of pathological effects on organ-level tricuspid valve function.*” 6th International Conference on Computational and Mathematical Biomedical Engineering (CMBE2019), Sendai, Japan, June 10-12, 2019.
51. Duginski G., and Lee, C.-H., “*Investigation of the effect of freezing on the mechanical response of atrioventricular heart valve leaflets.*” 2019 OU Undergraduate Research Day, Norman, OK, April 6, 2019.
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54. Johns, C., and Lee, C.-H., “*Data-driven computational modeling of heart valve function.*” 2019 OU Undergraduate Research Day, Norman, OK, April 6, 2019.
55. Ross, C., and Lee, C.-H., “*An investigation of the contributions of the porcine atrioventricular heart valve leaflet microstructure to organ-level mechanical behaviors.*” 2019 OU Undergraduate Research Day, Norman, OK, April 6, 2019.
56. Lee, C.-H., “*My journey to brain aneurysm research.*” Workshop on Meshfree Method and Advances in Computational Mechanics, Pleasanton, CA, March 10-12, 2019.
57. He, Q., Chen, J.S., and Lee, C.-H., “*Physics-informed data-driven meshfree modelling for biomaterials.*” Workshop on Meshfree Method and Advances in Computational Mechanics, Pleasanton, CA, March 10-12, 2019.
58. Laurence, D.W., Johnson, E.L., Hsu, M.-C., and Lee, C.-H., “*Development of a finite element model for quantifying the tricuspid valve pathological effect on valve function.*” OU Gallogly College of Engineering Graduate Student Poster Fair, Norman, OK, November 9, 2018.
59. Kunkel, R.P., Bohnstedt, B. N., Liu, Y., and Lee, C.-H., “*Shape memory polymer-based devices for the treatment of intracranial aneurysms.*” ASME Central Oklahoma Section Lightning Talks, Oklahoma City, OK, October 25, 2018.
60. Johns, C.H., Echols, A.L., and Lee, C.-H., “*A study on the regional variation in mitral and tricuspid valve material properties.*” 1st Oklahoma Women in Impacting STEM and Entrepreneurship (OK-WISE) Conference, Oklahoma City, OK, September 14, 2018.
61. Kunkel, R.P., Laurence, D.W., Robinson, D.O., Scherrer, J.H., Chien, A., Bohnstedt, B.N., Wu, Y., Liu, Y., and Lee, C.-H., “*Particle image velocimetry-based validation of a CFD model for the treatment of intracranial aneurysms using a shape memory polymer embolization device.*” 13th World Congress on Computational Mechanics, New York, NY, July 22-27, 2018.
62. Laurence, D.W., Wu, Y., and Lee, C.-H., “*Development of a multiscale computational modeling framework for the tricuspid valve – linking valvular interstitial cell mechanobiology with organ-level function.*” 13th World Congress on Computational Mechanics, New York, NY, July 22-27, 2018.
63. Babu, A.R., Kramer, K.E., Laurence, D.W., Wu, Y., and Lee, C.-H., “*Layer-specific mechanical responses and morphological structure of atrioventricular valve leaflets.*” 8th World Congress of Biomechanics, Dublin, Ireland, July 8-12, 2018.
64. Kramer, K.E., Babu, A.R., Hsu, M.-C., Aggarwal, A., Wu, Y., and Lee, C.-H., “*A layer-specific constitutive model for atrioventricular valve leaflets.*” Engineering Mechanics Institute Conference 2018, Boston, MA, May 29-June 1, 2018.
65. Laurence, D.W., Wu, Y., and Lee, C.-H., “*Development of a multiscale computational model for the tricuspid valve – linking valvular interstitial cell mechanobiology with organ-level function.*” Engineering Mechanics Institute Conference 2018, Boston, MA, May 29-June 1, 2018.
66. Jett, S.V., Laurence, D.W., Kramer, K.E., Babu, A.R., Wu, Y., and Lee, C.-H., “*Biaxial mechanical testing and constitutive model development of atrioventricular valve leaflets.*” Engineering Mechanics Institute Conference 2018, Boston, MA, May 29-June 1, 2018.
67. Kunkel, R.P., Robinson, D.O., Laurence, D.W., Scherrer, J.H., Wang, J., Bohnstedt, B.N., Liu, Y., and Lee, C.-H., “*Synthesis and characterization of aliphatic urethane shape memory polymers for endovascular embolization of intracranial aneurysms.*” Engineering Mechanics Institute Conference 2018, Boston, MA, May 29-June 1, 2018.
68. Jett, S.V., Laurence, D.W., Ross, C.J., Richardson, J., Johns, C.H., Echols, A.L., Bodlak, R., and Lee, C.-H., “*A study on the spatial variance in heart valve mechanics.*” The 2nd Curiosity to Creativity Spring Symposium, The University of Oklahoma, Norman, OK, April 25, 2018.

69. Kramer, K.E., Babu, A.R., Laurence, D.W., Johns, C.H., Wu, Y., and Lee, C.-H., “*Layer-specific mechanical responses and morphological structure of atrioventricular valve leaflets.*” 2nd Curiosity to Creativity Spring Symposium, The University of Oklahoma, Norman, OK, April 25, 2018.
70. Kunkel, R.P., Liu, Y., Bohnstedt, B.N., Wang, J., Robinson, D.O., Laurence, D.W., Scherrer, J.H., and Lee, C.-H., “*Synthesis and characterization of aliphatic urethane shape memory polymers for treatment of intracranial aneurysms.*” 2nd Curiosity to Creativity Spring Symposium, The University of Oklahoma, Norman, OK, April 25, 2018.
71. Laurence, D.W., Wu, Y., and Lee, C.-H., “*Development of a multiscale computational modeling framework for the tricuspid valve.*” 2nd Curiosity to Creativity Spring Symposium, The University of Oklahoma, Norman, OK, April 25, 2018.
72. Richardson, J., and Lee, C.-H., “*The essential role of glycosaminoglycans in the biomechanics of heart valve leaflets.*” 2nd Curiosity to Creativity Spring Symposium, The University of Oklahoma, Norman, OK, April 25, 2018.
73. Ross, C.J., Wu, Y., and Lee, C.-H., “*Development of a novel testing procedure for investigations of chordae mechanical properties of the tricuspid heart valve.*” 38th Oklahoma AIAA/ASME Symposium, Edmond, OK, April 14, 2018.
74. Kunkel, R.P., Robinson, D.O., Laurence, D.W., Scherrer, J.H., Wang, J., Bohnstedt, B.N., Liu, Y., and Lee, C.-H., “*Synthesis and characterization of shape memory polymers for the embolization of intracranial aneurysms.*” 38th Oklahoma AIAA/ASME Symposium, Edmond, OK, April 14, 2018.
75. Laurence, D.W., Wu, Y., and Lee, C.-H., “*Development of a multiscale computational modeling framework for the tricuspid valve.*” 38th Oklahoma AIAA/ASME Symposium, Edmond, OK, April 14, 2018.
76. Ross, C.J., and Lee, C.-H., “*Development of a novel mechanical testing procedure for investigations of chordae mechanical properties of the tricuspid heart valve.*” The 30th OU Undergraduate Research Day, The University of Oklahoma, Norman, OK, April 7, 2018.
77. Jett, S.V., and Lee, C.-H., “*A study on the spatial variation in the heart valve mechanical properties and microstructure.*” National Conference on Undergraduate Research, Edmond, April 4-7, 2018.
78. Kramer, K.E., Babu, A.R., and Lee, C.-H., “*An experimental study for layer separation of the tricuspid and mitral valves to investigate their biomechanical properties.*” National Conference on Undergraduate Research, Edmond, April 4-7, 2018.
79. Laurence, D.W., Mobaraki, M., and Lee, C.-H., “*Development of a novel integrated MRI-beating heart model for investigations into pathophysiological factors linked to tricuspid regurgitation.*” National Conference on Undergraduate Research, Edmond, April 4-7, 2018.
80. Kunkel, R.P., Liu, Y., Bohnstedt, B.N., and Lee, C.-H., “*Synthesis and characterization of aliphatic urethane shape memory polymers for the treatment of intracranial aneurysms.*” National Conference on Undergraduate Research, Edmond, April 4-7, 2018.
81. Ross, C.J., and Lee, C.-H., “*Investigations of the mechanical properties of chordae tendineae of atrioventricular heart valves.*” National Conference on Undergraduate Research, Edmond, April 4-7, 2018.
82. Ross, C.J., Wu, Y., and Lee, C.-H., “*Development of a novel mechanical testing procedure for investigations of chordae mechanical properties of the tricuspid heart valve.*” The 2nd OU-OUHSC Biomedical Engineering Symposium, Oklahoma City, OK, March 30, 2018.
83. Laurence, D.W., Wu, Y., and Lee, C.-H., “*An integrated experimental-computational framework for multiscale modeling of atrioventricular heart valves.*” The 2nd OU-OUHSC Biomedical Engineering Symposium, Oklahoma City, OK, March 30, 2018.
84. Jett, S.V. and Lee, C.-H., “*Integration of biaxial mechanical testing and microstructural imaging for correlation of mechanical performance and collagen microstructure — applications to prosthetic tissue design and tissue engineering.*” OU Gallogly College of Engineering Graduate Student Poster Fair, Norman, OK, November 10, 2017.

85. Wang, J., Chowdhury, S., Liu, Y., Bohnstedt, B.N., and Lee, C.-H., “*Development of thermally-activated shape memory polymers and composites for biomedical devices.*” ASME 2017 International Mechanical Engineering Congress & Exposition, Tampa, FL, November 3-9, 2017.
86. Laurence, D.W., and Lee, C.-H., “*An integrated experimental-computational approach for multi-scale investigations of heart valve function - linking valve interstitial cell responses with tissue biomechanical behavior.*” 2017 BMES Annual Meeting, Phoenix, AZ, October 11-14, 2017.
87. Ayoub, S., Lee, C.-H., Potter, S.T., Graves, J.L., and Sacks, M.S., “*A physiologically-driven biaxial bioreactor system to investigate valve interstitial cell phenotypic state after surgical repair.*” 2017 BMES Annual Meeting, Phoenix, AZ, October 11-14, 2017.
88. Laurence, D.W., and Lee, C.-H., “*In-vivo stress estimation of the functioning heart valve and its implication for annuloplasty ring-based surgical repair.*” 2nd Curiosity to Creativity Summer Symposium, The University of Oklahoma, Norman, OK, July 27, 2017.
89. Serrano, O., and Lee, C.-H., “*Biomechanical testing of heart valve tissues.*” 2nd Curiosity to Creativity Summer Symposium, The University of Oklahoma, Norman, OK, July 27, 2017.
90. Sacks, M.S., Lee, C.-H., and Zhang, W. “*On the in-vivo function of the heart valve leaflet: insights into tissue-interstitial cell biomechanical modeling.*” 14th U.S. National Congress on Computational Mechanics, Montreal, Canada, July 17-20, 2017.
91. Wang, J., Chowdhury, S., Liu, Y., Bohnstedt, B.N., and Lee, C.-H., “*Characterization of aliphatic urethane shape memory polymers for biomedical device design.*” Summer Biomechanics, Bioengineering, and Biotransport Conference, Tucson, AZ, June 21-24, 2017.
92. Lee, C.-H., and Sacks, M.S., “*In-vivo stress estimation of the functioning heart valves and its implications for annuloplasty ring-based valve surgical repair.*” Summer Biomechanics, Bioengineering, and Biotransport Conference, Tucson, AZ, June 21-24, 2017.
93. Lee, C.-H., and Sacks, M.S., “*An inverse modeling-based framework for in vivo modeling of the heart valves with investigations of the pre-strain effects.*” Engineering Mechanics Institute Conference 2017, San Diego, CA, June 4-7, 2017
94. Ayoub, S., Lee, C.-H., Potter, S.T., Graves, J.L., and Sacks, M.S., “*Valve interstitial cell phenotypic state after surgical repair: an integrated experimental-computational approach.*” 2017 BMES/FDA Frontiers in Medical Devices Conference, Washington, DC, May 16-18, 2017.
95. Laurence, D.W., and Lee, C.-H., “*A multi-scale computational model for patient-specific treatment of valvular heart diseases.*” 37th Oklahoma AIAA/ASME Symposium, Tulsa, OK, April 15, 2017.
96. Lee, C.-H., Liu, Y., and Bohnstedt, B.N., “*Novel shape memory polymer devices for optimal endovascular embolization of intracranial aneurysms.*” 1st OU-OUHSC Biomedical Engineering Symposium, Oklahoma City, OK, March 24, 2017.
97. Laurence, D.W., and Lee, C.-H., “*Development of a multi-scale mitral valve computational model for patient-specific treatment planning.*” 1st OU-OUHSC Biomedical Engineering Symposium, Oklahoma City, OK, March 24, 2017.
98. Lee, C.-H., and Sacks, M.S., “*Effects of annuloplasty on in vivo MV tissue stress and cellular phenotype.*” Heart Valve Society Scientific Meeting, Grimaldi Forum, Monaco, March 2-4, 2017.
99. Lee, C.-H., Feaver, K., Zhang, W., Gorman, R.C., Gorman, J. H., III, and Sacks, M.S., “*Interrelationships between in vivo tissue stress and interstitial cell deformations in the mitral valve anterior leaflet in normal and surgically modified states.*” 2016 BMES Annual Meeting, Minneapolis, MN, October 5-8, 2016.
100. Ayoub, S., Lee, C.-H., Driesbaugh, K., Anselmo, W., Hughes, C.T., Ferrari, G., and Sacks, M.S., “*Linking cell deformation to biosynthetic response: implications for mitral valve repair.*” 2016 BMES Annual Meeting, Minneapolis, MN, October 5-8, 2016.
101. Lee, C.-H., Feaver, K., Zhang, W., Gorman, R.C., Gorman, J.H., III, and Sacks, M.S., “*Inverse modeling based estimation of in-vivo stresses and their relation to simulated layer-specific interstitial*

- cell deformations in the mitral valve.*” The Summer Biomechanics, Bioengineering and Biotransport Conference, National Harbor, MD, June 29-July 2, 2016.
102. Feng, Y., Lee, C.-H., Sun, L., and Fu, S., “*Characterization of white matter using asymmetric indentation and inverse modeling in large strain.*” The Summer Biomechanics, Bioengineering and Biotransport Conference, National Harbor, MD, June 29-July 2, 2016.
 103. Ayoub, S., Lee, C.-H., Hughes, C.T., Ferrari, G., and Sacks, M.S., “*Linking mitral valve interstitial cell deformation to biosynthetic response: implications for mitral valve repair.*” The Summer Biomechanics, Bioengineering and Biotransport Conference, National Harbor, MD, June 29-July 2, 2016.
 104. Feng, Y., Lee, C.-H., Sun, L., Okamoto, R.J., and Ji, S., “*Automated estimation of elastic material parameters of a transversely isotropic material using asymmetric indentation and inverse finite element analysis.*” ASME 2015 International Mechanical Engineering Congress and Exposition (ASME 2015 IMECE), Houston, TX, November 13-19, 2015.
 105. Lee, C.-H., Feaver, K., Zhang, W., and Sacks, M.S., “*Inverse models for characterization of the in-vivo valvular mechanical behaviors.*” 52nd Society of Engineering Science Annual Technical Meeting, College Stations, TX, October 26-28, 2015.
 106. Ayoub, S., Khalighi, A. H., Lee, C.-H., and Sacks, M.S., “*The micro-geometric environment of mitral valve interstitial cells under physiological loading.*” 52nd Society of Engineering Science Annual Technical Meeting, College Stations, TX, October 26-28, 2015.
 107. Lee, C.-H., Feaver, K., Zhang, W., and Sacks, M.S., “*Estimation of the mitral valve in vivo stresses in the normal and surgically modified states.*” 2015 BMES Annual Meeting, Tampa, FL, October 7-10, 2015.
 108. Khalighi, A.H., Drach, A., Lee, C.-H., Bloodworth, C.H., Pierce, E.L., Jensen, M.O., Yoganathan, A.P., Gorman, R.C., Gorman, J.H., III, and Sacks, M.S., “*Development of a population-averaged model of the complete mitral valve geometry.*” 2015 BMES Annual Meeting, Tampa, FL, October 7-10, 2015.
 109. Lee, C.-H., and Sacks, M.S., “*On the effect of leaflet microstructure and constitutive model on the closing behavior of the mitral valve.*” 13th U.S. National Congress on Computational Mechanics, San Diego, CA, July 26-30, 2015.
 110. Khalighi, A.H., Drach, A., ter Huurne, F.M., Lee, C.-H., Bloodworth, C.H., Pierce, E.L., Jensen, M.O., Yoganathan, A.P., and Sacks, M.S., “*A comprehensive framework for the characterization of the complete mitral valve geometry for the development of a population-averaged model.*” 8th International Conference on Functional Imaging and Modeling of the Heart, Maastricht, the Netherlands, June 25-27, 2015.
 111. Lee, C.-H., Bloodworth, C.H., Jensen, M.O., Yoganathan, A.P., and Sacks, M.S., “*Effects of leaflet microstructure and constitutive model on the closing behavior of the mitral valve.*” The Summer Biomechanics, Bioengineering and Biotransport Conference, Snowbird, UT, June 17-20, 2015.
 112. Lee, C.-H., Carruthers, C.A., Ayoub, S., Gorman, R.C., Gorman, J.H., III, and Sacks, M.S., “*Layer-specific mitral valve interstitial cell deformations under physiological loading.*” The Summer Biomechanics, Bioengineering and Biotransport Conference, Snowbird, UT, June 17-20, 2015.
 113. Ayoub, S., Khalighi, A.H., Lee, C.-H., and Sacks, M.S., “*Microgeometry and microenvironment of mitral valve interstitial cells under physiological loads.*” The Summer Biomechanics, Bioengineering and Biotransport Conference, Snowbird, UT, June 17-20, 2015.
 114. Lee, C.-H., Bloodworth, C.H., Jensen, M.O., Yoganathan, A.P., and Sacks, M.S., “*Predictive computational simulations of the functioning mitral valve.*” BMES/FDA Frontiers in Medical Devices Conference, Washington, DC, May 18-20, 2015.
 115. Khalighi, A.H., Drach, A., ter Huurne, F.M., Lee, C.-H., Bloodworth, C.H., Pierce E.L., Jensen, M.O., Yoganathan, A.P., and Sacks, M.S., “*Multi-scale geometric framework for population-averaging of*

- the mitral valve apparatus.*” BMES/FDA Frontiers in Medical Devices Conference, Washington, DC, May 18-20, 2015.
116. Drach, A., Khalighi, A.H., Lee, C.-H., Jensen, M.O., Bloodworth, C.H., Yoganathan, A.P., and Sacks, M.S., “*Population-averaged geometric model of mitral valve from patient-specific imaging data.*” 14th Annual Design of Medical Devices Conference, Minneapolis, MN, April 13-16, 2015.
 117. Lee, C.-H., Carruthers, C.A., Good, B., Ayoub, S., Gorman, R.C., Gorman, J. H., III, and Sacks, M S., “*Integrated experimental-computational modeling of mitral valve interstitial cell deformation under in-situ physiological loading.*” 2014 BMES Annual Meeting, San Antonio, TX, October 22-25, 2014.
 118. Bloodworth, C.H., Pierce, E.L., Easley, T.F., Toma, M., Khalighi, A., Lee, C.-H., Sacks, M.S., Siefert, A., Jensen, M.O., and Yoganathan, A.P., “*Design of in vitro simulation pipeline for the development of computational mitral valve modeling.*” 2014 BMES Annual Meeting, San Antonio, TX, October 22-25, 2014.
 119. Lee, C.-H., and Sacks, M.S., “*A computational framework for Multiscale modeling of the mitral valve.*” 6th Biennial Meeting on Heart Valve Biology & Tissue Engineering, London, the United Kingdom, September 10-12, 2014.
 120. Lee, C.-H., and Sacks, M.S., “*A computational framework for Multiscale modeling of the mitral valve.*” 11th World Congress on Computational Mechanics, Barcelona, Spain, July 20-25, 2014.
 121. Chi, S.W., Lee, C.-H., Lin, S.P., and Chen, J.S., “*Level set enhanced frictional kernel contact algorithm for impact and penetration modeling.*” 11th World Congress on Computational Mechanics (WCCM XI), Barcelona, Spain, July 20-25, 2014.
 122. Lee, C.-H., Rabbah, J.P., Yoganathan, A.P., Amini, R., Gorman, J. H., III, Gorman, R.C., and Sacks, M.S., “*A computational paradigm for modeling the functional mitral valve (MV) and MV surgical repair.*” 7th World Congress of Biomechanics, Boston, MA, July 6-11, 2014.
 123. Lee, C.-H., and Sacks, M.S., “*A computational framework for Multiscale modeling of the mitral valve.*” 17th U.S. National Congress on Theoretical & Applied Mechanics, East Lansing, MI, June 15-20, 2014.
 124. Feaver, K., Zhang, W., Lee, C.-H., Tam, H., McGarvey, J.R., Kondo, N., Gorman, R.C., Gorman, J.H., III, Vyavahare, N., and Sacks, M.S., “*A novel experimental/numerical method to assess BHV biomaterial fatigue response in-vivo.*” Society for Biomaterials 2014 Annual Meeting & Exposition, Denver CO, April 16-19, 2014.
 125. Lee, C.-H., Amini, R., Aggarwal, A., Gorman, R.C., Gorman, J.H., III, and Sacks, M.S., “*Effects of local architectural mapping and material model on modeling the mitral valve.*” 3rd International Conference on Computational and Mathematical Biomedical Engineering, Hong Kong, China, December 16-18, 2013.
 126. Lee, C.-H., Gorman, J.H., III, Gorman, R.C., Amini, R., and Sacks, M.S., “*A micro-anatomically accurate finite element model for investigation of functioning mitral valve and its relationship to interstitial cell deformations.*” 2013 BMES Annual Meeting, Seattle, WA, September 25-28, 2013
 127. Lee, C.-H., and Chen, J.S., “*Multi-scale simulation of protein-induced DNA loop formation.*” 12th U.S. National Congress on Computational Mechanics, Raleigh, NC, July 22-25, 2013 (**keynote**).
 128. Lee, C.-H., Oomen, P.J.A., Rabbah, J.P., Saikrishnan, N., Yoganathan, A.P., Gorman, R.C., Gorman, J.H., III, and Sacks, M.S., “*A high-fidelity, micro-structurally & anatomically accurate 3D finite element model for functioning heart mitral valve.*” Proceedings of the ASME 2013 Summer Bioengineering Conference, Sun River, OR, June 26-29, 2013.
 129. Aggarwal, A., Aguilari, V.S., Lee, C.-H., Ferrari, G., Gorman, J.H., III, Gorman, R.C., and Sacks, M.S., “*Spline based microstructural mapping for soft biological tissues: application to aortic valves.*” Proceedings of the ASME 2013 Summer Bioengineering Conference, Sun River, OR, June 26-29, 2013.

130. Sacks, M.S., Lee, C.-H., Gorman, J.H., III, Gorman, R.C., and Yoganathan, A.P., “*A high-fidelity micro-structurally and anatomically accurate 3D finite element model for functioning heart mitral valve.*” 7th Biennial Congress of the Society of Heart Valve Disease, Venice, Italy, June 22-25, 2013.
131. Lee, C.-H., Oomen, P.J.A., Rabbah, J.P., Yoganathan, A.P., Gorman, R.C., Gorman, J.H., III, Amini, R., and Sacks, M.S., “*A high-fidelity and micro-anatomically accurate 3D finite element model for simulations of functional mitral valve.*” 7th International Conference on Functional Imaging and Modeling of the Heart, London, United Kingdom, June 20-22, 2013.
132. Aggarwal, A., Aguilari, V.S., Lee, C.-H., Ferrari, G., Gorman, J.H., III, Gorman, R.C., and Sacks, M.S., “*Patient-specific modeling of heart valves: from images to simulation.*” 7th International Conference on Functional Imaging and Modeling of the Heart, London, United Kingdom, June 20-22, 2013.
133. Chi, S.W., Lee, C.-H., Lin, S.P., and Chen, J.S., “*A level set enhanced kernel contact algorithm for fragment-impact problems.*” 3rd South-East European Conference on Computational Mechanics, Kos Island, Greece, June 12-14, 2013.
134. Lee, C.-H., and Chen, J.S., “*Multi-scale modeling of protein-mediated DNA loop formation.*” ASME 2012 International Mechanical Engineering Congress & Exposition, Houston, TX, November 9-15, 2012 (**keynote**).
135. Lee, C.-H., and Chen, J.S., “*POD-based model order reduction for molecular dynamics with radial basis represented force fields.*” 3rd International Symposium on Computational Mechanics and 2nd Symposium on Computational Structural Engineering, Taipei, Taiwan, December 5-7, 2011.
136. Lee, C.-H., and Chen, J.S., “*POD-based reduced-order simulation for DNA molecules.*” 11th U.S. National Congress on Computational Mechanics, Minneapolis, MN, July 25-29, 2011.
137. Roth, J.M., Chen, J.S., Slawson, T.R., Roone, N., Ren, X., Chi, S.W., Lee, C.-H., and Guan, P.C., “*Multiscale RKPM formulation for modeling penetration of an ultra-high strength concrete material.*” 3rd International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, Corfu, Greece, May 26-28, 2011.
138. Chen, J.S., Chi, S.W., Lee, C.-H., Roth, J.M., and Slawson, T.R., “*Micro-crack informed multi-scale damage model for fragment-impact modeling.*” International Union of Theoretical and Applied Mechanics Symposium Linking Scales in Computations: From Microstructure to Macro-Scale Properties, Pensacola, FL, May 17-19, 2011.
139. Lee, C.-H., Teng, H., and Chen, J. S., “*Atomistic to continuum modeling of DNA molecules.*” 1st Global Congress on NanoEngineering for Medicine and Biology, Houston, TX, February 7-10, 2010.
140. Lee, C.-H., Teng, H., and Chen, J.S., “*Atomistic to continuum modeling of DNA molecules.*” 10th U.S. Congress on Computational Mechanics, Columbus, OH, July 16-19, 2009.
141. Leu, L.J., Lee, C.-H., Wang, C.K., and Zhang, M.K., “*Object-oriented optimization system using commercial package as the analysis engine.*” the 8th U.S. National Congress on Computational Mechanics, Austin, TX, July 25-27, 2005.

SERVICE

A. Professional

Guest Editor:

1. Guest Editor, Special Issue on “*Advances in Biological Tissue Biomechanics*”, Bioengineering, 2020
2. Co-Guest Editor, Special Issue on “*Modeling and Simulation of Native, Diseased, and Prosthetic Heart Valves*”, International Journal for Numerical Methods in Biomedical Engineering, 2016

Session Chair, Mini-Symposium Organizer, and Scientific Committee:

1. Session Chair, 2019 BMES Annual Meeting, Philadelphia, October 16-19, 2019
2. Program Committee and Mini-Symposium Co-Organizer/Session Co-Chair, “*Image-based Characterization of Functional Soft Biological Tissues*”, 6th International Conference on Computational and Mathematical Biomedical Engineering, Sendai City, Japan, June 10-12, 2019
3. Session Chair, Workshop on Meshfree Method and Advances in Computational Mechanics, Pleasanton, CA, March 10-12, 2019
4. Scientific Committee, USACM Thematic Conference on Meshfree and Particle Methods: Applications and Theory, Santa Fe, NM, September 10-12, 2018
5. Mini-Symposium Co-Organizer/Session Co-Chair, “*Prosthetic Heart Valves*”, 8th World Congress of Biomechanics, Dublin, Ireland, July 8-12, 2018
6. Mini-Symposium Organizer/Session Chair, “*Computational Biomechanics: From Cell, Tissue, to Organ-Level Modeling*”, Engineering Mechanics Institute Conference 2018, Boston, MA, May 29-June 1, 2018
7. Session Chair, “*Biomechanics and Mechanobiology in Tissue Engineering*”, “*Hemodynamics and Vascular Mechanics P*”, “*Biomechanics of Biomaterials*”, 2017 BMES Annual Meeting, Phoenix, AZ, October 11-14, 2017
8. Mini-Symposium Organizer, “*Image-Based Models for Biomedical Applications*”, 14th U.S. National Congress on Computational Mechanics, Montreal, Canada, July 17-20, 2017
9. Session Chair, “*Surgical Device Design Applications (DDR/IAB)*”, Summer Biomechanics, Bioengineering, and Biotransport Conference, Tucson, AZ, June 21-24, 2017
10. Mini-Symposium Organizer/Session Chair, “*Computational Biomechanics for Biological Tissues & Human Body Systems*”, Engineering Mechanics Institute Conference, San Diego, CA, June 4-7, 2017
11. Program Committee and Mini-Symposium Organizer/Session Chair, “*Image-based Characterization of Functional Soft Biological Tissues*”, 5th International Conference on Computational and Mathematical Biomedical Engineering, Pittsburgh, PA, April 10-12, 2017
12. Session Chair, “*Biomechanics session on Computational and Multiscale Modeling, cellular and cardiovascular*”, 2015 BMES Annual Meeting, Tampa, FL, October 7-10, 2015
13. Session Chair, “*Mini-Symposium on Coarse-Grained and Multiscale Modeling in Molecular and Cellular Biomechanics*”, 10th U.S. National Congress on Computational Mechanics, Columbus, OH, July 16-19, 2009

Abstract Reviewer:

1. Summer Biomechanics, Bioengineering, and Biotransport Conference, Virtual, June 14-18, 2021
2. American Heart Association Scientific Sessions 2020, Virtual, November 14-16, 2020
3. 2020 BMES Virtual Annual Meeting, October 14-17, 2020
4. Summer Biomechanics, Bioengineering, and Biotransport Conference, Virtual, June 17-20, 2020
5. 2019 BMES Annual Meeting, Philadelphia, PA, October 16-19, 2019
6. Summer Biomechanics, Bioengineering, and Biotransport Conference, Seven Springs, PA, June 25-28, 2019
7. American Heart Association Scientific Sessions 2018, Chicago, IL, November 10-14, 2018
8. 8th World Congress of Biomechanics, Dublin, Ireland, July 8-12, 2018
9. Engineering Mechanics Institute Conference 2018, Boston, MA, May 29-June 1, 2018
10. American Heart Association Scientific Sessions 2017, Anaheim, CA, October 11-15, 2017
11. 2017 BMES Annual Meeting, Phoenix, AZ, October 11-14, 2017
12. Engineering Mechanics Institute Conference 2017, San Diego, CA, June 4-7, 2017
13. American Heart Association Scientific Sessions 2016, New Orleans, LA, November 12-16, 2016

14. Summer Biomechanics, Bioengineering and Biotransport Conference, National Harbor, MD, June 29-July 2, 2016

Judge for Student Paper Competitions/Posters:

1. Student Poster Competitions, Summer Biomechanics, Bioengineering, and Biotransport Conference, Virtual, June 14-18, 2021
2. Oral Presentations, OU's 33rd Undergraduate Research Day, April 9-10, 2021
3. Poster Presentations, 26th OK-LSAMP Research Symposium, Stillwater, OK, October 3, 2020
4. Student Poster Competitions and Undergraduate Design Competition, Summer Biomechanics, Bioengineering, and Biotransport Conference, Virtual, June 17-20, 2020
5. PhD-Level Student Poster Competitions, Summer Biomechanics, Bioengineering, and Biotransport Conference, Seven Springs, PA, June 25-29, 2019
6. Podium Presentations, 24th OK-LSAMP Research Symposium, Stillwater, OK, November 3, 2018
7. Judge for MS-Level Student Paper Competition, 8th World Congress of Biomechanics, Dublin, Ireland, July 8-12, 2018
8. Undergraduate Poster Competition, 2017 BMES Annual Meeting, Phoenix, AZ, October 11-14, 2017
9. Student Paper Competitions, Summer Biomechanics, Bioengineering, and Biotransport Conference, Tucson, AZ, June 21-24, 2017
10. PhD-Level Student Paper Competition, The Summer Biomechanics, Bioengineering and Biotransport Conference, Snowbird, UT, June 17-20, 2015

Membership:

1. Member, Biomedical Engineering Society (BMES)
2. Member, American Heart Association (AHA)
3. Member, American Society of Mechanical Engineers (ASME)

Journal Paper Reviewer (32 Scientific Journals):

• Acta Biomaterialia • ACS Applied Materials & Interfaces • Annals of Biomedical Engineering • Bioengineering • Biomechanics and Modeling in Mechanobiology • Cardiovascular Engineering and Technology • Computational Mechanics • Computer Methods in Biomechanics & Biomedical Engineering: Imaging & Visualization • Connective Tissue Research • Data in Brief • IEEE Journal of Biomedical and Health Informatics • International Journal for Numerical Methods in Biomedical Engineering • International Journal for Numerical Methods in Engineering • International Journal of Molecular Sciences • Interaction/Multiscale Mechanics • Inverse Problems in Science & Engineering • Journal of Biomechanics • Journal of Biomechanical Engineering • Journal of Cardiovascular Development and Disease • Journal of Cardiac Surgery • Journal of Engineering and Science in Medical Diagnostics and Therapy • Journal of the Mechanical Behavior of Biomedical Materials • Journal of Nanomedicine and Research • Journal of the Royal Society Interface • Journal of Visualized Experiments • Medical & Biological Engineering & Computing • Measurement • Micromachines • Part H: Journal of Engineering in Medicine • PLoS One • Polymers • Ultrasonics • Ultrasound in Medicine and Biology • WIREs System Biology and Medicine

Book Chapter Review:

1. *Advances in Soft Matter Mechanics*, Shaofan Li and Bohua Sun, Springer, 2012

Grant Proposal Review:

1. National Science Foundation (EBMS 2018, BMMB 2018 & 2019, GRFP 2019-2021)

Local Communities:

1. Member of Pre-Engineering Advisory Committee, Moore Norman Technology Center (MNTC), 2019-Present

2. Speaker at MNTC – High School Students in the Pre-Engineering Program (3/14/2019 & 4/9/2019)
3. Moderator & Mentor of Two Student Speakers at Oklahoma City Innovation District (OKID) – Showcase on Biomechanics & Biomaterials (3/22/2021)
4. Mentor for the AME-Hosted JrSEED (*Junior Science & Engineering Excellence and Diversity*) Summer Camp (Summer 2017 & Summer 2018)

B. University Service

1. Speaker, Panel of Online Teaching Workshop, Gallogly College of Engineering, August 18, 2020
2. Interview Panel, Director of Engineering Pathways, Gallogly College of Engineering, July 2020
3. Invited Speaker, Development for International Teaching Assistants (DITA) Academy Seminar Series, Center for Teaching Excellence, October 8, 2018
4. Undergraduate Academic Appeal Committee, Gallogly College of Engineering, 2017-Present
5. Graduate Admission Committee, Stephenson School of Biomedical Engineering, 2017-Present
6. Speaker, Faculty Panel for Outstanding Teaching, 2017 New Faculty Orientation, Office of the Senior Vice President and Provost, August 15, 2017
7. Search Committee, Faculty in Bioengineering, School of Aerospace & Mechanical Engineering, 2017
8. Academy Fellow, Faculty Leadership Academy, 2017

INVITED TALKS, SEMINARS, GUEST LECTURES

1. Biomechanical Investigations for the Tricuspid Heart Valve – Looking Forward: Computer-Assisted Management of Valvular Heart Disease, Mechanical & Industrial Engineering Seminar, Northeastern University, Virtual, April 1, 2021
2. Biomechanical Investigations for the Tricuspid Heart Valve: Moving Towards Computer-Assisted Diagnosis and Management of Valvular Heart Disease, Biomedical Engineering Seminar, The University of Texas at San Antonio, San Antonio, TX, February 28, 2020
3. Experimental and Computational Biomechanics for the Tricuspid Valve: Towards Precision Medicine for Personalized Management of Valvular Heart Disease, Invited Lecture in the Department of Engineering Science Seminar, National Cheng Kung University, Tainan, Taiwan, December 26, 2019
4. Towards Precision Medicine in Improved Diagnosis and Personalized Treatment of Patient with Cerebral Aneurysm, Invited Lecture, 3rd Annual OU-OUHSC Biomedical Engineering Symposium, Oklahoma City, March 29, 2019
5. Towards Biomechanical Simulation-Guided Diagnosis and Treatment of Valvular Heart Disease, Invited Lecture in the Department of Structural Engineering & Computational Mechanics Seminar, University of California, San Diego (UCSD), La Jolla, CA, January 23, 2019
6. Precision Medicine for Cardiovascular Heart Valve Biomechanics, Invited Lecture in the MAE Seminar Series, Mechanical and Aerospace Engineering, Oklahoma State University, Stillwater, OK, April 13, 2018
7. Multiscale Modeling of DNA Molecules, Invited Lecture in the Applied Mathematics Seminar, Department of Mathematics, The University of Oklahoma, Norman, OK, October 17, 2017
8. Biomechanical Modeling for Heart Valves, Guest Lecture in BME 2333 (Biomedical Engineering Fundamentals), Stephenson School of Biomedical Engineering, The University of Oklahoma, Norman, OK, November 17, 2016
9. What We Can Learn from Biomechanical Modeling – Insights Into Physiological Functioning of the Heart Valves? Guest Lecture in Graduate Student Community Seminar Series, School of Aerospace and Mechanical Engineering, The University of Oklahoma, Norman, OK, November 8, 2016
10. Integrated Computational-Experimental Modeling for Heart Valve Biomechanics, School of Mechanical and Electrical Engineering, Robotics and Microsystems Center, Soochow University, Suzhou, China, June 7, 2016

11. Multiscale Biomechanics – Bridging Molecular Biology, Cell Mechanobiology, Tissue Mechanics with Organ-Level Function, Department of Civil Engineering, National Taiwan University, Taipei, Taiwan, March 17, 2016
12. Computational & Experimental Modeling for Multiscale Biomechanics – Bridging Molecular Biology, Cell Mechanobiology, Tissue Micromechanics with Organ-Level Function, School of Aerospace and Mechanical Engineering, The University of Oklahoma, Norman, OK, March 8, 2016
13. Multiscale Biomechanical Modeling – Bridging Molecular Biology, Cell Mechanobiology, Tissue Mechanics with Organ-Level Function, Department of Biomedical Engineering, Pennsylvania State University, State College, PA, February 24, 2016
14. Multiscale Biomechanical Modeling – Bridging Molecular Biology, Cell Mechanobiology, Tissue Mechanics with Organ-Level Function, Department of Biomedical Engineering, Columbia University New York City, NY, February 20, 2016
15. Computational and Experimental Modeling for Multiscale Biomechanics – Bridging Molecular Biology, Cell Mechanobiology, Tissue Micromechanics with Organ-Level Function, Department of Mechanical Engineering and Engineering Mechanics, Michigan Technological University, Houghton, MI, February 11, 2016
16. Multiscale Computational Biomechanical Modeling – Bridging Molecular Biology, Cell Mechanobiology, Tissue Mechanics with Organ-Level Function, Department Agricultural and Biomedical Engineering, Louisiana State University, Baton Rouge, LA, January 27, 2016
17. Predictive Computational Modeling & Design for Engineering and Sciences, Department of Civil Engineering, National Taiwan University, Taipei, Taiwan, March 13, 2014
18. Atomistic to Continuum Modeling of DNA Molecules, Institute for Computational Engineering and Sciences, The University of Texas at Austin, Austin, TX, December 15, 2011

GRADUATE STUDENT SUPERVISION/MENTORING

• Ph.D. Students:

1. Devin W. Laurence, 3rd Year Ph.D. Dissertation Plan (Mechanical Engineering) – Advisor
2. Sergio Pineda-Castillo, 3rd Year Ph.D. Dissertation Plan (Biomedical Engineering) – Advisor
3. Colton J. Ross, 2nd Year Ph.D. Dissertation Plan (Mechanical Engineering) – Advisor

• MS Students:

1. Devin W. Laurence, M.S. (Mechanical Engineering), Spring '19 – Advisor
Thesis Title: *“Investigations of the Tricuspid Heart Valve Function: An Integrated Computational-Experimental Approach”*
2. Samuel V. Jett, M.S. (Mechanical Engineering), Spring '19 – Advisor
Thesis Title: *“Investigations of the Mechanical Properties and Microstructure of the Atrioventricular Heart Valve Leaflets”*
3. Robert P. Kunkel, M.S. (Mechanical Engineering), Spring '19 – Advisor
Thesis Title: *“Investigation of a Polyurethane Shape Memory Polymer for Potential Applications in Brain Aneurysm Treatment”*
4. Colton J. Ross, M.S. Thesis (Mechanical Engineering), Spring '20 – Advisor
Thesis Title: *“Investigations of the Mechanical and Microstructural Properties of the Atrioventricular Heart Valve Leaflets and Chordae Tendineae”*
5. Luke T. Hudson, M.S. Thesis (Mechanical Engineering), Spring '21 – Advisor
Thesis Title: *“Investigations of Microstructural and Mechanical Properties of the Four Heart Valves”*
6. Ryan Bodlak, M.S. Thesis (Mechanical Engineering), Completed in Summer '21 – Advisor
Thesis Title: *“Computational Investigations of a Shape-Memory Polymer Foam Embolization Device for Intracranial Aneurysms”*

7. Katherine Vopat, 2nd Year M.S. Thesis Plan (Biomedical Engineering) – Advisor
8. Launy Ohanina, 2nd Year M.S. Thesis Plan (Engineering Physics) – Advisor
9. Elizabeth Bradshaw, 1st Year M.S. Thesis Plan (Biomedical Engineering) – Advisor
10. Eleana Cabello, 1st Year M.S. Thesis Plan (Biomedical Engineering) – Advisor

GRADUATE STUDENT COMMITTEE

• Ph.D. Students:

1. Salma Mahzoon, Ph.D. Dissertation (Mechanical Engineering), Fall '18 – Dissertation Committee
2. Huiyu Wang, Ph.D. Dissertation (Mechanical Engineering), Spring '19 – General Exam Committee
3. Jamal Tausif, Ph.D. Dissertation (Mechanical Engineering), Spring '19 – General Exam Committee
4. Parisa Marashizadeh, Ph.D. Dissertation (Mechanical Engineering) – Dissertation Committee
5. Mohammad Abshirini, Ph.D. Dissertation (Mechanical Engineering) – Dissertation Committee
6. Emmanuel De Leon, Ph.D. Dissertation (Mechanical Engineering) – Dissertation Committee

• M.S. Students:

1. Warren G. Engles, M.S. Thesis (Mechanical Engineering), Fall '17 – Thesis Committee
2. Mark C. Haley, M.S. Non-Thesis (Mechanical Engineering), Spring '18 – General Exam Committee
3. Wenyuan Luo, M.S. Thesis (Mechanical Engineering), Summer '18 – Thesis Committee
4. Jishan Luo, M.S. Thesis (Mechanical Engineering), Fall '19 – Thesis Committee
5. Joseph J. Dal Santo, M.S. Thesis (Mechanical Engineering), Fall '19 – Thesis Committee
6. Wyatt E. Maney, M.S. Non-Thesis (Mechanical Engineering), Spring '20 – General Exam Committee
7. Yukai Liao, M.S. Thesis (Department of Engineering Mechanics at National Cheng Kung University, Taiwan), Spring '20 – Thesis Committee
8. Tess M. Hartog, M.S. Thesis (Mechanical Engineering), Spring '21 – Thesis Committee

POSTDOCTORAL FELLOW & VISITING SCHOLAR SUPERVISION/MENTORING

1. Dr. Anju Babu, Postdoctoral Fellow – Supervisor (October 2017 – March 2018) currently faculty in the Department of Biotechnology and Medical Engineering at the National Institute of Technology, Rourkela, India
2. Prof. Kimoo Lim, Visiting Professor from Kumoh National Institute of Technology, Korea – Supervisor (December 2017 – December 2018)
3. Mr. Chia-Lun Chao, Visiting Student from National Taiwan University, Taiwan – Supervisor (August 2018 – February 2019)
4. Ms. Fan Yang, Visiting Student from Central South University, China – Mentor/Supervisor (November 2019 – June 2020)

UNDERGRADUATE STUDENT MENTORING

1. Elizabeth Duncan, Biomedical Engineering, Fall '21 – Present
2. Kaden DeCamp, Biomedical Engineering, Fall '21 – Present
3. Santiago Aparicio Ruiz, Biomedical Engineering, Summer '21 – Present
4. Aubrey Lewellen, Mechanical Engineering, Summer '21 – Present
5. Daniel Fitzpatrick, Mechanical Engineering, Spring '21 – Present
6. Kevin Pham, Mechanical Engineering, Spring '21 – Present
7. Samantha Lane, Biomedical Engineering, Spring '21 – Present
8. Caylin Nimmo, Aerospace Engineering, Spring '21 – Present
9. Ryan E. Kenny, Mechanical Engineering, Fall '20 – Present
10. Madison M. Burns, Biomedical Engineering, Spring '20 – Present
11. Keely A. Laurence, Biomedical Engineering, Fall '19 – Present

12. Elizabeth A. Bradshaw, Biomedical Engineering, Fall '19 – Present
13. Eleana Cabello, Biomedical Engineering, Fall '19 – Present
14. Michael T. Barber, Biomedical Engineering, Fall '19 – Present
15. Kamolchatr Euengthong, Chemical Engineering, Spring '21 – Spring '21
16. Joadel Genuzio, Mechanical Engineering, Spring '21 – Spring '21
17. Katherine DeLaurentis, Chemical Engineering, Spring '21 – Spring '21
18. Robel Tesfaselassie, Biomedical Engineering, Spring '21 – Spring '21
19. Morgan H. Lau, Mechanical Engineering, Fall '20 – Spring '21
20. Mulan Tang, Biomedical Engineering, Spring '20 – Spring '21
21. Deenna D. Doan, Biomedical Engineering, Spring '20 – Spring '21
22. Brennan T. Mullins, Mechanical Engineering, Spring '19 – Spring '21
23. Scott Ritzmann, Chemical Engineering, Spring '19 – Spring '21
24. Catherine A. Vopat, Biomedical Engineering, Summer '20 – Summer '21
25. Allyson L. Echols, Electrical Engineering, Spring '18 – Summer '21
26. Katherine M. Casey, Biomedical Engineering, Spring '19 – Summer '21
27. Kevin T. Doe, Mechanical Engineering, Spring '20 – Summer '21
28. Jackson A. Carr, Biomedical Engineering, Fall '19 – Spring '21
29. Hunter M. Lau, Mechanical Engineering, Fall '19 – Spring '21
30. Seapehi Molise, Mechanical Engineering, Summer '20 – Spring '21
31. Tyler L. Goehler, Mechanical Engineering, Fall '20 – Spring '21
32. Ryan J. Myers, Mechanical Engineering Capstone, Fall '20 – Spring '21
33. Clare E. Hillshafer, Mechanical Engineering, Spring '20 – Fall '20
34. Fisher N. Hailey, Chemical Engineering, Spring '19 – Fall '20
35. Kevin M. Fritz, Biomedical Engineering, Spring '20 – Fall '20
36. Blake A. Adams, Biology, Summer '20 – Fall '20
37. Matthew A. Welborn, Mechanical Engineering Capstone, Spring '20
38. Colson E. Berryhill, Mechanical Engineering Capstone, Spring '20
39. Peter C. Hardisty, Mechanical Engineering Capstone, Spring '20
40. Stalder L. Talley, Mechanical Engineering Capstone, Spring '20
41. Kayla M. Herrera, Mechanical Engineering Capstone, Spring '20
42. Stacey L. Green, Mechanical Engineering Capstone, Spring '20
43. Ky K. Morris, Mechanical Engineering Capstone, Spring '20
44. Aspen C. Bell, Biology & Astrophysics, Spring '20
45. McKenzie B. Mabry, Mechanical Engineering, Spring '20
46. Karla Bonic, Mech. & Biomedical Engineering Interdisciplinary Capstone, Fall '19 – Spring '20
47. Kellen A. Stauder, Mech. & Biomedical Engineering Interdisciplinary Capstone, Fall '19 – Spring '20
48. Marwan Hashem, Mechanical Engineering, Fall '19 – Summer '20
49. Jonathan Sinnott, Mechanical Engineering, Fall '19 – Spring '20
50. Steven D. Trellis, Aerospace Engineering, Fall '19 – Spring '20
51. Dylan S. Portillo, Chemical Engineering, Fall '19 – Spring '20
52. Payton M. Woolard, Biology, Spring '19 – Spring '20
53. Robert J. Beem, Mechanical Engineering Capstone, Spring '19
54. Luke T. Hudson, Mechanical Engineering, Fall '18 – Summer '20
55. Grace A. Duginski, Biomedical Engineering, Fall '18 – Summer '20
56. Yung-Te (Daniel) Tsai, Aerospace Engineering, Fall '18 – Spring '19
57. Zach S. Smalling, Mechanical Engineering, Fall '18 & Spring '20
58. Will S. Callaway, Mechanical Engineering, Summer '18

59. Cortland H. Johns, Mechanical Engineering, Spring '18 – Summer '20
60. Ryan Bodlak, Mechanical Engineering, Spring '18 & Spring '19
61. Wyatt E. Maney, Mechanical Engineering, Spring '18 & Spring '19
62. Luke C. Whitney, Mechanical Engineering, Spring '18 – Summer '19
63. Ean G. Beyer, Biomedical Engineering, Spring '18 – Fall '18
64. Lauren E. Evans, Mechanical Engineering, Spring '18 – Spring '19
65. Benjamin C. Hoelzel, Mechanical Engineering, Summer '17 – Fall '17
66. Blake A. Herren, Aerospace Engineering, Summer '17 – Fall '17
67. Colton J. Ross, Mechanical Engineering, Fall '17 – Summer '19
68. Mark C. Means, Mechanical Engineering, Fall '17 – Spring '18
69. Jacob Richardson, Chemical Engineering, Fall '17 – Fall '18
70. Zach V. Schuermann, Mechanical Engineering, Fall '17 – Fall '18
71. Octavio Serrano, Mechanical Engineering, Spring '17 – Spring '18
72. Keaton Q. Mullenix, Mechanical Engineering Capstone, Spring '18
73. Jonathan T. Henck, Mechanical Engineering Capstone, Spring '18
74. Joshua H. Scherrer, Mechanical Engineering, Fall '17 – Spring '18
75. Donnie O. Robinson, Mechanical Engineering, Spring '17 – Spring '18
76. Matthew L. Solcher, Mechanical Engineering Capstone, Spring '18
77. McKenzie E. Makovec, Chemical Engineering, Spring '17 – Spring '18
78. Katherine E. Kramer, Biomedical Engineering, Spring '17 – Spring '19
79. Orhan Roksa, Mechanical Engineering, Spring '17 – Fall 2018
80. Robert P. Kunkel, Mechanical Engineering, Spring '17 – Summer '18
81. Samuel V. Jett, Mechanical Engineering, Spring '17 – Summer '18
82. Devin W. Laurence, Mechanical Engineering, Spring '17 – Summer '18