

Curriculum Vitae

Ellen Kuhl

Living Matter Laboratory
Departments of Mechanical Engineering
Bioengineering, and Cardiothoracic Surgery
452 Escondido Mall, Building 520, Room 203
Stanford, CA 94306
ekuhl@stanford.edu
<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

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 rd 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
----------------	---

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

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	US Association for Computational Mechanics, Chair TTA Data-Driven Modeling
2018 - present	US National Committee on Biomechanics, Chair
2018 - present	World Council of Biomechanics, Member-Elect
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
2021 - present	Wu Tsai Human Performance Alliance at Stanford, Executive Committee
2019 - present	Department of Mechanical Engineering, Robert Bosch Department Chair
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

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 13th World Congress on Computational Mechanics (WCCM) - cancelled
Minisymposium MS319: Machine Learning for Biological Systems
Paris, France
- 07/19 - 07/24/2020 13th 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 16th 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 13th World Congress on Computational Mechanics (WCCM)
Minisymposium MS501: Biomechanics and Mechanobiology of Soft Tissues
New York, United States
- 06/04 - 06/09/2018 18th 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 12th World Congress on Computational Mechanics (WCCM)
Minisymposium MS006: Brain Mechanics
Seoul, Korea
- 07/24 - 07/29/2016 12th World Congress on Computational Mechanics (WCCM)
Minisymposium MS010: Computational Biomechanics
Seoul, Korea
- 07/24 - 07/29/2016 12th 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 13th 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 11th World Congress on Computational Mechanics (WCCM)
Minisymposium MS 7: Computational Biomechanics
Barcelona, Spain
- 07/20 - 07/25/2014 11th World Congress on Computational Mechanics (WCCM)
Minisymposium MS 97: Growth and Remodeling of Living Tissues.
Barcelona, Spain
- 07/20 - 07/25/2014 11th 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 12th U.S. National Congress on Computational Mechanics (USNCCM)
Technical Session TS8: Biomechanics of Living Matter
Raleigh, North Carolina
- 07/22 - 07/25/2013 12th 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 11th 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 10th 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 9th 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 10th 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 9th U.S. National Congress on Computational Mechanics (USNCCM)
Minisymposium MS009: Growth and Remodeling
San Francisco, California
- 07/22 – 07/26/2007 9th U.S. National Congress on Computational Mechanics (USNCCM)
Minisymposium MS106: Multiscale Modeling of Materials
San Francisco, California
- 03/27 - 03/31/2006 77th 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. 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.
2. Peirlinck, M., Sahli Costabal, F., **Kuhl, E.** Sex differences in drug-induced arrhythmogenesis. *Frontiers in Physiology*. Vol 12, 708435, 2021.
3. 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*. online first, doi:10.1007/s11831-021-09638-y, 2021.
4. 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*. online first, doi:10.1080/10255842.2020.1869221, 2021.
5. 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.
6. 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.
7. Pang, 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.
 8. 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.
 9. Schafer, A., Mormino, E.C., **Kuhl, E.** Network diffusion modeling explains longitudinal tau PET data. *Frontiers in Neuroscience*. Vol 14, 566876, 2020.
 10. 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.
 11. 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.
 12. **Kuhl, E.** Data-driven modeling of COVID-19 - Lessons learned. *Extreme Mechanics Letters*. Vol 40, 100921, 2020.
 13. Linka, K., Rahman, P., Goriely, A., **Kuhl, E.** Is it safe to lift COVID-19 travel restrictions? The Newfoundland story. *Computational Mechanics*. Vol 66, pp. 1081-1092, 2020.
 14. Linka, K., Peirlinck, M., Sahli Costabal, F., **Kuhl, E.** Outbreak dynamics of COVID-19 in Europe and the effect of travel restrictions. *Computer Methods in Biomechanics and Biomedical Engineering*. Vol 23, pp. 710-717, 2020.
 15. Peirlinck, M., Linka, K., Sahli Costabal, F., **Kuhl, E.** Outbreak dynamics of COVID-19 in China and the United States. *Biomechanics and Modeling in Mechanobiology*; Vol 19, pp. 2179-2193, 2020.
 16. Holland, M.A., Budday, S., Li, G., Shen, D., Goriely, A., **Kuhl E.** Folding drives cortical thickness variations. *European Physics Journal*. Vol 229, pp. 2757-2778, 2020.
 17. Goriely, A., **Kuhl, E.**, Bick C. Neuronal oscillations on evolving networks: Dynamics, damage, degradation, decline, dementia, and death. *Physical Review Letters*. Vol 125, 128102, 2020.
 18. Sahli Costabal, F., Seo, K., Ashley, E., **Kuhl, E.** Classifying drugs by their arrhythmogenic risk using machine learning. *Biophysical Journal*. Vol. 118, pp. 1-12, 2020.
 19. Budday, S., Ovaert, T.C., Holzapfel, G.A., Steinmann, P., **Kuhl, E.** Fifty shades of brain: A review on the material testing and modeling of brain tissue. *Archives of Computational Methods in Engineering*. Vol 27, pp. 1187-1230, 2020.
 20. Sahli Costabal, F., Yang, Y., Perdikaris, P., Hurtado, D.E., **Kuhl, E.** Physics-informed neural networks for cardiac activation mapping. *Frontiers in Physiology*. Vol. 8, 42, 2020.
 21. **Kuhl, E.** Nervous tissue stiffens post injury. *Biophysical Journal*. Vol. 118, pp. 276-278, 2020.
 22. Budday, S., **Kuhl, E.** Modeling the life cycle of the human brain. *Current Opinion in Biomedical Engineering*. Vol. 15, pp. 16-25, 2020.
 23. Thompson, T.B., Chaggar, P., **Kuhl, E.**, Goriely, A. Protein-protein interactions in neurodegenerative diseases: A conspiracy theory. *PLoS Computational Biology*. Vol. 16, e1008267, 2020.
 24. Wang, L., **Kuhl, E.** Viscoelasticity of the axon limits stretch-mediated growth. *Computational Mechanics*. Vol. 65, pp. 587-595, 2020.
 25. Fornari, S., Schafer, A., Kuhl, E., Goriely, A. Spatially-extended nucleation-aggregation-fragmentation models for the dynamics of prion-like neurodegenerative protein-spreading in the

- brain and its connectome. *Journal of Theoretical Biology*. Vol. 486, 110102, 2020.
26. Budday, S., Sarem, M., Strack, L., Sommer, G., Pfefferle, J., Phunchago, N., **Kuhl, E.**, Paulsen, F., Steinmann, P., Shastri, V.P., Holzapfel, G.A. Towards microstructure-informed material models for human brain tissue. *Acta Biomaterialia*. Vol. 104, pp. 53-65, 2020.
 27. **Kuhl, E.**, Connectomics of neurodegeneration. *Nature Neuroscience*. Vol. 22, pp. 1200–1202, 2019.
 28. 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.** Integrating machine learning and multiscale modeling: Perspectives, challenges, and opportunities in the biological, biomedical, and behavioral sciences. *npj Digital Medicine*. Vol. 2:115, 2019.
 29. Fornari, S., Schafer, A., Jucker, M., Goriely, A., **Kuhl, E.** Prion-like spreading of Alzheimer's disease within the brain's connectome. *Journal of the Royal Society Interface*. Vol. 16, 20190356, 2019.
 30. Ambrosi, D., BenAmar, M., Cyron, C.J., DeSimone, A., Goriely, A., Humphrey, J.D., **Kuhl, E.** Growth and remodelling of living tissues: Perspectives, challenges, and opportunities. *Journal of the Royal Society Interface*. Vol. 16, pp. 20190233, 2019.
 31. Weickenmeier, J., Jucker, M., Goriely, A., **Kuhl, E.** A physics-based model explains the prion-like features of neurodegeneration in Alzheimer's disease, Parkinson's disease, and amyotrophic lateral sclerosis. *Journal of the Mechanics and Physics of Solids*. Vol. 124, pp. 264-281, 2019.
 32. Sahli Costabal, F., Matsuno, K., Yao, J., Perdikaris, P., **Kuhl, E.** Machine learning in drug development: Characterizing the effect of 30 drugs on the QT interval using Gaussian process regression, sensitivity analysis, and uncertainty quantification. *Computer Methods in Applied Mechanics and Engineering*. Vol. 348, pp. 313-333, 2019.
 33. Schafer, A., Weickenmeier, J., **Kuhl, E.** The interplay of biochemical and biomechanical degeneration in Alzheimer's disease. *Computer Methods in Applied Mechanics and Engineering*, Vol. 352, pp. 369-388, 2019.
 34. Noel, L., **Kuhl, E.** Modeling neurodegeneration in chronic traumatic encephalopathy using gradient damage models. *Computational Mechanics*, online first, doi:10.1007/s00466-019-01717-z.
 35. Harris, T.C., de Rooij, R., **Kuhl, E.** The shrinking brain: Cerebral atrophy following traumatic brain injury. *Annals of Biomedical Engineering*, Vol. 47, pp. 1941-1959, 2019.
 36. Sahli Costabal, F., Yao, J., Sher, A., **Kuhl, E.** Predicting critical drug concentrations and torsadogenic risk using a multiscale exposure response simulator. *Progress in Biophysics and Molecular Biology*, Vol. 144, pp. 61-76, 2019.
 37. Peirlinck, M., Sahli Costabal, F., Sack, K.L., Choy, J.S., Kassab, G.S., Guccione, J.M., De Beule, M., Segers, P., **Kuhl, E.** Using machine learning to characterize heart failure across the scales. *Biomechanics and Modeling in Mechanobiology*. Vol. 18, pp. 1987-2001, 2019.
 38. Sahli Costabal, F., Choy, J.S., Sack, K.L., Guccione, J.M., Kassab, G., **Kuhl, E.** Multiscale characterization of heart failure. *Acta Biomaterialia*, Vol. 86, pp. 66-76, 2019.
 39. Lejeune, E., Dortdivanlioglu, B., **Kuhl, E.**, Linder, C. Understanding the mechanical link between oriented cell division and cerebellar morphogenesis. *Soft Matter*. Vol. 15, pp. 2204, 2019.
 40. Sahli Costabal, F., Perdikaris, P., **Kuhl, E.**, Hurtado, D. Multi-fidelity classification using Gaussian processes: accelerating the prediction of large-scale computational models. *Computer Methods in Applied Mechanics and Engineering*. Vol. 357, pp. 112602, 2019.
 41. Ostwald, R., **Kuhl, E.**, Menzel, A. On the implementation of finite deformation gradient-enhanced damage models. *Computational Mechanics*, Vol. 64, pp. 847-877, 2019.
 42. Bothe, W., Escobar Kvitting, J.P., Rausch, M.K., Timek, T.A., Swanson, J.C., Liang, D.H., Walther, M., **Kuhl, E.**, Ingels, N.B., Miller, D.C. Do annuloplasty rings designed to treat ischemic/functional

- mitral regurgitation alter left-ventricular dimensions in the acutely ischemic ovine heart? *Journal of Thoracic Cardiovascular Surgery*. Vol.158, pp. 1058-1068, 2019.
43. Alawiye, H., **Kuhl, E.**, Goriely, A. Revisiting the wrinkling of elastic bilayers I: Linear analysis. *Philosophical Transactions A*. Vol. 377, pp. 20180076, 2019.
 44. van Kelle, M.A.J., Rausch, M.K., **Kuhl, E.**, Loerakker, S. A computational model to predict cell traction-mediated prestretch in the mitral valve. *Computer Methods in Biomechanics and Biomedical Engineering*, Vol. 22, pp. 1174-1185, 2019.
 45. Weickenmeier, J., **Kuhl, E.**, Goriely, A. The multiphysics of prion-like diseases: progression and atrophy. *Physical Review Letters*, Vol. 121, pp. 158101, 2018.
 46. Holland, M.A., Budday, S., Goriely, A., **Kuhl, E.** Symmetry breaking in wrinkling patterns: Gyri are universally thicker than sulci. *Physical Review Letters*, Vol. 121, pp. 228002, 2018.
 47. Sahli Costabal, F., Yao, J., **Kuhl, E.** Predicting the cardiac toxicity of drugs using a novel multiscale exposure-response simulator. *Computer Methods in Biomechanics and Biomedical Engineering*. Vol. 21, pp. 232-246, 2018.
 48. de Rooij, R., **Kuhl, E.** Physical biology of axonal damage. *Frontiers in Cellular Neuroscience*, Vol. 12, pp. 144, 2018.
 49. **Kuhl, E.** Mechanical cues in spinal cord injury. *Biophysical Journal*. Vol. 115, pp. 751-753, 2018.
 50. Weickenmeier, J., Kurt, M., Ozkaya, E., de Rooij, R., Ovaert, T.C., Ehman, R.L., Butts Pauly, K., **Kuhl, E.** Brain stiffens post mortem. *J Journal of the Mechanical Behavior of Biomedical Materials*. Vol. 84, pp. 88-98, 2018.
 51. de Rooij, R., **Kuhl, E.** Microtubule polymerization and cross-link dynamics explain axonal stiffness and damage. *Biophysical Journal*, Vol. 114, pp. 201-212, 2018.
 52. Sahli Costabal, F., Yao, J., Kuhl, E. Predicting drug-induced arrhythmias by multiscale modeling. *International Journal for Numerical Methods in Biomedical Engineering*. Vol. 34, pp. e2964, 2018.
 53. Weickenmeier, J., Kurt, M., Ozkaya, E., Wintermark, M., Butts Pauly, K., **Kuhl, E.** Magnetic resonance elastography of the brain: A comparison between pigs and humans. *Journal of the Mechanical Behavior of Biomedical Materials*. Vol. 77, pp. 702-710, 2018.
 54. Limbert, G., **Kuhl, E.** On skin microrelief and the emergence of expression microwrinkles. *Soft Matter*. Vol. 14, pp. 1292-1300, 2018.
 55. de Rooij, R., **Kuhl, E.** A physical multifield model predicts the development of volume and structure in the human brain. *Journal of the Mechanics and Physics of Solids*. Vol. 112, pp. 563-576, 2018.
 56. de Rooij, R., **Kuhl, E.**, Miller, KE. Modeling the axon as an active partner with the growth cone in axonal elongation. *Biophysical Journal*. Vol. 115, pp. 1783-1795, 2018.
 57. Lee, T., Vaca, E.E., Ledwon, J.K., Bae, H., Topczewska, J.M., Turin, S.Y., Kuhl, E., Gosain, A.K., Buganza Tepole, A. Improving tissue expansion protocols through computational modeling. *Journal of the Mechanical Behavior of Biomedical Materials*, Vol. 82, pp. 224-234, 2018.
 58. Oomen, P.A., Holland, M.A., Bouten, C.V.C., **Kuhl, E.**, Loerakker, S. Growth and remodeling play opposing roles during postnatal human heart valve development. *Scientific Reports*. Vol. 8, pp. 1235, 2018.
 59. Purnell, C.A., Gart, M.S., Buganza Tepole, A., Tomaszewski, J.P., Topczewska, J.M., **Kuhl, E.**, Gosain, A.K. Determining the differential effects of stretch and growth in tissue-expanded skin: Combining isogeometric analysis and continuum mechanics in a porcine model. *Dermatological Surgery*. Vol. 44, pp. 48-52, 2018.
 60. Abilez, O.J., Tzatzalos, E., Yang, H., Zhao, M.T., Jung, G., Zollner, A.M., Tiburcy, M., Riegler, J.,

- Matsa, E., Shukla, P., Zhuge, Y., Chour, T., Chen, V.C., Burridge, P.W., Karakides, I., **Kuhl, E.**, Bernstein, D., Couture, L.A., Gold, J.D., Zimmermann, W.H., Wu, J.C. Passive stretch induces structural and functional maturation of engineered heart muscle as predicted by computational modeling. *Stem Cells*. Vol. 36, pp. 265-277, 2018.
61. Sahli Costabal, F., Zaman, J.A.B., **Kuhl, E.**, Narayan, S.M. Interpreting activation mapping of atrial fibrillation: a hybrid computational/physiological study. *Annals of Biomedical Engineering*. Vol. 46, pp. 257-269, 2018.
 62. Budday, S., Sommer, G., Hayback, J., Steinmann, P., Holzapfel, G.A., **Kuhl, E.** Rheological characterization of human brain tissue. *Acta Biomaterialia*. Vol. 60, pp. 315-329, 2017.
 63. van den Bedem, H., **Kuhl, E.** Molecular mechanisms of chronic traumatic encephalopathy. *Current Opinion in Biomedical Engineering*. Vol. 1, pp. 23-30, 2017.
 64. Weickenmeier, J., de Rooij, R., Budday, S., Ovaert TC, **Kuhl E.** The mechanical importance of myelination in the central nervous system. *Journal of the Mechanical Behavior of Biomedical Materials*. Vol. 76, pp. 119-124, 2017.
 65. Weickenmeier, J., Fischer, C., Carter, D., **Kuhl, E.**, Goriely, A. Dimensional, geometrical, and physical constraints in skull growth. *Physical Review Letters*. Vol. 118, pp. 248101, 2017.
 66. Wu, L.C., Ye, P.P., Kuo, C., Laksari, K., Camarillo, D., **Kuhl, E.** Pilot findings of brain displacements and deformations during roller coaster rides. *Journal of Neurotrauma*. Vol. 34, pp. 3198-3205, 2017.
 67. Budday, S., Sommer, G., Holzapfel, G.A., Steinmann, P., **Kuhl, E.** Viscoelastic parameter identification of human brain tissue. *Journal of the Mechanical Behavior of Biomedical Materials*. Vol. 74, pp. 463-476, 2017.
 68. Weickenmeier, J., Saez, P., Butler, C.A.M., Young, P.G., Goriely, A., **Kuhl, E.** Bulging brains. *Journal of Elasticity*. Vol. 129, pp. 197-212, 2017.
 69. Mihai, L.A., Budday, S., Holzapfel, G.A., Kuhl, E., Goriely, A. A family of hyperelastic models for human brain tissue. *Journal of the Mechanics and Physics of Solids*. Vol. 106, pp. 60-79, 2017.
 70. Budday, S., Sommer, G., Birkl, C., Langkammer, C., Hayback, J., Kohnert, J., Bauer, M., Paulsen, F., Steinmann, P., **Kuhl, E.**, Holzapfel, G.A. Mechanical characterization of human brain tissue. *Acta Biomaterialia*. Vol. 48, pp. 319-340, 2017.
 71. de Rooij, R., Miller, K.E., **Kuhl, E.** Modeling molecular mechanisms in the axon. *Computational Mechanics*. Vol. 259, pp. 523-537, 2017.
 72. Weickenmeier, J., Butler, C.A.M., Young, P.G., Goriely, A., **Kuhl, E.** The mechanics of decompressive craniectomy: Personalized simulations. *Computer Methods in Applied Mechanics and Engineering*. Vol. 314, pp. 180-195, 2017.
 73. Sahli Costabal, F., Concha, F.A., Hurtado, D.E., **Kuhl, E.** The importance of mechano-electrical feedback and inertia in cardiac electromechanics. *Computer Methods in Applied Mechanics and Engineering*. Vol. 320, pp. 352-368, 2017.
 74. Buganza Tepole, A., Vaca, E.E., Purnell, C.A., Gart, M., McGrath, J., **Kuhl, E.**, Gosain, A. Quantification of strain in a porcine model of skin expansion using multi-view stereo and isogeometric kinematics. *Journal of Visualized Experiments*. Vol. 122, pp. e55052, 2017.
 75. Budday, S., Andres, S., Walter, B., Steinmann, P., **Kuhl, E.** Wrinkling instabilities in soft bi-layered systems. *Philosophical Transactions of the Royal Society London A*. Vol. 375, pp. 20160163, 2017.
 76. Rausch, M.K., Zollner, A.M., Genet, M., Baillargeon, B., Bothe, W., **Kuhl, E.** A virtual sizing tool for mitral valve annuloplasty. *International Journal for Numerical Methods in Biomedical Engineering*. Vol. 33, pp. e02788, 2017.

77. Holland, M.A., Li, B., Feng, X.Q., **Kuhl, E.** Instabilities of soft films on compliant substrates. *Journal of the Mechanics and Physics of Solids*. Vol. 98, pp. 350-365, 2017.
78. **Kuhl, E.** Biophysics: Unfolding the brain. *Nature Physics*. Vol. 12, pp. 533-534, 2016.
79. Goriely, A., Weickenmeier, J., **Kuhl, E.** Stress singularities in swelling soft solids. *Physical Review Letters*. Vol. 117, pp. 138001, 2016.
80. Weickenmeier, J., **Kuhl, E.**, Goriely, A. The mechanics of decompressive craniectomy: Bulging in idealized geometries. *Journal of the Mechanics and Physics of Solids*. Vol. 96, pp. 572-590, 2016.
81. Narayan, S.M., Baykaner, T., Sahli Costabal, F., **Kuhl, E.** Terminating atrial fibrillation by cooling the heart. *Heart Rhythm*. Vol. 13, pp. 2259-2260, 2016.
82. Weickenmeier, J., de Rooij, R., Budday, S., Steinmann, P., Ovaert, T.C., **Kuhl, E.** Brain stiffness increases with myelin content. *Acta Biomaterialia*. Vol. 42, pp. 265-272, 2016.
83. Lejeune, E., Javili, A., Weickenmeier, J., **Kuhl, E.**, Linder, C. Tri-layer wrinkling as a mechanism for anchoring center initiation in the developing cerebellum. *Soft Matter*. Vol. 12, pp. 5613-5620, 2016.
84. Ploch, C.C., Mansi, C.S.S.A., Jayamohan, J., **Kuhl, E.** Using 3D printing to create personalized brain models for neurosurgical training and preoperative planning. *World Neurosurgery*. Vol. 90, pp. 668-674, 2016.
85. Sack, K.L., Baillargeon, B., Acevedo-Bolton, G., Genet, M., Rebelo, N., **Kuhl, E.**, Klein, L., Weiselthaler, G.M., Burkhoff, D., Franz, T., Guccione, J.M. Partial LVAD restores ventricular outputs and normalizes LV but not RV stress distributions in the acutely failing heart in silico. *International Journal of Artificial Organs*. Vol. 39, pp. 421-430, 2016.
86. Sahli Costabal, F., Hurtado, D.E., **Kuhl, E.** Generating Purkinje networks in the human heart. *Journal of Biomechanics*. Vol. 49, pp. 2455-2465, 2016.
87. Eskandari, M., Javili, A., **Kuhl, E.** Elastosis during airway wall remodeling explains multiple coexisting instability patterns. *Journal of Theoretical Biology*. Vol. 403, pp. 209-218, 2016.
88. Buganza Tepole, A., Gart, M., Purnell, C.A., Gosain, A.K., **Kuhl, E.** The incompatibility of living systems: Characterizing growth-induced incompatibilities in expanded skin. *Annals of Biomedical Engineering*. Vol. 44, pp. 1734-1752, 2016.
89. de Rooij, R., **Kuhl, E.** Constitutive modeling of brain tissue: current perspectives. *Applied Mechanics Reviews*. Vol. 68, pp. 010801.1-16, 2016.
90. Saez, P., **Kuhl, E.** Computational modeling of acute myocardial infarction. *Computer Methods in Biomechanics and Biomedical Engineering*. Vol. 19, pp. 1107-1115, 2016.
91. Chabiniok, R., Wang, V., Hadjicharalambous, M., Asner, L., Lee, J., Sermesant, M., **Kuhl, E.**, Young, A., Moireau, P., Nash, M., Chapelle, D., Nordsletten, D.A. Multiphysics and multiscale modeling, data-model fusion and integration of organ physiology in the clinic: ventricular cardiac mechanics. *Interface Focus*. Vol. 6, pp. 20150083, 2016.
92. Genet, M., Lee, L.C., Baillargeon, B., Guccione, J.M., **Kuhl, E.** Modeling pathologies of systolic and diastolic heart failure. *Annals of Biomedical Engineering*. Vol. 44, pp. 112-127, 2016.
93. Buganza Tepole, A., **Kuhl, E.** Computational modeling of chemo-bio-mechanical coupling: A systems-biology approach towards wound healing. *Computer Methods in Biomechanics and Biomedical Engineering*. Vol. 19, pp. 13-30, 2016.
94. van den Bedem, H., **Kuhl, E.** Tau-ism: the Yin and Yang of microtubule sliding, detachment, and rupture. *Biophysical Journal*. Vol. 109, pp. 2215-2217, 2015.
95. Goriely, A., Budday, S., **Kuhl, E.** Neuromechanics: from neurons to brain. *Advances in Applied Mechanics*. Vol. 48, pp. 79-139, 2015.

96. Budday, S., Steinmann, P., **Kuhl, E.** Secondary instabilities modulate cortical complexity in the mammalian brain. *Philosophical Magazine*. Vol. 95, pp. 3244-3256, 2015.
97. Budday, S., **Kuhl, E.**, Hutchinson, J.W., Period-doubling and period-tripling in growing bilayered systems. *Philosophical Magazine*. Vol. 95, pp. 3208-3224, 2015.
98. Eskandari, M., **Kuhl, E.** Systems biology and mechanics of growth. *WIREs Systems Biology and Medicine*. Vol. 7, pp. 401-412, 2015.
99. Budday, S., Steinmann, P., Goriely, A., **Kuhl, E.** Size and curvature regulate pattern selection in the mammalian brain. *Extreme Mechanics Letters*. Vol. 4, pp. 193-198, 2015.
100. Buganza Tepole, A., Gart, M., Purnell, C.A., Gosain, A.K., **Kuhl, E.** Multi-view stereo analysis reveals anisotropy of prestrain, deformation, and growth in living skin. *Biomechanics and Modeling in Mechanobiology*. Vol. 14, pp. 1007-1019, 2015.
101. Goriely, A., Geers, M.G.D., Holzapfel, G.A., Jayamohan, J., Jerusalem, A., Sivaloganathan, S., Squier, W., van Dommelen, J.A.W., Waters, S., **Kuhl, E.** Mechanics of the brain: Perspectives, challenges, and opportunities. *Biomechanics and Modeling in Mechanobiology*. Vol. 14, pp. 931-965, 2015.
102. Eskandari, M., Kuschner, W.G., **Kuhl, E.** Patient-specific airway wall remodeling in chronic lung disease. *Annals of Biomedical Engineering*. Vol. 10, 2538-2551, 2015.
103. Javili, A., Dortdivanlioglu, B., **Kuhl, E.**, Linder, C. Computational aspects of growth-induced instabilities. *Computational Mechanics*. Vol. 56, pp. 405-420, 2015.
104. Budday, S., Steinmann, P., **Kuhl, E.** Physical biology of human brain development. *Frontiers in Cellular Neuroscience*. Vol. 9, pp. 257.1-17, 2015.
105. Buganza Tepole, A., Kabaria, H., Bletzinger, K.U., **Kuhl, E.** Isogeometric Kirchhoff-Love shell formulations for biological membranes. *Computer Methods in Applied Mechanics and Engineering*. Vol. 293, pp. 328-347, 2015.
106. Baillargeon, B., Costa, I., Leach, J.R., Lee, L.C., Genet, M., Toutain, A., Wenk, J.F., Rausch, M.K., Rebelo, N., Acevedo-Bolton, G., **Kuhl, E.**, Navia, J.L., Guccione, J.M. Human cardiac function simulator for the optimal design of a novel annuloplasty ring. *Cardiovascular Engineering and Technology*, Vol. 6, pp. 105-116, 2015.
107. Genet, M., Rausch, M.K., Lee, L.C., Choy, S., Zhao, X., Kassab, G.S., Kozerke, S., Guccione, J.M., **Kuhl, E.** Heterogeneous growth-induced prestrain in the heart. *Journal of Biomechanics*, Vol. 48, pp. 2080-2089, 2015.
108. Holland, M.A., Miller, K.E., **Kuhl, E.** Emerging brain morphologies from axonal elongation. *Annals of Biomedical Engineering*, Vol. 43, pp. 1640-1653, 2015.
109. Wong, J., **Kuhl, E.**, Darve, E. A new sparse matrix vector multiplication GPU algorithm designed for finite element problems. *International Journal for Numerical Methods in Engineering*, Vol. 102, pp. 1784-1814, 2015.
110. Budday, S., Nay, R., de Rooij, R., Steinmann, P., Wyrobek, T., Ovaert, T.C., **Kuhl, E.** Mechanical properties of gray and white matter brain tissue by indentation. *Journal of the Mechanical Behavior of Biomedical Materials*, Vol. 46, pp. 318-330, 2015.
111. Raaz, U., Zollner, A.M., Schellinger, I.N., Toh, R., Nakagami, F., Brandt, M., Emrich, F.C., Kayama, Y., Eken, S., Adam, M., Maegdefessel, L., Hertel, T., Deng, A., Jagger, A., Buerke, M., Dalman, R.L., Spin, J.M., **Kuhl, E.**, Tsao, P.S. Segmental aortic stiffening contributes to experimental abdominal aortic aneurysm development. *Circulation*. Vol. 131, pp. 1783-1795, 2015.
112. Balbi, V., **Kuhl, E.**, Ciarletta, P. Morphoelastic control of gastro-intestinal organogenesis: theoretical predictions and numerical insights. *Journal of the Mechanics and Physics of Solids*, Vol.

- 78, pp. 493-510, 2015.
113. Wisdom, K.M., Delp, S.L., **Kuhl, E.** Use it or lose it: Multiscale skeletal muscle adaptation to mechanical stimuli. *Biomechanics and Modeling in Mechanobiology*, Vol. 14, pp. 195-215, 2015.
 114. Lee, L.C., Genet, M., Acevedo-Bolton, G., Ordovas, K., Guccione, J.M., **Kuhl, E.** A computational model predicts reverse growth in response to mechanical unloading. *Biomechanics and Modeling in Mechanobiology*, Vol. 14, pp. 217-229, 2015.
 115. Zollner, A.M., Pok, J.M., McWalter, E.J., Gold, G.E., **Kuhl, E.** On high heels and short muscles: A multiscale model for sarcomere loss in the gastrocnemius muscle. *Journal of Theoretical Biology*, Vol. 365, pp. 301-310, 2015.
 116. Checa, S., Rausch, M.K., Petersen, A., **Kuhl, E.**, Duda, G.N. The emergence of extracellular matrix mechanics and cell traction forces as important regulators of cellular self-organization. *Biomechanics and Modeling in Mechanobiology*, Vol. 14, pp. 1-13, 2015.
 117. Ciarletta, P., Balbi, V., **Kuhl, E.** Pattern selection in growing tubular tissues. *Physical Review Letters*, Vol. 113, pp. 248101.1-248101.5, 2014.
 118. Buganza Tepole, A., Gart, M., Gosain, A.K., **Kuhl, E.** Characterization of living skin using multi view stereo and isogeometric analysis. *Acta Biomaterialia*, Vol. 10, pp. 4822-4831, 2014.
 119. Buganza Tepole, A., Steinberg, J.P., **Kuhl, E.**, Gosain, A.K. Application of finite element modeling to optimize flap design with tissue expansion. *Plastic and Reconstructive Surgery*, Vol. 134, pp. 785-792, 2014.
 120. Baillargeon, B., Rebelo, N., Fox, D.D., Taylor, R.L., **Kuhl, E.** The Living Heart Project: A robust and integrative simulator for human heart function. *European Journal of Mechanics A/Solids*, Vol. 48, pp. 38-47, 2014.
 121. Vogel, F., Goktepe, S., Steinmann, P., **Kuhl, E.** Modeling and simulation of viscous electro-active polymers. *European Journal of Mechanics A/Solids*, Vol. 48, pp. 112-128, 2014.
 122. Budday, S., Steinmann, P., **Kuhl, E.** The role of mechanics during brain development. *Journal of the Mechanics and Physics of Solids*, Vol. 72, pp. 75-92, 2014.
 123. Goktepe, S., Menzel, A., **Kuhl, E.** The generalized Hill model: A kinematic approach towards active muscle contraction. *Journal of the Mechanics and Physics of Solids*, Vol. 72, pp. 20-39, 2014.
 124. Buganza Tepole, A., Gosain, A.K., **Kuhl, E.** Computational modeling of skin: Using stress profiles as predictor for tissue necrosis in reconstructive surgery. *Computers & Structures*, Vol. 143, pp. 32-39, 2014.
 125. Budday, S., Raybaud, C., **Kuhl, E.** A mechanical model predicts morphological abnormalities in the developing human brain. *Scientific Reports*, Vol. 4, 5644, 2014.
 126. Saez, P., Pena, E., Martinez, M.A., **Kuhl, E.** Computational modeling of hypertensive growth in the human carotid artery. *Computational Mechanics*, Vol. 53, pp. 1183-1196, 2014.
 127. Wong, J., **Kuhl, E.** Generating fiber orientation maps in human heart models using Poisson interpolation. *Computer Methods in Biomechanics and Biomedical Engineering*, Vol. 17, pp. 1217-1226, 2014.
 128. Hurtado, D.E., **Kuhl, E.** Computational modeling of electrocardiograms: Repolarization and T-wave polarity in the human heart. *Computer Methods in Biomechanics and Biomedical Engineering*, Vol. 17, pp. 986-996, 2014.
 129. Rausch, M.K., **Kuhl, E.** On the mechanics of growing thin biological membranes. *Journal of the Mechanics and Physics of Solids*, Vol. 63, pp. 128-140, 2014.
 130. **Kuhl, E.** Growing matter - A review of growth in living systems. *Journal of the Mechanical Behavior of Biomedical Materials*, Vol. 29, pp. 529-543, 2014.

131. Javili, A., Steinmann, P., **Kuhl, E.** A novel strategy to identify the critical conditions for growth-induced instabilities. *Journal of the Mechanical Behavior of Biomedical Materials*, Vol. 29, pp. 20-32, 2014.
132. Eskandari, M., Pfaller, M.R., **Kuhl, E.** On the role of mechanics in chronic lung disease. *Materials*, Vol. 6, pp. 5639-5658, 2013.
133. Zollner, A.M., Holland, M.A., Honda, K.S., Gosain, A.K., **Kuhl, E.** Growth on demand - Reviewing the mechanobiology of stretched skin. *Journal of the Mechanical Behavior of Biomedical Materials*, Vol. 28, pp. 495-509, 2013.
134. Saez, P., Pena, E., Martinez, M.A., Kuhl, E. Mathematical modeling of collagen turnover in biological tissue. *Journal of Mathematical Biology*, Vol. 67, pp. 1765-1793, 2013.
135. Wong, J., Goktepe, S., **Kuhl, E.** Computational modeling of chemo-electro-mechanical coupling: A novel implicit monolithic finite element approach. *International Journal for Numerical Methods in Biomedical Engineering*, Vol. 29, pp. 1104-1133, 2013.
136. Rausch, M.K., Famaey, N., O'Brien Shultz, T., Bothe, W., Miller, D.C., **Kuhl, E.** Mechanics of the mitral valve: A critical review, an in vivo parameter identification, and the effect of prestrain. *Biomechanics and Modeling in Mechanobiology*, Vol. 12, pp. 1053-1071, 2013.
137. Rausch, M.K., Tibayan, F.A., Ingels, N.B., Miller, D.C., **Kuhl, E.** Mechanics of the mitral annulus in chronic ischemic cardiomyopathy. *Annals of Biomedical Engineering*, Vol. 41, pp. 2171-2180, 2013.
138. Rausch, M.K., **Kuhl, E.** On the effect of prestrain and residual stress in thin biological membranes. *Journal of the Mechanics and Physics of Solids*, Vol. 61, pp. 1955-1969, 2013.
139. Holland, M.A., Kosmata, T., Goriely, A., **Kuhl, E.** On the mechanics of thin films and growing surfaces. *Mathematics and Mechanics of Solids*, Vol. 18, pp. 561-575, 2013.
140. Papastavrou, A., Steinmann, P., **Kuhl, E.** On the mechanics of continua with boundary energies and growing surfaces. *Journal of the Mechanics and Physics of Solids*, Vol. 61, pp. 1446-1463, 2013.
141. Buganza Tepole, A., **Kuhl, E.** Systems-based approaches towards wound healing. *Pediatric Research*, Vol. 73, pp. 553-563, 2013.
142. Chen, M.Q., Wong, J., **Kuhl, E.**, Giovangrandi, L., Kovacs, G.T.A. Characterization of electrophysiological conduction in cardiomyocyte co-cultures using co-occurrence analysis. *Computer Methods in Biomechanics and Biomedical Engineering*, Vol. 16, pp. 185-197, 2013.
143. Famaey, N., Vander Sloten, J., **Kuhl, E.** A three-constituent damage model for arterial clamping in computer-assisted surgery. *Biomechanics and Modeling in Mechanobiology*, Vol. 12, pp. 123-136, 2013.
144. Dal, H., Goktepe, S., Kaliske, M., **Kuhl, E.** A fully implicit finite element method for bidomain models of cardiac electromechanics. *Computer Methods in Applied Mechanics and Engineering*, Vol. 253, pp. 323-336, 2013.
145. Rausch, M.K., Tibayan, F.A., Miller, D.C., **Kuhl, E.** Evidence of adaptive mitral leaflet growth. *Journal of the Mechanical Behavior of Biomedical Materials*, Vol. 15, pp. 208-217, 2012.
146. Zollner, A.M., Abilez, O.J., Bol, M., **Kuhl, E.** Stretching skeletal muscle - Chronic muscle lengthening through sarcomerogenesis. *PLoS ONE*, Vol. 7(10):e45661, 2012.
147. Bothe, W., Rausch, M.K., Kvitting, J.P., Echtner, D.K., Walther, M., Ingels, N.B., **Kuhl, E.**, Miller, D.C., How do annuloplasty rings affect mitral annular strains in the normal beating ovine heart? *Circulation*, Vol. 126, pp. S231-S238, 2012.
148. Buganza Tepole, A., Gosain, A.K., **Kuhl, E.** Stretching skin - The physiological limit and beyond. *International Journal of Nonlinear Mechanics*, Vol. 47, pp. 938-949, 2013.
149. Zollner, A.M., Buganza Tepole, A., Gosain, A.K., **Kuhl, E.** Growing skin - Tissue expansion in

- pediatric forehead reconstruction. *Biomechanics and Modeling in Mechanobiology*, Vol. 11, pp. 855-867, 2012.
150. Waffenschmidt, T., Menzel, A., **Kuhl, E.**, Anisotropic density growth of bone. A computational micro-sphere approach. *International Journal of Solids and Structures*, Vol. 49, pp. 1928-1946, 2012.
151. Menzel, A., **Kuhl, E.** Frontiers in growth and remodeling. *Mechanics Research Communications*, Vol. 42, pp. 1-14, 2012.
152. Klepach, D., Lee, L.C., Wenk, J.F., Ratcliffe, M.B., Zohdi, T.I., Navia, J.A., Kassab, G.S., **Kuhl, E.**, Guccione, J.M. Growth and remodeling of the left ventricle: A case study of myocardial infarction and surgical ventricular restoration. *Mechanics Research Communications*, Vol. 42, pp. 134-141, 2012.
153. Dal, H., Goktepe, S., Kaliske, M., **Kuhl, E.** A fully implicit finite element method for bidomain models of cardiac electrophysiology. *Computer Methods in Biomechanics and Biomedical Engineering*, Vol. 15, pp. 645-656, 2012.
154. Wong, J., Abilez, O.J., **Kuhl, E.**, Computational optogenetics - A novel continuum framework for the photoelectrochemistry of living systems, *Journal of the Mechanics and Physics of Solids*, Vol. 60, pp. 1158-1178, 2012.
155. Schmid, H., Pauli, L., Paulus, A., **Kuhl, E.**, Itskov, M., Consistent formulation of the growth process at the kinematic and constitutive level for soft tissues composed of multiple constituents, *Computer Methods in Biomechanics and Biomedical Engineering*, Vol. 15, pp. 547-561, 2012.
156. Tsamis, A., Cheng, A., Nguyen, T.C., Langer, F., Miller, D.C., **Kuhl, E.**, Kinematics of cardiac growth - In vivo characterization of growth tensors and strains, *Journal of the Mechanical Behavior of Biomedical Materials*, Vol. 8, pp. 165-177, 2012.
157. Zollner, A.M., Buganza Tepole, A., **Kuhl, E.**, On the biomechanics and mechanobiology of growing skin, *Journal of Theoretical Biology*, Vol. 297:166-175, 2012.
158. Rausch, M.K., Bothe, W., Kvitting, J.P., Swanson, J.C., Miller, D.C., **Kuhl, E.**, Mitral valve annuloplasty - A quantitative clinical and mechanical comparison of different annuloplasty devices, *Annals of Biomedical Engineering*, Vol. 40, pp. 750-761, 2012.
159. Pang, H., Shiwalkar, A.P., Madormo, C.M., Taylor, R.E., Andriacchi, T.P., **Kuhl, E.**, Computational modeling of bone density profiles in response to gait: A subject-specific approach, *Biomechanics and Modeling in Mechanobiology*, Vol. 11, pp. 379-390, 2012.
160. Bol, M., Abilez, O.J., Assar, A.N., Zarins, C.K., **Kuhl, E.**, In vitro / in silico characterization of active and passive stresses in cardiac muscle, *International Journal for Multiscale Computational Engineering*, Vol. 10, pp. 171-188, 2012.
161. Rausch, M.K., Dam, A., Goktepe, S., Abilez, O.J., **Kuhl, E.**, Computational modeling of growth: Systemic and pulmonary hypertension in the heart, *Biomechanics and Modeling in Mechanobiology*, Vol. 10, pp. 799-811, 2011.
162. Buganza Tepole, A., Ploch, C.J., Wong, J., Gosain, A.K., **Kuhl, E.**, Growing skin - A computational model for skin expansion in reconstructive surgery, *Journal of the Mechanics and Physics of Solids*, Vol. 59:2177-2190, 2011.
163. Wong, J., Goktepe, S., **Kuhl, E.**, Computational modeling of electrochemical coupling: A novel finite element approach towards ionic models for cardiac electrophysiology, *Computer Methods in Applied Mechanics and Engineering*, Vol. 200, pp. 3139-3158, 2011.
164. Abilez, O.J., Wong, J., Prakash, R., Deisseroth, K., Zarins, C.K., **Kuhl, E.**, Multiscale computational models for optogenetic control of cardiac function, *Biophysical Journal*, Vol. 101, pp. 1326-1334,

- 2011.
165. Bothe, W., **Kuhl, E.**, Kvitting, J.P., Rausch, M.K., Goktepe, S., Swanson, J.C., Farahmandnia, S., Ingels, N.B., Miller, D.C., Rigid, complete annuloplasty rings increase anterior mitral leaflet strains in the normal beating ovine heart, *Circulation*, Vol. 124, pp. S81-S96, 2011.
 166. Wenk, J.F., Eslami, P., Zhang, Z., Xu, C., **Kuhl, E.**, Gorman, J.H., Robb, J.D., Ratcliffe, M.B., Gorman, R.C., Guccione, J.M., A novel method for quantifying the in-vivo mechanical effect of material injected into a myocardial infarction, *Annals of Thoracic Surgery*, Vol. 92, pp. 935-941, 2011.
 167. Tsamis, A., Bothe, W., Kvitting, J.P., Swanson, J.C., Miller, D.C., **Kuhl, E.**, Active contraction of cardiac muscle: In vivo characterization of mechanical activation sequences in the beating heart, *Journal of the Mechanical Behavior of Biomedical Materials*, Vol. 4, pp. 1167-1176, 2011.
 168. Rausch, M.K., Bothe, W., Kvitting, J.P., Swanson, J.C., Ingels, N.B., Miller, D.C., **Kuhl, E.**, Characterization of mitral valve annular dynamics in the beating heart, *Annals of Biomedical Engineering*, Vol. 39:1690-1702, 2011.
 169. Rausch, M.K., Bothe, W., Kvitting, J.P., Goktepe, S., Miller, D.C., **Kuhl, E.**, In vivo dynamic strains of the ovine anterior mitral valve leaflet, *Journal of Biomechanics*, Vol. 44, pp. 1149-1157, 2011.
 170. Ambrosi, D., Ateshian, G.A., Arruda, E.M., Cowin, S.C., Dumais, J., Goriely, A., Holzapfel, G.A., Humphrey, J.D., Kemkemer, R., **Kuhl, E.**, Olberding, J.E., Taber, L.A., Garikipati, K., Perspectives on biological growth and remodeling, *Journal of the Mechanics and Physics of Solids*, Vol. 59, pp. 863-883, 2011.
 171. Goktepe, S., Acharya, S.N.S., Wong, J., **Kuhl, E.**, Computational modeling of passive myocardium, *International Journal for Numerical Methods in Biomedical Engineering*, Vol. 27, pp. 1-12, 2011.
 172. Kvitting, J.P., Bothe, W., Goktepe, S., Rausch, M.K., Swanson, J.C., **Kuhl, E.**, Ingels, N.B., Miller, D.C., Anterior mitral leaflet curvature during the cardiac cycle in the normal ovine heart, *Circulation*, Vol. 122, pp. 1683-1689, 2010.
 173. Goktepe, S., Abilez, O.J., **Kuhl, E.**, A generic approach towards finite growth with examples of athlete's heart, cardiac dilation, and cardiac wall thickening, *Journal of the Mechanics and Physics of Solids*, Vol. 58, pp. 1661-1680, 2010.
 174. Goktepe, S., Abilez, O.J., Parker, K.K., **Kuhl, E.**, A multiscale model for eccentric and concentric cardiac growth through sarcomerogenesis, *Journal of Theoretical Biology*, Vol. 265, pp. 433-442, 2010.
 175. Rajagopal, A., Fischer, P., **Kuhl, E.**, Steinmann, P., Natural element analysis of the Cahn-Hilliard phase-field model, *Computational Mechanics*, Vol. 46, pp. 471-493, 2010.
 176. Goktepe, S., Bothe, W., Kvitting, J.P., Swanson, J., Ingels, N.B., Miller, D.C., **Kuhl, E.**, Anterior mitral leaflet curvature in the beating ovine heart. A case study using videofluoroscopic markers and subdivision surfaces, *Biomechanics and Modeling in Mechanobiology*, Vol. 9, pp. 281-293, 2010.
 177. Kotikanyadanam, M., Goktepe, S., **Kuhl, E.**, Computational modeling of electrocardiograms - A finite element approach towards cardiac excitation, *International Journal for Numerical Methods in Biomedical Engineering*, Vol. 26, pp. 524-533, 2010.
 178. Gitman, I., Askes, H., **Kuhl, E.**, Aifantis, E.C., Stress concentrations in fractured compact bone simulated with a special class of anisotropic gradient elasticity, *International Journal of Solids and Structures*, Vol. 47, pp. 1099-1107, 2010.
 179. Goktepe, S., Wong, J., **Kuhl, E.**, Atrial and ventricular fibrillation - Computational simulation of spiral waves in cardiac tissue, *Archive of Applied Mechanics*, Vol. 80, pp. 569-580, 2010.

180. Zhang, J., Michalenko, M.M., **Kuhl, E.**, Ovaert, T.C., Characterization of indentation response and stiffness reduction of bone using a continuum damage model, *Journal of the Mechanical Behavior of Biomedical Materials*, Vol. 3, pp. 189-202, 2010.
181. Goktepe, S., **Kuhl, E.**, Electromechanics of the heart - A unified approach to the strongly coupled excitation-contraction problem, *Computational Mechanics*, Vol. 45, pp. 227-243, 2010.
182. Krishnamurthy, G., Itoh, A., Swanson, J., Bothe, W., Karlsson, M., **Kuhl, E.**, Miller, D.C., Ingels, N.B., Regional stiffening of the mitral valve anterior leaflet in the beating heart, *Journal of Biomechanics*, Vol. 42, pp. 2697-2701, 2009.
183. Jager, P., Steinmann, P., **Kuhl, E.**, Towards the treatment of boundary conditions for global crack path tracking in three-dimensional brittle fracture, *Computational Mechanics*, Vol. 45, pp. 91-107, 2009.
184. Krishnamurthy, G., Itoh, A., Bothe, W., Swanson, J., **Kuhl, E.**, Karlsson, M., Miller, D.C., Ingels, N.B., Stress-strain behavior of mitral valve leaflets in the beating ovine heart, *Journal of Biomechanics*, Vol. 42, pp. 1909-1916, 2009.
185. Itoh, A., Krishnamurthy, G., Swanson, J., Ennis, D., Bothe, W., **Kuhl, E.**, Karlsson, M., Davis, L., Miller, D.C., Ingels, N.B., Active stiffening of mitral valve leaflets in the beating heart, *American Journal of Physiology - Heart and Circulation Physiology*. Vol. 296, pp. H1766-H1773, 2009.
186. Goktepe, S., **Kuhl, E.**, Computational modeling of electrophysiology: A novel finite element approach, *International Journal for Numerical Methods in Engineering*, Vol. 79:156-178, 2009.
187. Bol, M., Reese, S., Parker, K.K., **Kuhl, E.**, Computational modeling of muscular thin films for cardiac repair, *Computational Mechanics*, Vol. 43, pp. 535-544, 2009.
188. Taylor, R.E., Zheng, C., Jackson, P.R., Doll, J.C., Chen, J.C., Holzbaur, K.R.S., Besier, T., **Kuhl, E.**, The phenomenon of twisted growth: Humeral torsion in dominant arms of high performance tennis players, *Computer Methods in Biomechanics and Biomedical Engineering*, Vol.12, pp. 83-93, 2009.
189. Krishnamurthy, G., Ennis, D.B., Itoh, A., Bothe, W., Swanson-Birchill, J.C., Karlsson, M., **Kuhl, E.**, Miller, D.C., Ingels, N.B., Material properties of the ovine mitral valve anterior leaflet in vivo from inverse finite element analysis, *American Journal of Physiology - Heart and Circulatory Physiology*, Vol. 295, pp. H1141-H1149, 2008.
190. Jha, C.M., Salvia, J., Chandorkar, S.A., Melamud, R., **Kuhl, E.**, Kenny, T.W., Acceleration insensitive encapsulated silicon microresonator, *Applied Physics Letters*, Vol. 93, pp. 234103.1-234103.3, 2008.
191. Jager, P., Schmalholz, S.M., Schmid, D.W., **Kuhl, E.**, Brittle fracture during folding rocks - A finite element study, *Philosophical Magazine*, Vol. 88, pp. 3245-3263, 2008.
192. Meier, H.A., Schlemmer, M., Wagner, C., Kerren, A., Hagen, H., **Kuhl, E.**, Steinmann, P., Visualization of particle interactions in granular media, *Institute of Electrical and Electronics Engineers (IEEE) Transactions on Visualization and Computer Graphics*, Vol. 14, pp. 1-16, 2008.
193. Jager, P., Steinmann, P., **Kuhl, E.**, Modeling three-dimensional crack propagation - A comparison of crack path tracking strategies, *International Journal for Numerical Methods in Engineering*, Vol. 76, pp. 1328-1352, 2008.
194. Himpel, G., Menzel, A., **Kuhl, E.**, Steinmann, P., Time-dependent fiber reorientation of transversely isotropic continua - Finite element formulation and consistent linearization, *International Journal for Numerical Methods in Engineering*, Vol. 73, pp. 1413-1433, 2008.
195. Jager, P., Steinmann, P., **Kuhl, E.**, On local tracking algorithms for the simulation of three-dimensional discontinuities, *Computational Mechanics*, Vol. 42, pp. 395-406, 2008.

196. Meier, H.A., Steinmann, P., **Kuhl, E.**, Towards multiscale computation of confined granular media - Contact forces, stresses and tangent operators, *Technische Mechanik*, Vol. 28, pp. 32-42, 2008.
197. Utzinger, J., Bos, M., Floeck, M., Menzel, A., **Kuhl, E.**, Renz, R., Friedrich, K., Schlarb, A.K., Steinmann, P., Computational modelling of thermal impact welded PEEK/steel single lap tensile specimens, *Computational Materials Science*, Vol. 41, pp. 287-296, 2008.
198. Meier, H.A., **Kuhl, E.**, Steinmann, P., A note on the generation of periodic granular microstructures based on grain size distributions, *International Journal for Numerical and Analytical Methods in Geomechanics*, Vol. 32, pp. 509-522, 2008.
199. **Kuhl, E.**, Holzapfel, G.A., A continuum model for remodeling in living structures, *Journal of Materials Science*, Vol. 42, pp. 8811-8823, 2007.
200. Hauret, P., **Kuhl, E.**, Ortiz, M., Diamond elements: A finite-element/discrete-mechanics approximation scheme with guaranteed optimal convergence in incompressible elasticity, *International Journal for Numerical Methods in Engineering*, Vol. 72, pp. 253-294, 2007.
201. **Kuhl, E.**, Maas, R., Himpel, G., Menzel, A., Computational modeling of arterial wall growth: Attempts towards patient specific simulations based on computer tomography, *Biomechanics and Modeling in Mechanobiology*, Vol. 6, pp. 321-331, 2007.
202. Hirschberger, C.B., **Kuhl, E.**, Steinmann, P., On deformational and configurational mechanics of micromorphic hyperelasticity - Theory and computation, *Computer Methods in Applied Mechanics and Engineering*, Vol. 196, pp. 4027-4044, 2007.
203. **Kuhl, E.**, Schmid, D.W., Computational modeling of mineral unmixing and growth - An application of the Cahn-Hilliard equation, *Computational Mechanics*, Vol. 39, pp. 439-451, 2007.
204. Mergheim, J., **Kuhl, E.**, Steinmann, P., Towards the algorithmic treatment of 3D strong discontinuities, *Communications in Numerical Methods in Engineering*, Vol. 23, pp. 97-108, 2007.
205. Wells, G., **Kuhl, E.**, Garikipati, K., A discontinuous Galerkin formulation for the Cahn-Hilliard equation, *Journal of Computational Physics*, Vol. 218, pp. 860-877, 2006.
206. **Kuhl, E.**, Menzel, A., Garikipati, K., On the convexity of transversely isotropic chain network models, *Philosophical Magazine*, Vol. 86, pp. 3241-3258, 2006.
207. **Kuhl, E.**, Askes, H., Steinmann, P., An illustration of the equivalence of the loss of ellipticity conditions in spatial and material settings of hyperelasticity, *European Journal of Mechanics - A/Solids*, Vol. 25, pp. 199-214, 2006.
208. **Kuhl, E.**, Garikipati, K., Arruda, E.M., Gosh, K., Remodeling of biological tissue - Mechanically induced reorientation of a transversely isotropic chain network, *Journal of the Mechanics and Physics of Solids*, Vol. 53, pp. 1552-1573, 2005.
209. **Kuhl, E.**, Balle, F., Computational modeling of hip replacement surgery - Total hip replacement vs. hip resurfacing, *Technische Mechanik*, Vol. 25, pp. 107-114, 2005.
210. Himpel, G., **Kuhl, E.**, Menzel, A., Steinmann, P., Computational modelling of isotropic multiplicative growth, *Computer Modeling in Engineering and Sciences*, Vol. 8, pp. 119-134, 2005.
211. Mergheim, J., **Kuhl, E.**, Steinmann, P., A finite element method for the computational modelling of cohesive cracks, *International Journal for Numerical Methods in Engineering*, Vol. 63, pp. 276-289, 2005.
212. **Kuhl, E.**, Steinmann, P., A hyperelastodynamic ALE formulation based on referential, spatial and material forces, *Acta Mechanica*, Vol. 174, pp. 201-222, 2005.
213. Askes, H., Bargmann, S., **Kuhl, E.**, Steinmann, P., Structural optimization by simultaneous equilibration of spatial and material forces, *Communications in Numerical Methods in Engineering*, Vol. 21, pp. 433-442, 2005.

214. **Kuhl, E.**, Steinmann, P., Computational modeling of healing - An application of the material force method, *Biomechanics and Modeling in Mechanobiology*, Vol. 2, pp. 187-203, 2004.
215. **Kuhl, E.**, Askes, H., Steinmann, P., An ALE formulation based on spatial and material settings of continuum mechanics, Part 1: Generic hyperelastic formulation, *Computer Methods in Applied Mechanics and Engineering*, Vol. 193, pp. 4207-4222, 2004.
216. Askes, H., **Kuhl, E.**, Steinmann, P., An ALE formulation based on spatial and material settings of continuum mechanics, Part 2: Classification and applications, *Computer Methods in Applied Mechanics and Engineering*, Vol. 193, pp. 4223-4245, 2004.
217. **Kuhl, E.**, Denzer, R., Barth, F.J., Steinmann, P., Application of the material force method to thermo-hyperelasticity, *Computer Methods in Applied Mechanics and Engineering*, Vol. 193, pp. 3303-3326, 2004.
218. Mergheim, J., **Kuhl, E.**, Steinmann, P., A hybrid discontinuous Galerkin/interface method for the computational modelling of failure, *Communications in Numerical Methods in Engineering*, Vol. 20, pp. 511-519, 2004.
219. **Kuhl, E.**, Steinmann, P., Material forces in open system mechanics, *Computer Methods in Applied Mechanics and Engineering*, Vol. 193, pp. 2357-2381, 2004.
220. **Kuhl, E.**, Menzel, A., Steinmann, P., Computational modeling of growth - A critical review, a classification of concepts and two new consistent approaches, *Computational Mechanics*, Vol. 32, pp. 71-88, 2003.
221. **Kuhl, E.**, Steinmann, P., Theory and numerics of geometrically nonlinear open systems, *International Journal for Numerical Methods in Engineering*, Vol. 58, pp. 1593-1615, 2003.
222. **Kuhl, E.**, Steinmann, P., On spatial and material settings of thermo-hyperelastodynamics for open systems, *Acta Mechanica*, Vol. 160, pp. 179-217, 2003.
223. **Kuhl, E.**, Steinmann, P., Mass- and volume specific views on thermodynamics for open systems, *Proceedings of the Royal Society London Series A - Mathematical Physical and Engineering Sciences*, Vol. 459, pp. 2547-2568, 2003.
224. **Kuhl, E.**, Hulshoff, S., de Borst, R., An arbitrary Lagrangian Eulerian finite-element approach for fluid-structure interaction phenomena, *International Journal for Numerical Methods in Engineering*, Vol. 57, pp. 117-142, 2003.
225. **Kuhl, E.**, Carol, I., Steinmann, P., New thermodynamic approach to microplane model, Part II: Dissipation and inelastic constitutive modeling, *International Journal of Solids and Structures*, Vol. 38, pp. 2933-2952, 2001.
226. **Kuhl, E.**, Ramm, E., Willam, K.J., Failure analysis for elasto-plastic material models on different levels of observation, *International Journal of Solids and Structures*, Vol. 37, pp. 7259-7280, 2000.
227. **Kuhl, E.**, Ramm, E., de Borst, R., An anisotropic gradient damage model for quasi-brittle materials, *Computer Methods in Applied Mechanics and Engineering*, Vol. 183, pp. 87-103, 2000.
228. **Kuhl, E.**, Ramm, E., Microplane modelling of cohesive frictional materials, *European Journal of Mechanics - A/Solids*, Vol. 19, pp. S121-S143, 2000.
229. **Kuhl, E.**, D'Addetta, G.A., Herrmann, H.J., Ramm, E., A comparison of discrete granular material models with continuous microplane formulations, *Granular Matter*, Vol. 2, pp. 123-135, 2000.
230. **Kuhl, E.**, Ramm, E., Simulation of strain localization with gradient enhanced damage models, *Computational Materials Science*, Vol. 16, pp. 176-185, 1999.
231. Mahnken, R., **Kuhl, E.**, Parameter identification of gradient enhanced damage models with the finite element method, *European Journal of Mechanics - A/Solids*, Vol. 18, pp. 819-835, 1999.
232. **Kuhl, E.**, Ramm, E., On the linearization of the microplane model, *Mechanics of Cohesive*

Frictional Materials, Vol. 2, pp. 343-364, 1998.

233. Steinmann, P., **Kuhl, E.**, Stein, E., Aspects of non-associated single crystal plasticity: Influence of Non-Schmid effects and localization analysis, *International Journal of Solids and Structures*, Vol. 35, pp. 4437-4456, 1998.
234. **Sawischlewski,* E.**, Steinmann, P., Stein, E., Modelling and computations of instability phenomena in multisurface plasticity, *Computational Mechanics*, Vol. 18, pp. 245-258, 1996.
*Sawischlewski is Kuhl's maiden name.

Book Chapters

Kuhl's students & postdocs underlined

1. Famaey, N., **Kuhl, E.**, Holzapfel, G.A., Vander Sloten, J., Cardiovascular tissue damage: An experimental and computational framework, *Computer Models in Biomechanics: From Nano to Macro*, eds. G.A. Holzapfel, E. Kuhl, Springer, ISBN-13: 978-9400754638, pp. 129-148, 2013.
2. Goktepe, S., Menzel, A., **Kuhl, E.**, Micro-structurally based kinematic approaches to electromechanics of the heart, *Computer Models in Biomechanics: From Nano to Macro*, eds. G.A. Holzapfel, E. Kuhl, Springer, ISBN-13: 978-9400754638, pp. 175-188, 2013.
3. Constantinou, C.E., McLean, L., **Kuhl, E.**, Chen, B., Imaging-based computation of the dynamics of pelvic floor deformation and strain visualization analysis, *ISVC, Part III, Lecture Notes in Computer Science 6455*, eds. G. Bebis et al., Springer, Heidelberg, ISBN: 978-3-642-17276-2, pp. 604-612, 2010.
4. Fischer, P., Rajagopal, A., **Kuhl, E.**, Steinmann, P., Cahn-Hilliard generalized diffusion modeling using the natural element method, *Mechanics of Generalized Continua, ASM Series*, eds. H. Altenbach, G.A. Maugin, V. Erofeev, Springer, ISBN 978-3-642-19219-7, 2010, Chapter 16, pp. 325-338.
5. Ulerich, J., Goktepe, S., **Kuhl, E.**, Dilation and hypertrophy: A cell-based continuum mechanics based approach towards ventricular growth and remodeling, *Cellular and Molecular Tissue Mechanics*, eds. K. Garikipati, E.M. Arruda, Springer, ISBN 978-90-481-3348-2, pp. 237-244, 2009.
6. Meier, H.A., Steinmann, P., **Kuhl, E.**, On the multiscale computation of confined granular media, *European Community on Computational Methods in Applied Sciences (ECCOMAS) Multidisciplinary Jubilee Symposium, New Computational Challenges in Materials, Structures, and Fluids. Series: Computational Methods in Applied Sciences, Vol. 14*, eds. Ebehardsteiner, J., Hellmich, C., Mang, H.A. and Piaux, J., Springer, ISBN 978-1-4020-9230-5, pp. 121-133, 2009.
7. **Kuhl, E.**, Jager, P., Mergheim, J., Steinmann, P., On the applications of Hansbo's method for interface problems, *International Union of Theoretical and Applied Mechanics (IUTAM) Symposium on Discretization Methods for Evolving Discontinuities*, eds. Combescure, A., de Borst, R. and Belytschko, T., Springer, ISBN 1402065299, pp. 255-26, 2007.
8. **Kuhl, E.**, Menzel, A., Garkipati, K., Arruda, E.M., Grosh, K., Modeling and simulation of remodeling in soft biological tissues, *Mechanics of Biological Tissues*, eds. Holzapfel, G.A. and Ogden, R.W., Springer, ISBN: 978-3-540-25194-1, pp. 77-90, 2006.
9. Denzer, R., Liebe, T., **Kuhl, E.**, Barth, F.J., Steinmann, P., Material force method: Continuum damage and thermo-hyperelasticity, Chapter 10 in *Mechanics of Material Forces, Series: Advances in Mechanics and Mathematics*, Vol. 11, eds. Steinmann, P. and Maugin, G.A., Springer, ISBN 978-0-387-26260-4, pp. 95-104, 2005.
10. **Kuhl, E.**, Askes, H., Steinmann, P., Computational spatial and material settings of continuum mechanics: An arbitrary Lagrangian-Eulerian formulation, Chapter 12 in *Mechanics of Material*

Forces, Series: Advances in Mechanics and Mathematics, Vol. 11, eds. Steinmann, P. and Maugin, G.A., Springer, ISBN 978-0-387-26260-4, pp. 115-125, 2005.

11. **Kuhl, E.**, Steinmann, P., On the impact of configurational mechanics on computational mechanics, Chapter 2 in *Configurational Mechanics*, eds. Kalpakides, V.K. and Maugin, G.A., Taylor and Francis, ISBN 905809667X, pp. 15–30, 2004.
12. **Kuhl, E.**, D’Addetta, G.A., Leukart, M., Ramm, E., Microplane modeling and particle modeling of cohesive frictional materials, Chapter 3 in *Continuous and Discontinuous Modelling of Cohesive Frictional Materials*, Series: Lecture Notes in Physics, Vol. 586, eds. Vermeer, P.A., Diebels, S., Ehlers, W., Herrmann, H.J., Luding, S., Ramm, E., Springer, ISBN 3-540-41525-4, pp. 31-46, 2001.

Reviewed Conference Proceedings

Kuhl’s students & postdocs underlined

1. Schafer, A., Peirlinck, M., Linka, K., **Kuhl, E.** Probabilistic modeling of tau propagation in Alzheimer’s disease. 16th U.S. National Congress on Computational Mechanics (USNCCM), Virtual Congress, Technical Abstract 21721743, 2021.
2. Ziya Tikenogullari, O., Peirlinck, M., Vedula, V., **Kuhl, E.**, Marsden, A. Patient-specific characterization of hypoplastic left heart mechanics. 16th U.S. National Congress on Computational Mechanics (USNCCM), Virtual Congress, Technical Abstract 21722116, 2021.
3. Sahli Costabal, F., Yang, Y., Perdikaris, P., Hurtado, D.E., **Kuhl, E.** Physics-informed neural networks for cardiac activation mapping. 16th U.S. National Congress on Computational Mechanics (USNCCM), Virtual Congress, Technical Abstract 21721105, 2021.
4. Peirlinck, M., Sahli Costabal, F., **Kuhl, E.** Using data-driven modeling to characterize sex difference in drug development. 16th U.S. National Congress on Computational Mechanics (USNCCM), Virtual Congress, Technical Abstract 21721754, 2021.
5. Hoppstadter, M., **Kuhl, E.**, Bol, M. Age-dependent mechanical properties of brain tissue in compression and tension. Proceedings of the 26th Congress of the European Society of Biomechanics (ESB), Milano, Italy, Virtual Congress, Technical Abstract, 2021.
6. **Kuhl, E.** Network modeling of dementia. 91th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Kassel, Germany, Virtual Meeting, Technical Abstract-ID 188, 2021.
7. Budday, S., Paulsen, F., **Kuhl, E.**, Steinmann, P., Holzapfel, G.A. Microstructure-informed constitutive modeling of human brain tissue. 14th World Congress in Computational Mechanics (WCCM), Virtual Congress. Technical Abstract, 2021.
8. Schafer, A., **Kuhl, E.** A network diffusion model for the spatiotemporal propagation of hyperphosphorylated tau protein in Alzheimer’s disease. 14th World Congress in Computational Mechanics (WCCM), Virtual Congress, Technical Abstract, 2021.
9. Tikenogullari, O.Z., Liu, J., Marsden, A., **Kuhl, E.** Formulation of incompressible electromechanics based on Gibbs free energy. 14th World Congress in Computational Mechanics (WCCM), Virtual Congress. Technical Abstract, 2021.
10. Wang, L., **Kuhl, E.** Linking mechanical deformation and functional damage in stretch-mediated axon growth. 14th World Congress in Computational Mechanics (WCCM), Virtual Congress. Technical Abstract, 2021.
11. Peirlinck, M., **Kuhl, E.** Opportunities in human heart modeling. 14th World Congress in Computational Mechanics (WCCM), Virtual Congress. Technical Abstract, 2021.

12. Sahli Costabal, F., Perdikaris, P., Kuhl, E., Hurtado, D. Multi-fidelity classification using Gaussian processes. 14th World Congress in Computational Mechanics (WCCM), Virtual Congress. Technical Abstract, 2021.
13. Peirlinck, M., Kuhl, E. Notable scientific studies in human heart modeling. International Symposium on the Living Heart and Virtual Twin for Humans. Virtual Symposium. Technical Abstract, 2020.
14. Peirlinck, M., Linka, K., Sahli Costabal, F., Bendavid, E., Bhattacharya, J., Ioannidis, J., **Kuhl, E.** The effect of asymptomatic transmission on the outbreak dynamics of COVID-19. Virtual Physiome Project (VPP) Virtual Conference. Technical Abstract, 2020.
15. Linka, K., Raman, P., Kuhl, E., Goriely, A. Network and epidemiology models. Virtual Physiome Project (VPP) Virtual Conference. Technical Abstract, 2020.
16. Peirlinck, M., Linka, K., Sahli Costabal, F., Kuhl E. Outbreak dynamics of COVID-19 and exit strategies from lockdown. Living Heart Project Webinar Series. Technical Abstract, 2020.
17. Peirlinck, M., Sahli Costabal, F., Sack, K.L., Segers, P., **Kuhl, E.** Cardiac growth and remodeling in heart failure: Correlating cell and organ scales using multiscale modeling and machine learning. Proceedings of the 16th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Columbia University, New York City, Technical Paper A-07.4, 2019.
18. Vedula, V., Liu, J., Tikenogullari, O., Kuhl, E., Marsden, A. A multiphysics model of cardiac function: Methods and validation. Proceedings of the 16th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Columbia University, New York City, Technical Paper A-08.6, 2019.
19. Sahli Costabal, F., Yao, J., Perdikaris, P., Kuhl, E. Machine learning in drug development. Proceedings of the 16th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Columbia University New York City, Technical Paper B-11, 2019.
20. Wang, L.M., de Rooij, R., Kuhl, E. Microstructural heterogeneity influences the flexural rigidity of the axon. Proceedings of the 16th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Columbia University, New York City, Technical Paper D-10.3, 2019.
21. Budday, S., Holzapfel, G.A., Steinmann, P., Kuhl, E. Human brain tissue testing and modeling across time scales. Proceedings of the 16th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Columbia University, New York City, Technical Paper F-02.5, 2019.
22. **Kuhl, E.** Modeling dementia. Proceedings of the 16th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Columbia University, New York City, 2019. Technical Paper F-03.1, 2019.
23. Holland, M.A., Darayi, M., Hoffman, M., Twohy, K., Hardan, A., Goriely, A., Kuhl, E. Image-based analysis of cortical thickness patterns. 15th US National Congress on Computational Mechanics (USNCCM), Austin, Texas, 2019.
24. Noel, L., Kuhl, E. A coupled multiphysics model for Chronic Traumatic Encephalopathy. 15th US National Congress on Computational Mechanics (USNCCM), Austin, Texas, 2019.
25. Sahli Costabal, F., Matsuno, K., Yao, J., Perdikaris, P., Kuhl E. Machine learning in drug development: Characterizing the effect of 30 drugs on the QT interval with Gaussian process regression, sensitivity analysis, and uncertainty quantification. 15th US National Congress on Computational Mechanics (USNCCM), Austin, Texas, 2019.

26. Schafer, A., Weickenmeier, J., Kuhl, E. Computational modeling of the biochemical and biomechanical degeneration in Alzheimer's disease. 15th US National Congress on Computational Mechanics (USNCCM), Austin, Texas, 2019.
27. Tikenogullari, O.Z., Sahli Costabal, F., Vedula, V., Kuhl, E., Marsden, A. Investigating viscous effects in a pumping heart. 15th US National Congress on Computational Mechanics (USNCCM), Austin, Texas, 2019.
28. Vastmans, J., Kuhl, E., Famaey, N. Testing constrained mixture and kinematic growth models against experimental reality. 25th Congress of the European Society of Biomechanics (ESB), Vienna, Austria. Technical Paper 528, 2019.
29. Peirlinck, M., Sahli Costabal, F., Sack, K.L., Choy, J.S., Kassab, G.S., Guccione, J.M., De Beule, M., Segers, P., Kuhl, E. Cardiac growth and remodeling: Using machine learning to correlate cell and organ scales. Summer Biomechanics, Bioengineering and Biotransport Conference (SB3C), Seven Springs, Pennsylvania. Technical Paper SB³C2019-P099, 2019.
30. Holland, M.A., Kuhl, E., Goriely, A. Summer Biomechanics, Bioengineering and Biotransport Conference (SB3C), Seven Springs, Pennsylvania, Technical Paper SB³C2019-051, 2019.
31. Budday, S., Holzapfel, G.A., Steinmann, P., Kuhl, E. Challenges and perspectives in brain tissue testing and modeling. Proceedings of the 90th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Vienna, Austria, Technical Paper S02-269, 2019.
32. Schafer, A., Noel, L., Weickenmeier, J., Goriely, A., Kuhl, E. The multiphysics of prion-like disease: Spreading and atrophy in neurodegeneration. Proceedings of the 90th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Vienna, Austria, Technical Paper S02-482, 2019.
33. Budday, S., Sommer, G., Steinmann, P., Holzapfel, G.A., Kuhl, E. Biomechanical characterization of brain tissue. Proceedings of the 13th World Congress on Computational Mechanics (WCCM), New York, 2018.
34. Matsuno, K., Sahli Costabal, F., Perdikaris, P., Yao, J., Kuhl, E. Uncertainty quantification in drug-induced arrhythmias. Proceedings of the 13th World Congress on Computational Mechanics (WCCM), New York, 2018.
35. Holland, M.A., Hardan, A., Goriely, A., Kuhl, E. Physiological and pathological cortical thickness variations. Proceedings of the 13th World Congress on Computational Mechanics (WCCM), New York, 2018.
36. de Rooij, R., Kuhl, E. A physical multifield model predicts the development of volume and structure in the human brain. Proceedings of the 13th World Congress on Computational Mechanics (WCCM), New York, 2018.
37. Noel, L., Kuhl, E. Modeling brain tissue degradation through continuum damage mechanics. Proceedings of the 13th World Congress on Computational Mechanics (WCCM), New York, 2018.
38. Sahli Costabal, F., Yao, J., Kuhl, E. A high resolution Multiscale model to study drug-induced arrhythmias. Proceedings of the 13th World Congress on Computational Mechanics (WCCM), New York, 2018.
39. Lee, T., Vaca, E.E., Turin, S.Y., Kuhl, E., Gosain, A.K., Buganza Tepole, A. Quantifying skin growth due to tissue expansion. ID 4010. Proceedings of the 8th World Congress of Biomechanics (WCB), Dublin, Ireland, 2018.
40. van den Bedem, H., Kuhl, E. Molecular mechanisms of neurodegeneration. ID 4060. Proceedings of the 8th World Congress of Biomechanics (WCB), Dublin, Ireland, 2018.

41. Ostwald, R., **Kuhl, E.**, Menzel, A. Implementation of a gradient-enhanced damage model – A heat equation-based framework. Proceedings of the 6th European Conference on Computational Mechanics (ECCM 6), Glasgow, United Kingdom, 2018.
42. Butler, C.A.M., Weickenmeier, J., Genc, K., Young, P.G., **Kuhl, E.** Brain bulging: A personalized model. Proceedings of the NAFEMS Conference on Advancing Analysis & Simulation in Engineering (CAASE18), Cleveland, 2018.
43. Budday, S., Sommer, G., Holzapfel, G.A., Steinmann, P., **Kuhl, E.** Region- and loading-specific finite viscoelasticity of human brain tissue. Proceedings of the 89th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Munich, Germany, PAMM 18 (1), e201800169, 2018.
44. **Kuhl, E.** Probing the living brain. 7th International Conference on Mechanics of Biomaterials and Tissues, Waikoloa, Hawaii, 2017.
45. Sahli Costabal, F., Yao, J., **Kuhl, E.** A new in silico proarrhythmia assay using multiscale modeling. Cardiac Physiome 2017 Meeting on Metabolism, Mechanics, and Ion Fluxes, Toronto, Canada, Abstract CP-83, 2017.
46. Sahli Costabal, F., Yao, J., **Kuhl, E.** Predicting drug-induced arrhythmias by multiscale modeling. Cardiac Physiome 2017 Meeting on Metabolism, Mechanics, and Ion Fluxes, Toronto, Canada, Abstract CP-102, 2017.
47. Budday, S., Sommer, G., Steinmann, P., Holzapfel, G.A., **Kuhl, E.**, Finite viscoelasticity of human brain tissue under multiple loading conditions, Proceedings of the XIV International Conference on Computational Plasticity (COMPLAS XIV), Barcelona, Spain, Technical Paper ThE02.1, 2017.
48. Oomen, P.J.A., Bouten, C.V.C., **Kuhl E.**, Loerakker, S. The interplay of growth and remodeling in human heart valves during somatic growth. 23rd Congress of the European Society of Biomechanics, Seville, Spain, Technical Paper 214, 2017.
49. van Kelle, M., Rausch, M.K., Bouten, C.V.C., **Kuhl E.**, Loerakker, S. A biologically motivated computational model to explain anisotropic prestretch in the mitral valve. 23rd Congress of the European Society of Biomechanics (ESB), Seville, Spain, Technical Paper 133, 2017.
50. Kuhl, E. The physics of heart failure. International Symposium on Physics Meets Medicine, The Heart of Active Matter, Gottingen, Germany, 2017.
51. de Rooij, R., **Kuhl, E.** Multiscale computational analysis of the brain, International Symposium on Multiscale Computational Analysis of Complex Materials, Copenhagen, Denmark, 2017.
52. **Kuhl, E.**, Budday, S., Sommer, G., Steinmann, P., Holzapfel, G.A. Constitutive modeling of human brain tissue. 14th US National Congress on Computational Mechanics (USNCCM), Montreal, Canada, Technical Abstract USNCCM14-MS101.1.1, 2017.
53. de Rooij, R., **Kuhl, E.** Modeling force-driven damage in the axon from molecular mechanisms. 14th US National Congress on Computational Mechanics (USNCCM), Montreal, Canada, Technical Abstract USNCCM14-MS101.2.2, 2017.
54. Sahli Costabal, F., Concha, F.A., Hurdato, D.E., **Kuhl, E.** The importance of mechano-electrical feedback and inertia in cardiac electromechanics. 14th US National Congress on Computational Mechanics (USNCCM), Montreal, Canada, Technical Abstract USNCCM14-MS105.1.2, 2017.
55. Eskandari, M., Arvayo, A.L., Levenston, M.E., **Kuhl, E.** Characterization of airway wall mechanics. 14th US National Congress on Computational Mechanics (USNCCM), Montreal, Canada, Technical Abstract USNCCM14-MS105.2.1, 2017.
56. Oomen, P.J.A., Bouten, C.V.C., **Kuhl E.**, Loerakker, S. Growth and remodeling towards preserving mechanical homeostasis in human heart valves during somatic growth. Summer Biomechanics,

- Bioengineering and Biotransport Conference, Tucson, Arizona, Technical Paper SB³C2017-317, 2017.
57. van Kelle, M., Rausch, M.K., **Kuhl E.**, Bouten, C.V.C., Loerakker, S. A biologically motivated computational model to explain anisotropic prestretch in the mitral valve. Summer Biomechanics, Bioengineering and Biotransport Conference, Tucson, Arizona, Technical Paper SB³C2017-317, 2017.
 58. Eskandari, M., Arvayo, A.L., **Kuhl E.**, Levenston, M.E. Experimental characterization of airway tissue exhibits pronounced directional and regional mechanical property variations. Summer Biomechanics, Bioengineering and Biotransport Conference, Tucson, Arizona, Technical Paper SB³C2017-189, 2017.
 59. Weickenmeier, J., Budday, S., Goriely, A., **Kuhl, E.** Neuromechanics: Challenges and Opportunities. 9th International Conference on Porous Media. InterPore 2017, Rotterdam, The Netherlands, Technical Abstract PL-1, 2017.
 60. Baillargeon, B., Sahli Costabal, F., Yao, J., D'Souza, K., **Kuhl, E.** Advanced electrophysiology model using a whole heart simulation. NAFEMS Multiscale and Multiphysics Modeling & Simulation – Innovation Enabling Technologies, Columbus, Ohio, 2017.
 61. Sahli Costabal, F., Acevedo-Bolton, G., Choi, S., Shaul, S., Lee, L.C., Kassab, G., Guccione, J., **Kuhl, E.** Multiscale modeling of myocardial growth and remodeling. IMAG Multiscale Modeling Consortium Meeting, NIBIB, NIH Campus, Bethesda, Maryland, 2017.
 62. Sahli Costabal, F., Rausch, M.K., Concha, F., Genet, M., Baillargeon, B., Hurtado, D.E., **Kuhl, E.** Modeling cardiovascular mechanics in health and disease, EMI International Conference, Rio de Janeiro, Brazil, Abstract KL-13.1, 2017.
 63. de Rooij, R., Holland, M.A., Ploch, C., Jayamohan, J., Budday, S., Weickenmeier, J., Goriely, A., **Kuhl, E.** Neuromechanics: Perspectives, challenges, and opportunities, EMI International Conference, Rio de Janeiro, Brazil, Abstract PL-3, 2017.
 64. Budday, S., Sommer, G., Steinmann, P., **Kuhl, E.**, Holzapfel, G.A. Experimental and constitutive analyses of human brain tissue investigated under multiple loading conditions. EUROMECH Colloquium 585. Advanced Experimental Methods in Tissue Biomechanics, Burg Warberg, Germany, 2017.
 65. Weickenmeier, J., de Rooij, R., Budday, S., Ovaert, T.C., **Kuhl, E.** Investigating the mechanobiological properties of the brain. EUROMECH Colloquium 585. Advanced Experimental Methods in Tissue Biomechanics, Burg Warberg, Germany, 2017.
 66. Oomen, P.J.A., Bouten, C.V.C., **Kuhl, E.**, Loerakker, S. Predicting age-dependent changes in human heart valves due to growth. EUROMECH Colloquium 585. Advanced Experimental Methods in Tissue Biomechanics, Burg Warberg, Germany, 2017.
 67. **Kuhl, E.**, Neuromechanics: Challenges and Opportunities, Proceedings of the 12th World Congress on Computational Mechanics (WCCM), Seoul, Korea, 2016.
 68. Sahli-Costabal, F., Hurtado, D., **Kuhl, E.**, Generating Purkinje networks in the human heart, Proceedings of the 12th World Congress on Computational Mechanics (WCCM), Seoul, Korea, 2016.
 69. de Rooij, R., Miller, K., **Kuhl, E.**, Modeling the mechanisms of axonal elongation by molecular motors, Proceedings of the 12th World Congress on Computational Mechanics (WCCM), Seoul, Korea, 2016.
 70. Weickenmeier, J., de Rooij, R., Budday, S., Ovaert, T.C., **Kuhl, E.**, Investigating the mechanical micro-structure of brain tissues, Proceedings of the 12th World Congress on Computational Mechanics (WCCM), Seoul, Korea, 2016.

71. Holland, M.A. Li, B., Feng, X.Q., **Kuhl, E.**, Buckling of soft growing or compressed bilayered systems, Proceedings of the 12th World Congress on Computational Mechanics (WCCM), Seoul, Korea, 2016.
72. Ploch, C., Mansi, C., **Kuhl E.** A tactilely realistic, patient-specific brain model for preoperative surgical training. Annual Meeting of the Biomedical Engineering Society (BMES), Tampa, Florida, Technical Abstract, 2015.
73. Eskandari, M., Kuschner, W., **Kuhl E.** A personalized model of chronic lung disease. Annual Meeting of the Biomedical Engineering Society (BMES), Tampa, Florida, Technical Abstract, 2015.
74. Budday, S., Steinmann, P., **Kuhl, E.** A mechanobiological approach to relate neurodevelopmental processes to brain morphology. 13th US National Congress on Computational Mechanics (USNCCM), San Diego, California, Technical Abstract USNCCM13-MS102.6.1, 2015.
75. Eskandari, M., **Kuhl, E.** The mechanics of airway obstruction and characterization of folding in chronic lung disease. 13th US National Congress on Computational Mechanics (USNCCM), San Diego, California, Technical Abstract USNCCM13-MS102.5.2, 2015.
76. Buganza Tepole, A., Purnell, C.A., Gart, M., Gosain, A.K., **Kuhl, E.** Growth and incompatibility: Experimental characterization of expanded porcine skin. 13th US National Congress on Computational Mechanics (USNCCM), San Diego, California, Technical Abstract USNCCM13-MS110.9.3, 2015.
77. **Kuhl, E.**, Genet, M., Lee, L.C., Baillargeon, B., Guccione, J.M. The Living Heart Project: Modeling pathologies of systolic and diastolic heart failure. 13th US National Congress on Computational Mechanics (USNCCM), San Diego, California, Technical Abstract USNCCM13-MS112.5.1, 2015.
78. de Rooij, R., Budday, S., Nay, R., Steinmann, P., Wyrobek, T., Ovaert, T.C., **Kuhl, E.** Viscoelastic modeling of brain tissue. Proceedings of the 9th European Solid Mechanics Conference (ESMC), Madrid, Spain, Technical Abstract ESMC2015-BM-2.25, 2015.
79. Budday, S., Steinmann, P., Goriely, A., **Kuhl, E.** In response to Wilfrid Le Gros Clark 1945: Extrinsic mechanical factors during brain development. Proceedings of the 9th European Solid Mechanics Conference (ESMC), Madrid, Spain, Technical Abstract ESMC2015-BM-3.11, 2015.
80. Genet, M., Lee, L.C., Toutain, A., Baillargeon, B., Kozerke, S., Guccione, J.M., **Kuhl, E.** A whole heart model with finite growth for hypertension-induced pathologies. Proceedings of the 9th European Solid Mechanics Conference (ESMC), Madrid, Spain, Technical Abstract ESMC2015-CM-1.12, 2015.
81. Vijayakumar, N., Holland, M.A., **Kuhl, E.** A mechanical model for cortical folding during brain development. Summer Biomechanics, Bioengineering and Biotransport Conference, Snowbird Resort, Utah, Technical Paper SB³C2015-575, 2015.
82. Eskandari, M., Javili, A., Linder, C., **Kuhl, E.**, Exploring instabilities in bi-layered structures with a focus on chronic lung disease. Proceedings of the 4th International Conference on Material Modeling (ICCM), Berkeley, California, Technical Abstract, 2015.
83. Weickenmeier, J., Mazza, E., **Kuhl, E.**, Mechanical modeling of tissue interaction in facial tissues. Proceedings of the 4th International Conference on Material Modeling (ICCM), Berkeley, California, Technical Abstract, 2015.
84. Budday S., Andres S, Steinmann P, **Kuhl E.** Primary and secondary instabilities in soft bilayered systems. 86th Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Lecce, Italy, Technical Paper S06.52, 2015.

85. **Kuhl, E.**, On the role of neuromechanics in human brain development, Proceedings of Axonal Transport and Neuronal Mechanics, Mathematical Biosciences Institute (MBI), Columbus, Ohio, Technical Paper S4.9, 2014.
86. Zollner A.M., Rhyne, B., Danser, K., Shultz, R., **Kuhl, E.**, Modeling functional asymmetries in specialized high performance football players, Proceedings of the 12th Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Amsterdam, The Netherlands, April 12-16, 2014. Technical Paper 149, 2014.
87. Buganza Tepole, A., Gart, M., Gosain, A.K., **Kuhl, E.**, Characterizing skin mechanics in vivo in a pig animal model of skin expansion, Proceedings of the 12th Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Amsterdam, The Netherlands, April 12-16, 2014. Technical Paper 094, 2014.
88. Baillargeon, B., **Kuhl, E.**, Alexandre, M. A proof-of-concept simulator for heart function, Proceedings of the 12th Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Amsterdam, The Netherlands, April 12-16, 2014. Technical Paper 216, 2014.
89. Budday, S., Steinmann, P., **Kuhl, E.**, A mechanical model explains brain development, Proceedings of the IUTAM Symposium on Innovative Numerical Approaches for Materials and Structures, Burg Schnellenberg, Germany, September 1-4, 2014, Technical Paper 36, 2014.
90. Buganza Tepole, A., Kabaria, H., **Kuhl, E.**, Isogeometric Kirchhoff-Love shell formulation for biological membranes, Proceedings of the 11th World Congress on Computational Mechanics (WCCM), Barcelona, Spain, 2014.
91. Genet, M., Rausch, M.K., Lee, L.C., Guccione, J.M., **Kuhl, E.**, Differential growth-induced residual stress in arteries and the heart, Proceedings of the 11th World Congress on Computational Mechanics (WCCM), Barcelona, Spain, 2014.
92. Holland, M.A., Lettau, S., **Kuhl, E.**, The effect of white matter anisotropy on cortical folding during development, Proceedings of the 11th World Congress on Computational Mechanics (WCCM), Barcelona, Spain, 2014.
93. Lettau, S., **Kuhl, E.**, Growth and development of the human brain, Proceedings of the 11th World Congress on Computational Mechanics (WCCM), Barcelona, Spain, 2014.
94. Saez, P., **Kuhl, E.**, Simulation of short-term adaptation processes in the infarcted heart, Proceedings of the 11th World Congress on Computational Mechanics (WCCM), Barcelona, Spain, 2014.
95. Javili, A., Lettau, S., Steinmann, P., **Kuhl, E.**, Computational aspects of growth-induced instabilities, Instabilities Across the Scales 2014, Cachan, France, Technical Abstract IAS.4.14, 2014.
96. Lettau, S., Steinmann, P., **Kuhl, E.**, Morphological instabilities of cortical folding in the developing human brain, Instabilities Across the Scales 2014, Cachan, France, Technical Abstract IAS.4.22, 2014.
97. Checa, S., Rausch, M.K., Petersen, A., **Kuhl, E.**, Duda, G.N., Extracellular matrix mechanics and cell traction forces as important regulators of cellular organization, Proceedings of the 7th World Congress of Biomechanics (WCB), Boston, Massachusetts, Technical Abstract S4.11.4, 2014.
98. Eskandari, M., Pfaller, M.R., **Kuhl, E.**, Mechanics of airway obstruction in chronic lung disease, Proceedings of the 7th World Congress of Biomechanics (WCB), Boston, Massachusetts, Technical Abstract R382, 2014.
99. Lee, L., Genet, M., Wenk, J., **Kuhl, E.**, Kozerke, S., Gorman, R., Guccione, J., Mechanism underlying mechanical dysfunction in the border zone of a myocardial infarction: finite element model and

- direct active force measurement studies, Proceedings of the 7th World Congress of Biomechanics (WCB), Boston, Massachusetts, Technical Abstract S11.9.4, 2014.
100. Baillargeon, B., Costa, I., Lee, L.C., Genet, M., Wenk, J.F., **Kuhl, E.**, Navia, J.L., Guccione, J.M., A whole heart simulation of the effects of a novel mitral sub-valvular ring on regional mechanics, Proceedings of the 7th World Congress of Biomechanics (WCB), Boston, Massachusetts, Technical Abstract S12.9.3, 2014.
 101. Genet, M., Lee, L.C., **Kuhl, E.**, Kozerke, S., Guccione, J.M., In vivo MRI-validation of a micromechanics-based active contraction model of healthy and diseased human hearts, Proceedings of the 7th World Congress of Biomechanics (WCB), Boston, Massachusetts, Technical Abstract S13.9.2, 2014.
 102. Bohmer, A., Zollner, A.M., **Kuhl, E.**, Lindemann, U., Medical device design process: A medical engineering perspective, Proceedings of the International Design Conference – Design Society 2014, 749-758, 2014.
 103. Genet, M., Lee L.C., **Kuhl, E.**, Guccione J.M., Abaqus/Standard-based quantification of human cardiac mechanical properties, Proceedings of the SIMULIA Community Conference, Rhode Island, Technical Paper 83, 2014.
 104. Lettau, S., Steinmann, P., **Kuhl, E.**, A mechanical approach to explain cortical folding phenomena in health and disease, Proceedings of the 85rd Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Erlangen, Germany, Technical Abstract S2.5, 2014.
 105. Eskandari, M., Pfaller, M.R., **Kuhl, E.**, The mechanics of chronic airway obstruction, Proceedings of Multiscale Methods and Validation in Medicine and Biology II (MMVMB), Berkeley, California, Technical Abstract MMVMB.II.11, 2014.
 106. Lettau, S., **Kuhl, E.**, On the role of mechanics during brain development, Second Oxford Brain Mechanics Workshop, Oxford, United Kingdom, Abstract II.14, 2014.
 107. Buganza Tepole, A., Kabaria, H., **Kuhl, E.**, Isogeometric Kirchhoff-Love shell formulation with application to anisotropic materials, Isogeometric Analysis: Integrating Design and Analysis (IAG), Austin, Texas, Technical Paper SS.IV.1, 2014.
 108. Zollner, A.M., Bol, M., **Kuhl, E.**, Computational modeling of muscle plasticity through sarcomerogenesis, Proceedings of the XII International Conference on Computational Plasticity (COMPLAS XII), Barcelona, Spain, Technical Paper ThE05.2, 2013.
 109. Zollner, A.M., Bol, M., **Kuhl, E.**, Multiscale modeling of skeletal muscle growth, Proceedings of the 12th US National Congress on Computational Mechanics (USNCCM), Raleigh, North Carolina, Technical Paper 4.7.1, 2013.
 110. Buganza Tepole, A., **Kuhl, E.**, A novel computational framework for to the bio-chemo-mechanical interaction during wound healing, Proceedings of the 12th US National Congress on Computational Mechanics (USNCCM), Raleigh, North Carolina, Technical Paper 2.1.3, 2013.
 111. Rausch, M.K., **Kuhl, E.**, A growing shell: Modeling biological membrane adaptation to mechanical loads, Proceedings of the 12th US National Congress on Computational Mechanics (USNCCM), Raleigh, North Carolina, Technical Paper 2.1.9, 2013.
 112. Holland, M.A., Steinmann, P., **Kuhl, E.**, Theory and numeric of volume and surface growth in the developing brain, Proceedings of the 12th US National Congress on Computational Mechanics (USNCCM), Raleigh, North Carolina, Technical Paper 2.1.10, 2013.
 113. Buganza Tepole, A., Gosain, A.K., **Kuhl, E.**, Computational optimization of flap design following skin expansion, Proceedings of the 92nd Annual Meeting of the American Association of Plastic Surgeons (AAPS 2013), New Orleans, Louisiana, Technical Paper P81, 2013.

114. Hurtado, D.E., Castro, S., **Kuhl, E.**, Computational modeling of the repolarization sequence in the human heart, Proceedings of the 11th Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Salt Lake City, Utah, April 3-7, 2013. Technical Paper PS-CM.17, 2013.
115. Rausch, M.K., **Kuhl, E.**, Mechanics of the mitral valve, Proceedings of the 11th Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Salt Lake City, Utah, Technical Paper SS9B.1, 2013.
116. Saez, P., Malve, M., Pena, E., Martinez, M.A., **Kuhl, E.**, Computational growth model of a carotid artery in hypertensive disease, Proceedings of the 11th Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Salt Lake City, Utah, Technical Paper SS16.3, 2013.
117. Rausch, M.K., Bothe, W., Miller, D.C., **Kuhl, E.**, Nonlinear in-vivo material parameter identification of the mitral valve leaflet, Proceedings of the 11th Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Salt Lake City, Utah, Technical Paper GS-CM.4, 2013.
118. Zollner, A.M., Holland, M.A., Gosain, A.K., **Kuhl, E.**, On the biomechanics and mechanobiology of growing skin, Proceedings of the 11th Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Salt Lake City, Utah, Technical Paper SS5.2, 2013.
119. Waffenschmidt, T., Menzel, A., **Kuhl, E.**, Anisotropic density growth of bone: A computational micro-sphere approach, Proceedings of the 6th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS), Vienna, Austria. ECCOMAS2012-1505, 2012.
120. Rausch, M.K., Tibayan, F.A., Miller, D.C., **Kuhl, E.**, Chronic mitral leaflet growth following myocardial infarction, Proceedings of the ASME 2012 Summer Bioengineering Conference (ASME-SBC), Fajardo, Puerto Rico, Technical Paper SBC2012-80308, 2012.
121. Buganza Tepole, A., Zollner, A.M., **Kuhl, E.**, Finite element modeling of flap design after skin expansion, Proceedings of the ASME 2012 Summer Bioengineering Conference (ASME-SBC), Fajardo, Puerto Rico, Technical Paper SBC2012-80459, 2012.
122. Zollner, A.M., Buganza Tepole, A., **Kuhl, E.**, Modeling growth in tissue expansion, Proceedings of the ASME 2012 Summer Bioengineering Conference (ASME-SBE), Fajardo, Puerto Rico, Technical Paper SBC2012-80588, 2012.
123. Wong, J., Abilez, O.J., **Kuhl, E.**, Computational modelling of optogenetics in cardiac cells, Proceedings of the ASME 2012 Summer Bioengineering Conference (ASME-SBC), Fajardo, Puerto Rico, Technical Paper SBC2012-80810, 2012.
124. Rausch, M.K., Bothe, W., Miller, D.C., **Kuhl, E.**, Mitral valve modeling: The effect of prestrain, Proceedings of the 2012 Annual Meeting of the Biomedical Engineering Society (BMES), Atlanta, Georgia, Technical Paper BMES2012-2368, 2012.
125. Wong, J., Abilez, O.J., **Kuhl, E.**, Pacing Hearts with Light: Multiscale modeling of the photoelectrochemistry of living systems, Proceedings of the 8th European Solid Mechanics Conference (ESMC), Graz, Austria, Technical Abstract ESMC2012-MS6.1.3, 2012.
126. Zollner, A.M., Buganza Tepole, A., **Kuhl, E.**, Biomechanics and mechanobiology of growing skin, Proceedings of the 8th European Solid Mechanics Conference (ESMC), Graz, Austria, Technical Abstract ESMC2012-MS13.1.4, 2012.
127. Saez, P., Pena, E., Martinez, M.A., **Kuhl, E.**, Theoretical and numerical study of the evolution processes in blood vessels, Proceedings of the 8th European Solid Mechanics Conference (ESMC), Graz, Austria, Technical Abstract ESMC2012-MS13.2.2, 2012.

128. **Kuhl, E.**, Zollner, A.M., Buganza Tepole, A., The mechanics of growing skin. Proceedings of the 83rd Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Darmstadt, Germany, Technical Abstract S2.6.1, 2010.
129. Saez, P., Malve, M., Pena, E., Martinez, M.A., **Kuhl, E.**, Computational mechanics of an active adaptation model for blood vessels. Proceedings of the 23rd International Congress of Theoretical and Applied Mechanics (ICTAM), Beijing, China, ICTAM2012-MS01.014, 2012.
130. Zollner, A.M., Buganza Tepole, A., **Kuhl, E.**, Growth modeling in skin expansion, Proceedings of the 10th World Congress on Computational Mechanics (WCCM), Sao Paulo, Brazil, Technical Paper WCCM2012-18082, 2012.
131. Hurtado, D.E., **Kuhl, E.**, Computational modeling of cardiac electrophysiology: Toward realistic patient-specific simulations, XI Jornadas de Mecanica Computacional, Valparasio, Chile, Technical Paper JMC2012-ST.II.2, 2012.
132. Dal, H., Goktepe, S., Kaliske, M., **Kuhl, E.**, A three-field bi-domain based approach to the strongly coupled electromechanics of the heart. Proceeding of the 82th Annual Scientific Conference of the International Association of Mathematics and Mechanics (GAMM), Graz, Austria, Technical Abstract YR Me3.2, Proceedings of Applied Mathematics and Mechanics (PAMM), Vol. 11, pp. 931-934, 2011.
133. Rausch, M.K., Abilez, O.J., **Kuhl, E.**, A computational multiscale model for heart failure, Proceeding of the 82th Annual Scientific Conference of the International Association of Mathematics and Mechanics (GAMM), Graz, Austria, Technical Abstract S2.7.1, 2011.
134. Werner, D., **Kuhl, E.**, Ricken, T., On simulation of growth processes in the human heart: A comparison between a one- and biphasic model, Proceeding of the 82th Annual Scientific Conference of the International Association of Mathematics and Mechanics (GAMM), Graz, Austria, Technical Abstract S2.7.1, 2011.
135. Wong, J., Goktepe, S., **Kuhl, E.**, A monolithic electromechanical ionic model of cardiac tissue, Proceeding of the 82th Annual Scientific Conference of the International Association of Mathematics and Mechanics (GAMM), Graz, Austria. Technical Abstract YR Me3.2, 2011.
136. Abilez, O.J., Prakash, R., Wong, J., **Kuhl, E.**, Deisseroth, K., Zarins, C.K., In vitro and in silico optogenetic control of differentiated human pluripotent stem cell-derived cardiomyocytes, Keystone Molecular Cardiology Symposium, Keystone, Colorado, Technical Abstract W2.2, 2011.
137. Abilez, O.J., Prakash, R., Wong, J., **Kuhl, E.**, Deisseroth, K., Zarins, C.K., In vitro and in silico optogenetic control of differentiated human pluripotent stem cells, 55th Annual Meeting of the Biophysical Society, Baltimore, Maryland, Biophysical Journal, Vol. 100, p. 368, 2011.
138. Wong, J., Abilez, O.J., Prakash, R., Deisseroth, K., Zarins, C.K., **Kuhl, E.**, Electrophysiological modeling of channelrhodopsin-2 in cardiac cells, 55th Annual Meeting of the Biophysical Society, Baltimore, Maryland, Biophysical Journal, Vol. 100, p. 437, 2011.
139. Buganza Tepole, A., Zollner, A., **Kuhl, E.**, Finite element modeling of mechanically driven skin growth due to different expander geometries, Proceedings of the ASME 2011 Summer Bioengineering Conference (ASME-SBC), Farmington, Pennsylvania, Technical Paper SBC2011-53099, 2011.
140. Murphey, C.L., Wong, J., **Kuhl, E.**, Computational simulation of biventricular pacing in an asymptomatic human heart, Proceedings of the ASME 2011 Summer Bioengineering Conference (ASME-SBC), Farmington, Pennsylvania, Technical Paper SBC2011-53110, 2011.
141. O'Brien Shultz, T., Rausch, M.K., **Kuhl, E.**, Collagen orientation in the anterior mitral valve leaflet, Proceedings of the ASME 2011 Summer Bioengineering Conference (ASME-SBC), Farmington, Pennsylvania, Technical Paper SBC2011-53191, 2011.

142. Rausch, M.K., Bothe, W., Kvitting, J.P., Goktepe, S., Miller, D.C., **Kuhl, E.**, In vivo dynamic strains of the ovine anterior mitral valve leaflet, Proceedings of the ASME 2011 Summer Bioengineering Conference (ASME-SBC), Farmington, Pennsylvania, Technical Paper SBC2011-53195, 2011.
143. Buganza Tepole, A., Ploch, C.J., Wong, J., **Kuhl, E.**, Computational modeling of skin growth in reconstructive surgery, 11th US National Congress on Computational Mechanics (USNCCM), Minneapolis, Minnesota, Technical Abstract 14.1.1, 2011.
144. Klepach, D., Lee, L.C., Wenk, J., Ratcliffe, M.B., Zohdi, T.I., **Kuhl, E.**, Guccione, J.M., Finite element stress analysis of left ventricular remodeling in response to a myocardial infarction, ASME Frontiers in Biomedical Devices. Irvine, California, Technical Paper BioMed2011-66069, 2011.
145. Abilez, O.J., Wong, J., Prakash, R., Deisseroth, K., Zarins, C.K., **Kuhl, E.**, Computational optogenetics - Turning light into force, Proceedings of the IUTAM Symposium on Computer Models in Biomechanics, Stanford, California, pp. 16-17, 2011.
146. Abilez, O.J., Zarins, C.A., Guillou, L., **Kuhl, E.**, Zarins, C.K., A strain device for probing sarcomerogenesis in differentiating human pluripotent stem cell-derived cardiomyocytes, Proceedings of the IUTAM Symposium on Computer Models in Biomechanics, Stanford, California, p. 80, 2011.
147. O'Brien Shultz, T., Rausch, M.K., **Kuhl, E.**, Collagen orientation in the anterior mitral valve leaflet, Proceedings of the IUTAM Symposium on Computer Models in Biomechanics, Stanford, California, pp. 63-64, 2011.
148. Buganza Tepole, A., **Kuhl, E.**, Mathematical modeling of skin growth, Proceedings of the IUTAM Symposium on Computer Models in Biomechanics, Stanford, California, pp. 43-44, 2011.
149. Famaey, N., Vander Sloten, J., **Kuhl, E.**, A three-constituent damage model for cardiovascular tissue, Proceedings of the IUTAM Symposium on Computer Models in Biomechanics, Stanford, California, pp. 45-46, 2011.
150. Goktepe, S., Menzel, A., **Kuhl, E.**, Micro-structurally based kinematic approaches to electromechanics of the heart, Proceedings of the IUTAM Symposium on Computer Models in Biomechanics, Stanford, California, p. 31, 2011.
151. Murphey, C.L., Wong, J., **Kuhl, E.**, Computational simulation of biventricular pacing in a human heart, Proceedings of the IUTAM Symposium on Computer Models in Biomechanics, Stanford, California, p. 56, 2011.
152. Rausch, M.K., **Kuhl, E.**, Mitral valve annular dynamics in the beating heart, Proceedings of the IUTAM Symposium on Computer Models in Biomechanics, Stanford, California, pp. 61-62, 2011.
153. Wong, J., Abilez, O.J., Zarins, C.K., **Kuhl, E.**, Electromechanical modeling of channelrhodopsin-2 in cardiac cells, Proceedings of the IUTAM Symposium on Computer Models in Biomechanics, Stanford, California, p. 78, 2011.
154. Zollner, A., Gosain, A.K., **Kuhl, E.**, On the mechanics of growing skin, Proceedings of the IUTAM Symposium on Computer Models in Biomechanics, Stanford, California, pp. 80-81, 2011.
155. Goktepe, S., Abilez, O.J., Parker, K.K., **Kuhl, E.**, A multiscale model for cardiac growth through sarcomerogenesis, BIRM Workshop on the Mathematical Foundation of Mechanical Biology, Banff, Canada, Technical Abstract 59, 2010.
156. Bothe, W., **Kuhl, E.**, Kvitting, J.P., Rausch, M.K., Goktepe, S., Swanson, J., Ingels, N.B., Miller, D.C., Rigid, complete annuloplasty rings increase anterior mitral leaflet strains in the normal beating ovine heart, American Heart Association Annual Meeting (AHA), Chicago, Illinois, Technical Paper 2010-SS-A-14544-AHA, 2010.

157. Goktepe, S., Abilez, O.J., Parker, K.K., **Kuhl, E.**, Computational modeling of eccentric and concentric cardiac growth through sarcomerogenesis, Biomedical Engineering Society Annual Fall Meeting (BMES), Austin, Texas, Technical Paper BMES-2010-880, 2010.
158. Goktepe, S., Abilez, O.J., Parker, K.K., **Kuhl, E.**, A generic approach towards finite growth: Examples of cardiac dilation and hypertrophy. Proceedings of the 9th World Congress in Computational Mechanics WCCM, Sydney, Australia, July 19-23, 2010.
159. Wong, J., Goktepe, S., **Kuhl, E.**, A novel efficient algorithm for the electro-chemical modeling of cardiac cells. Proceedings of the 9th World Congress in Computational Mechanics WCCM, Sydney, Australia, July 19-23, 2010.
160. Goktepe, S., Menzel, A., **Kuhl, E.**, Micro-structurally based kinematic approaches to anisotropic electro-active materials. Proceeding of the 9th World Congress in Computational Mechanics WCCM, Sydney, Australia, July 19-23, 2010.
161. Vogel, F., Steinmann, P., Goktepe, S., **Kuhl, E.**, Exploring the nature of viscous electro-active materials. Proceedings of the 9th World Congress in Computational Mechanics WCCM, Sydney, Australia, July 19-23, 2010.
162. Goktepe, S., Wong, J., **Kuhl, E.**, Computational modeling of electroactive cardiac tissue. Proceedings of the 16th US National Congress of Theoretical and Applied Mechanics, State College, Pennsylvania, USNCTAM2010-418, 2010.
163. Guilliou, L., Abilez, O.J., Baugh, J., Billakanti, G., Zarins, C.K., **Kuhl, E.**, In vitro assessment of rat heart force generation: A quantitative approach for predicting outcomes from stem cell injection for myocardial infarction, Proceedings of the ASME Summer Bioengineering Conference (ASME-SBC), Naples, Florida, 2010
164. Vogel, F., Steinmann, P., Goktepe, S., **Kuhl, E.**, Exploring the nature of viscous electro-active materials. Proceedings of the IV European Conference on Computational Mechanics (ECCM) Paris, France, Technical Abstract MS83.2, 2010.
165. Rajagopal, A., Fischer, P., **Kuhl, E.**, Steinman, P., C1 Natural element method for analysis of Cahn-Hilliard phase-field model, Proceeding of the 81th Annual Meeting of the International Association of Mathematics and Mechanics (GAMM), Karlsruhe, Germany, 2010. Technical Abstract S17.3.5, 2010.
166. Vogel, F., Steinmann, P., Goktepe, S., **Kuhl, E.**, Application of a viscoelastic material model in electro-mechanics, Proceedings of the 81th Annual Meeting of the International Association of Mathematics and Mechanics (GAMM), Karlsruhe, Germany, Technical Abstract S7.1.3, 2010. Proceedings of Applied Mathematics and Mechanics (PAMM), Vol. 10, pp. 387-388, 2010.
167. **Kuhl, E.**, Goktepe, S., On the structure-function relationship in electro-active biological tissue, Proceedings of the 81th Annual Meeting of the International Association of Mathematics and Mechanics (GAMM), Karlsruhe, Germany, Technical Abstract S2.4.2, 2010.
168. Goktepe, S., Kotikanyadanam, M., **Kuhl, E.**, On excitation-contraction coupling in computational cardiology, Proceeding of the 10th International Conference on Computational Plasticity (COMPLAS), Barcelona, Spain, Abstract No. 381, 2009.
169. Goktepe, S., **Kuhl, E.**, A new computational approach to fully coupled excitation contraction in cardiac electromechanics, Proceedings of the 10th U.S. National Congress on Computational Mechanics (USNCCM), Columbus, OH, Abstract No. 154302, 2009.
170. Kotikanyadanam, M., Goktepe, S., **Kuhl, E.**, Simulating electrocardiograms with a finite element model of cardiac electrophysiology, Proceedings of the 10th U.S. National Congress on Computational Mechanics (USNCCM), Columbus, OH, Abstract No. 155029, 2009.

171. Meier, H.A., Steinmann, P., **Kuhl, E.**, Multiscale modeling of granular soils: Impact of microscopic boundary conditions, Proceedings of the 10th U.S. National Congress on Computational Mechanics (USNCCM), Columbus, OH, Abstract No. 160028, 2009.
172. Jager, P., Schmalholz, S.M., Schmid, D., Steinmann, P., **Kuhl, E.**, Three-dimensional applications of brittle fracture in geological structures, Proceedings of the 10th U.S. National Congress on Computational Mechanics (USNCCM), Columbus, OH, Abstract No. 156422, 2009.
173. Goktepe, S., **Kuhl, E.**, Consistent computational procedures for fully coupled excitation-contraction in cardiac electromechanics, Proceedings of the First International Conference on Material Modelling, eds. Menzel, A., Svendsen, B. and Bertram, A., Dortmund, Germany, p. 84, 2009.
174. Krishnamurthy, G., Swanson-Birchill, J.C., Itoh, A., Bothe, W., Ennis, D.B., **Kuhl, E.**, Karlsson, M., Miller, D.C., Ingels, N.B., Transient tensing of the mitral valve anterior leaflet in the beating heart, Joint Meeting of the Society for Heart Valve Disease and Heart Valve Society of America, Berlin, Germany, p. 207, 2009.
175. Wong, J., Goktepe, S., **Kuhl, E.**, Computational simulation of traveling arrhythmic waves in myocardial tissue, Proceedings of the American Society of Mechanical Engineers (ASME) Summer Bioengineering Conference (SBC), Lake Tahoe, CA, Abstract No. SBC2009-206552, 2009.
176. Taylor, R.E., Lue, S.J., Gumerlock, K., Fajaro, G., Higgs, G., Norman, J.J., Wei, P., Ding, Z., Ziaie, B., Bernstein, D., **Kuhl, E.**, Pruitt, B.L., Synchronized mechanical and electrical stimulation of primary heart cells with a stretchable microelectrode array, Fifth International Conference on Microtechnologies in Medicine and Biology, Quebec, Canada, Paper F2P16, 2009.
177. Goktepe, S., **Kuhl, E.**, Electromechanics of cardiac tissue: A unified approach to the fully coupled excitation-contraction problem, Proceedings of Applied Mathematics and Mechanics (PAMM), Vol. 9, pp. 159-160, 2009.
178. Krishnamurthy, G., Itoh, A., Bothe, W., Ennis, D.B., Swanson-Birchill, J.C., **Kuhl, E.**, Miller, D.C., Ingels, N.B., Stress-strain behavior of ovine anterior mitral valve leaflets in vivo, Proceedings of the Biomedical Engineering Society Annual Fall Meeting, St. Louis, MO, pp. 111-112, 2008.
179. Kuhl, E., Goktepe, S., Bol, M., Abilez, O., Growth and remodeling of the heart – A cell-based continuum mechanics approach towards ventricular growth and remodeling, Oberwolfach Report No. 39/2008, Miniworkshop, eds. Ambrosi, D., Garikipati, K. and Kuhl, E., Mathematical Research Center Oberwolfach, Germany, pp. 24-26, 2008.
180. Goktepe, S., Ulerich, J., Abilez, O., Zarins, C.K., **Kuhl, E.**, Computational design of novel stem cell based therapies for myocardial infarction, Proceedings of the XXII International Congress of Theoretical and Applied Mechanics (ICTAM), Adelaide, Australia, pp. 243-244, 2008.
181. Taylor, R.E., Zheng, C., Jackson, R.P., Doll, J.C., Chen, J.C., Holzbaur, K.R.S., Besier, T., **Kuhl, E.**, Critical loading during serve: Modeling stress-induced bone growth in performance tennis players, Proceedings of the American Society of Mechanical Engineers (ASME) Summer Bioengineering Conference (SBC), Marco Island, FL, Abstract No. SBC2008-192005, 2008.
182. Krishnamurthy, G., Itoh, A., Bothe, W., Ennis, D.B., Swanson-Birchill, J.C., **Kuhl, E.**, Miller, D.C., Ingels, N.B., Quantification of in vivo stresses in the ovine anterior mitral valve leaflet, Proceedings of the American Society of Mechanical Engineers (ASME) Summer Bioengineering Conference (SBC), Marco Island, FL, Abstract No. SBC2008-192295, 2008.
183. Ulerich, J., Goktepe, S., **Kuhl, E.**, First attempts towards the computational simulation of novel stem-cell based post infarction therapies, Proceedings of the American Society of Mechanical Engineers (ASME) Summer Bioengineering Conference (SBC), Marco Island, FL, Abstract No. SBC2008-192715, 2008.

184. Goktepe, S., Ulerich, J., **Kuhl, E.**, How to treat the loss of beat: Modeling and simulation of growth and remodeling and novel post-infarction therapies, Proceedings of the American Society of Mechanical Engineers (ASME) Summer Bioengineering Conference (SBC), Marco Island, FL, Abstract No. SBC2008-193159, 2008.
185. Zheng, C., Doll, J.C., Gu, E., Hager-Barnard, E., Huang, Z., Kia, A.A., Ortiz, M., Petzold, B., Shi, Y., Suk, S.D., Usui, T., Kwon, R., Jacobs, C., **Kuhl, E.**, Exploring cellular tensegrity: Physical modeling and computational simulation, Proceedings of the American Society of Mechanical Engineers (ASME) Summer Bioengineering Conference (SBC), Marco Island, FL, Abstract No. SBC2008-192407, 2008.
186. Jager, P., Steinmann, P., **Kuhl, E.**, Three-dimensional numerical modeling of brittle failure in solids, Eighth World Congress on Computational Mechanics (WCCM), Venice, Italy, Abstract No. 24/13, 2008.
187. Schmalholz, S.M., Schmid, D.W., Jager, P., **Kuhl, E.**, Brittle fracturing during folding of rocks: A finite element study, Geophysical Research Abstracts, European Geosciences Union (EGU) General Assembly, Vol. 10, Abstract No. EGU2008-A-01717, 2008.
188. Taylor, R.E., Zheng, C., Jackson, R.P., Doll, J.C., Chen, J.C., Holzbaur, K.R.S., Besier, T., **Kuhl, E.**, The phenomenon of twisted growth: Humeral torsion in dominant arms of high performance tennis players, 16th Annual Symposium on Computational Methods in Orthopaedic Biomechanics, San Francisco, CA, pp. 123-124, 2008.
189. Jager, P., **Kuhl, E.**, Steinmann, P., Three-dimensional discontinuities at large deformations, International Conference on Computational Fracture and Failure of Materials and Structures, Nantes, France, Abstract No. MS11-6, p. 140, 2007.
190. Hirschberger, C.B., **Kuhl, E.**, Steinmann, P., Recent aspects in the mechanics of micromorphic continua, Nonlocal Modeling of Material's Failure, Wuppertal, Germany, p. 61, 2007.
191. Meier, H.A., **Kuhl, E.**, Steinmann, P., Towards confined granular multiscale methods, Modeling of Heterogeneous Materials, Prague, Czech Republic, pp. 172-173, 2007.
192. Jager, P., Mergheim, J., **Kuhl, E.**, Steinmann, P., Simulation of discrete failure processes on arbitrary scales of observation, Instabilities Across the Scales 2007, Delft, The Netherlands, pp. 43-44, 2007.
193. **Kuhl, E.**, Schmid, D.W., Computational modeling of mineral unmixing and growth: An application of the Cahn-Hilliard equation, Instabilities Across the Scales 2007, Delft, the Netherlands, pp. 35-36, 2007.
194. Meier, H.A., **Kuhl, E.**, Steinmann, P., Multiscale homogenization of discontinuous media, Proceedings of the Ninth U.S. National Congress on Computational Mechanics (USNCCM), San Francisco, CA, Abstract No. MS006-5, 2007.
195. Jager, P., **Kuhl, E.**, Steinmann, P., On tracking strategies for 3D crack propagation, Proceedings of the Ninth U.S. National Congress on Computational Mechanics (USNCCM), San Francisco, CA, Abstract No. MS105-9, 2007.
196. Himpel, G., **Kuhl, E.**, Menzel, A., Steinmann, P., Computational modeling of time-dependent fiber reorientation in biomaterials, Proceedings of the Ninth U.S. National Congress on Computational Mechanics (USNCCM), San Francisco, CA, Abstract No. MS009-6, 2007.
197. Hirschberger, C.B., **Kuhl, E.**, Steinmann, P., Computational modelling of micromorphic continua – Theory numerics, and visualization challenges, Visualization of Large and Unstructured Data Sets, eds. Hagen, H., Kerren, A. and Dannenmann, P., Vol. S-4 of GI-Edition Lecture Notes in Informatics, pp. 155–164, 2006.

198. Meier, H.A., **Kuhl, E.**, Steinmann, P., On discrete modeling and visualization of granular media, eds. Hagen, H., Kerren, A and Dannenmann, P., Vol. S-4 of GI-Edition Lecture Notes in Informatics, pp. 165–175, 2006.
199. **Kuhl, E.**, Jager, P., Mergheim, J., Steinmann, P., On the applications of Hansbo's method for interface problems, Proceedings of the International Union of Theoretical and Applied Mechanics (IUTAM) Symposium on Discretization Methods for Evolving Discontinuities, eds. Combescure, A., de Borst, R. and Belytschko, T., Lyon, France. pp. 43-44, 2006.
200. Hirschberger, C.B., **Kuhl, E.**, Steinmann, P., A configurational-mechanics perspective on computational micromorphic continua, Proceedings of the Seventh World Congress on Computational Mechanics (WCCM), Los Angeles, CA, Abstract No. 292, 2006.
201. **Kuhl, E.**, Jager, P., Mergheim, J., Steinmann, P., On the computational simulation of three-dimensional strong discontinuities, Proceedings of the Seventh World Congress on Computational Mechanics (WCCM), Los Angeles, CA, Abstract No. 397, 2006.
202. Utzinger, J., Menzel, A., **Kuhl, E.**, Steinmann, P., Simulation of thermal impact welded lightweight structures, Proceedings in Applied Mathematics and Mechanics (PAMM), Vol. 6, pp. 201-202, 2006.
203. Himpel, G., Menzel, A., **Kuhl, E.**, Steinmann, P., Theory and implementation of time dependent fibre reorientation in transversely isotropic materials, Proceedings in Applied Mathematics and Mechanics (PAMM), Vol. 6, pp. 131-132, 2006.
204. Hirschberger, C.B., **Kuhl, E.**, Steinmann, P., Computational material forces in micromorphic continua, Proceedings in Applied Mathematics and Mechanics (PAMM), Vol. 6, pp. 379-380, 2006.
205. Jager, P., **Kuhl, E.**, Steinmann, P., Modelling and computation of 3D discontinuities in solids, Proceedings in Applied Mathematics and Mechanics (PAMM), Vol. 6, pp. 383-384, 2006.
206. Meier, H.A., **Kuhl, E.**, Steinmann, P., Failure of granular materials at different scales - Microscale approach, Proceedings in Applied Mathematics and Mechanics (PAMM), Vol. 6, pp. 399-400, 2006.
207. **Kuhl, E.**, Menzel, A., Garikipati, K., Advanced chain network models in biomechanics, 6th European Solid Mechanics Conference (ESCM), Budapest, Hungary, Abstract No. MS02-K120, 2006.
208. Hirschberger, C.B., **Kuhl, E.**, Steinmann, P., Computational micromorphic continua – Deformational and configurational mechanics, 6th European Solid Mechanics Conference (ESMC), Budapest, Hungary, Abstract No. S23-K232, 2006.
209. Utzinger, J., Menzel, A., **Kuhl, E.**, Steinmann, P., Computational modeling of laminar welded hybrid lightweight structures, Proceedings of the International Workshop on Research in Mechanics of Composites, Bad Herrenalb, Germany, p. 53, 2006.
210. Himpel, G., Menzel, A., **Kuhl, E.**, Steinmann, P., Computational simulation of growth and remodeling, Proceedings of the Fifth World Congress of Biomechanics, Munich, Germany, Abstract No. 4491, 2006.
211. Utzinger, J., Menzel, A., **Kuhl, E.**, Steinmann, P., On well-posedness in continuum interface problems, Proceedings in Applied Mathematics and Mechanics (PAMM), Vol. 5, pp. 369-370, 2005.
212. Himpel, G., **Kuhl, E.**, Menzel, A., Steinmann, P., Modelling of mass changes in anisotropic materials, Proceedings in Applied Mathematics and Mechanics (PAMM), Vol. 5, pp. 299-300, 2005.
213. **Kuhl, E.**, Himpel, G., Menzel, A., Steinmann, P., Modeling and simulation of biological growth phenomena, Oberwolfach Report No. 9/2005, Mini-Workshop, eds. Saccomandi, G. and Ogden, R.W., Mathematical Research Center Oberwolfach, Germany, p. 515, 2005.

214. Menzel, A., **Kuhl, E.**, Fiber reorientation for transversely isotropic and orthotropic tissue adaptation, Oberwolfach Report No. 9/2005, Mini-Workshop, eds. Saccomandi, G. and Ogden, R.W., Mathematical Research Center Oberwolfach, Germany, p. 517, 2005.
215. Himpel, G., **Kuhl, E.**, Menzel, A., Steinmann, P., Anisotropic growth based on a multiplicative decomposition of the deformation gradient, Proceedings of the First International Association of Applied Mathematics and Mechanics (GAMM) Seminar on Continuum Biomechanics, ed. Ehlers, W., Freudenstadt, Germany, pp. 69-78, 2005.
216. **Kuhl, E.**, Askes, H., Steinmann, P., Spatial material convexity analysis in nonlinear hyperelasticity, Instabilities Across the Scales 2004, Cairns, Australia, pp. 23-24, 2004.
217. **Kuhl, E.**, Menzel, A., Garkipati, K., Arruda, E.M., Grosh, K., Modeling and simulation of remodeling in soft biological tissues, International Union of Theoretical and Applied Mechanics (IUTAM) Symposium on Mechanics of Biological Tissues, eds. Holzapfel, G.A. and Ogden, R.W., Graz, Austria, p. 43, 2004.
218. Askes, H., **Kuhl, E.**, Bargmann, S., Steinmann, P., Dual equilibrium problem with applications to mesh optimization and structural optimization, Proceedings of Advanced Problems in Mechanics 2004, ed. Indeitsev, D.A., St. Petersburg, Russia, pp. 28-32, 2004.
219. Himpel, G., **Kuhl, E.**, Menzel, A., Steinmann, P., Theory and implementation of orthotropic materials in growing continua, Proceedings in Applied Mathematics and Mechanics (PAMM), Vol. 4, pp. 320-321, 2004.
220. Mergheim, J., **Kuhl, E.**, Menzel, A., Steinmann, P., A finite element method for the modelling of cohesive cracks, Proceedings in Applied Mathematics and Mechanics (PAMM), Vol. 4, pp. 350-351, 2004.
221. Mergheim, J., **Kuhl, E.**, Steinmann, P., Computational modelling of failure with the discontinuous Galerkin method, Proceedings in Applied Mathematics and Mechanics (PAMM), Vol. 3, pp. 306-307, 2003.
222. **Kuhl, E.**, Askes, H., Steinmann, P., An energy minimizing mesh optimization strategy based on the equilibrium of discrete spatial and material forces, Proceedings of the First International Conference on Adaptive Modeling and Simulation (ADMOS) 2003, eds. Wiberg, N.E. and Diez, P., Göteborg, Sweden, pp. 205-224, 2003.
223. **Kuhl, E.**, Steinmann, P., On the impact of configurational mechanics on computational mechanics, Proceedings of the Fifth Euromech Solid Mechanics Conference (ESMC), Thessaloniki, Greece, pp. 119-120, 2003.
224. Mergheim, J., **Kuhl, E.**, Steinmann, P., Computational modelling of failure with the discontinuous Galerkin method, Proceedings of the First International Finite Element for Process (LUXFEM) 2003, eds. Lewis, R.W. and Grober, H., Luxembourg, pp. 97-106, 2003.
225. **Kuhl, E.**, Askes, H., Steinmann, P., Computational spatial and material settings of continuum mechanics: An arbitrary Lagrangian-Eulerian formulation, Proceedings of the Euromech Colloquium 445: Mechanics of Material Forces, eds. Maugin, G.A. and Steinmann, P., Kaiserslautern, Germany, p. 54, 2003.
226. **Kuhl, E.**, Menzel, A., Steinmann, P., Computational modeling of biological growth phenomena, Seventh International Conference on Computational Plasticity - Fundamentals and Applications (COMPLAS), eds. Onate, E., Owen, D.R.J. and Suarez, B., International Center for Numerical Methods in Engineering (CIMNE), Barcelona, Spain, pp. 153-160, 2003.
227. Askes, H., **Kuhl, E.**, Steinmann, P., Arbitrary Lagrangian-Eulerian (ALE) mesh optimization by equilibration of discrete material forces, Seventh International Conference on Computational Plasticity - Fundamentals and Applications (COMPLAS), eds. Onate, E., Owen, D.R.J. and Suarez,

- B., International Center for Numerical Methods in Engineering (CIMNE), Barcelona, Spain, pp. 103-118, 2003.
228. **Kuhl, E.**, Steinmann, P., Thermodynamics of open systems with application to chemo-mechanical problems, Computational Modelling of Concrete Structures (EURO-C), eds. Bicanic, N., de Borst, R., Mang, H. and Meschke, G., Balkema, Rotterdam, the Netherlands, pp. 463-472, 2003.
229. **Kuhl, E.**, Steinmann, P., Theoretical and computational aspects of bone remodeling, The Finite Element Method in Biomedical Engineering, Biomechanics and Related Fields, Ulm, Germany, Manuscript No. 04-023, 2002.
230. **Kuhl, E.**, Steinmann, P., Geometrically nonlinear functional adaptation of biological microstructures, Proceedings of the Fifth World Congress on Computational Mechanics (WCCM), eds. Mang, H., Rammerstorfer, F.G. and Eberhardsteiner, J., Vienna, Austria, Paper-ID 80370, 2002.
231. **Kuhl, E.**, Hulshoff, S., de Borst, R., A comparison of partitioned and monolithic solution procedures for fluid-structure interaction problems, Proceedings of the Second European Conference on Computational Mechanics (ECCM), Krakow, Poland, pp. 107-116, 2001.
232. **Kuhl, E.**, Hulshoff, S. and de Borst, R., A comparison of coupled and partitioned solution strategies for fluid-structure interaction phenomena, Trends in Computational Structural Mechanics, eds. Wall, W.A., Bletzinger, K.U. and Schweizerhoff, K., International Center for Numerical Methods in Engineering (CIMNE), Barcelona, Spain, pp. 670-679, 2001.
233. Ramm, E., D'Addetta, G.A., **Kuhl, E.**, Modelling of cohesive frictional materials as continuum or discontinuum, Zur Beschreibung komplexen Materialverhaltens, ed. Diebels, S., Bericht aus dem Institut für Mechanik (Bauwesen) Nr. II-7, Stuttgart, Germany, pp. 135-155, 2001.
234. Ramm, E., D'Addetta, G.A., **Kuhl, E.**, Geomaterials: Continuum or discontinuum, that is the question, Proceedings of the European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS), ed. Onate, E., Barcelona, Spain, pp. 217-226, 2000.
235. **Kuhl, E.**, D'Addetta, G.A., Ramm, E., Discontinuous vs. continuous modeling of failure phenomena, Euromech Colloquium 402: Micromechanics of Fracture Processes, Seeheim, Germany, p. 56, 1999.
236. D'Addetta, G.A., **Kuhl, E.**, Ramm, E., Kun, F., Micromechanical modeling of concrete cracking, Proceedings of the European Conference on Computational Mechanics (ECCM), ed. Wunderlich, W., Munich, Germany, Paper-No. MS012-15, 1999.
237. **Kuhl, E.**, Ramm, E., William, K.J., Failure analysis of elasto-plastic material models on different levels of observation, Proceedings of the Fifth U.S. National Conference on Computational Mechanics (USNCCM), Boulder, Colorado, Abstract 08-014, 1999.
238. **Kuhl, E.**, D'Addetta, G.A., Ramm, E., Continuous vs. discontinuous modeling of concrete failure, Proceedings of the Fifth U.S. National Conference on Computational Mechanics (USNCCM), Boulder, Colorado, Abstract 14-035, 1999.
239. **Kuhl, E.**, Ramm, E., William, K.J., Discontinuous vs. continuous modeling of failure phenomena, Euromech Colloquium 390: Instability, Bifurcation and Localization in Fracture of Materials, ed. Benallal, A., Paris, France, p. 87, 1999.
240. **Kuhl, E.**, de Borst, R., Ramm, E., A gradient enhancement with application to anisotropic continuum damage, Proceedings of the Fourth World Congress on Computational Mechanics (WCCM), eds. Onate, E. and Idelsohn, S., Buenos Aires, Argentina, pp. 415-424, 1998.
241. de Borst, R., Geers, M.G.D., **Kuhl, E.**, Peerlings, R.H.J., Enhanced damage models for concrete fracture, Computational Modelling of Concrete Structures (EURO-C), Badgastein, Austria, eds. de

- Borst, R., Bicanic, N., Mang, N. and Meschke, G., Balkema, Rotterdam, the Netherlands, pp. 231–248, 1998.
242. **Kuhl, E.**, Ramm, E., de Borst, R., Anisotropic gradient damage with the microplane model, Computational Modelling of Concrete Structures (EURO-C), Badgastein, Austria, eds. de Borst, R., Bicanic, N., Mang, N. and Meschke, G., Balkema, Rotterdam, the Netherlands, pp. 103–112, 1998.

Invited Lectures

1. Modeling Dementia, Sectional Lecture, 25th International Congress of Theoretical and Applied Mechanics, Milano, Italy, 08/25/2020, postponed to Virtual Lecture, 08/26/2021.
2. The multiphysics of neurodegeneration. Plenary Lecture. 16th U.S. National Congress on Computational Mechanics, Chicago, Illinois, 07/26/2020, postponed to Virtual Lecture, 07/27/2021.
3. Stanford Mechanical Engineering during and beyond COVID-19. Invited Panelist. Autodesk University Conference and Exhibition, Las Vegas, changed to Virtual Conference, 11/17/2020.
4. 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.
5. Data-driven modeling of COVID-19. Koiter Lecture. 23rd Engineering Mechanics Symposium, Delft, The Netherlands, changed to Virtual Symposium, 10/28/2020.
6. Data-driven modeling of COVID-19: Lessons learned. Invited Speaker. New York Scientific Data Summit 2020. changed to Virtual Summit, 10/22/2020.
7. Data-driven modeling of COVID-19: Lessons learned. Invited Lecture. Extreme Mechanics Letter (EML) Speaker, Webinar, 08/12/2020.
8. Modeling Dementia, Keynote Lecture, 16th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, New York, 08/14/2019.
9. A New Application of the Living Heart Project: Machine Learning in Drug Development, Living Heart Project Symposium, Waltham, Massachusetts, 07/23/2019.
10. Credible Enough? Perspectives from Cardiac Growth and Remodeling, Invited Lecture, IMAG Multiscale Modeling Consortium Meet, Bethesda, Maryland, 03/07/2019.
11. Machine Learning in Drug Development, Invited Seminar, Department of Mechanical Engineering, FAU Erlangen, Erlangen, Germany, 06/27/2019.
12. Machine Learning in Drug Development, Invited Lecture, IMAG Multiscale Modeling Consortium Meet, Bethesda, Maryland, 03/06/2019.
13. The Life Cycle of the Human Brain – From Morphogenesis to Aging. Invited Lecture, Applied Physics Society March Meeting, Boston, Massachusetts, 03/04/2019.
14. Machine Learning in Drug Development, Applied Mathematics and Computational Science Colloquium, University of Pennsylvania, Philadelphia, Pennsylvania, 02/22/2019.
15. The Multiphysics of Alzheimer’s Disease, Invited Seminar, Department of Mechanical Engineering, FAU Erlangen, Erlangen, Germany, 12/18/2018.
16. 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.

17. Neuromechanics. Invited Lectures, 8th Summer School on Biomechanics and Modeling in Mechanobiology, TU Graz, Austria, 09/03-09/07/2018.
18. Instabilities in Soft Structures, Invited Lecture, International Slovay Institutes Brussels, Belgium, 08/28/2018.
19. Neuromechanics: Perspectives, Challenges, and Opportunities, Keynote Lecture, 2nd International Conference on Simulation Technology, Simtech 2018, University of Stuttgart, Germany, 03/26/2018.
20. Probing the Living Brain. Invited Lecture, 5th Oxford International Workshop on Neuron and Brain Mechanics, Oxford, United Kingdom, 03/22/2018.
21. Neuromechanics: Perspectives, Challenges, and Opportunities. Department of Mechanical and Aerospace Engineering 2018 Spring Seminar Series, Princeton, New Jersey, 02/23/2018.
22. Mechanics of the Developing Brain, Invited Lecture, Mechanics of Morphogenesis, Princeton Center for Theoretical Science, Princeton, New Jersey, 02/21/2018.
23. Probing the Living Brain, Keynote Lecture, 7th International Conference on Mechanics of Biomaterials and Tissues, Waikoloa, Hawaii, 12/11/2017.
24. Predicting Drug-Induced Arrhythmias by Multiscale Modeling, Invited Lecture, Cardiac Physiome 2017 Meeting on Metabolism, Mechanics, and Ion Fluxes, Toronto, Canada, 11/07/2017.
25. The Physics of Heart Failure, Invited Lecture, International Symposium on Physics Meets Medicine, The Heart of Active Matter, Gottingen, Germany, 09/04/2017.
26. Multiscale Computational Analysis of the Brain, Invited Lecture, International Symposium on Multiscale Computational Analysis of Complex Materials, Copenhagen, Denmark, 08/31/2017.
27. Constitutive Modeling of Human Brain Tissue, Keynote Presentation, 14th U.S. National Congress on Computational Mechanics (USNCCM), Montreal, Canada, 07/17/2017.
28. Growth and Remodeling in Soft Biological Tissue, Lecturer, 23rd CISM-IUTM International Summer School, Udine, Italy, 06/12-06.16/2017.
29. Neuromechanics: Challenges and Opportunities, Plenary Lecture, InterPore 2017, Rotterdam, The Netherlands, 05/09/2017.
30. Neuromechanics: Perspectives, Challenges, and Opportunities, Plenary Lecture, 2017 EMI International Conference, Rio de Janeiro, Brazil, 03/20/2017.
31. Neuromechanics: Perspectives, Challenges, and Opportunities, Structural Engineering, Mechanics, and Materials (SEMM) Seminar, Georgia Institute of Technology, Atlanta, 09/19/2016.
32. Introduction to Neuromechanics, Keynote Lecture, 622nd WE Heraeus Seminar on Neuronal Mechanics, Physics Center Bad Honnef, 08/17/2016.
33. Neuromechanics: Challenges and Opportunities, Semi-Plenary Lecture, 12th World Congress on Computational Mechanics (WCCM), Seoul, Korea, 07/26/2016.
34. Understanding Brain Development as a Mechanical Instability Problem, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, 11/04/2015.
35. The Power of Personalized Simulation, Simulia West Regional User Meeting, Santa Clara, California, 10/28/2015.
36. The Living Heart Project: Modeling Pathologies and Personalizing Treatment, Simulia Central Regional User Meeting, Minneapolis, Minnesota, 09/23/2015.

37. Mechanics of the Developing Brain, Institute for Computational Engineering and Sciences (ICES), The University of Texas at Austin, Texas, 04/20/2015.
38. Mechanics of the Developing Brain, University of Pennsylvania, Philadelphia, 03/17/2015.
39. The Living Heart Project - Modeling Pathologies and Optimizing Treatment, Living Heart Founding Member Meeting, San Diego, California, 03/12/2015.
40. Mechanics of the Brain, 3rd Oxford Brain Mechanics Workshop, Oxford, United Kingdom, 01/19/2015.
41. 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.
42. Mechanics in Brain Development, Solid Mechanics Seminar, Carolo Wilhelmina University Braunschweig, Germany, 12/17/2014.
43. On the Role of Neuromechanics in Human Brain Development, Axonal Transport and Neuronal Mechanics, Mathematical Biosciences Institute (MBI), Columbus, Ohio, 11/06/2014.
44. Mechanics of the Developing Brain, Plenary Lecture, Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Amsterdam, The Netherlands, 10/13/2014.
45. Modeling Pathologies within the Living Heart Project, Abaqus/Simulia Living Heart Meeting, Providence, Rhode Island, 09/16/2014.
46. A Mechanical Model Explains Brain Development, IUTAM Symposium on Innovative Numerical Approaches for Materials and Structures, Burg Schnellenberg, Germany, 09/03/2014.
47. Growth and Development of the Human Brain, Eleventh World Congress on Computational Mechanics (WCCM), Barcelona, Spain, 07/14/2014.
48. Morphological Instabilities of Cortical Folding in the Developing Human Brain, Instabilities Across the Scales (IAS), Cachan, Paris, France, 06/05/2014.
49. Extreme Mechanics of Growing Matter, Mechanics: Modeling, Experimentation, Computation Seminar, Massachusetts Institute of Technology, Cambridge, Massachusetts, 05/06/2014.
50. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, University of Minnesota, Minneapolis, Minnesota, 04/25/2014.
51. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, Iowa State University, Ames, Iowa, 04/24/2014.
52. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, Illinois Institute of Technology, Chicago, Illinois, 04/23/2014.
53. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, University of Illinois at Urbana Champaign, Champaign, Illinois 04/22/2014.
54. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, Purdue University, West Lafayette, Indiana, 04/21/2014.
55. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, Northwestern University, Chicago, Illinois, 01/30/2014.
56. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, University of Notre Dame, South Bend, Indiana, 01/29/2014.

57. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, Michigan State, East Lansing, Michigan, 01/28/2014.
58. Extreme Mechanics of Growing Matter, Midwest Mechanics Seminar Series, University of Michigan, Ann Arbor, Michigan, 01/27/2014.
59. On the Role of Mechanics During Brain Development, 2nd Oxford Brain Mechanics Workshop, Oxford, United Kingdom, 01/13/2014.
60. The Virtual Heart, Simulia User Meeting, Santa Clara, California, 10/17/2013.
61. Challenges in Modeling Growing Matter, Current Challenges in Computing (C³), Napa, California, 09/04/2013.
62. Chemo-Electro-Mechanical Coupling in Living Systems, Euromech Colloquium 545, Dortmund, Germany, 05/23/2013.
63. The Virtual Heart, Simulia Community Conference, Vienna, Austria, 05/22/2013.
64. Mechanics of the Mitral Valve, Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Salt Lake City, Utah, 05/03/2013.
65. On the Biomechanics and Mechanobiology of Skin, Computer Methods in Biomechanics and Biomedical Engineering (CMBBE), Salt Lake City, Utah, 04/03/2013.
66. The Virtual Heart, Fourth Annual International Conference in Computational Surgery, Boston, Massachusetts, 12/10/2012.
67. Modeling and Simulation in Soft Biological Tissue Biomechanics, Summer School Lecturer, Graz, Austria, 9/3-9/7/2012.
68. Biomechanics and Mechanobiology of Skin, European Solid Mechanics Conference (ESMC), Graz Austria, 7/12/2012.
69. Pacing Hearts with Light, European Solid Mechanics Conference, Graz, Austria, 7/12/2012.
70. Computational Modeling of the Heart, Solvers in Biomedical Applications, Graz, Austria, 7/3/2012.
71. The Mechanics of Growing Skin, 83rd Annual Meeting of the International Association of Applied Mathematics and Mechanics (GAMM), Darmstadt, Germany, 3/29/2012.
72. Cardiac Optogenetics – Turning Light into Force, Multiscale Methods and Validation in Medicine and Biology (MMVMB), San Francisco, California, 2/13/2012.
73. Computational Optogenetics - Turning Light into Force, IUTAM Symposium on Computer Models in Biomechanics, Stanford, California, 8/30/2011.
74. Computational Modeling of Skin Growth in Reconstructive Surgery, 11th USNCCM, Minneapolis, Minneapolis, 7/26/2011.
75. Biomechanics of cardiovascular tissue, Hemodynamics and Vascular Disease Seminar. University of California at San Francisco, California, 12/16/2010.
76. Multiscale modeling of heart failure: From sarcomerogenesis to cardiac growth, Biomechanics Seminar. University of California at San Diego, 11/10/2010.
77. 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.

78. A multiscale continuum approach towards computational cardiology, Structural Engineering Seminar Series, University of Illinois Urbana Champaign, 3/15/2010.
79. On the structure-function relationship in electro-active cardiac tissue, Seminar on Modeling Biological Materials. Texas A&M, College Station, Texas, 1/27/2010.
80. The Virtual Heart. A multiscale continuum approach towards computational cardiology, Cardiomyopathy Seminar. Stanford University, 12/5/2009.
81. Biomechanics of the heart, Bioengineering Seminar. BIOE102. University of California at Berkeley, 11/4/2009.
82. The virtual heart - A hierarchical approach towards computational cardiology, Applied Mechanics Seminar, University of Erlangen Nuremberg, Erlangen, Germany, 10/12/2009.
83. Computational design of heart failure treatment, Theoretical and Applied Mechanics Colloquium, Northwestern University, Evanston, IL, 4/15/2009.
84. The Virtual Heart. A multiscale continuum approach towards computational cardiology, Frontiers in Interdisciplinary Biosciences. Stanford University, 4/9/2009.
85. The Virtual Heart - A multiscale continuum approach for computational cardiology, Applied Mechanics Colloquium, Eidsgenossische Technische Hochschule (ETH) Zurich, Switzerland, 3/9/2009.
86. 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.
87. The virtual heart - A hierarchical approach towards computational cardiology, Applied Mechanics Colloquium, Harvard University, Cambridge, MA, 10/15/2008.
88. Growth and remodeling of the heart - A cell-based continuum approach, Mathematical Modelling of Biological Tissues, Mathematical Research Center Oberwolfach, Germany, 9/3/2008.
89. 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.
90. 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.
91. 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.
92. Computational simulation of growing tissues, Growth in the Desert, University of Arizona, Tucson, AZ, 9/21/2007.
93. 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.
94. Computational modeling of mineral unmixing and growth, Instabilities Across the Scales, Delft, the Netherlands, 7/2/2007.
95. 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.

96. Advanced chain network models in biomechanics, Sixth European Solid Mechanics Conference ESMC, Minisymposium on Biomechanics, Budapest, Hungary, 8/29/2006.
97. 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.
98. Continuum biomechanics - Pantha psiloni, Massachusetts Institute of Technology, Cambridge, MA, 3/23/2006.
99. Continuum biomechanics - Pantha psiloni, Virginia Polytechnic Institute and State University, Blacksburg, VA, 3/2/2006.
100. Modellierung lebender biologischer Gewebe, University of Braunschweig, Germany, 1/26/2006.
101. Form follows function - Natural design in structural mechanics, Ecole Polytechnique Federale de Lausanne (EPFL), Switzerland, 1/19/2006.
102. Simulation of diffusion processes - Numerics of the Cahn Hilliard equation, Kolloquium fur Mechanik, University of Braunschweig, Germany, 1/12/2006.
103. Kontinuumsmechanik offener Systeme - Biologische und technische Strukturen, University of Kassel, Germany, 12/21/2005.
104. Kontinuumsmechanik offener Systeme - Smart Structures in der Natur, University of Karlsruhe, Germany, 12/14/2005.
105. Pantha psiloni - Everything grows, Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany, 11/23/2005.
106. 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.
107. Form follows function - Natürlich optimierte Strukturen in der Biomechanik, University of Stuttgart, Germany, 4/29/2005.
108. Continuum biomechanics - Pantha psiloni, Eidsgenossische Technische Hochschule (ETH) Zurich, Switzerland, 4/7/2005.
109. Continuum biomechanics - Pantha psiloni, Mechanical Engineering Seminar, California Institute of Technology, Pasadena, CA, 3/29/2005.
110. Continuum biomechanics - Everything grows, Computational Solid Mechanics Seminar, California Institute of Technology, Pasadena, CA, 3/11/2005.
111. Modelling and simulation of biological growth phenomena, Mathematical methods and models of continuum biomechanics, Mathematical Research Center, Oberwolfach, Germany, 2/24/2005.
112. Modelling and simulation of isotropic and anisotropic biological growth, Plasticity 2005, Kauai, Hawaii, 1/4/2005.
113. Erweiterung klassischer kontinuumsmechanischer Konzepte auf die Biomechanik, University of Hannover, Germany, 10/25/2004.
114. Spatial and material convexity analysis in nonlinear hyperelasticity, Instabilities Across the Scales 2004, Cairns, Australia, 9/17/2004.
115. 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.
116. Optimales Design - Die Natur als Vorbild, University of Siegen, Germany, 6/18/2004.
117. Biomechanik - Modellierung und Simulation von biologischen Werkstoffen, Technical University of Berlin, Germany, 5/25/2004.

118. Computational modeling of isotropic growth, Continuum Modelling of Tissue and Implants, Keynote Lecture, Göteborg, Sweden, 10/02/2003.
119. 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.
120. Theory and numerics of mechanically induced healing phenomena, Seventh U.S. National Conference on Computational Mechanics (USNCCM), Albuquerque, NM, 7/28/2003.
121. 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.
122. Geometrically nonlinear functional adaption of biological microstructures, Fifth World Congress on Computational Mechanics (WCCM), Keynote Lecture, Vienna, Austria, 7/10/2002.
123. 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.
124. Stability and bifurcation of elasto-plastic micro- vs. macroscopic formulations, Euromech Colloquium 390: Instability and Bifurcation, Paris, France, 5/11/1999.

Postdoctoral Trainees

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

Amelie Schafer
Thesis: Biophysical Behavior of the Living Human Brain
Anticipated year of graduation: 2022

Oguz Ziya Tikenogullari
Thesis: Modeling the Living Heart
Anticipated year of graduation: 2022

Lucy Wang
Thesis: Biophysics of the Axon
Anticipated year of graduation: 2022

Bartek Krzysztof Kaczmarek
Thesis: The Mechanics of Instabilities in Soft Solids
Anticipated year of graduation: 2023

Sarah St. Pierre
Thesis: Sex matters. Understanding the Limits of Human Performance.
Anticipated year of graduation: 2024

Former Doctoral Students

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

21/22	Fall	<i>Data-driven Modeling of COVID-19 ME233</i> Mechanical Engineering, Stanford University, graduate level
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 Gyrfication 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