

## Curriculum Vitae

Ellen Kuhl

Living Matter Laboratory  
Departments of Mechanical Engineering  
Bioengineering, and Cardiothoracic Surgery  
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<http://biomechanics.stanford.edu>

## Education and Training

2004	Habilitation	Technical University of Kaiserslautern, Germany
2000	Ph.D.	University of Stuttgart, Germany
1995	M.S.	Leibniz University of Hannover, Germany
1993	B.S.	Leibniz University of Hannover, Germany

## Academic Experience

02/2021 - present	Walter B. Reinhold Professor in the School of Engineering Stanford University, Stanford, CA
09/2019 - present	Robert Bosch Department Chair of Mechanical Engineering Stanford University, Stanford, CA
02/2016 - present	Professor, Department of Mechanical Engineering Stanford University, Stanford, CA
02/2016 - present	Professor, Department of Bioengineering (courtesy) Stanford University, Stanford, CA
02/2016 - present	Professor, Department of Cardiothoracic Surgery (courtesy) Stanford University, Stanford, CA
01/2010 - 01/2016	Associate Professor, Department of Mechanical Engineering Stanford University, Stanford, CA
07/2011 - 12/2011	Professor, Department of Mechanical Engineering ETH Zurich, Switzerland
01/2007 - 12/2009	Assistant Professor, Department of Mechanical Engineering Stanford University, Stanford, CA
12/2002 - 12/2006	Assistant Professor, Department of Mechanical Engineering Technical University of Kaiserslautern, Germany
04/2001 - 11/2002	Habilitation Researcher, Department of Mechanical Engineering Technical University of Kaiserslautern, Germany
04/2000 - 03/2001	Postdoctoral Researcher, Department of Aerospace Engineering Technical University of Delft, the Netherlands
10/1996 - 03/2000	Graduate Researcher, Department of Civil Engineering University of Stuttgart, Germany
01/1996 - 09/1996	Graduate Researcher, Department of Civil Engineering Leibniz University of Hannover, Germany

## Honors and Awards

2021	ASME Ted Belytschko Applied Mechanics Award
2016	Humboldt Research Award
2010 - 2014	NSF CAREER Award, National Science Foundation
2009	Hellman Faculty Scholar, Hellman Faculty Scholar Fund
2001 - 2004	Habilitation Research Fellowship, German National Science Foundation (DFG)
1996 - 1999	Graduate Research Fellowship, German National Science Foundation (DFG)
2017	American Society of Mechanical Engineers (ASME) Fellow
2014	Midwest Mechanics Seminar Speaker
2014	American Institute for Medical and Biological Engineering (AIMBE) Fellow
2013	Taylor & Francis Best Podium Presentation (CMBBE), Ellen Kuhl
2013	Taylor & Francis 3 <sup>rd</sup> Place Student Podium Presentation (CMBBE) Manuel K. Rausch
2013	Taylor & Francis Best Poster Presentation (CMBBE) Daniel E. Hurtado
2013	Annals of Biomedical Engineering Editor's Choice Award, Manuel K. Rausch et al.

## Consulting Service

2013 - present	Living Heart Project, Founding Member and Consultant Abaqus, Dassault Systemes Simulia Corporation, Rhode Island
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## Memberships in Professional Organizations

- American Physical Society (APS), Member
- American Society of Engineering Education (ASEE), Member
- American Society of Mechanical Engineers (ASME), Member
- Biomedical Engineering Society (BMES), Member
- Biophysical Society (BPS), Member
- European Society of Biomechanics (ESB), Member
- European Mechanics Society (EUROMECH), Member
- International Association for Computational Mechanics (IACM), Member
- US Association for Computational Mechanics (USACM), Member

## Editorial Service

2022 - present	Computer Methods Applied Mechanics Engineering, Editorial Advisory Board
2020 - present	Computational Mechanics, Editorial Advisory Board Member
2020 - present	Brain Multiphysics, Editorial Board Member
2015 - present	Journal of the Mechanics and Physics of Solids, Associate Editor
2015 - present	Annals of Biomedical Engineering, Associate Editor
2015 - present	Biomechanics and Modeling in Mechanobiology, Editorial Board Member
2013 - 2015	Journal of the Mechanics and Physics of Solids, Editorial Advisor
2012 - present	Journal of Computational Surgery, Editorial Board Member
2012 - 2016	ASME Applied Mechanics Reviews, Associate Editor
2011 - present	Intl Journal for Numerical Methods in Biomed Eng, Editorial Board Member
2011 - present	Computer Methods in Biomech and Biomed Eng, Editorial Board Member
2011 - present	Acta Mechanica Sinica, Editorial Board Member

## Guest Editor

- 2020 Computational Mechanics  
Modeling and Simulation of Infectious Diseases
- 2020 Current Opinion in Biomedical Engineering  
Biomechanics and Mechanobiology of Tissue Growth and Remodeling
- 2019 Computer Methods of Applied Mechanics and Engineering  
Uncertainty Quantification, Machine Learning, and Data-Driven Modeling of Biological Systems
- 2017 Computer Methods of Applied Mechanics and Engineering  
Volume 314. Biological Systems. In the honor of Bill Klug
- 2017 Annals of Biomedical Engineering  
Volume 45. Engineering the Ideal Heart Valve Replacement or Repair
- 2014 European Journal of Mechanics A/Solids  
Volume 48. Frontiers in Finite-Deformation Electromechanics
- 2013 Journal of the Mechanical Behavior of Biomedical Materials  
Volume 29. Growing Matter
- 2012 Mechanics Research Communications  
Volume 42. Recent Advances in the Biomechanics of Growth and Remodeling
- 2012 International Journal of Multiscale Computational Engineering  
Volume 10. Active Tissue Modeling: From Single Cells to Muscle Contraction
- 2009 Philosophical Transactions of the Royal Society London  
Volume 369. Mechanics in Biology: Cells and Tissues
- 2008 Computer Methods in Biomechanics and Biomedical Engineering  
Volume 11. Computer Simulations of Mechanobiology

## Journal Reviewer

- Acta Biomaterialia
- American Journal of Physiology Heart and Circulatory Physiology
- Annals of Biomedical Engineering
- Archive of Applied Mechanics
- Archive of Computational Methods in Engineering
- Biomechanics and Modeling in Mechanobiology
- Biophysical Journal
- Cardiovascular Engineering and Technology
- Computational Materials Science
- Computational Mechanics
- Computer Methods in Applied Mechanics and Engineering
- Computer Methods in Biomechanics and Biomedical Engineering
- Computer Methods and Programs in Biomedicine
- Computers and Concrete
- Continuum Mechanics and Thermodynamics
- Encyclopedia of Computational Mechanics
- Engineering and Computational Mechanics
- Engineering Computations, Engineering with Computers
- European Journal of Mechanics A/Solids
- Experimental Biology and Medicine

- Frontiers in Computational Physiology and Medicine
- International Journal for Numerical and Analytical Methods in Geomechanics
- International Journal for Numerical Methods in Biomedical Engineering
- International Journal for Numerical Methods in Engineering
- International Journal of Engineering Science
- International Journal of Mechanics of Materials and Structures
- International Journal of Non-Linear Mechanics
- International Journal of Solids and Structures
- International Journal of Applied Mathematics and Mechanics
- Journal of Applied Mechanics, Journal of Biological Dynamics
- Journal of Biomechanics
- Journal of Computational Physics
- Journal of Elasticity, Journal of Engineering Mechanics
- Journal of Mechanics of Materials and Structures
- Journal of Multiscale Computational Engineering
- Journal of the Royal Society Interface
- Journal of Structural Changes in Solids
- Journal of the Mechanical Behavior of Biomedical Materials
- Journal of the Mechanics and Physics of Solids
- Journal of Theoretical Biology
- Lancet Infectious Diseases
- Mechanics Research Communications
- Medical Engineering and Physics
- Nature Neuroscience
- Nature Physics
- PLoS Computational Biology
- PLoS ONE
- Proceedings of the National Academy of Sciences PNAS
- Proceedings in Applied Mathematics and Mechanics
- Proceedings of the Royal Society London
- Philosophical Magazine

## Professional Service

2020 - present	Advisory Committee to the German Science Foundation DFG, Member-Elect
2018 - present	US National Committee on Biomechanics, Chair
2018 - present	World Council of Biomechanics, Member-Elect
2020 - 2022	US Association for Computational Mechanics, Chair TTA Data-Driven Modeling
2016 - 2020	US Association for Computational Mechanics, Executive Committee, Member
2015 - 2019	US Association for Computational Mechanics, Chair TTA Biological Systems
2014 - 2019	NIH Study Section Modeling and Analysis of Biological Systems, Member
2016 - 2018	NIH IMAG Interagency Modeling Analysis Group, Steering Committee, Member
2016 - 2018	US National Committee on Biomechanics, Vice-Chair
2014 - 2016	US National Committee on Biomechanics, Secretary/Treasurer
2022 - present	Stanford Bio-X Leadership Council, Member
2022 - present	Department of Civil and Environmental Engineering, Appt & Promotion ExCom
2021 - present	Wu Tsai Human Performance Alliance at Stanford, Executive Committee
2019 - present	Department of Mechanical Engineering, Robert Bosch Department Chair
2019 - present	School of Engineering Engineering, Executive Committee ExCom

2019 - present	Department of Mechanical Engineering, Strategic Planning Committee, Chair
2019 - 2022	Department of Bioengineering, Appointment & Promotion ExCom
2018 - 2019	Department of Mechanical Engineering, Chair of Graduate Admission
2018 - 2019	Department of Mechanical Engineering, Advisory Committee AdCom
2018 - 2019	Department of Mechanical Engineering, Chair of Biomechanical Engineering
2018 - 2019	Department of Mechanical Engineering, Graduate Curriculum Committee
2018 - 2019	Department of Mechanical Engineering, Faculty Search Committee
2017 - 2018	Department of Mechanical Engineering, Chair of Graduate Curriculum
2017 - 2018	Stanford Neurosciences Institute, Faculty Search Committee
2016 - 2018	Department of Mechanical Engineering, Appointment & Promotion Committee
2017 - 2018	Stanford University, Long-Range Planning, Steering Group Research
2016 - 2017	Stanford University, Leading the Biomedical Revolution, Committee Member
2014 - 2017	Department of Mechanical Engineering, Advisory Committee AdCom
2014 - 2017	Department of Mechanical Engineering, Chair of Mechanics & Computation
2015 - 2017	Stanford Fellow, nominated by Dean Drell
2015 - 2016	Department of Mechanical Engineering, Chair of Faculty Search Committee
2013 - 2014	Stanford Faculty Voice & Influence Program, nominated by Dean Plummer
2012 - 2014	Department of Mechanical Engineering, Chair of Graduate Admission
2011 - 2012	Department of Mechanical Engineering, Vice-Chair of Graduate Admission
2010 - 2011	Department of Bioengineering, Faculty Search Committee
2008 - 2012	Department of Mechanical Engineering, Graduate Admission Committee
2009 - 2010	Department of Mechanical Engineering, Broad Faculty Search Committee
2008 - 2009	Department of Mechanical Engineering, Faculty Search Committee
2008 - 2009	Department of Mechanical Engineering, ABET Committee

## Scientific Reviewer

11/2022	National Science Foundation CMMI/BMMB CAREER
10/2022	National Science Foundation CMMI/MoM CAREER
04/2022	Wu Tsai Performance Alliance Graduate Research Fellowship
04/2022	Stanford Bio-X Interdisciplinary Initiative Seed Grant X, Round I
04/2022	Stanford Bio-X Graduate Student Fellowship
10/2021	National Science Foundation CMMI/MoM CAREER
04/2021	Stanford Bio-X Graduate Student Fellowship
08/2020	Stanford Bio-X Interdisciplinary Initiative Seed Grant IX, Round II
04/2020	Stanford Bio-X Interdisciplinary Initiative Seed Grant IX, Round I
03/2020	National Science Foundation PHY
11/2019	National Science Foundation CMMI/BMMB
09/2018	Stanford Bio-X Interdisciplinary Initiative Seed Grant VIII, Round II
06/2018	National Institutes of Health NIH/MABS Study Section
05/2018	German National Science Foundation DFG/ ING Excellence Initiative Panel
05/2018	Stanford Bio-X Interdisciplinary Initiative Seed Grant VIII, Round I
02/2018	National Institutes of Health NIH/MABS Study Section
10/2017	National Institutes of Health NIH/MABS Study Section
10/2017	National Science Foundation CMMI/BMMB CAREER
10/2017	National Science Foundation CMMI/MoM CAREER
06/2017	National Institutes of Health NIH/MABS Study Section
05/2017	German National Science Foundation DFG/ ING Excellence Initiative Panel
02/2017	National Institutes of Health NIH/MABS Study Section

10/2016 National Science Foundation CMMI/BMMB CAREER  
10/2016 National Institutes of Health NIH/MABS Study Section  
09/2016 Stanford Bio-X Interdisciplinary Initiative Seed Grant VII, Round II  
09/2016 National Institutes of Health NIH/NHLBI Research Center Review  
05/2016 Stanford Bio-X Interdisciplinary Initiative Seed Grant VII, Round I  
02/2016 National Institutes of Health NIH/MABS Study Section  
10/2015 National Institutes of Health NIH/MABS Study Section  
06/2015 National Institutes of Health NIH/MABS Study Section  
02/2015 National Institutes of Health NIH/MABS Study Section  
11/2014 National Science Foundation CMMI/BMMB CAREER  
10/2014 National Institutes of Health NIH/MABS Study Section  
09/2014 American Heart Association AHA/BioEng Basic Sci 1, Peer Review Study Group  
09/2014 Stanford Bio-X Interdisciplinary Initiative Seed Grant VII, Round II  
05/2014 Stanford Bio-X Interdisciplinary Initiative Seed Grant VII, Round I  
04/2014 American Heart Association AHA/BioEng Basic Sci 1, Peer Review Study Group  
03/2014 National Science Foundation CMMI/CDS&E  
02/2014 National Institutes of Health NIH/MABS Study Section  
02/2014 German National Science Foundation DFG/Division of Engineering Sciences  
12/2013 Universita della Svizzera Italiana USI/CCMC Center Computational Medicine  
10/2013 National Science Foundation CMMI/BMMB CAREER  
08/2013 National Science Foundation CMMI/CBET  
07/2013 German National Science Foundation DFG/Division of Engineering Sciences  
06/2013 National Institutes of Health NIH/MABS Study Section  
06/2013 National Science Foundation CMMI/MoM BRIGE  
06/2013 Swiss National Science Foundation SNF/Division of Mathematics  
06/2013 National Institutes of Health NIH/NIBIB Research Center Review  
05/2013 National Science Foundation CMMI/BMMB  
05/2013 German National Science Foundation DFG/Division of Life Sciences  
04/2013 National Science Foundation CMMI/MoM  
04/2013 German National Science Foundation DFG/Division of Life Sciences  
11/2012 National Institutes of Health NIH/MABS Study Section  
10/2012 German National Science Foundation DFG/Division of Life Sciences  
09/2012 American Heart Association AHA/BioEng Basic Sci 1, Peer Review Study Group  
08/2012 Stanford Bio-X Interdisciplinary Initiative Seed Grant VI, Round II  
06/2012 National Science Foundation CMMI/BMMB  
05/2012 Stanford Bio-X Interdisciplinary Initiative Seed Grant VI, Round I  
05/2012 German National Science Foundation DFG/Division of Engineering  
02/2012 Qatar National Research Fund QNRF/Division of Engineering  
01/2012 German National Science Foundation DFG/ ING16 Excellence Initiative Panel  
01/2012 Swiss National Science Foundation, SNF/Division of Maths and Nat Sciences  
11/2011 National Science Foundation CMMI/BMMB CAREER  
11/2011 National Science Foundation CMMI/MoM CAREER  
07/2011 German National Science Foundation DFG/INST 248  
07/2011 National Science Foundation CMMI/MoM  
07/2011 Stanford Cardiovascular Institute Seed Grants CVI  
01/2011 National Science Foundation CMMI/BMMB  
01/2011 Swiss National Science Foundation SNF/Division of Engineering Sciences  
12/2010 German National Science Foundation DFG/SFB 926  
11/2010 National Science Foundation CMMI/MoM CAREER  
12/2009 Swiss National Science Foundation SNF/Division of Medicine

09/2009	Stanford Bio-X Interdisciplinary Initiative Seed Grant V, Round II
06/2009	National Science Foundation ENG/BBBE
05/2009	Stanford Bio-X Interdisciplinary Initiative Seed Grant V, Round I
03/2009	Israel National Science Foundation ISF/Division of Engineering
01/2009	National Science Foundation EFRI/BSBA Round I
04/2008	National Science Foundation DMS/CDI-II
01/2008	National Science Foundation CMMI/ NBM
11/2007	National Science Foundation CHE/SYO/DYN
09/2007	National Science Foundation CMMI/ NBM
05/2007	National Science Foundation CMMI/ NBM
06/2006	German National Science Foundation DFG/Division of Engineering

### **Conference/Workshop/Symposium Organizer**

08/23 - 08/28/2020	Virtual Physical Human (VPH2020) - all online Special Session: Epidemiology of COVID-19 Paris, France
08/14/2020	Modeling and Simulation of Infectious Diseases – all online Virtual Workshop Berkeley, California
07/19 - 07/24/2020	13 <sup>th</sup> World Congress on Computational Mechanics (WCCM) - cancelled Minisymposium MS319: Machine Learning for Biological Systems Paris, France
07/19 - 07/24/2020	13 <sup>th</sup> World Congress on Computational Mechanics (WCCM) - cancelled Minisymposium MS87: Brain Computational Mechanics Paris, France
10/23 - 10/24/ 2019	Integrating Machine Learning with Multiscale Modeling Conference Chair NIH Bethesda, Maryland, United States
08/14 - 08/16/ 2019	16 <sup>th</sup> Computer Methods in Biomechanics and Biomedical Engineering Symposium B-11: In honor of Professor Christopher Jacobs New York, United States
09/03 - 09/07/ 2018	Summer School on Biomechanics from Protein to Tissue to Organ Lecturer Graz, Austria
07/23 - 07/27/2018	13 <sup>th</sup> World Congress on Computational Mechanics (WCCM) Minisymposium MS501: Biomechanics and Mechanobiology of Soft Tissues New York, United States
06/04 - 06/09/2018	18 <sup>th</sup> U.S National Congress for Theoretical Mechanics (USNC/TAM) Minisymposium MS361: Multiscale brain mechanics: From growth to injury Chicago, Illinois
02/14 - 02/19/ 2016	Ecole de Physique des Hoches International Winter School: New Challenges in the Physics of the Brain Les Hoches, France
07/24 - 07/29/2016	12 <sup>th</sup> World Congress on Computational Mechanics (WCCM)

- Minisymposium MS006: Brain Mechanics  
Seoul, Korea
- 07/24 - 07/29/2016 12<sup>th</sup> World Congress on Computational Mechanics (WCCM)  
Minisymposium MS010: Computational Biomechanics  
Seoul, Korea
- 07/24 - 07/29/2016 12<sup>th</sup> World Congress on Computational Mechanics (WCCM)  
Minisymposium MS017: Computational Modeling of Biological Growth  
Seoul, Korea
- 11/01 - 11/07/2015 Mathematical Research Center Oberwolfach  
Workshop 1545: Mathematics of Differential Growth and Morphogenesis  
Oberwolfach, Germany
- 07/20 - 07/25/2015 13<sup>th</sup> U.S. National Congress on Computational Mechanics (USNCCM)  
Minisymposium MS102: Folds, Twists and Bends: Growth-Induced Morphology  
San Diego, California
- 07/20 - 07/25/2014 11<sup>th</sup> World Congress on Computational Mechanics (WCCM)  
Minisymposium MS 7: Computational Biomechanics  
Barcelona, Spain
- 07/20 - 07/25/2014 11<sup>th</sup> World Congress on Computational Mechanics (WCCM)  
Minisymposium MS 97: Growth and Remodeling of Living Tissues.  
Barcelona, Spain
- 07/20 - 07/25/2014 11<sup>th</sup> World Congress on Computational Mechanics (WCCM)  
Minisymposium MS 106: Advances in Computational Cardiovascular Modeling.  
Barcelona, Spain
- 07/06 - 07/11/2014 World Congress of Biomechanics VII (WCB)  
Track: Organ Level Biomechanics  
Boston, Massachusetts
- 02/13 - 02/14/2014 Multiscale Methods and Validation in Medicine and Biology II (MMVMB)  
Co-Organizer with Krishna Garikipati, Panos Papadopoulos, and Tarek I. Zohdi  
Berkeley, California
- 07/22 - 07/25/2013 12<sup>th</sup> U.S. National Congress on Computational Mechanics (USNCCM)  
Technical Session TS8: Biomechanics of Living Matter  
Raleigh, North Carolina
- 07/22 - 07/25/2013 12<sup>th</sup> U.S. National Congress on Computational Mechanics (USNCCM)  
Technical Session TS7: Computational Modeling of Cardiovascular Tissue  
Raleigh, North Carolina
- 05/22 - 05/24/2013 Euromech Colloquium 545: Frontiers in Finite-Deformation Electromechanics  
Conference Organizer with Andreas Menzel and Serdar Goktepe  
Dortmund, Germany
- 04/03 - 04/07/2013 11<sup>th</sup> Symposium on Computer Methods in Biomech and Biomed Eng (CMBBE)  
Session SS16: Growth, Remodeling and Adaptation of Biological Tissue  
Salt Lake City, Utah
- 07/08 - 07/13/2012 10<sup>th</sup> World Congress on Computational Mechanics (WCCM)  
Minisymposium MS132: Computational Biomechanics  
Sao Paulo, Brazil



- 08/29 – 09/02/2011 IUTAM Symposium GA.08-06: Computer Mod in Biomech - From Nano to Macro Conference Organizer with Gerhard A. Holzapfel  
Stanford, California
- 07/19 - 07/23/2010 9<sup>th</sup> World Congress on Computational Mechanics (WCCM)  
Minisymposium 6043: Computational Modeling of Electro-Active Materials  
Sydney, Australia
- 06/23 - 06/25/2010 Modern Trends in Geomechanics II: Multiscale and Multiphysics Processes  
Organization Committee with Ronnie Borja  
Stanford, California
- 05/24/2010 Biomechanical Engineering Conference at Stanford (BMECS)  
Student Mentor and Faculty Coordinator  
Stanford, California
- 07/16 - 07/19/2009 10<sup>th</sup> U.S. National Congress on Computational Mechanics (USNCCM)  
Minisymposium 2.3.2: Active Tissue Modeling From Cells to Muscle Contraction  
Columbus, Ohio
- 06/18 - 06/21/2008 IUTAM Symposium GA.06-12: Cellular, Molecular and Tissue Mechanics  
Scientific Committee  
Woods Hole, Cape Cod, Massachusetts
- 08/31 – 09/06/2008 Mathematical Research Center Oberwolfach  
Workshop 0638a: Mathematics of Growth and Remodeling  
Oberwolfach, Germany
- 07/22 – 07/26/2007 9<sup>th</sup> U.S. National Congress on Computational Mechanics (USNCCM)  
Minisymposium MS009: Growth and Remodeling  
San Francisco, California
- 07/22 – 07/26/2007 9<sup>th</sup> U.S. National Congress on Computational Mechanics (USNCCM)  
Minisymposium MS106: Multiscale Modeling of Materials  
San Francisco, California
- 03/27 - 03/31/2006 77<sup>th</sup> Meeting of the Association of Applied Mathematics and Mechanics (GAMM)  
Session 2: Biomechanics  
Berlin, Germany

## Books

1. **Kuhl, E.** Computational Epidemiology – Data-Driven Modeling of COVID-19, Springer Nature New York, ISBN 978-3-030-82889-9, 2021.
2. De, S., Wang, W., **Kuhl, E.** (Eds.), Multiscale Modeling in Biomechanics and Mechanobiology, Springer Science + Business Media Dordrecht. ISBN 978-1-4471-6598-9, 2015.
3. Holzapfel, G.A., **Kuhl, E.** (Eds.) Computer Models in Biomechanics: From Nano to Macro, Springer Science + Business Media Dordrecht, ISBN-10: 9400754639, 2013.

## Peer Reviewed Journal Publications

Kuhl's students & postdocs underlined

1. Linka, K., **Kuhl, E.** A new family of Constitutive Artificial Neural Networks towards automated model discovery. *Computer Methods of Applied Mechanics and Engineering*. Vol 403, 115731, 2023.

2. St Pierre, S.R., Linka, K., Kuhl, E. Automated model discovery for human brain using Constitutive Artificial Neural Networks. doi:10.1101/2022.11.08.515656. 2023.
3. Wang, L.M., Goodman, M.B., Kuhl, E. Image-based axon model highlights heterogeneity in initiation of damage. *Biophysical Journal*. doi:10.1016/j.bpj.2022.11.2946. 2023
4. Wang, L.M., Kuhl, E. Mechanics of axon growth and damage: A systematic review of computational models. *Seminars in Cell & Developmental Biology*. doi:10.1016/j.semcd.2022.04.019. 2023.
5. Kaczmariski, B., Goriely, A., Kuhl, E., Moulton, D.E. A simulation tool for physics-informed control of biomimetic soft robotic arms. *IEEE Robot and Automation Letters*. accepted, 2023.
6. Linka, K., Schafer, A., Meng, X., Zou, Z., Karniadakis, G.E., Kuhl, E. Bayesian Physics-Informed Neural Networks for real-world nonlinear dynamical systems. *Computer Methods in Applied Mechanics and Engineering*. Vol 402, 115346, 2022.
7. Schafer, A., Chaggar, P., Goriely, A., Kuhl, E. Correlating tau pathology to brain atrophy using a physics-based Bayesian model. *Engineering with Computers*. Vol 38, pp. 3867-3877, 2022
8. St Pierre, S.R., Peirlinck, M., Kuhl, E. Sex matters: A comprehensive comparison of female and male hearts. *Frontiers in Physiology*. Vol 13, pp. 831179, 2022.
9. Tikenogullari, O.Z., Sahli Costabal, F., Yao, J., Marsden, A., Kuhl, E. How viscous is the beating heart? Insights from a computational study. *Computational Mechanics*. Vol 70, pp. 565-579, 2022.
10. Peirlinck, M., Yao, J., Sahli Costabal, F., Kuhl, E. How drugs modulate the performance of the human heart. *Computational Mechanics*. Vol 69, pp. 1397-1411, 2022.
11. Hoppstadter, M., Pullmann, D., Seydewitz, R., Kuhl, E., Bol, M. Correlating the microstructural architecture and macrostructural behaviour of the brain. *Acta Biomaterialia*. Vol 151, pp. 379-395, 2022.
12. Kaczmariski, B., Moulton, D.E., Kuhl, E., Goriely, A. Active filaments I: Curvature and torsion generation. *Journal of the Mechanics and Physics of Solids*. Vol 164, 104918, 2022.
13. Vastmans, J., Maes, L., Peirlinck, M., Vanderveken, E., Rega, F., Kuhl, E., Famaey, N. Growth and remodeling in the pulmonary autograft: computational evaluation using kinematic growth models and constrained mixture theory. *International Journal for Numerical Methods in Biomedical Engineering*. Vol 38, e354, 2022.
14. Oliveri, H., de Rooij, R., Kuhl, E., Goriely, A. Rheology of growing axons. *Physical Review Research*. Vol 4, 033125, 2022.
15. Schafer, A., Chaggar, P., Thompson, T.B., Goriely, A., Kuhl, E. Predicting brain atrophy from tau pathology: a summary of clinical findings and their translation into personalized models. *Brain Multiphysics*. Vol 2, 100039, 2021
16. Schafer, A., Peirlinck, M., Linka, K., Kuhl, E. Bayesian physics-based modeling of tau propagation in Alzheimer's disease. *Frontiers in Physiology*. Vol 12, 702975, 2021.
17. Peirlinck, M., Sahli Costabal, F., Kuhl, E. Sex differences in drug-induced arrhythmogenesis. *Frontiers in Physiology*. Vol 12, 708435, 2021.
18. Linka, K., Peirlinck, M., Schafer, A., Ziya Tikenogullari, O., Goriely, A., Kuhl, E. Effects of B.1.1.7 and B.1.351 on COVID-19 dynamics. A campus reopening study. *Archives of Computer Methods in Engineering*. Vol 28, pp. 4225-4236, 2021.
19. Lu, H., Weintz, C., Pace, J., Indana, D., Linka, K., Kuhl, E. Are college campuses superspreaders? A data-driven modeling study. *Computer Methods in Biomechanics and Biomedical Engineering*. Vol 24, pp. 1136-1145, 2021.
20. Peirlinck, M., Sahli Costabal, F., Yao, J., Guccione, J.M., Tripathy, S., Wang, Y., Ozturk, D., Segars,

- P., Morrison, T.M., Levine, S., **Kuhl, E.** Precision medicine in human heart modeling. Perspectives, challenges and opportunities. *Biomechanics and Modeling in Mechanobiology*. Vol 20, pp. 803-831, 2021.
21. [Linka, K.](#), Goriely, A., **Kuhl, E.** Global and local mobility as a barometer for COVID-19 dynamics. *Biomechanics and Modeling in Mechanobiology*. Vol 20, pp. 651-669, 2021.
  22. Peng, G.C.Y., Alber, M., Buganza Tepole, A., Cannon, W., De, S., Dura-Bernal, S., Garikipati, K., Karniadakis, G., Lytton, W.W., Perdikaris, P., Petzold, L., **Kuhl, E.** Multiscale modeling meets machine learning: What can we learn? *Archives of Computational Methods in Engineering*. Vol 28, pp. 1017-1037, 2021.
  23. Bhourri, M.A., [Sahli Costabal, F.](#), Wang, H., [Linka, K.](#), [Peirlinck, M.](#), **Kuhl, E.**, Perdikaris, P. COVID-19 dynamics across the US: A deep learning study of human mobility and social behavior. *Computer Methods in Applied Mechanics and Engineering*. Vol 382, 113891, 2021.
  24. [Schafer, A.](#), Mormino, E.C., **Kuhl, E.** Network diffusion modeling explains longitudinal tau PET data. *Frontiers in Neuroscience*. Vol 14, 566876, 2020.
  25. [Linka, K.](#), [Peirlinck, M.](#), **Kuhl, E.** The reproduction number of COVID-19 and its correlation with public health interventions. *Computational Mechanics*. Vol 66, pp. 1035-1050, 2020.
  26. [Peirlinck, M.](#), [Linka, K.](#), [Sahli Costabal, F.](#), Bendavid, E., Bhattacharya, J., Ioannidis, J.P.A., **Kuhl, E.** Visualizing the invisible: The effect of asymptomatic transmission on the outbreak dynamics of COVID-19. *Computer Methods in Applied Mechanics and Engineering*. Vol 372, 113410, 2020.
  27. **Kuhl, E.** Data-driven modeling of COVID-19 - Lessons learned. *Extreme Mechanics Letters*. Vol 40, 100921, 2020.
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## Book Chapters

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## Reviewed Conference Proceedings

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5. Schafer, A., Peirlinck, M., Linka, K., Weickenmeier, J., Goriely, A., **Kuhl, E.** Modeling dementia. 25<sup>th</sup> International Congress of Theoretical and Applied Mechanics (ICTAM 2020+1), Milano, Italy, Technical Abstract, 2021.
6. Linka, K., Peirlinck, M., **Kuhl, E.** Human mobility and the outbreak dynamics of COVID-19. 16<sup>th</sup> US National Congress on Computational Mechanics (USNCCM), Virtual Congress. Technical Abstract, 2021.
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### Invited Lectures

1. Data-Driven Modeling of COVID-19: Lessons Learned. Invited Speaker. New York Scientific Data Summit 2020: Data-Driven Discovery in Science and Industry. 10/22/ 2021, Virtual Event.
2. Health Care and Medicine. Panelist. New York Scientific Data Summit 2020: Data-Driven Discovery in Science and Industry. 10/22/ 2021, Virtual Event.
3. Personalized Modeling of Alzheimer’s Disease. Keynote Speaker. 24<sup>th</sup> International Conference on Medical Image Computing & Computer Assisted Intervention (MICCAI2021) Computational Biomechanics for Medicine XVI Workshop, 10/01/ 2021, Strasbourg, France.
4. Data-Driven Modeling of Neurodegeneration. Plenary Lecture. 7<sup>th</sup> International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE2021), 09/07/2021, Bonn, Germany, changed to Virtual Conference.
5. Modeling Dementia. Invited Speaker. Sectional Lecture 16. 25<sup>th</sup> International Congress of Theoretical and Applied Mechanics (ICTAM 2020+1), 08/26/ 2021, Milano, Italy.
6. Brain Network Modeling Predicts Spreading of Tau Pathology Modulated by Gene Expression. Invited Speaker. International Brain Mechanics and Trauma Lab (IBMTL) 2021 Workshop, 04/19/2021, Oxford, United Kingdom.
7. Data-Driven Modeling of COVID-19: Lessons Learned. Invited Speaker, Focus Session on Artificial Intelligence, Machine Learning, and Data Science in Medicine and Biomedicine. Applied Physics Society (APS) March Meeting 2021, 03/16/ 2021.
8. Data-Driven Modeling of COVID-19: Lessons Learned. Invited Speaker. IMAG/MSM Working Group on Multiscale Modeling for Viral Pandemics, 03/04/2021.
9. Modeling Dementia, Sectional Lecture, 25<sup>th</sup> International Congress of Theoretical and Applied Mechanics, Milano, Italy, 08/25/2020, postponed to Virtual Lecture, 08/26/2021.
10. The Multiphysics of Neurodegeneration. Plenary Lecture. 16<sup>th</sup> U.S. National Congress on Computational Mechanics, Chicago, Illinois, 07/26/2020, postponed to Virtual Lecture, 07/27/2021.
11. Stanford Mechanical Engineering during and beyond COVID-19. Invited Panelist. Autodesk University Conference and Exhibition, Las Vegas, changed to Virtual Conference, 11/17/2020.

12. Stanford Mechanical Engineering during and beyond COVID-19. Invited Panelist. Mechanical Engineering Education during the COVID-19 Pandemic. ASME International Mechanical Engineering Congress and Exposition, changed to Virtual Conference, 11/18/2020.
13. Data-driven modeling of COVID-19. Koiter Lecture. 23<sup>rd</sup> Engineering Mechanics Symposium, Delft, The Netherlands, changed to Virtual Symposium, 10/28/2020.
14. Data-driven modeling of COVID-19: Lessons learned. Invited Speaker. New York Scientific Data Summit 2020. changed to Virtual Summit, 10/22/2020.
15. Data-driven modeling of COVID-19: Lessons learned. Invited Lecture. Extreme Mechanics Letter (EML) Speaker, Webinar, 08/12/2020.
16. Modeling Dementia, Keynote Lecture, 16<sup>th</sup> International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, New York, 08/14/2019.
17. A New Application of the Living Heart Project: Machine Learning in Drug Development, Living Heart Project Symposium, Waltham, Massachusetts, 07/23/2019.
18. Credible Enough? Perspectives from Cardiac Growth and Remodeling, Invited Lecture, IMAG Multiscale Modeling Consortium Meet, Bethesda, Maryland, 03/07/2019.
19. Machine Learning in Drug Development, Invited Seminar, Department of Mechanical Engineering, FAU Erlangen, Erlangen, Germany, 06/27/2019.
20. Machine Learning in Drug Development, Invited Lecture, IMAG Multiscale Modeling Consortium Meet, Bethesda, Maryland, 03/06/2019.
21. The Life Cycle of the Human Brain – From Morphogenesis to Aging. Invited Lecture, Applied Physics Society March Meeting, Boston, Massachusetts, 03/04/2019.
22. Machine Learning in Drug Development, Applied Mathematics and Computational Science Colloquium, University of Pennsylvania, Philadelphia, Pennsylvania, 02/22/2019.
23. The Multiphysics of Alzheimer’s Disease, Invited Seminar, Department of Mechanical Engineering, FAU Erlangen, Erlangen, Germany, 12/18/2018.
24. The Multiphysics of Prion-Like Disease: Spreading and Atrophy of Neurodegeneration, Invited Seminar, Institute for Computational and Engineering Sciences, UT Austin, Texas, 11/13/2018.
25. Neuromechanics. Invited Lectures, 8<sup>th</sup> Summer School on Biomechanics and Modeling in Mechanobiology, TU Graz, Austria, 09/03-09/07/2018.
26. Instabilities in Soft Structures, Invited Lecture, International Slovay Institutes Brussels, Belgium, 08/28/2018.
27. Neuromechanics: Perspectives, Challenges, and Opportunities, Keynote Lecture, 2<sup>nd</sup> International Conference on Simulation Technology, Simtech 2018, University of Stuttgart, Germany, 03/26/2018.
28. Probing the Living Brain. Invited Lecture, 5th Oxford International Workshop on Neuron and Brain Mechanics, Oxford, United Kingdom, 03/22/2018.
29. Neuromechanics: Perspectives, Challenges, and Opportunities. Department of Mechanical and Aerospace Engineering 2018 Spring Seminar Series, Princeton, New Jersey, 02/23/2018.
30. Mechanics of the Developing Brain, Invited Lecture, Mechanics of Morphogenesis, Princeton Center for Theoretical Science, Princeton, New Jersey, 02/21/2018.
31. Probing the Living Brain, Keynote Lecture, 7<sup>th</sup> International Conference on Mechanics of Biomaterials and Tissues, Waikoloa, Hawaii, 12/11/2017.

32. Predicting Drug-Induced Arrhythmias by Multiscale Modeling, Invited Lecture, Cardiac Physiome 2017 Meeting on Metabolism, Mechanics, and Ion Fluxes, Toronto, Canada, 11/07/2017.
33. The Physics of Heart Failure, Invited Lecture, International Symposium on Physics Meets Medicine, The Heart of Active Matter, Gottingen, Germany, 09/04/2017.
34. Multiscale Computational Analysis of the Brain, Invited Lecture, International Symposium on Multiscale Computational Analysis of Complex Materials, Copenhagen, Denmark, 08/31/2017.
35. Constitutive Modeling of Human Brain Tissue, Keynote Presentation, 14<sup>th</sup> U.S. National Congress on Computational Mechanics (USNCCM), Montreal, Canada, 07/17/2017.
36. Growth and Remodeling in Soft Biological Tissue, Lecturer, 23<sup>rd</sup> CISM-IUTM International Summer School, Udine, Italy, 06/12-06.16/2017.
37. Neuromechanics: Challenges and Opportunities, Plenary Lecture, InterPore 2017, Rotterdam, The Netherlands, 05/09/2017.
38. Neuromechanics: Perspectives, Challenges, and Opportunities, Plenary Lecture, 2017 EMI International Conference, Rio de Janeiro, Brazil, 03/20/2017.
39. Neuromechanics: Perspectives, Challenges, and Opportunities, Structural Engineering, Mechanics, and Materials (SEMM) Seminar, Georgia Institute of Technology, Atlanta, 09/19/2016.
40. Introduction to Neuromechanics, Keynote Lecture, 622<sup>nd</sup> WE Heraeus Seminar on Neuronal Mechanics, Physics Center Bad Honnef, 08/17/2016.
41. Neuromechanics: Challenges and Opportunities, Semi-Plenary Lecture, 12th World Congress on Computational Mechanics (WCCM), Seoul, Korea, 07/26/2016.
42. Understanding Brain Development as a Mechanical Instability Problem, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, 11/04/2015.
43. The Power of Personalized Simulation, Simulia West Regional User Meeting, Santa Clara, California, 10/28/2015.
44. The Living Heart Project: Modeling Pathologies and Personalizing Treatment, Simulia Central Regional User Meeting, Minneapolis, Minnesota, 09/23/2015.
45. Mechanics of the Developing Brain, Institute for Computational Engineering and Sciences (ICES), The University of Texas at Austin, Texas, 04/20/2015.
46. Mechanics of the Developing Brain, University of Pennsylvania, Philadelphia, 03/17/2015.
47. The Living Heart Project - Modeling Pathologies and Optimizing Treatment, Living Heart Founding Member Meeting, San Diego, California, 03/12/2015.
48. Mechanics of the Brain, 3<sup>rd</sup> Oxford Brain Mechanics Workshop, Oxford, United Kingdom, 01/19/2015.
49. How does our Brain get its Folds? Stanford Brain Bee - Qualifying Round of the International Brain Bee, a Neuroscience Competition for High School Students, Stanford University, 01/10/2015.
50. Mechanics in Brain Development, Solid Mechanics Seminar, Carolo Wilhelmina University Braunschweig, Germany, 12/17/2014.
51. On the Role of Neuromechanics in Human Brain Development, Axonal Transport and Neuronal Mechanics, Mathematical Biosciences Institute (MBI), Columbus, Ohio, 11/06/2014.
52. Mechanics of the Developing Brain, Plenary Lecture, Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Amsterdam, The Netherlands, 10/13/2014.

53. Modeling Pathologies within the Living Heart Project, Abaqus/Simulia Living Heart Meeting, Providence, Rhode Island, 09/16/2014.
54. A Mechanical Model Explains Brain Development, IUTAM Symposium on Innovative Numerical Approaches for Materials and Structures, Burg Schnellenberg, Germany, 09/03/2014.
55. Growth and Development of the Human Brain, Eleventh World Congress on Computational Mechanics (WCCM), Barcelona, Spain, 07/14/2014.
56. Morphological Instabilities of Cortical Folding in the Developing Human Brain, Instabilities Across the Scales (IAS), Cachan, Paris, France, 06/05/2014.
57. Extreme Mechanics of Growing Matter, Mechanics: Modeling, Experimentation, Computation Seminar, Massachusetts Institute of Technology, Cambridge, Massachusetts, 05/06/2014.
58. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, University of Minnesota, Minneapolis, Minnesota, 04/25/2014.
59. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, Iowa State University, Ames, Iowa, 04/24/2014.
60. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, Illinois Institute of Technology, Chicago, Illinois, 04/23/2014.
61. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, University of Illinois at Urbana Champaign, Champaign, Illinois 04/22/2014.
62. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, Purdue University, West Lafayette, Indiana, 04/21/2014.
63. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, Northwestern University, Chicago, Illinois, 01/30/2014.
64. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, University of Notre Dame, South Bend, Indiana, 01/29/2014.
65. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, Michigan State, East Lansing, Michigan, 01/28/2014.
66. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, University of Michigan, Ann Arbor, Michigan, 01/27/2014.
67. On the Role of Mechanics During Brain Development, 2<sup>nd</sup> Oxford Brain Mechanics Workshop, Oxford, United Kingdom, 01/13/2014.
68. The Virtual Heart, Simulia User Meeting, Santa Clara, California, 10/17/2013.
69. Challenges in Modeling Growing Matter, Current Challenges in Computing (C<sup>3</sup>), Napa, California, 09/04/2013.
70. Chemo-Electro-Mechanical Coupling in Living Systems, Euromech Colloquium 545, Dortmund, Germany, 05/23/2013.
71. The Virtual Heart, Simulia Community Conference, Vienna, Austria, 05/22/2013.
72. Mechanics of the Mitral Valve, Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Salt Lake City, Utah, 05/03/2013.
73. On the Biomechanics and Mechanobiology of Skin, Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Salt Lake City, Utah, 04/03/2013.

74. The Virtual Heart, Fourth Annual International Conference in Computational Surgery, Boston, Massachusetts, 12/10/2012.
75. Modeling and Simulation in Soft Biological Tissue Biomechanics, Summer School Lecturer, Graz, Austria, 9/3-9/7/2012.
76. Biomechanics and Mechanobiology of Skin, European Solid Mechanics Conference (ESMC), Graz Austria, 7/12/2012.
77. Pacing Hearts with Light, European Solid Mechanics Conference, Graz, Austria, 7/12/2012.
78. Computational Modeling of the Heart, Solvers in Biomedical Applications, Graz, Austria, 7/3/2012.
79. The Mechanics of Growing Skin, 83rd Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Darmstadt, Germany, 3/29/2012.
80. Cardiac Optogenetics – Turning Light into Force, Multiscale Methods and Validation in Medicine and Biology (MMVMB), San Francisco, California, 2/13/2012.
81. Computational Optogenetics - Turning Light into Force, IUTAM Symposium on Computer Models in Biomechanics, Stanford, California, 8/30/2011.
82. Computational Modeling of Skin Growth in Reconstructive Surgery, 11th USNCCM, Minneapolis, Minneapolis, 7/26/2011.
83. Biomechanics of cardiovascular tissue, Hemodynamics and Vascular Disease Seminar. University of California at San Francisco, California, 12/16/2010.
84. Multiscale modeling of heart failure: From sarcomerogenesis to cardiac growth, Biomechanics Seminar. University of California at San Diego, 11/10/2010.
85. A multiscale model for cardiac growth through sarcomerogenesis, Mathematical Foundations of Mechanical Biology. Banff International Research Station for Mathematical Innovation and Discovery, Banff, Canada, 9/28/2010.
86. A multiscale continuum approach towards computational cardiology, Structural Engineering Seminar Series, University of Illinois Urbana Champaign, 3/15/2010.
87. On the structure-function relationship in electro-active cardiac tissue, Seminar on Modeling Biological Materials. Texas A&M, College Station, Texas, 1/27/2010.
88. The Virtual Heart. A multiscale continuum approach towards computational cardiology, Cardiomyopathy Seminar. Stanford University, 12/5/2009.
89. Biomechanics of the heart, Bioengineering Seminar. BIOE102. University of California at Berkeley, 11/4/2009.
90. The virtual heart - A hierarchical approach towards computational cardiology, Applied Mechanics Seminar, University of Erlangen Nuremberg, Erlangen, Germany, 10/12/2009.
91. Computational design of heart failure treatment, Theoretical and Applied Mechanics Colloquium, Northwestern University, Evanston, IL, 4/15/2009.
92. The Virtual Heart. A multiscale continuum approach towards computational cardiology, Frontiers in Interdisciplinary Biosciences. Stanford University, 4/9/2009.
93. The Virtual Heart - A multiscale continuum approach for computational cardiology, Applied Mechanics Colloquium, Eidsgenossische Technische Hochschule (ETH) Zurich, Switzerland, 3/9/2009.

94. The virtual heart - A hierarchical approach towards computational cardiology, Graduate Aeronautics Laboratories California Institute of Technology (GALCIT) Colloquium, California Institute of Technology, Pasadena, CA, 2/6/2009.
95. The virtual heart - A hierarchical approach towards computational cardiology, Applied Mechanics Colloquium, Harvard University, Cambridge, MA, 10/15/2008.
96. Growth and remodeling of the heart - A cell-based continuum approach, Mathematical Modelling of Biological Tissues, Mathematical Research Center Oberwolfach, Germany, 9/3/2008.
97. Computational design of novel stem-cell based therapies for myocardial infarction, XXII International Congress of Theoretical and Applied Mechanics (ICTAM) Conference, Minisymposium on Growth, Adelaide, Australia, 8/27/2008.
98. How to treat the loss of beat - Modeling and simulation of ventricular growth and remodeling and novel post-infarction therapies, American Society of Mechanical Engineers (ASME) Summer Bioengineering Conference (SBC) 2008, Minisymposium on Growth, Marco Island, FL, 6/27/2008.
99. Dilation and hypertrophy - A cell based continuum mechanics approach towards ventricular growth and remodeling, International Union of Theoretical and Applied Mechanics (IUTAM) Symposium on Cellular, Molecular, and Tissue Mechanics, Woods Hole, MA, 6/20/2008.
100. Computational simulation of growing tissues, Growth in the Desert, University of Arizona, Tucson, AZ, 9/21/2007.
101. Collagen fiber remodeling in arterial walls, Sixth International Congress on Industrial and Applied Mathematics (ICIAM) 2007, Minisymposium on Biological Structures, Zurich, Switzerland, 7/17/2007.
102. Computational modeling of mineral unmixing and growth, Instabilities Across the Scales, Delft, the Netherlands, 7/2/2007.
103. On the application of discontinuous Galerkin methods to interface problems, International Union of Theoretical and Applied Mechanics (IUTAM) Symposium on Discretization Methods for Evolving Discontinuities, Lyon, France, 9/4/2006.
104. Advanced chain network models in biomechanics, Sixth European Solid Mechanics Conference ESMC, Minisymposium on Biomechanics, Budapest, Hungary, 8/29/2006.
105. On the computational simulation of three-dimensional strong discontinuities, World Congress on Computational Mechanics (WCCM) VII, Minisymposium on Failure Mechanics, Los Angeles, CA, 7/18/2006.
106. Continuum biomechanics - Pantha psiloni, Massachusetts Institute of Technology, Cambridge, MA, 3/23/2006.
107. Continuum biomechanics - Pantha psiloni, Virginia Polytechnic Institute and State University, Blacksburg, VA, 3/2/2006.
108. Modellierung lebender biologischer Gewebe, University of Braunschweig, Germany, 1/26/2006.
109. Form follows function - Natural design in structural mechanics, Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland, 1/19/2006.
110. Simulation of diffusion processes - Numerics of the Cahn Hilliard equation, Kolloquium fur Mechanik, University of Braunschweig, Germany, 1/12/2006.
111. Kontinuumsmechanik offener Systeme - Biologische und technische Strukturen, University of Kassel, Germany, 12/21/2005.
112. Kontinuumsmechanik offener Systeme - Smart Structures in der Natur, University of Karlsruhe, Germany, 12/14/2005.

113. Pantha psiloni - Everything grows, Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany, 11/23/2005.
114. On the fundamental difference between engineering materials and living tissues, Seminar in Civil and Environmental Engineering, University of California at Davis, CA, 10/28/2005.
115. Form follows function - Natürlich optimierte Strukturen in der Biomechanik, University of Stuttgart, Germany, 4/29/2005.
116. Continuum biomechanics - Pantha psiloni, Eidsgenossische Technische Hochschule (ETH) Zurich, Switzerland, 4/7/2005.
117. Continuum biomechanics - Pantha psiloni, Mechanical Engineering Seminar, California Institute of Technology, Pasadena, CA, 3/29/2005.
118. Continuum biomechanics - Everything grows, Computational Solid Mechanics Seminar, California Institute of Technology, Pasadena, CA, 3/11/2005.
119. Modelling and simulation of biological growth phenomena, Mathematical methods and models of continuum biomechanics, Mathematical Research Center, Oberwolfach, Germany, 2/24/2005.
120. Modelling and simulation of isotropic and anisotropic biological growth, Plasticity 2005, Kauai, Hawaii, 1/4/2005.
121. Erweiterung klassischer kontinuumsmechanischer Konzepte auf die Biomechanik, University of Hannover, Germany, 10/25/2004.
122. Spatial and material convexity analysis in nonlinear hyperelasticity, Instabilities Across the Scales 2004, Cairns, Australia, 9/17/2004.
123. Modeling and simulation of isotropic and anisotropic growth in biological tissues, International Union of Theoretical and Applied Mechanics (IUTAM) Symposium on Mechanics of Biological Tissue, Graz, Austria, 7/1/2004.
124. Optimales Design - Die Natur als Vorbild, University of Siegen, Germany, 6/18/2004.
125. Biomechanik - Modellierung und Simulation von biologischen Werkstoffen, Technical University of Berlin, Germany, 5/25/2004.
126. Computational modeling of isotropic growth, Continuum Modelling of Tissue and Implants, Keynote Lecture, Göteborg, Sweden, 10/02/2003.
127. ALE formulation based on the spatial and material setting of continuum mechanics, Seventh U.S. National Conference on Computational Mechanics (USNCCM), Albuquerque, NM, 7/30/2003.
128. Theory and numerics of mechanically induced healing phenomena, Seventh U.S. National Conference on Computational Mechanics (USNCCM), Albuquerque, NM, 7/28/2003.
129. Computational spatial and material settings of continuum mechanics: An Arbitrary Lagrangian Eulerian formulation, Euromech Colloquium 445: Mechanics of Material Forces, Technical University of Kaiserslautern, Germany, 5/21/2003.
130. Geometrically nonlinear functional adaption of biological microstructures, Fifth World Congress on Computational Mechanics (WCCM), Keynote Lecture, Vienna, Austria, 7/10/2002.
131. Failure analysis for elasto-plastic material models on different levels of observation, Fifth U.S. National Conference on Computational Mechanics (USNCCM), Boulder, CO, 8/04/1999.
132. Stability and bifurcation of elasto-plastic micro- vs. macroscopic formulations, Euromech Colloquium 390: Instability and Bifurcation, Paris, France, 5/11/1999.



## Postdoctoral Trainees

Jennifer Maier

02/01/2022 - present

Extreme mechanics of the shoulder joint.

Postdoctoral Researcher, Wu Tsai Human Performance Alliance, Stanford

Mathias Peirlinck

09/01/2019 – 07/31/2021

Assistant Professor of Biomechanical Engineering

Technical University of Delft, The Netherlands

Kevin Linka

03/01/2020 – 08/31/2020

Data-driven modeling of COVID-19

Postdoctoral Researcher, TUHH Hamburg Harburg, Germany

Lise Noel

12/2017 - 12/2018

Assistant Professor of Precision and Microsystems Engineering

Technical University of Delft, The Netherlands

Johannes Weickenmeier

05/2014 – 12/2017

Assistant Professor of Mechanical Engineering

Stevens Institute of Technology, Hoboken, New Jersey

Martin Genet

09/2012 - 06/2014

Assistant Professor of Mechanical Engineering

Ecole Polytechnique, Palaiseau, Paris, France

Pablo Saez

02/2013-08/2013

Assistant Professor, Department of Applied Mathematics

Universitat Politecnica de Catalunya, Barcelona, Spain

Husnu Dal

07/2011-12/2011

Associate Professor of Mechanical Engineering

Middle East Technical University (METU) Ankara, Turkey

Alkiviadis Tsamis

03/2010 - 06/2011

Assistant Professor of Mechanical Engineering

University of Western Macedonia, Greece

Serdar Goktepe

12/2007-04/2010

Associate Professor of Civil Engineering

Middle East Technical University (METU) Ankara, Turkey

## Current Doctoral Students

Oguz Ziya Tikenogullari  
Thesis: Modeling the Living Heart  
Anticipated year of graduation: 2023

Lucy Wang  
Thesis: Biophysics of the Axon  
Anticipated year of graduation: 2023

Bartek Krzysztof Kaczmarek  
Thesis: The Mechanics of Instabilities in Soft Solids  
Anticipated year of graduation: 2024

Sarah St. Pierre  
Thesis: Sex matters. Understanding the Limits of Human Performance.  
Anticipated year of graduation: 2025

## Former Doctoral Students

Amelie Schafer  
Thesis: Biophysical Behavior of the Living Human Brain  
Year of graduation: 2022  
Data Scientist, Neuron23, San Francisco, California

Francisco Sahli Costabal  
Thesis: Multiscale Modeling of Cardiac Arrhythmias  
Year of graduation: 2018  
Assistant Professor, Pontificia Universidad Catolica de Chile, Santiago, Chile

Rijk de Rooij  
Thesis: Multiscale Modeling of Brain Mechanics  
Year of graduation: 2018  
Product Design Engineer, Apple Inc., Cupertino, California

Silvia Budday  
Thesis: Human Brain Development  
Year of graduation: 2017  
Emmy Noether Independent Junior Research Group Leader, University of Erlangen, Germany

Maria A. Holland  
Thesis: On the Role of Mechanics in Brain Development  
Year of graduation: 2017  
Assistant Professor of Mechanical Engineering, University of Notre Dame, South Bend, Indiana

Mona Eskandari  
Thesis: On the Role of Mechanics in Chronic Lung Disease  
Year of graduation: 2017  
Assistant Professor of Mechanical Engineering, University of California, Riverside, California

Alexander M. Zollner  
Thesis: Challenges in Computational Modeling of Biological Systems  
Year of graduation: 2016  
Moonshot Prospector, X: The Moonshot Factory, Mountain View, California

Adrian Buganza Tepole

Thesis: Modeling Growth and Healing of Living Skin

Year of graduation: 2015

Associate Professor of Mechanical Engineering, Purdue University, West Lafayette, Indiana

Manuel K. Rausch

Thesis: Mechanics of the Mitral Valve – An in vivo / in silico Approach

Year of graduation: 2013

Assistant Professor of Mechanical Engineering, University of Texas, Austin, Texas

Jonathan Wong

Thesis: Efficient Modeling of Cardiac Tissue and Resulting Applications

Year of graduation: 2012

Software Engineer, San Francisco, California

Philippe Jager

Thesis: Theory and Numerics of Modeling of Strong Discontinuities at Finite Strains

Year of graduation: 2009

Design Engineer, Siemens AG, Energy, Mulheim an der Ruhr, Germany

Holger Meier

Thesis: Computational Homogenization of Confined Granular Media

Year of graduation: 2009

Research & Development Engineer, ExxonMobil Research and Development, Annandale, New Jersey

Grieta (Himpel) Albers

Thesis: Theory and Numerics of Growth Phenomena in Biological Tissues

Year of graduation: 2007

Design Engineer, BASF Polyurethanes GmbH, Lemforde, Germany

Julia Mergheim

Thesis: Computational Modeling of Strong and Weak Discontinuities

Year of graduation: 2005

Professor of Mechanical Engineering, University of Erlangen-Nuremberg, Erlangen, Germany

### **Supervised Master Students and Co-Authors on a Publication**

Sveva Fornari

10/2018 – 03/2019

Master Thesis: “Spreading of prion-like proteins in Alzheimer’s disease”

Caitlin Ploch

09/2015 - 08/2016

Associate Patent Agent, Schox, San Francisco, California

Felipe Concha

03/2016 – 09/2016

Master Thesis: “Mechano-electrical feedback and inertia in cardiac electromechanics”, 2016

Martin Pfaller

04/2013 - 10/2013

Master Thesis: “Instabilities during mucosal folding induced by volumetric growth,” 2013

Postdoctoral Researcher, Cardiovascular Biomechanics Computation Lab, Stanford University

Katrina Wisdom

09/2012 - 12/2013

PhD student, Chaudhuri Lab, Mechanical Engineering, Stanford University, Stanford, California

Annette Bohmer

09/2012 - 03/2013

Master Thesis: "Medical device design process: A medical engineering perspective," 2013

PhD student, Institute of Product Development, Engineering, Technical University of Munich, Germany

Christopher Ploch

09/2010 - 06/2011

PhD student, Cutkosky Lab, Mechanical Engineering, Stanford University, Stanford, California

Sudarsan Acharya

06/2010 - 12/2010

Senior Cloud Software Developer/Architect, Rackspace, San Antonio, Texas

Henry Pang

10/2010 - 12/2010

Mechanical Engineer, Nikon Research Corporation of America, Belmont, California

Abishek Shiwalkar

10/2010 - 12/2010

Automation Engineer, Apple Inc., Cupertino, California

Chris Madormo

10/2010 - 12/2010

Flight Test Engineer, Pratt & Whitney, Toulouse, France

Parastou Eslami

09/2009 - 06/2010

PhD student, Institute for Computational Medicine, Johns Hopkins University, Baltimore, Maryland

Lionel Guillou

09/2009 - 06/2010

PhD student, Cardiovascular Engineering Laboratory, Ecole Polytechnique, Palaiseau, Paris, France

Daniel Werner

06/2009 - 09/2009

Master Thesis: "Simulation of growth processes in the human heart," 2009

PhD student in Mechanical Engineering, Technical University of Dortmund, Germany

Mohan Kotikanyadanam

08/2008 - 12/2009

Research and Development Engineer, Shell Global Solutions U.S. Inc., Houston, Texas

Gaurav Krishnamurthy

09/2007 - 12/2009

Research and Development Engineer, Altura Medical Inc., Menlo Park, California

Joseph Ulerich

09/2007 - 12/2008

Design Engineer, Northrop Grumman Electronic Systems, Linthicum, Maryland

Rebecca Taylor

04/2007 - 12/2008

Assistant Professor of Mechanical Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania

Chung hua Zheng

04/2007 - 12/2007

Clinical Development Engineer, Intuitive Surgical, Sunnyvale, California

Britta Hirschberger

09/2006 - 12/2007

Research and Development Engineer, Volkswagen AG, Wolfsburg, Germany

Frank Balle

07/2005 - 12/2005

Master Thesis: "Computational modeling of hip replacement surgery," 2005

Professor of Functional Materials, University of Freiburg, Germany

Ramona (Maas) Hoffmann

04/2005 – 09/2005

Master Thesis: "On the Implementation of Material Growth into Abaqus," 2005

Professor of Engineering, University of Applied Sciences, Saarbrücken, Germany

Swantje Bargmann

10/2004 – 03/2005

Master Thesis: "Structural optimisation by using spatial and material forces," 2005

Chair of Solid Mechanics, University of Wuppertal, Wuppertal, Germany

### **Supervised Undergraduates and Co-Authors on a Publication**

Taylor Christine Harris

05/2018 – 06/2018

Knight-Hennessy Scholar, Medical Student, Stanford University, Stanford, California

Nithya Vijayakumar

01/2014 – 12/2014

Medical Student, University of Michigan, Ann Arbor, Michigan

Ben Rhyne

01/2014 - 03/2014

Graduate Student of Management Science and Engineering, Stanford University, Stanford, California

Kevin Danser

01/2014 - 03/2014

Right Guard, Tennessee Titans, Nashville, Tennessee

Tim Kosmata

08/2012 - 12/2012 and 05/2014 – 06/2014

Graduate Composite Design Engineer, Mercedes Formula One Team, Brackley, United Kingdom

Jaqi Pok

06/2013 - 12/2013

Product Design Engineering Program Manager, Apple Inc., Cupertino, California

Tyler O'Brian Shultz

07/2010 - 06/2011

Research Assistant, Center for Magnetic Nanotechnology, Stanford, California

Corey Murphey

07/2010 - 06/2011

Patent Engineer, Schox PLC, San Francisco, California

Anton Dam

06/2008 - 08/2010

Currently: Software Engineer, LinkedIn, Mountain View, California

## Teaching

22/23	Fall	<i>Introduction to Neuromechanics ME234</i> Mechanical Engineering, Stanford University, undergraduate, enrollment 67
21/22	Fall	<i>Data-driven Modeling of COVID-19 ME233</i> Mechanical Engineering, Stanford University, graduate level, enrollment 12
20/21	Fall	<i>Data-driven Modeling of COVID-19 ME233</i> Mechanical Engineering, Stanford University, graduate level, enrollment 34
19/20	Winter	<i>Introduction to Neuromechanics ME234</i> Mechanical Engineering, Stanford University, undergraduate, enrollment 35
18/19	Summer	<i>Introduction to Neuromechanics</i> Engineering, FAU Erlangen-Nuremberg, Germany, graduate, enrollment 40
18/19	Winter	<i>Mechanics of Growth ME337</i> Mechanical Engineering, Stanford University, graduate level, enrollment 18
18/19	Fall	<i>Introduction to Neuromechanics ME234</i> Mechanical Engineering, Stanford University, undergraduate, enrollment 30
17/18	Spring	<i>Mechanics of Growth ME337</i> Mechanical Engineering, Stanford University, graduate level, enrollment 18
17/18	Winter	<i>Introduction to Solid Mechanics ENGR14</i> Engineering, Stanford University, undergraduate level, enrollment 61
17/18	Fall	<i>Introduction to Neuromechanics ME234</i> Mechanical Engineering, Stanford University, undergraduate, enrollment 53
16/17	Summer	<i>Introduction to Neuromechanics</i> Engineering, FAU Erlangen-Nuremberg, Germany, graduate, enrollment 34
16/17	Spring	<i>Mechanics: Continuum Mechanics ME333C</i> Mechanical Engineering, Stanford University, graduate level, enrollment 7
16/17	Winter	<i>Introduction to Solid Mechanics ENGR14</i> Engineering, Stanford University, undergraduate level, enrollment 84
16/17	Fall	<i>Introduction to Neuromechanics ME234</i> Mechanical Engineering, Stanford University, undergraduate, enrollment 26
15/16	Spring	<i>Mechanics: Continuum Mechanics ME333C</i> Mechanical Engineering, Stanford University, graduate level, enrollment 8
15/16	Winter	<i>Introduction to Solid Mechanics ENGR14</i> Engineering, Stanford University, undergraduate level, enrollment 85
15/16	Winter	<i>The Future of Mechanical Engineering ME228</i> Mechanical Engineering, Stanford University, seminar, enrollment 32
15/16	Fall	<i>Introduction to Neuromechanics ME234</i> Mechanical Engineering, Stanford University, undergraduate, enrollment 21
14/15	Spring	<i>Mechanics: Continuum Mechanics ME333C</i> Mechanical Engineering, Stanford University, graduate level, enrollment 14
14/15	Winter	<i>Mechanics of Growth ME337</i> Mechanical Engineering, Stanford University, graduate level, enrollment 13

14/15	Fall	<i>Mechanics of the Brain ME334</i> Mechanical Engineering, Stanford University, graduate level, enrollment 23
13/14	Winter	<i>Mechanics of Growth ME337</i> Mechanical Engineering, Stanford University, graduate level, enrollment 15
13/14	Fall	<i>Continuum Mechanics ME338</i> Mechanical Engineering, Stanford University, graduate level, enrollment 14
12/13	Winter	<i>Mechanics of Growth ME337</i> Mechanical Engineering, Stanford University, graduate level, enrollment 14
12/13	Fall	<i>Continuum Mechanics ME338</i> Mechanical Engineering, Stanford University, graduate level, enrollment 15
11/12	Spring	<i>Mechanics of the Cell ME239</i> Engineering, Stanford University, undergraduate level, enrollment 23
11/12	Winter	<i>Mechanics of Growth ME337</i> Mechanical Engineering, Stanford University, graduate level, enrollment 18
11/12	Fall	<i>Mechanics I</i> Engineering, ETH Zurich, undergraduate level, enrollment 251
10/11	Spring	<i>Statics E14</i> Engineering, Stanford University, undergraduate level, enrollment 116
10/11	Winter	<i>Mechanics of the Cell ME239</i> Engineering, Stanford University, undergraduate level, enrollment 26
10/11	Fall	<i>Mechanics of Growth ME337</i> Mechanical Engineering, Stanford University, graduate level, enrollment 23
10/11	Fall	<i>Dim Sum of Mechanical Engineering Seminar ME201</i> Mechanical Engineering, Stanford University, graduate level, enrollment 44
09/10	Spring	<i>Mechanics of the Cell ME239</i> Engineering, Stanford University, undergraduate level, enrollment 24
09/10	Winter	<i>Continuum Mechanics ME338A</i> Mechanical Engineering, Stanford University, graduate level, enrollment 15
09/10	Fall	<i>Dim Sum of Mechanical Engineering Seminar ME201</i> Mechanical Engineering, Stanford University, graduate level, enrollment 27
08/09	Spring	<i>Finite Element Analysis in Design ME309</i> Mechanical Engineering, Stanford University, graduate level, enrollment 35
08/09	Winter	<i>Continuum Mechanics ME338A</i> Mechanical Engineering, Stanford University, graduate level, enrollment 15
08/09	Winter	<i>Solid Mechanics Seminar ME395</i> Mechanical Engineering, Stanford University, graduate level, enrollment 9
08/09	Fall	<i>Mechanics of the Cell ME339</i> Mechanical Engineering, Stanford University, graduate level, enrollment 7
08/09	Fall	<i>Dim Sum of Mechanical Engineering Seminar ME201</i> Mechanical Engineering, Stanford University, graduate level, enrollment 26
07/08	Spring	<i>Continuum Mechanics ME338A</i>

		Mechanical Engineering, Stanford University, graduate level, enrollment 24
07/08	Fall	<i>Dim Sum of Mechanical Engineering Seminar ME201</i> Mechanical Engineering, Stanford University, graduate level, enrollment 42
07/08	Winter	<i>Finite Element Analysis in Design ME309</i> Mechanical Engineering, Stanford University, graduate level, enrollment 22
07/08	Winter	<i>Solid Mechanics Seminar ME395</i> Mechanical Engineering, Stanford University, graduate level, enrollment 13
07/08	Fall	<i>Mechanics of the Cell ME339</i> Mechanical Engineering, Stanford University, graduate level, enrollment 11
07/08	Fall	<i>Dim Sum of Mechanical Engineering Seminar ME201</i> Mechanical Engineering, Stanford University, graduate level, enrollment 42
07/08	Fall	<i>Solid Mechanics Seminar ME395</i> Mechanical Engineering, Stanford University, graduate level, enrollment 16
06/07	Spring	<i>Mechanics of Growth ME337</i> Mechanical Engineering, Stanford University, graduate level, enrollment 6
05/06	Summer	<i>Mechanics II - Strength of Materials</i> Engineering, TU Kaiserslautern, undergraduate level, enrollment 289
05/06	Summer	<i>Linear Finite Element Methods</i> Mechanical Engineering, TU Kaiserslautern, graduate level, enrollment 38
05/06	Winter	<i>Mechanics I - Statics and Dynamics</i> Engineering, TU Kaiserslautern, undergraduate level, enrollment 314
05/06	Winter	<i>Nonlinear Finite Element Methods</i> Mechanical Engineering, TU Kaiserslautern, graduate level, enrollment 10
04/05	Summer	<i>Linear Finite Element Methods</i> Mechanical Engineering, TU Kaiserslautern, graduate level, enrollment 32
04/05	Winter	<i>Nonlinear Finite Element Methods</i> Mechanical Engineering, TU Kaiserslautern, graduate level, enrollment 9
03/04	Summer	<i>Linear Finite Element Methods</i> Mechanical Engineering, TU Kaiserslautern, graduate level, enrollment 35
03/04	Summer	<i>Nonlinear Continuum Mechanics</i> Mechanical Engineering, TU Kaiserslautern, graduate level, enrollment 8
03/04	Winter	<i>Linear Continuum Mechanics</i> Mechanical Engineering, TU Kaiserslautern, graduate level, enrollment 12
03/04	Winter	<i>Nonlinear Finite Element Methods</i> Engineering, TU Kaiserslautern, graduate level, enrollment 7
03/04	Fall	<i>Open Systems and Material Growth</i> Commas Summer School, University of Stuttgart, enrollment 21
02/03	Summer	<i>Linear Finite Element Methods</i> Engineering, TU Kaiserslautern, graduate level, enrollment 31
02/03	Winter	<i>Linear and Nonlinear Finite Element Methods</i> Lecture Series, IGERT 814, TU Kaiserslautern, PhD level, enrollment 18



02/03	Winter	<i>Nonlinear Finite Element Methods</i> Engineering, TU Kaiserslautern, graduate level, enrollment 8
01/02	Summer	<i>Linear Finite Element Methods</i> Mechanical Engineering, TU Kaiserslautern, graduate level, enrollment 37
01/02	Winter	<i>Nonlinear Finite Element Methods</i> Mechanical Engineering, TU Kaiserslautern, graduate level, enrollment 10
00/01	Summer	<i>Biomechanics</i> Mechanical Engineering, TU Kaiserslautern, graduate level, enrollment 8
99/00	Winter	<i>Finite Elements in Structural Mechanics I (Selected Lectures)</i> Civil Engineering, University of Stuttgart, graduate level, enrollment 41
98/99	Summer	<i>Finite Elements in Structural Mechanics II (Selected Lectures)</i> Civil Engineering, University of Stuttgart, graduate level, enrollment 15
98/99	Winter	<i>Finite Elements in Structural Mechanics I (Selected Lectures)</i> Civil Engineering, University of Stuttgart, graduate level, enrollment 39
95/96	Summer	<i>Finite Element Methods (Problem Sessions)</i> Civil Engineering, University of Hannover, graduate level, enrollment 12
93-95	Summer	<i>Mechanics II – Strength of Materials (Problem Sessions)</i> Civil Engineering, University of Hannover, undergraduate level, enrollment 35
92-95	Winter	<i>Mechanics I - Statics (Problem Sessions)</i> Civil Engineering, University of Hannover, undergraduate level, enrollment 40

### Sponsored Research

Title: A Novel Approach towards Drug Screening using Machine Learning

Role: Principal Investigator

Dates: 10/01/18 - 09/30/20

Funding: \$200,000

Source of support: Stanford BIO-X Interdisciplinary Initiatives Seed Grant Program (IIP) 9

Title: A New Framework for Understanding the Mechanisms of Diastolic Dysfunction

Role: Co-Investigator (PI Ennis)

Dates: 10/01/16 - 09/30/18

Funding: \$180,000

Source of support: National Institutes of Health R01 HL131823

Title: Understanding Neurodegeneration Across the Scales

Role: Principal Investigator

Dates: 09/01/17 - 08/31/20

Funding: \$400,000

Source of support: National Science Foundation CMMI 1727268

Title: Multi-Scale Laws of Myocardial Growth and Remodeling

Role: Principal Investigator (with Julius Guccione and Ghassan Kassab)

Dates: 07/25/14 - 06/30/19

Funding: \$3,750,000

Source of support: National Institutes of Health U01 HL119578

Title: Molecular Mechanisms of Chronic Traumatic Encephalopathy

Role: Principal Investigator

Dates: 10/01/16 - 09/30/18

Funding: \$200,000

Source of support: Stanford BIO-X Interdisciplinary Initiatives Seed Grant Program (IIP) 8

Title: Understanding Gyrification Dynamics in the Human Brain

Role: Principal Investigator

Dates: 10/01/14 - 09/30/17

Funding: \$200,000

Source of support: Stanford BIO-X Interdisciplinary Initiatives Seed Grant Program (IIP) 7

Title: Determining the Biomechanical and Biological Response of Stretched Skin

Role: Collaborator (with Arun Gosain)

Dates: 04/01/16 - 03/31/18

Funding: \$289,809

Source of support: National Institutes of Health R21 EB021590

Title: Optogenetic Control of the Human Heart – Turning Light into Force

Role: Principal Investigator

Dates: 08/15/12 - 08/14/16

Funding: \$600,000

Source of support: National Science Foundation INSPIRE 1233054

Title: The Virtual Heart – Exploring the Structure-Function Relationship in Electroactive Cardiac Tissue

Role: Principal Investigator

Dates: 02/01/10 - 01/31/15

Funding: \$400,000

Source of support: National Science Foundation CAREER CMMI-0952021

Title: Engineering of cardiovascular cellular interfaces and tissue constructs.

Role: Co-Investigator (with Beth Pruitt)

Dates: 09/01/07 - 08/31/12

Funding: \$2,000,000

Source of support: National Science Foundation EFRI-CBE 0735551

Title: IUTAM Symposium on Computer Models in Biomechanics: From Nano to Macro.

Role: Principal Investigator

Dates: 04/01/11 - 03/31/12

Funding: \$35,000

Source of support: National Science Foundation CMMI 1050504

Title: A New Predictive Multiscale Simulation Tool for Heart Failure.

Role: Principal Investigator

Dates: 09/01/09 - 08/31/10

Funding: \$45,000

Source of support: Hellman Faculty Scholar Fund

Title: An Integrated Approach to Cardiac Repair: Computational Models, Biomaterials, and Stem Cells.

Role: Co-Investigator (with Sarah Heilshorn)

Dates: 09/01/08 - 08/31/10

Funding: \$200,000

Source of support: Stanford BIO-X Interdisciplinary Initiatives Seed Grant Program (IIP) 4

Title: SimGrowth - A Virtual Lab for Myocardial Infarction and Restoration of Cardiac Function

Role: Principal Investigator

Dates: 10/01/07 - 03/31/08

Funding: \$30,000

Source of Support: National Institutes of Health 5U54GM072970, Seed Grant

Title: Nonlinear Functional Adaptation of Biological Microstructures

Role: Principal Investigator

Dates: 04/01/01 - 03/30/03

Funding: \$120,000

Source of Support: German National Science Foundation (DFG), Habilitation Grant KU1313/3-1