

# Curriculum Vitae & List of Publications

## Alessio Gizzi

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Scholar: <https://shorturl.at/lwGf7>

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### • CURRENT POSITIONS

- 2025 **Full Professor, Solid & Structural Mechanics** – ICAR/08, Dept Engng, UCBM.
- 2024 – to date **Council Board GBMA** - Biomechanics Group - AIMETA.
- 2023 – 2026 **EU Member (EMA) of the Screening Panel:** *Medical devices*.
- 2020 – to date **Council Member:** *Inter-University Center for the Promotion of the 3Rs Principles in Teach.&Res.*

### • PREVIOUS POSITIONS

- 2024 **Visiting Professor** Gran Sasso Science Institute – GSSI, School of Advanced Studies.
- 2022 – 2023 **European Medicines Agency (EMA):** *Expert panels on medical devices and IVD*.
- 2021 – 2025 **Associate Professor, Solid & Structural Mechanics** – ICAR/08, Dept Engng, UCBM.  
**Executive Board ESB-ITA:** *Italian Chapter of the European Society of Biomechanics*.
- 2020 – 2021 **European Commission's Panel:** *“Medical devices and in vitro diagnostic medical devices”*  
(Expanded - Screening Panel) (Ref. 804/PP/GRO/CODEL/20/).
- 2019 – 2021 **Tenure Track Assistant Professor (RTD-B), Solid & Structural Mechanics** – ICAR/08, Dept Engng, UCBM.
- 2015 – 2018 **Visiting Professor, Solid & Structural Mechanics** – ICAR/08 (2 months/year), IMT School for Advanced Studies Lucca. PROJECT: *Modelling and computational research on biological cell-cell interactions using reaction diffusion systems*. Contribution to research and PhD education programmes at IMT Lucca, fostering interdisciplinary research. Contact person: Prof. Marco Paggi.
- 2015 – 2018 **Assistant Professor (RTD-A), Solid & Structural Mechanics** – ICAR/08, Dept Engng, UCBM.
- 2012 – 2014 **Post-Doc, Solid & Structural Mechanics** – ICAR/08, Dept Engng UCBM.

### • EDUCATION

#### ACADEMIC DEGREES

- 19/04/2012 **PhD in Biomedical Engineering**, UCBM.  
*Spatio-temporal dynamics of cardiac physiopathology: experiments, theory and simulations.*
- 27/10/2008 **MS in Biomedical Engineering cum Laude**, UCBM (2 years).  
*Thermal effects on the action potential propagation in cardiac tissue.*
- 25/10/2006 **BS in Biomedical Engineering cum Laude & Special Mention**, UCBM (3 years).  
*Finite element modeling of diffusion phenomena within the human brain reconstructed by NMR images.*

LANGUAGES Mother Tongue: *Italian*. Others: *English*. Reading/Writing/Verbal skills: C2. *French*: Beginner.

## POST LAUREAM SCHOOLS &amp; COURSES - (Selected)

- 10/2020 EU PROGRAMME: *Medical Devices and In vitro Diagnostic Devices*. **EU Commission**.
- 6-7/2018 POST-GRADUATE PROGRAMME: *Integrative Cardiac Dynamics Programme*.  
**Kavli Institute for Theoretical Physics (KITP)**, UCSB, Santa Barbara, CA (US).
- 2/2016 ADVANCED SCHOOL: *Nonlinear Elasticity for Rubber-like materials and Soft Tissues*.  
**Università Cattolica, Brescia**, Italy. LECTURER: G. Saccomandi.
- 2012 SUMMER SCHOOL: *Biomechanics and Modeling in Mechanobiology*.  
**Graz University of Technology**, Austria. ORGANIZERS: G.A. Holzapfel, R.W. Ogden.  
PHD COURSE: *An Introduction to Nonlinear Solid Mechanics*.  
**Politecnico di Milano**, Department of Structural Engineering, Italy. LECTURER: A. Pandolfi.
- 6/2011 POST-GRADUATE COURSE: *Advanced and Bio-Inspired Nanomechanics*.  
**CISM**. International Centre for Mechanical Sciences (CISM), Udine, Italy.
- 2009 – 2013 POST-GRADUATE COURSE: *Introduction to Multiphysics Modeling with the Finite Element Method*.  
**CASPUR**, Rome, Italy. LECTURER: L. Teresi.  
XXVIII DOCTORAL TRAINING SCHOOL: *Dynamical Systems for the Biology of Systems*.  
**Les Houches**. Pole de Biologie Systémique de Nice, France.  
POST-GRADUATE COURSES: *Advanced Topics in Theoretical and Applied Mechanics*.  
**Roma Tre University of Rome**. ORGANIZER: A. Di Carlo.  
MASTER OF SCIENCE COURSE: *Continuum Mechanics*.  
**Tor Vergata University of Rome**. LECTURER: P. Podio-Guidugli.

## • HONORS &amp; AWARDS

- 2023 Best Student Paper - *Investigating FBG Sensor Arrangements and Computational Modeling in Photothermal Laser Treatment*, 2023 IEEE (BATS), Catanzaro, Italy. **Senior author**.  
DiProMed Oral Award - *Optimization of photothermal laser ablation using an experimental-numerical approach on agarose phantom*, XII Annual Meeting (ESB-ITA), Torino, Italy. **Senior author**.
- 2022 – 2023 Mathematical Reviews, American Mathematical Society (AMS).
- 2021 **SIAM News** research blog editorial invitation.
- 11/2020 **National Habilitation as Full Professor** in Solid & Structural Mechanics (Scienza delle Costruzioni – ICAR/08) by the Italian Minister of University and Research MIUR.  
**EC-funded HPC-Europa3 Consortium**, Host Researcher.  
**Blackflynn Member**, Gregersen Lab.
- 2018 – 2019 **Cover Page PTRSA**, Vol. 377 Issue. 2144 (March) 20190090 (2019) Phyl. Trans. Roy. Soc. A..  
**Cover Page ZAMM**, Vol. 98 No. 12 (December) 2035–2327 (2018) J. Appl. Math. Mech. (2018).
- 2018 – to date **SIMULIA Research Member**, *The Living Heart Project*, Dassault Systems.
- 03/2017 **National Habilitation as Associate Professor** in Solid & Structural Mechanics (Scienza delle Costruzioni – ICAR/08) by the Italian Minister of University and Research MIUR.
- 2011 – 2013 **IBM Research in Computational Science Prize**, Marie Dupraz's Project Thesis (2013).  
**Top 10 Poster**, DDW2012 San Diego (USA) (2012).  
**SIAM Student Travel Award**, *Applications of Dynamical Systems*, UTHA (USA) (2011).  
**Gordon K. Moe YOUNG INVESTIGATOR COMPETITION** (2011).
- 2008 **National Qualification for Industrial Engineering Professional Practice**.
- 2007 – 2019 **20 Invited Seminars** in International Scientific Institutions, among which:  
BCAM – Bilbao; CNRS – Nice; EMORY – USA; ENEA – IT; GEORGIA INSTITUTE OF TECHNOLOGY – Atlanta; IMT SCHOOL FOR ADVANCED STUDIES – Lucca IT; PUC of CHILE; TU MUNICH – Germany; TU VIENNA – Austria; SISSA – IT; UCSB – USA; U. OXFORD – UK.

- **GRANTS** (selected)

- 2025 – 2030 **ERC-2024 Consolidator - #101170592 - MiGEM.**  
PROJECT: *Modelling Inter-Scale Energetics in GastroIntestinal ElectroMechanics*, 2 M€.
- 2024 – 2025 **SkinPULSE**, Next Generation EU. PROJECT: *In silico trial of skin thermal profile for pulse wave stratification: A multiphysics and machine-learning approach*, 84 k€.  
**CATALYST**, Royal Society of New Zealand - Te Apārangi, *Virtual twin of the gastrointestinal tract*, 24-UOA-010-CSG, 80 k€.
- 2023 – 2025 **PoC #NOACRONYM+**. *Prototypization and optimization of biomechanical device production for therapeutic treatment of skin lesion* - **PROCUT**, C88H23000650002. **PI**, 58 k€.  
**PRIN 2022. #2022T3SLAZ.** *Computational Micromechanics in BOne mechanobiology: biodegradation of magnesium-based bone implants* - **COMBO. co-PI**, 111.932 €.
- 2022 – 2027 **HORIZON-CL4-2021:** Research Participant, 6.6 M€.  
PROJECT: *Multiscale quantum bio-imaging and spectroscopy* – **MUQUABIS**.  
SCHEME: “Digital and emerging technologies for competitiveness and fit for the green deal”.
- 2022 – 2024 **National Operational Program (PON)**, Minister of University and Research, Research Advisor.
- 2021 – 2022 **BIOPMEAT**, Research Projects on Green Economy, **Co-PI** 68.130 €.  
**GNFM-INdAM, Young Researcher Grant, PI:** U-UFMBAZ-2021-000081. PROJECT: *Model- and data-driven methodologies for the rapid estimation of material parameters in soft active matter*.
- 2020 **KA107 Erasmus+**. Universidad Nacional Autónoma de Honduras, 62.364 €, **PI**.  
**EC-funded HPC-Europa3 Consortium.** HPC175QA9K **Research Host** (Prof. R. Ruiz-Baier).
- 2019 **National Science Foundation (NSF).** PROJECT: *Novel Data Assimilation Techniques in Mathematical Cardiology-Development, Analysis and Validation* (Collaborative Research – A. Veneziani).  
**GNFM-INdAM, Young Researcher Grant, PI:** PRR-20190404-105833-952.  
PROJECT: *Constitutive modeling of active fiber-distributed media*.
- 2018 **CONICYT**, International Research Grant Network – **Co-PI**, Chile (RCH).  
PROJECT: *Formation of an International Network of Young Researchers* (Call 2017).  
**COST-CA16119**, Short Term Scientific Missions (STSM-38666) - TU Munich (DE). PROJECT: *Micromechanically motivated constitutive modeling of the visco-elastic active behavior of the cytoskeleton*.
- 2017 **London Mathematical Society, Research in Pairs** – Ricardo Ruiz-Baier, University of Oxford.  
PROJECT: *Computational modeling of multi-field electro-mechanical couplings*.  
**INdAM, International Scholarship Grant 2016-2017** – TU Munich (DE).  
PROJECT: *Micromechanically modeling of the active behavior of the cytoskeleton*.  
**INTESE, UCBM Technological Transfer Grant - PI**, 125 k€.
- 2015 – 2016 **GNFM-INdAM, Young Researcher Grant – Co-PI.** PROJECT: *Waveguide properties of periodic media and their connection with functionally graded materials and microstructure*.  
**UCBM Multidisciplinary Grant Co-PI**, 180 k€. PROJECT: *A multi-cellular “gut-on-chip” technology for predictive human safety testing: an integrated experimental and modeling approach*.
- 2013 – 2014 **CEST+I Project 18/PCI/207**, Chile-European STI Initiative. PROJECT: *In silico experiments of soft tissue biomechanics: Developing a computational framework for personalized healthcare*.  
**GNFM-INdAM, Young Researcher Grant. PI.**  
PROJECT: *Hyperelastic formulation of electro-active media with distributed fibers*.  
**GNFM-INdAM, Young Researcher Grant, PI.**  
PROJECT: *Spatio-temporal analysis of electro-mechanical dynamics in biological excitable media*.
- 2011 - 2019 **MOBILITY Grants:**  
**European Physical Society, European Science Foundation, Erasmus+, GNFM-INdAM.**

• **COMMISSIONS OF TRUST**

- 2024 **Natural Sciences & Eng Research Council, Canada (NSERC)** - Discovery Grant Reviewer.  
**Committee Member**, Post Doctoral Fellow PHYS-06, Dept Eng, UCBM.  
**Committee Chair**, Post Doctoral Fellow CHIM/07, Dept Eng, UCBM.  
**Committee Member**, Post Doctoral Fellow ICAR/08, University of Rome Tor Vergata.  
**Doctoral Thesis Exam. Committee**, Chiara Bernard, University of Trento (IT).  
**Doctoral Thesis Exam. Committee**, Silvia Lombardi, *Gran Sasso Science Institute* - GSSI (IT).  
**Qatar National Research Fund (QNRF)**, Academic Research Grants.  
**HFSP Review Committees**, Research Grant awards, Human Frontier Science Program.
- 2023 **Qatar National Research Fund (QNRF)**, Academic Research Grants.  
**HFSP Review Committees**, Research Grant awards, Human Frontier Science Program.  
**Committee Chair**, Post Doctoral Fellow ICAR/08, Dept Engng UCBM.  
**Committee Member**, Post Doctoral Fellow FIS/03, Dept Engng UCBM.  
**Doctoral Thesis Exam. Committee**, Gianluca Santesarti, University of Rome Tor Vergata (IT).  
**Doctoral Thesis Ext. Examiner**, Nicole Guazzelli, Università degli studi di Pisa (IT).  
**Doctoral Thesis Ext. Examiner**, Simone Borrelli, Politecnico di Torino (IT).
- 2022 **Natural Sciences & Eng Research Council, Canada (NSERC)** - Discovery Grant Reviewer.  
**COST External Expert**, European Cooperation in Science & Technology, OC-2022-1.  
**Committee Member**, Post Doctoral Fellow FIS/03, Dept Engng UCBM.  
**Committee Chair**, Post Doctoral Fellow ICAR/08, Dept Engng UCBM.  
**Committee Chair**, Post Doctoral Fellow ICAR/08, IMT School for Advanced Studies, Lucca.  
**Doctoral Thesis Exam. Committee**, Giulio Del Corso, *Gran Sasso Science Institute* (IT).  
**Doctoral Thesis Ext. Examiner**, Sachira Kuruppu, *University of Auckland* (NZ).  
**Doctoral Thesis Ext. Examiner**, Pierfrancesco Gaziano, University of Rome Tor Vergata (IT).
- 2021 **Natural Sciences & Eng. Research Council, Canada (NSERC)** - Discovery Grant Reviewer.  
**University of Parma Consolidating & Scouting Grant** Reviewer.  
**Committee Member**, Assistant Professor RTD-A ICAR/08, University of Brescia (IT).  
**Committee Member**, Assistant Professor RTD-A ICAR/08, University of Chieti-Pescara (IT).  
**Committee Member**, Assistant Professor RTD-A ICAR/08, Dept Engng UCBM.  
**Doctoral Thesis Exam. Committee**, Sebastian Brandstaeter, TU Munich (DE).  
**Doctoral Thesis Exam. Committee**, Sebastian L. Fuchs, TU Munich (DE).  
**Doctoral Thesis Exam. Committee**, William A. Ramirez, Pontificia Universidad Católica, Chile.
- 2020 **ERC Starting Grant 2020** Reviewer.  
**Committee Member**, Post Doctoral Fellow FIS/02, Dept Engng UCBM.
- 2019 **Doctoral Thesis Exam. Committee**, Fabian A. Bräu, TU Munich (DE).  
**FULBRIGHT** Foreign Student Program.
- 2014 – 2015 **MSc Evaluation Committee**, Department of Engineering, Pontificia Universidad Católica de Chile.  
**Committee Member**, Post Doctoral Fellow ICAR/08, IMT School for Advanced Studies Lucca.  
**Committee Member**, Post Doctoral Fellow CHIM/07, Dept Engng UCBM.

• **INSTITUTIONAL RESPONSIBILITIES & PROFESSIONAL EXPERIENCE**

- 2025            **QS Global Academic TUHH.**
- 2024 – 2025    **TECO-ANVUR** Academic manager.
- 2023 – 2024    **Teaching Staff-Student Joint Committee (Commissione Paritetica - CPDS)**, UCBM.  
**Technical Scientific Committee**, ARTES 4.0.
- 2022 – to date **PhD Board Member**, *IMT School for Advanced Studies Lucca, Systems Science.*  
**Research Quality Committee (AQR)**, UCBM.  
**Tutor Coordinator** for the BSc in Biomedical Engineering, UCBM.
- 2022            **Advising Committee** in Biomedical Engineering, University of Chieti-Pescara.  
**Chair**, Qualification Exam for Engineering Professional Practice.
- 2021 – to date **Technology Transfer (Industrial) – Consulting**, Theras S.r.l.
- 2020 – 2023    **Excellence Programme General Committee**, Dept Engng UCBM.
- 2019 – 2020    **Technology Transfer (Industrial) – Consulting**, Anika Therapeutics S.r.l.
- 2018 – to date **PATENT** N°102018000002704: *Medical Device for Optimal Wound Healing.*  
**Rector's Committee Member** for the tutoring system, UCBM.
- 2017 – 2022    **PhD Board Member**, UCBM, *Sciences and Engng for Humans and the Environment.*
- 2015 – to date **Tutor Coordinator** for the BSc in Industrial Engineering, UCBM.
- 2009 – to date **Tutorial activity** for Bachelor students in Industrial Engineering, UCBM.

• **TEACHING EXPERIENCE**

- 2025 –            **Lecturer**, MSc course *Computational modeling in biomechanics* [6 CFU], Dept Eng UCBM.
- 2024            **International Summer School Lecturer** for the course *Mathematical modeling and computational optimization of wearable sensors.* UCBM.  
**PhD Lecturer** for the course *Modeling of nonlinear cardiac dynamics* – PhD Programme *Mathematics in Natural, Social and Life Sciences*, School of Advanced Studies, Gran Sasso Science Institute – GSSI.
- 2023 – to date **Lecturer**, BSc course *Mechanics of Solids* [6 CFU], Dept Eng UCBM.
- 2022            **Design & Development** of the course *Transferable Skills & Tutoring* [3 CFU] UCBM.
- 2020 – 2025    **Lecturer**, MSc course *Mechanics of Biological Systems* [6 CFU], Dept Eng UCBM.
- 2019            **PhD Lecturer**, *Biomechanics and Mechanobiology.* PU Catolica de Chile.  
**TA**, BSc course *Rational Mechanics* [6 CFU], Dept Eng UCBM.
- 2016 – 2018    **PhD Lecturer**, *Advanced Topics of Computational Mechanics.* IMT School for Advanced Studies.  
**PhD Lecturer**, *Multiphysics Modeling in Computational Mechanics.* TU Munich.  
**PhD Lecturer**, *Design of Stretching Devices for Cells and Tissues.* UCBM Doctoral School.
- 2015 – to date **Lecturer**, *Solid & Structural Mechanics* [9 CFU], BSc in Industrial Engineering, Dept Eng UCBM.
- 2012 – 2014    **TA**, BSc course, *Solid & Structural Mechanics* [9 CFU], Dept Eng UCBM.
- 2010 – 2012    **TA**, BSc course, *Solid Mechanics* [6 CFU], Dept Eng UCBM.
- 2009 – 2024    **TA**, MSc course, *Dynamics of Complex Systems* [9 CFU], Dept Eng UCBM.

## • REVIEWER & EDITORIAL ACTIVITY

- 2013 – to date **Reviewer for more than 30 peer reviewed international journals** (selected): Acta Biomaterialia (**AB**); American Journal of Physiology (**AJP**); American Journal of Physiology - Heart and Circulatory Physiology (**AJP**); Applied Numerical Mathematics (**APNUM**); Applications in Engineering Science (**APPLES**); ASME Journal of Biomechanical Engineering; Biomaterials; Biomechanics and Modeling in Mechanobiology (**BMMB**); Biomedical Signal Processing and Control (**BSPC**); **CHAOS**; Cellular & Molecular Bioengineering (**CAMB**); Computers in Biology and Medicine (**CIBM**); Computer Methods and Programs in Biomedicine (**CMPB**); Computer Methods in Applied Mechanics and Engineering (**CMAME**); Computer Modeling in Engineering Science (**CMES**); European Journal of Mechanics A/Solids (**EJMSOL**); **Frontiers**; **Frontiers in Mechanical Engineering**; **IEEE**; **Interface Focus**; International Journal for Numerical Methods in Biomedical Engineering (**IJNMBE**); Journal of Biomechanics (**JB**); Journal of Biomechanical Engineering (**JBE**); Journal of Computational and Applied Mathematics (**CAM**); Journal of Elasticity (**JELA**); Journal of the American Heart Association (**JAHA**); Journal of the Mechanics and Physics of Solids (**JMPS**); Journal of the Mechanical Behavior of Biomedical Materials (**JMBBM**); Journal of Mathematical Biology (**JoMB**); Journal of the Royal Society Interface (**JRS Interface**); Journal of Theoretical, Computational and Applied Mechanics (**JTCAM**); **Meccanica**; Medical Engineering & Physics (**MEP**); Philosophical Transactions of the Royal Society A (**RSTA**); **PLoSOne**; Royal Society Open Science (**RSOS**); Transaction Biomed Eng (**TBE**); Journal of Applied Mathematics and Mechanics (**ZAMM**); Journal of Applied Mathematics and Physics (**ZAMP**).
- Editor
- 2024 – 2025: **Guest Editor, Frontiers in Bioengineering and Biotechnology.**  
 2023 – 2025: **Guest Editor, Mechanics of Soft Materials, ISSN 2524-5619.**  
 2022 – to date: **Review Editor, Frontiers in Materials - Mechanics of Materials.**  
 2022 – to date: **Guest Editor, Journal of Applied Physics, ISSN 0021-8979.**  
 2022 – to date: **Guest Editor, Applied Sciences, ISSN 2076-3417.**  
 2022 – to date: **Associate Editor, Frontiers in Network Physiology.**  
 2021 – to date: **Review Editor, Frontiers in Network Physiology - Netws Cardiov Sys.**  
 2019 – 2021: **Guest Editor, Mathematics, ISSN 2227-7390.**  
 2016 – to date: **Associate Editor, Mathematical Problems in Engineering.**

## BOOKS & BOOK CHAPTERS

1. P. Casini, **A. Gizzi**, and M. Vasta. *Scienza delle Costruzioni per Ingegneria Biomedica*. Città Studi, DeAgostini Scuola, EAN: 9788825174434, ISBN: 8825174438 (2023).
2. C. Falcinelli, **A. Gizzi**, A. Di Martino, and G. Vairo. A patient-specific mechanical modeling of metastatic femurs. In: Carcaterra A., Paolone A., Graziani G. (eds) Proceedings of XXIV AIMETA Conference 2019. AIMETA 2019. *Lecture Notes in Mechanical Engineering*. Springer, Cham. doi: 10.1007/978-3-030-41057-5-70
3. **A. Gizzi**, R. Ruiz-Baier, S. Rossi, A. Laadhari, C. Cherubini, and S. Filippi. (2015) A three-dimensional continuum model of active contraction in single cardiomyocytes. In: “The Cardio-circulatory System: from Modeling to Clinical Applications”, Modeling, Simulations and Applications (MS&A) Series, A. Quarteroni Editor, Springer International Publishing Switzerland, ISSN: 2037–5255, ISBN 978-3-319-05229-8.

## EDITORIAL

1. **A. Gizzi**, Andrew McCulloch, and Corina Drapaca. Multiscale Modeling and Analysis in Biophysics. *Journal of Applied Physics* **135**:210401 (2024). <https://doi.org/10.1063/5.0219187>
2. **A. Gizzi**, and Alessandro Veneziani. Estimating patient-specific cardiac conductivities: A challenge between models and data. *SIAM News* (2021).
3. M. Paggi, A. Bacigalupo, S. Bennati, C. Borri, M. Corrado, **A. Gizzi**, P.S. Valvo (a cura di) (2016). GIMC-GMA 2016 Atti del Convegno. Sesto Fiorentino (Firenze): Tipolitografia Contini, ISBN: 9791220013338.

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- **MEMBERSHIP OF SCIENTIFIC SOCIETIES**

- 2023 – to date **IEEE** Sensors Council & **IEEE** Engineering in Medicine and Biology Society (**EMBS**) #99134610.
- 2018 – to date Società Italiana di Scienza delle Costruzioni, **SISCo**.
- 2017 – to date European Society of Biomechanics, **ESB** (ID: #2168).  
European Mechanics Society (#200162-AIMETA), **EUROMECH**.
- 2015 – to date Associazione Italiana di Meccanica Teorica e Applicata, **AIMETA**. Gruppo di Biomeccanica **GBMA**.
- 2013 – to date Department of Mathematics and Physics of Roma Tre, **INdAM Research Unit**.
- 2011 – 2016 Society for Mathematical Biology, **SMB** (2015-16). Society for Natural Philosophy, **SNP**. European Physical Society, **EPS** (2013-14). Society for Industrial and Applied Mathematics, **SIAM** (2011-12).
- 2009 – to date National Group for Mathematical Physics, **GNFM**.  
Istituto Nazionale di Alta Matematica “*Francesco Severi*”, **INdAM**.
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- **RESEARCH INTERESTS**

My research covers multi-field and multi-scale modeling of biological media:

- **Theoretical and computational modeling in biomechanics & mechanobiology.**
  - **Constitutive modeling of active electro-mechanics in gastric and cardiac tissues.**
  - **Inverse problems, optimization and non-local modeling of active biological systems.**
  - ***In silico* design and optimization of biomedical devices.**
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- **VISITING PERIODS in INTERNATIONAL INSTITUTES**

<b>Auckland Bioengineering Institute</b> , Auckland (NZ):	7/23–2/25
<b>Basque Center for Applied Mathematics</b> , Math Modeling in Biosciences (E):	2/18
<b>Cornell University</b> , College of Sciences (USA):	1-5/10–11
<b>École Polytechnique Fédérale de Lausanne</b> , Mathematical Institute (CH):	3/12
<b>Georgia Institute of Technology</b> , School of Physics (USA):	7/15
<b>IMT School for Advanced Studies Lucca</b> , Computational Mechanics (IT):	6-7/16–18
<b>Max Planck Institute for Dynamics and Self-Organization</b> , Göttingen (DE):	9/11
<b>Monash University</b> , Melbourne (AU):	3/23
<b>Politecnico di Milano</b> , Dipartimento di Ingegneria Civile e Ambientale (IT):	2/11–14
<b>Pontificia Universidad Católica de Chile</b> , Biological Medical Engineering (RCH):	1/14–19
<b>Technical University of Munich</b> , Institute for Computational Mechanics (DE):	4,8-11/17
<b>Universidad Nacional Autónoma de Honduras</b> , Escuela de Matemáticas (HN):	2/23
<b>University of Oxford</b> , Mathematical Institute (UK):	2/17
<b>Vienna University of Technology</b> , Institute of Computer Engineering (AT):	8-9/19

• **CONFERENCE ORGANIZATION & COMMITTEE**

CONFERENCE ORGANIZER

- 2025 Chair: **XI International Conference on Computational Bioengineering - ICCB**. Rome (IT).  
Committee: **IEEE Int. Workshop on Biomedical Appl. Tech. & Sensors - BATS** (IT).
- 2024 Co-Chair: **National Conference of the Italian Chapter ESB-ITA**, Pescara (IT).
- 2023 Co-Chair: **EUROMECH Colloquium. Cellular Mechanobiology and Morphogenesis**, Sirmione (IT).

MINI-SYMPOSIUM & WORKSHOP & SPECIAL SESSION ORGANIZER

- 2025 *Gut Motility Workshop*, 17-27 Feb 2025, Auckland Bioengineering Institute (NZ).
- 2024 **CMBBE Cellular Mechanobiology and Morphogenesis**, Vancouver (CA).  
**IEEE MetroInd Wearable sensors and new frontiers for human health monitoring**, Florence (IT).
- 2023 **ICCB23 Biomechanical modelling by coupling Mechanics, Biology and Chemistry**, Vienna (AT).  
**DDE23 Analysis and control of cardiac dynamics: experiments, modeling, and simulations**, Naples.
- 2022 **XXV AIMETA Reaction-Diffusion-Drift equations and Gradient Flows in Mechanics and Continuum Physics**, Palermo (IT).  
**15th WCCM Computational Biomechanics: Advanced Methods and Emerging Areas, & Modelling and simulation of thermo-mechanical effects in excitable tissues**, Yokohama (JP).  
**8th ECCOMAS Unexplored Avenues of Computational Modeling of Living Systems**, Oslo (NO).
- 2019 **PLACE Experiment, Modeling and Simulation in Cardiac Physio-Pathology**, Rome (IT).
- 2018 **ICCM9 Multiscale material modeling in biomechanics and mechanobiology**, Rome, IT.  
**13th WCCM Advances in theoretical & computational mechanics and mechanobiology**, NY (US).
- 2017 **ICBT17 Behind pathogenesis and biocompatibility: models and experiments linking biomechanics to biology. – Contact in soft tissues: Experimental, theoretical and computational tools**, Hannover (DE).  
**ICF14 Fracture and contact in multiphysics problems: from energy to biological applications**, (GR).
- 2013 – 2016 **12thWCCM Nonlinear Cardiac Dynamics and Multiphysics Coupling**. Seoul (ROK).  
**SMB Society for Math. Biology**, Atlanta (US). *Nonlinear Dynamics in Cardiac Electrophysiology*.  
**XXXIII Dynamics Days Europe, Cardiac Electromechanical Modeling**, Madrid (E).

POSTDOCTORAL SCHOOL ORGANIZER

- 2026 **CISM School on “Modeling the biomechanics of soft tissues: experimental methods, theoretical bases and computational challenges”**. International Centre for Mechanical Sciences, Udine (IT) (Co-Chair).
- 2023 **International School on “Uncertainty Quantification in Biomechanics”**. Johannes Kepler University of Linz, Austrian Academy of Science–RICAM, 23-27 Oct 2023, Linz (AT) (Co-Chair).
- 2023 **2<sup>nd</sup> Advanced International School on “Experiments, Modeling and Simulation in Biomechanics & Mechanobiology”**. UCBM & Tor Vergata, 20-24 Feb 2023, Rome (IT) (Chair).
- 2020 **1<sup>st</sup> Advanced International School on “Imaging, Modeling and Simulation in Biomechanics & Mechanobiology”**. UCBM, Tor Vergata & Hannover, 24-28 Feb 2020, Rome (IT) (Chair).
- 2019 **1<sup>st</sup> Latin-American Summer School on “Biomechanics & Mechanobiology”**. Department of Engineering, Pontificia Universidad Catolica de Chile, Santiago (RCH).

SCIENTIFIC COMMITTEE MEMBER (selected)

- 2026 *Scientific Advisory Committee, WCCM-ECCOMAS 2026*, Munich (DE).
- 2024 *International Program Committee, BIODEVICES*, Rome (IT).  
*International Summer School on Wearable Sensors*, Rome (IT).
- 2023 *X International Conference on Computational Bioengineering, ICCB23*, Vienna (AT).
- 2017–2023 *European Society of Biomechanics - Italy Chapter, ESB-ITA*, Rome, Bologna, Massa, Torino.
- 2016 **ESB-ITA Frontier Biomechanical Challenges in Cardiovascular Physiopathology**. Palermo (IT).  
**GIMC-GMA National Conference - AIMETA IMT School for Advanced Studies Lucca** (IT).

### Invited Seminars & Lectures (Selected)

1. *Multiphysics Modeling in Biomechanics: Challenges and Opportunities*. **University of Auckland - The Auckland Bioengineering Institute** (NZ), February 18, 2025 (**Invited Seminar**).
2. *Active biomechanics: Nonlocality and multiphysics modeling*. Research Colloquium, Computational Science and Engineering (CSE), **University of the Bundeswehr Munich** (DE), November 14, 2024 (**Invited Seminar**).
3. *Nonlocality in active biomechanics*. **Helmholtz-Zentrum Hereon & Hamburg University of Technology** (DE) August 29-30, 2024 (**Invited Seminar**).
4. *Thermo-Electro-Magnetic Exploitation of Excitable Media*. CNR-Nanotec Institute of Nanotechnology, Lecce, June 12, 2024 (**Invited Lecture**).
5. *Nonlinear dynamics in reaction-diffusion biological systems*. Workshop in honor of P.E. Ricci, Rome, May 23-24, 2024 (**Invited Speaker**).
6. *Constitutive formulation of fiber-distributed homogenized constrained mixtures*. Origami Metamaterials and Architected Materials for Innovative Engineering Solutions, Trento, Feb 16, 2024 (**Invited Talk**).
7. *Constitutive modeling of growth and remodeling in distributed fiber-reinforced soft tissues*. USA and Italy: Biomechanics Outsourcing New Disciplines (**U&I: BOND**) (**Invited Speaker**), Naples, 24-27 Sept, 2023.
8. *Spatio-temporal characterization of alternans onset in whole-heart optical mapping*. **EMBC - Engineering in Medicine and Biology Conference**, Sidney, 2023 (**Invited Talk**).
9. *Experimental-based computational modeling of active soft tissue electrophysiology*. **ABI - Auckland Bioengineering Institute**, Auckland, July 27, 2023 (**Invited Seminar**).
10. *Modeling and simulation in electro-active soft materials with distributed fibers*. The University of Melbourne, March 30, 2023 (**Invited Talk**).
11. *Ciclo de Conferencias del encuentro: Matematicas - Ingegneria Biomedica*. **UNAH - Universidad Nacional Autonoma de Honduras**, Tegucigalpa, 3-12 February, 2023, (**Invited Seminars**).
12. *A statistics-based approach of growth and remodeling in soft biological tissues*. **ESMC Galway**, July 6, 2022.
13. *Microstructural statistical modeling of distributed fiber-reinforced tissues*. **University of Brescia**, May 30, 2022.
14. *Multiphysics modeling of nonlinear cardiac dynamics*. **Technische Universität Wien**, July 11, 2019.
15. *Collagen architecture of the human cornea: A micromechanical perspective of fiber interlacing*. **ESB**, Vienna, July 7-10, 2019 (**Keynote**).
16. *Cardiac electro-mechanics & mechano-electric feedback: The Stress-Assisted Diffusion approach*. Integrative Cardiac Dynamics, **Kavli Institute for Theoretical Physics, UCSB**, CA (USA), June 25-July 20, 2018.
17. *Microstructural mathematical modeling of fiber-distributed bio-materials: Theoretical and computational issues*. **BCAM - Bilbao** (E), February 27th, 2018.
18. *Theoretical and numerical modeling of multiphysics coupling in cardiac tissue*. **University of Oxford**, Mathematical Institute, UK, February 8, 2017.
19. *Stretching devices for cells and tissues*. **SISSA, Mathlab**, Trieste (IT), December 2015.
20. *Fiber recruitment computational model for statistical distributed biological tissues*. **Pontificia Universidad Católica de Chile**, Santiago de Chile, January 2015.
21. *Dispersed fibers and Theoretical electromechanics of soft active tissues*. **INdAM Meeting**, The Mathematics of Cells and Tissues September, Scuola Normale Superiore, Cortona, Italy, Sept 2013.
22. *Spatio-temporal dynamics of alternans patterns in cardiac tissue*. **Gordon K. Moe Young Investigator Award Competition**, 21st Annual Meeting Upstate New York Cardiac Electrophysiology Society (UNYCES), Syracuse, USA, October 2011.
23. *Three-dimensional Thermoelectrical Modelling of Paralytic Ileus*. **Universite de Nice Sophia Antipolis**, Laboratoire J.A. Dieudonné (UMR-CNRS), France, November 2009.

• **INTERNATIONAL SCIENTIFIC COLLABORATIONS (Selected):**

- S. Brandstaeter **University of the Bundeswehr Munich (DE)**.  
*Computational mechanics*. (2 papers, conferences, grants).
- L.K. Cheng **University of Auckland (NZ)**. (conferences, grants).  
*Gastro-intesting optical mapping and mathematical modeling*.
- C.J. Cyron **TU Hamburg - Helmholtz Institute (DE)**. (3 paper, conferences, grants).  
*Gastric active-strain. Growth & Remodeling in Mechanobiology*.
- S. Federico **University of Calgary (CA)**. (1 papers, conferences, grants).  
*Active material constitutive modeling*.
- F.H. Fenton **Georgia Institute of Technology (USA)**. (14 papers, conferences, grants).  
*Experiments and simulations in cardiac dynamics*.
- L. Gerardo-Giorda **Johannes Kepler University - RICAM (AT)**. (4 paper, grants, co-advisor)  
*Mathematical methods in medicine and life science*.
- D.E. Hurtado **Pontificia Universidad Católica de Chile (RCH)**. (4 papers, conferences, grants).  
*Finite Element modeling in biomechanics*.
- R. Ruiz-Baier **Monash University (AU)**. (9 papers, conferences, grants).  
*Multiphysics high performance computing*.
- A. Veneziani **Emory University (USA)**. (3 papers, conferences, grants).  
*Mathematical modeling and optimization in cardiac electrophysiology*.

• **NATIONAL SCIENTIFIC COLLABORATIONS (Selected):**

- A. Di Martino **UCBM (IT)**, School of Medicine (MD). (2 papers, grants, patent).  
*Model and optimization of scar biomechanics*.
- G. Marangi **University of Bologna (IT)**, School of Medicine (MD). (5 papers, conferences).  
*Biomechanics of femur and vertebra*.
- M. Marino **University of Rome Tor Vergata (IT)**. (2 papers, conferences, grants).  
*Multiscale fluid-structure interaction modeling*.
- M. Paggi **IMT School for Advanced Studies Lucca (IT)**. (2 paper, conferences, grants).  
*Computational contact mechanics*.
- A. Pandolfi **Politecnico di Milano–DICA (IT)**. (18 papers, conferences, grants).  
*Computational mechanics of inelastic media*.
- L. Sacconi **CNR-IFC**, Cardiac optical mapping. (grants).  
*Design and optimization of panoramic optical mapping*.
- E. Schena **UCBM**, Unit of Measurement and Biomedical Instrumentation. (10+ papers, conferences, grants).  
*Design and metrological characterization of biomedical devices*.
- G. Vairo **University of Rome Tor Vergata (IT)**. (3 papers, conferences, grants).  
*Multiscale biomechanics*.
- M. Vasta **University of Chieti-Pescara (IT)**. (15 papers, conferences, grants).  
*Theoretical statistical mechanics*.
- F. Viola **Gran Sasso Science Institute - GSSI (IT)**.  
*Mathematical modeling and numerical simulation of cardiac dynamics*.

• MENTORED STUDENTS & POSTDOCTORAL FELLOWS

MENTORING - AS OF MARCH 11, 2025

	BSc	MSc	Ph.D.	Scholars	PostDoc	Ext. Reviewer
Advisor & Co-Advisor	14	27	4	4	5	16

PostDoc	<p><b>Lorenzo Zoboli</b> UCBM (2022 – 2026). <i>Peridynamics computational modeling.</i></p> <p><b>Daniele Bianchi</b> UCBM (2021). <i>Micromechanics modeling of soft tissues.</i></p> <p><b>Alessandro Barone</b> UCBM (2020 – 2021). <i>Optimization of His bundle pacing device.</i></p> <p><b>Cristina Falcinelli</b> UCBM (2017 – 2018). <i>FE biomechanical constitutive modeling of bone tissue.</i></p> <p><b>Nicole Cusimano</b> Basque Center for Applied Mathematics (BCAM) (2018). <i>Fractional diffusion.</i></p>
Ph.D. Adv	<p><b>Antonio Di Cecco</b> UCBM-Pescara (2023-2026). <i>National PhD program in Artificial Intelligence, Healthcare &amp; Life science area.</i></p> <p><b>René Thierry Djoumessi</b> IMT Lucca (2022-2026). <i>Computational contact mechanics of intestine physiopathology.</i></p> <p><b>Federica Bianconi</b> UCBM (2022-2025). <i>Modeling, design and optimization of nanoparticle-based heating devices.</i></p> <p><b>Anna Crispino</b> UCBM (2021-2024). <i>Experimental analysis and computational modeling of multi-field cardiac signals.</i></p>
Scholars	<p><b>Nicolas Falgayrettes, PhD Candidate</b>, Georgia Tech Lorraine (2020 – 2021) (Visiting UCBM 3 months). <i>Computational modeling &amp; biomechanics of the human cornea.</i></p> <p><b>William Ramirez Benitez, PhD Candidate</b>, Pontificia Universidad Catolica de Chile (Visiting UCBM 6 months – 2018). <i>HPC Finite element modeling of 3D infarcted hearts electrophysiology.</i></p> <p><b>Sebastian Brandstätter, PhD Candidate</b>, Technical University of Munich (2018). <i>Finite element analysis of stomach electro-mechanics.</i></p> <p><b>Alessandro Barone, PhD Candidate</b>, Emory University (Visiting UCBM 1 month – 2017). <i>Optimization algorithms and data assimilation of fluorescence optical mapping.</i></p>
Ext. Advisor	<p><b>Lilly Treml, PhD Candidate</b>, Technical University of Vienna (2019 – 2022) <i>Cellular automata modeling of cardiac dynamics: Software and hardware implementation.</i></p> <p><b>Chiara Stanca, Industrial Internship</b>, AKKA ITALIA (2021).</p> <p><b>Andrea Bonifacio, Industrial Internship</b>, Larimart Spa (2019).</p> <p><b>Pietro Lenarda, PhD Candidate</b>, IMT School for Advanced Studies Lucca (2017 – 2018).</p> <p><b>Daniele Bianchi, PhD Candidate</b>, University of Rome Tor Vergata (2016 – 2018).</p> <p><b>Alessandro Loppini, PostDoc</b>, UCBM (2015 – 2018).</p>
Ext. Reviewer	<p><b>Chiara Bernard, Doctoral Thesis</b>, University of Trento (2024). <i>Mechanobiology of coronaviruses uptake across the cell membrane.</i></p> <p><b>Silvia Lombardi, Doctoral Thesis</b>, Gran Sasso Science Institute (2024). <i>Fluid-structure interaction problem in human eye.</i></p> <p><b>Giuseppe Geraci, Doctoral Thesis</b>, Alma Mater Studiorum - Università di Bologna (2024). <i>A reliable and representative simulation study to investigate the risk of impingement in total hip replacement (THR) patients.</i></p> <p><b>Gianluca Santesarti, Doctoral Thesis</b>, University of Rome Tor Vergata (2023). <i>Modelling of extrusion-based bioprinting via quasi-analytical and FSI computational approaches.</i></p> <p><b>Nicole Guazzelli, Doctoral Thesis</b>, University of Pisa (2023). <i>An integrated in silico - in vitro strategy for the design of physiologically relevant alveolar models.</i></p> <p><b>Simone Borrelli, Doctoral Thesis</b>, Politecnico di Torino (2023). <i>Stabilization of lumbar metastasis: a biomechanical perspective for more effective surgical strategies.</i></p> <p><b>Pierfrancesco Gaziano, Doctoral Thesis</b>, University of Rome Tor Vergata (2022). <i>Modelling the failure mechanics of hard biological tissues: Continuum damage-based approaches</i></p>

- Sachira Kuruppu, Doctoral Thesis**, University of Auckland (2022). *Investigation Into The Relationship Between Intestinal Slow Waves, Spike Bursts, and Motility*
- Sebastian L. Fuchs, Doctoral Thesis**, Technical University of Munich (2021). *Computational Multiphysics Modeling with Smoothed Particle Hydrodynamics and Finite Elements*
- Sebastian Brandstätter, Doctoral Thesis**, Technical University of Munich (2021). *Global Sensitivity Analysis for Models of Active Biomechanical Systems*
- Marzio Di Giuseppe, Doctoral Thesis**, Università degli Studi di Palermo (2021). *Micromechanical modeling of aortic pathologies.*
- Mattia Serpelloni, Doctoral Thesis**, Università degli Studi di Brescia (2021). *The response of endothelial cells to angiogenic stimuli: Experiments, modeling, and simulations.*
- Alessandro Masci, Doctoral Thesis**, Alma Mater Studiorum, Università di Bologna (2021). *Development of a patient-specific model for stroke risk assessment in atrial fibrillation.*
- Francesco Clerici, MSc Thesis**, Politecnico di Milano, MOX (2019). *Adaptive Algorithms for Image Segmentation and Reconstruction with Application to 3D Biomedical Datasets.*
- Michele Giuliano Carlino, MSc Thesis**, Politecnico di Milano, MOX (2017). *Model reduction by proper generalized decomposition in electrocardiology.*
- Sebastián A. Castro, MSc Thesis**, Pontificia Universidad Católica de Chile (2014 – 2015). *Multiscale modeling of cardiac electrophysiology.*
- Advisor**
- Ludovica Luciano, MSc Thesis** (2024–2025 UCBM & Sapienza Università di Roma). *Electrocardiography data analysis and modeling.*
- Ludovica Chimenti, MSc Thesis** (2024–2025 UCBM). *Computational peridynamics modeling of bioabsorbable screw degradation.*
- Lorenzo Rezza, MSc Thesis** (2024–2025 CNR - Institute of Clinical Physiology (IFC) Florence). *Development of open source integrated software for panoramic optical mapping of cardiac electrical dynamics.*
- Andrea Alberici, BSc Thesis** (2024–2025 UCBM). *Analysis of the pharmacokinetic response of medical devices for insulin administration.*
- Valentina Romanelli, MSc Thesis** (2023–2024 CNR - Institute of Clinical Physiology (IFC) Florence). *Stereographic fluorescence optical imaging of whole heart electrophysiology.*
- Cecilia Granata, MSc Thesis** (2023–2024 University JKU Linz - RICAM, Linz). *FEM implementation of dual-phase-lag thermo-electric model with a three-state cell death dynamics for cardiac radiofrequency catheter ablation.*
- Mauro Pignalosa, MSc Thesis** (2022–2023 Theras s.r.l.). *Multi-field computational modeling and optimization of insuline delivery.*
- Federica Bianconi, MSc Thesis** (2021–2022 UCBM & Policlinico Casilino). *Development of a computational model for the analysis of cardiac LBBP stimulation: Optimization of electrode position and activation times.*
- Carolina Haboba, BSc Thesis - Grand Challenge** (2021–2022 UCBM - MEDERE s.r.l.). *Plantar design and process development.*
- Alessandra Fiorenza, BSc Thesis** (2021 - UCBM). *Software development and data analysis of fluorescence voltage signals in cardiac electrical activity.*
- Leonardo Molinari, MSc Thesis** (2020–2021 - Johannes Kepler University Linz). *Multi-field material modeling and computational implementation of cardiac ablation. Currently Ph.D. student at Emory University, Department of Mathematics and Computer Science (USA).*
- Andrea Bonifacio, MSc Thesis** (2020–2021 - Technical University of Munich). *Active-strain electromechanics in patient-specific FE gastric domains.*
- Giulia Malizia, MSc Thesis** (2020 - UCBM - Policlinico Casilino). *Mathematical modeling and numerical simulation of His bundle electrical pacing.*
- Chiara Stanca, MSc Thesis** (2020 - UCBM - Policlinico Casilino). *Development and implementation of a graphical interface for the visualization of ECG signals.*
- Marta Silighini, MSc Thesis** (2020 - Helmholtz Center, Hamburg). *Computational study of a bone implant subject to a push-out test.*

- Ludovica Capriotti, BSc Thesis** (2020 - UCBM). *Constitutive models of vertebra biomechanics.*
- Giulia Sammaritano, MSc Thesis** (2019 – 2020 - Leibniz University Hannover). *Finite element computational modeling of chemo-mechano-biological couplings.*
- Martina De Clementi, MSc Thesis** (2019 - Imperial College London). *In vitro analysis of an abdominal aortic aneurysm-related risk indicator through an ultrasound scanning system.*
- Andrea Bonifacio, BSc Thesis** (2018 - UCBM & Policlinico Universitario UCBM). *Computational modeling of the arm: Mechanical analysis in presence of scar tissue.*
- Leonardo Molinari, BSc Thesis** (2018 - UCBM & Policlinico Universitario UCBM). *Computational analysis of the mechanical response of the human vertebra in presence of metallic screws.*
- Giulia Sammaritano, BSc Thesis** (2017 - UCBM). *Thermo-electric modeling and numerical simulation of cardiac electrophysiology.*
- Arianna Mazzotta, BSc Thesis** (2017 - UCBM & Policlinico Universitario UCBM). *Finite element analysis of human femur biomechanics in presence of metastatic tumor lesions.*
- Silvia Buscaglione, BSc Thesis** (2016 - UCBM). *Computational modeling of brachioplasty: Stress analysis and validation of the surgical approach.*
- Camilla Fiocchetti, BSc Thesis** (2016 - UCBM). *Modal analysis of microfluidic devices.*
- Elisa Ficarella, MSc Thesis** (2015 - Max Planck Institute). *Electro-mechanical cardiac modeling in finite elasticity: fluorescence optical mapping validation.*
- Co-Advisor **Mindula Irugalbandara, MSc Thesis** (2025–2026 Auckland Bioengineering Institute). *Quantification of contraction patterns in the gut.*
- Francesco Luppino, MSc Thesis** (2023–2024 Theras s.r.l.). *Medical device optimization for subcutaneous insuline delivery: Computational models for the analysis of fluid dynamics and pharmacokinetics.*
- Beatrice Guidalotti, BSc Thesis** (2023–2024 Medere s.r.l.). *Experimental characterization and computational modeling of biodegradable printable materials.*
- Anna Tortoriello, MSc Thesis** (2022–2023 UCBM). *CAD design, FEM simulation and 3D printing of hydrogel prototypes for the thermal characterization of FBG sensors for laser ablation.*
- Sofia Ricci, MSc Thesis** (2022–2023 UCBM). *Definition and development of computational models for the topological optimization and of production parameters of plantar orthoses obtained via 3D printing.*
- Michela D’Aveli, MSc Thesis** (2020 - UCBM). *Flexible deformation sensors based on fiber Bragg grating: Theoretical and experimental mechanical characterization.*
- Cecilia Liberati, BSc Thesis** (2019 - UCBM). *Mechanical characterization and constitutive modeling of sensors based on Optical Fiber Bragg deformation.*
- Claudio D’Agostino, MD Thesis** (2018 - UCBM). *Study of fracture risk with metastatic femurs patients through biomechanical finite element analysis.*
- Valentina Giagnacovo, BSc Thesis** (2017 - UCBM). *Microfluidic chip devices for T-junction foam generation.*
- Francesca Pellicanó, BSc Thesis** (2017 - Ospedale Pediatrico Bambino Gesù). *Computational modeling of cardiac anisotropic passive mechanics in presence of microstructural disorganization.*
- Alberto Ippolito, MSc Thesis** (2017 - UCBM). *Low energy cardiac defibrillation finite element model with thermo-electric coupling. Currently Postdoctoral Research Fellow at The Johns Hopkins University School of Medicine (USA).*
- Elisabetta Monaldo, MSc Thesis**, (2016 - University of Rome “Tor Vergata”). *Multiscale fluid-structure interaction modeling and simulation of abdominal aorta: TBD analysis.*
- Luca Belardi, MSc Thesis** (2014 - MEDTAG). *MATLAB mathematical model development of the mechanical activity of the human cardio-circulatory system.*
- Marie Dupraz, MSc Thesis** (2013 - UCBM & EPFL). *Phenomenological and physiological approaches in the study of cardiac alternans. Theoretical background, mathematical modeling and numerical simulations.*
- Mariangela Dipaola, MSc Thesis** (2012 - UCBM). *Thermo-electro-mechanical study of human colonic contractile activity. Experiments and mathematical modeling.*

## PUBLICATION METRICS - AS OF MARCH 11, 2025

	ISI-WOS	Scopus	G-Scholar
Number of Publications	95 (103)	101	>100
Total Number of Citations	1519	1659	2313
h-index	23	23	29
i10-index	50	57	65

## JOURNALS, IMPACT FACTOR, QUARTILE, &amp; SUBJECT AREA

Journal		IF	Q	SA	N <sup>o</sup>
Materials and Design	JMADE	9.417	Q1	Engineering	2
Computer Methods in Applied Mechanics and Engineering	CMAME	7.2	Q1	Engineering	4
Biosensors	OPB	5.972	Q1	Engineering	1
Journal of the Mechanics and Physics of Solids	JMPS	5.471	Q1	Engineering	2
Measurement	MEAS	5.2	Q1	Engineering	2
Frontiers in Physiology: Computational Physiology and Medicine	FrontPhysiol	4.566	Q1	Physics	2
Computational Mechanics	CM	4.391	Q1	Engineering	1
IEEE Sensors Journal	IEEE	4.325	Q1	Engineering	4
Journal of Clinical Medicine	JCM	4.242	Q1	Medicine	1
Communications in Nonlinear Science and Numerical Simulation	CNSNS	4.260	Q1	Mathematics	1
Scientific Reports	SciRep	4.122	Q1	Engineering	2
Journal of the Mechanical Behavior of Biomedical Materials	JMBBM	3.902	Q1	Engineering	3
Plastic & Reconstructive Surgery	PRS	3.784	Q1	Medicine	1
Euromech	-	3.670	Q1	Physiology	1
American Journal of Physiology	AJP	3.649	Q1	Physiology	1
Chaos: An Interdisciplinary Journal of Nonlinear Science	CHAOS	3.642	Q1	Physics	2
Journal of Computational Physics	JCP	3.553	Q1	Engineering	1
Frontiers in Physiology: Cardiac Electrophysiology	FrontPhysiol	3.534	Q1	Physics	1
International Journal of Non-Linear Mechanics	NLM	3.2	Q1	Engineering	1
Biomechanics and Modeling in Mechanobiology	BMMB	3.1	Q1	Engineering	2
Physical Biology	PB	2.987	Q2	Physics	1
Diabetes Metabolism Research & Review	DMRR	2.968	Q1	Medicine	1
European Journal of Mechanics - A/Solids	EJM-A	2.846	Q1	Engineering	1
Mechanics of Advanced Materials and Structures	MAMS	2.8	Q2	Engineering	1
Philosophical Transaction of the Royal Society A	PTRSA	2.746	Q1	Engineering	1
International Journal of Engineering Science	IJES	2.668	Q1	Engineering	1
Journal of Biomechanics	JB	2.664	Q1	Engineering	1
Mechanics of Materials	MoM	2.598	Q1	Engineering	1
Mathematics and Mechanics of Solids	MMS	2.6	Q1	Engineering	2
Mathematical Medicine and Biology	MMB	2.412	Q2	Mathematics	1
Proceedings of the Royal Society of London Series A	RSPA	2.372	Q1	Mathematics	1
Medical Engineering & Physics	MEP	2.356	Q2	Engineering	2
Physical Review E: Statistical Nonlinear & Soft Matter Physics	PRE	2.353	Q1	Physics	7
Meccanica	MECC	2.316	Q1	Engineering	2
Journal of Theoretical Biology	JTB	2.113	Q2	Physics	1
Europhysics Letters	EPL	2.095	Q2	Physics	1
Acta Mechanica Solida Sinica	AMS	1.897	Q2	Mechanics	1
Communications in Computational Physics	CiCP	1.863	Q1	Physics	5
International J. for Numerical Methods in Biomedical Engineering	IJNMBE	1.849	Q1	Engineering	1
Mathematics	MDPI	1.747	Q2	Engineering	2
Physics Letters A	PLA	1.706	Q2	Physics	1
Physiological Measurement	PM	3.2	Q2	Biophysics	2
Probabilistic Engineering Mechanics	PREM	1.440	Q1	Engineering	1
Journal of Engineering Mathematics	JEM	1.434	Q1	Engineering	2
Journal of Applied Mathematics and Mechanics	ZAMM	1.332	Q3	Engineering	2
International Journal of Modern Physics C	IJMPC	1.260	Q3	Physics	1
Electromagnetic Biology and Medicine	EBM	1.194	Q3	Physics	1
Mathematical Methods in Applied Science	MMAS	0.877	Q1	Mathematics	1

Rome, March 11, 2025

Alessio Gizzi

A handwritten signature in black ink, appearing to read 'A. Gizzi', with a long horizontal flourish extending to the right.

# LIST of PUBLICATIONS

Alessio Gizzi

## PEER-REVIEWED INTERNATIONAL JOURNALS

### Submitted:

- R.T. Djoumessi, P. Lenarda, **A. Gizzi**, and M. Paggi. A self-contact electromechanical framework for intestinal motility.
- P. Gaziano, L. Zoboli, M. Marino, **A. Gizzi**, and G. Vairo. Modeling the degradation process in biodegradable bone implants: A computational approach.
- D. Lo Presti, L. Zoboli, C. Massaroni, J. Nedoma, **A. Gizzi**, and E. Schena. A multi-sensor wearable system based on FBG technology: analysis of the influence of measurement sites on systems performance in cardiorespiratory monitoring.
- F. Bianconi, E. De Vita, B. Novati, M. Giustra, L. Salvioni, D. Lo Presti, F. Testa, C. Massaroni, A. Iadiciccio, **A. Gizzi**, D. Prospero, E. Schena, S. Campopiano. Study on nanoparticles-mediated laser ablation for selective cancer treatments.

### 2025:

1. F. Bianconi, M. Leoni, A. Petras, E. Schena, L. Gerardo-Giorda, and **A. Gizzi**. Higher-order thermal modeling and computational analysis of laser ablation in anisotropic cardiac tissue. *Biomech. Model. Mechanobiol.* (2025). 10.1007/s10237-025-01926-x

### 2024:

2. M. Pulcinelli, F. D'Antoni, F. De Tommasi, L. Zoboli, C. Massaroni, V. Altomare, A. Grasso, **A. Gizzi**, E. Schena, M. Merone, D. Lo Presti. Fiber Bragg grating sensors combined with artificial intelligence for noninvasive breast tumor identification. *IEEE Sens. J.* (2024). 10.1109/JSEN.2024.3520358
3. F. De Tommasi, M. Pulcinelli, C. Massaroni, **A. Gizzi**, S. Silvestri, E. Schena, and D. Lo Presti. A 3D-printed sensing element based on Fiber Bragg Grating technology for grasping force measurement in surgical forceps. *Measurement* **242**:116236 (2024). 10.1016/j.measurement.2024.116236
4. L. Zoboli, F. Luppino, D. Bianchi, L. Lazzarotti, A. Nannei, M. Centola, and **A. Gizzi\***. Multi-field modeling and computational optimization of a subcutaneous insulin release port. *Mat. Des.* **245**:113284 (2024). 10.1016/j.matdes.2024.113284
5. **A. Gizzi**, A.D. McCulloch, and C.S. Drapaca. Multiscale modeling and analysis in biophysics. *J. Appl. Phys.* **135**:210401 (2024). 10.1063/5.0219187
6. M. Pulcinelli, L. Zoboli, F. De Tommasi, C. Massaroni, V. Altomare, A. Grasso, **A. Gizzi**, E. Schena, and D. Lo Presti. A multi-sensor tactile system based on fiber Bragg grating sensors for soft tissue palpation. *IEEE Sens. J.* **24**:25205–25214 (2024). 10.1109/JSEN.2024.3415808
7. A. Crispino, A. Loppini, I. Uzelac, S. Irvanian, N.K. Bhatia, M. Burke, S. Filippi, F.H. Fenton, and **A. Gizzi**. A cross species thermoelectric and spatiotemporal analysis of alternans in live explanted hearts using dual voltage-calcium fluorescence optical mapping. *Physiol. Meas.* **45** (2024). 10.1088/1361-6579/ad4e8f
8. M.L. De Bellis, M. Vasta, **A. Gizzi**, and A. Pandolfi. Modelling the deterioration of the stiffness and of the collagen fibril distribution in a discrete model of the cornea microstructure. *Int. J. Non-Linear Mech.* **163**:104736 (2024). 10.1016/j.ijnonlinmec.2024.104736
9. R.T. Djoumessy, P. Lenarda, **A. Gizzi**, S. Giusti, P. Alduini, and M. Paggi. In silico model of colon electromechanics for manometry prediction after laser tissue soldering. *Comput. Methods Appl. Mech. Engng.* **426**:116989 (2024). 10.1016/j.cma.2024.116989
10. L. Zoboli, D. Bianchi, C. Falcinelli, and **A. Gizzi**. Improving the manufacturing of 3D printed insoles through a combined experimental and topology optimization approach. *Mech. Adv. Mat. Stru.* 1–15 (2024). doi.org/10.1080/15376494.2024.2326667

11. D. Lo Presti, D. Bianchi, C. Massaroni, A. Rainer, S. Silvestri, **A. Gizzi**, and E. Schena. Optimization and characterization of a 3D-printed wearable strain sensor for respiration and heartbeat measurements. *Measurement* **228**:114377 (2024). 10.1016/j.measurement.2024.114377
12. D. Lo Presti, L. Zoboli, A. Abbaddo, D. Bianchi, A. Dimo, C. Massaroni, V. Altomare, A. Grasso, **A. Gizzi**, and E. Schena. Design optimization and characterization of a 3D-printed tactile sensor for tissue palpation. *IEEE Sens. J.* **24**:12366–12373 (2024). 10.1109/JSEN.2024.3369337
13. D. Preve, P. Lenarda, D. Bianchi, and **A. Gizzi**. Phase field modeling and simulation of damage occurring in human vertebra after screws fixation procedure. *Comput. Mech.* (2024). 10.1007/s00466-024-02450-y
14. **A. Gizzi\***, C.J. Cyron, C. Falcinelli, and M. Vasta. Evolution of fiber distributions in homogenized constrained mixture models of soft tissue growth and remodeling: uniaxial loading. *J. Mech. Phys. Sol.* **183**:105491 (2024). 10.1016/j.jmps.2023.105491

**2023:**

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### PRESENTATIONS AT INTERNATIONAL MEETINGS

1. *A statistically-based homogenized constrained mixture model for anisotropic soft tissue growth & remodeling.* Int. Workshop on The coupled nonlinear continuum theory horizon. 1-5 July 2024, Castro Urdiales (E).
2. *Thermo-hyperelastic microstructure constitutive modeling of myocardial tissue for cardiac radiofrequency ablation.* INdAM Workshop on Mathematical and Numerical Modeling of the Cardiovascular System, 15 - 19 April, Rome, 2024 (IT).
3. *Constitutive modeling of growth and remodeling in distributed fiber-reinforced soft tissues.* USA and Italy: Biomechanists Outlining New Directions (U&I:BOND), 24 - 27 October, Naples, 2023 (IT).
4. *Growth and remodeling in distributed fiber-reinforced materials.* EUROMECH Colloquium 638 - Cellular Mechanobiology and Morphogenesis, 21 - 24 August, 2023, Sirmione (IT).
5. *Innovative characterization of alternans onset and development in dual voltage-calcium whole-heart optical mapping signals at multiple thermal states.* 45th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 24 - 28 July, 2023, Sydney (AU).
6. *Multi-field and multi-scale thermo-hyperelastic constitutive modeling of cardiac radiofrequency catheter ablation.* Workshop of the IRP Coss&Vita, 24 - 27 October, 2022, Arpino (IT).
7. *Electro-active soft materials with distributed fibers.* EUROMECH Colloquium on Mechanics of Soft Active Polymers, 24 - 25 August 2022, Southampton (UK).
8. *Growth and remodeling in living soft tissues: A statistics-based approach.* WCCM2022, August 2022, Japan.
9. **Invited** - *A statistics-based approach of growth and remodeling in soft biological tissues.* ESMC2022, 4 - 8 July 2022, Galway (IRL).

10. *A thermodynamics-based thermoelastic constitutive model of cardiac radiofrequency ablation.* ECCOMAS 8th, 5 - 9 June 2022, Oslo, Norway (NO).
11. *Computational fracture analysis of metastatic human bones in the presence of fixation screws and accounting for bone-metastasis interaction.* NewFrac Workshop, IMT Advanced School Lucca, 9 - 12 May, 2022, Lucca (IT).
12. *A generalized thermo-hyperelastic constitutive model of cardiac radiofrequency catheter ablation.* EMMC18, 4 - 6 April, 2022, Oxford (UK).
13. *Modeling cardiac thermo-electro-viscoelasticity: The role of nonlinear diffusion.* SIMAI, 30 August - 3 September, 2021, Parma (IT).
14. *Patient-specific biomechanical modeling of the human cornea: microstructural collagen degeneration.* 26th ESB Congress, July 11-14, 2021, Milan (IT).
15. *Thermo-electric visco-elastic modeling of the heart with nonlinear diffusion.* 5th SoftMech - Soft Tissue Modeling, 1st-3rd July, 2021, Glasgow (UK).
16. *Orthotropic electro-visco-elastic computational modelling of the heart.* MCF2020 - Modelling the Cardiac Function: Theory, Numerical Methods, Clinical Applications, 31st August - 2nd September, 2020, Milan (IT).
17. *Cardiac electromechanics: The role of stress-assisted diffusion.* 8th International Workshop on Cardiac Mechano-Electric Coupling and Arrhythmias, Freiburg (DE), September 4-7, 2019.
18. *Collagen architecture of the human cornea: A micromechanical perspective of fiber interlacing.* Congress of the European Society of Biomechanics (ESB) Vienna (AT), July 7-10, 2019.
19. *Multiphysics constitutive modelling of active deformable biological media.* Multiscale Methods for Interface Couplings, Graduate School, Leibniz University of Hannover (DE), March 20-22, 2019.
20. *Computationally informed design of microfluidic chip devices: Challenges and Perspectives.* Workshop on Understanding Complexity in Life Sciences, Milano Bicocca (IT), February 14-15, 2019.
21. *1st Latin-American Summer School on Biomechanics and Mechanobiology.* PUC Chile (CL), January 7-10, 2019.
22. *Cardiac electro-mechanics & mechano-electric feedback: The Stress-Assisted Diffusion approach.* Integrative Cardiac Dynamics, KITP, UCSB, CA (USA), June 25-July 20, 2018.
23. *Cardiovascular risk analysis: A multiscale flow-tissue computational modeling.* INdAM Workshop, Mathematical and Numerical Modeling of the Cardiovascular System, Rome (IT), April 16-19, 2018.
24. *Biomechanics of human cornea modeled via a generalized statistical approach.* EMMC16, 16th European Mechanics of Materials Conference, Nantes (F), March 26-28, 2018.
25. *Electro-mechanical cardiac arrhythmias: A stress-assisted nonlinear diffusion approach.* QBio2018 - BCAM Workshop on Quantitative Biomedicine for Health and Disease, Bilbao (E), 28 Feb-1 Mar, 2018.
26. *Multi-field contact modeling of excitable biological cells: A computational framework.* ICBT17, International Conference on Biomedical Technology, Hannover (DE), November 6-8, 2017.
27. *Multiscale modeling of tissue mechanics and a novel wall shear stress risk assessment in FSI models of large vessels.* 19th International Conference on Finite Elements in Flow Problems (FEF), Rome (IT), April 5-7, 2017.
28. *Fluid-Structure Interaction in Abdominal Aortic Aneurysms: Multiscale modeling of tissue mechanics and a novel wall shear stress risk assessment.* SIAM CSE, Atlanta (USA), February 27-March 3, 2017.
29. *Thermo-electro-mechanical modeling of cardiac arrhythmias.* European Congress on Methods in Applied Sciences and Engineering, ECCOMAS 2016, Crete (GR), 2016.
30. *Electro-active biological material models for the behavior of the large intestine. & Statistical characterization of soft materials with distributed fibers.* 9th European Solid Mechanics Conference (ESMC), Madrid (ES), 2015.
31. *Nonlinear diffusion in cardiac electrophysiology.* Annual Meeting, Society for Mathematical Biology, SMB2015, Atlanta (USA), 2015.
32. *Non-ohmic propagation of action potential in cardiac tissue: a porous-medium approach.* 2nd International Workshop on Latest Advances in Cardiac Modeling, LACM 2015, Munich (DE), 2015.

33. *Three-dimensional thermo-viscoelasticity for electro-active intestine modeling*. VPH2014, Virtual Physiological Human Institute Conference, NTNU, Trondheim (NO), 2014.
34. *Electromechanical cardiac arrhythmias: experiments, theory and simulations*. 11th World Congress on Computational Mechanics, XI WCCM, Barcelona (ES), 2014.
35. *Theoretical electromechanics of cardiac tissue*. XXXIII Dynamics Days Europe, Madrid (ES), June 2013.
36. *Complex Dynamics of Cardiac Alternans*. XXXI Dynamics Days Europe, Oldenburg (DE), September 2011.
37. *Temperature and cycle length effects on spatial patterns of cardiac alternans*. SIAM Conference on “Applications of Dynamical Systems”, Utha (USA), May 2011.
38. *Mechano-electric coupling effects in reentrant arrhythmias*. 5<sup>th</sup> International Workshop on Cardiac Mechano-Electric Coupling and Arrhythmias, Oxford (UK), 2010.
39. *Modeling of thermal induced electrical instabilities in intestine using COMSOL Multiphysics*. European COMSOL Conference, Milan (IT), October 2009.

### PRESENTATIONS AT NATIONAL MEETINGS

1. *Computational modeling of multi-field subcutaneous insulin injection*. AIMETA Congress, Naples, September 2-6, 2024 (IT).
2. *A Lennard-Jones potential modeling approach to reaction-diffusion induced degeneration in the collagen microstructure of the human cornea*. AIMETA Congress, Palermo, September 4-9, 2022 (IT).
3. *Biomechanics of human cornea*. 99° SOI Congress, Rome, November 20-23, 2019 (IT).
4. *Electromechanics of active soft tissues: Competing mechanisms of stress and stretch contributions to electrical diffusivity*. AIMETA Congress, Rome, September 15-19, 2019 (IT).
5. *Computational multiscale modelling of FSI in arterial vessels: Tissue mechanics and WSS analysis*. ESB-ITA 2017, Italian Chapter of the European Society of Biomechanics, Rome, September 28-29, 2017.
6. *Computational modelling of multiscale tissue mechanics and FSI coupling in arterial vessels*. AIMETA 2017, XXIII Congresso Associazione Italiana di Meccanica Teorica e Applicata, Salerno, September 4-7, 2017.
7. *Stress-driven anisotropic diffusion in active deformable media*. Università Cattolica del Sacro Cuore, Workshop Math from the Body, Brescia, May 29-31, 2017.
8. *Novel wall shear stress risk predictors for the Abdominal Aortic Aneurysm. & Computational modelling of fluid-structure interaction in arterial vessels: Multiscale tissue mechanics and wall shear stress analysis*. FBCCP, ESB-ITA 2016, Palermo, 2016.
9. *Computational contact mechanics of excitable biological cells*. GIMC-GMA National Conference, Lucca, 2016.
10. *Statistical characterization of soft materials with distributed fibers*. XXII Congress, Associazione Italiana di Meccanica Teorica e Applicata, AIMETA, Genova, 2015.
11. *Computational modeling of fiber recruitment for statistical distributed biological tissues*. GIMC-GMA, XX National Congress of Computational Mechanics, AIMETA, Università degli Studi di Cassino e del Lazio Meridionale, Cassino, 2014.
12. *Dispersed fibers and Theoretical electromechanics of soft active tissues*. INdAM Meeting, The Mathematics of Cells and Tissues September, Scuola Normale Superiore, Cortona, Sept 2013.
13. *Electro-elastic unpinning of rotating vortices in biological excitable media*. Assemblea Scientifica Nazionale, GNFM-INdAM, September 2012.
14. *Spatio-temporal dynamics of alternans physiopathology: experiments and modeling*. Workshop, The Heart Tissue: Modeling and Equations, Brescia, May 2012.

PEER-REVIEWED ABSTRACTS & REPORTS**2025:**

1. M.S. Henke, S. Brandstaeter, **A. Gizzi**, and C.J. Cyron. *Coupled electromechanical simulations of the human stomach*. ESB2025, July 6-9 2025, ETH-Zurich (CH).
2. R.T. Djoumessi, P. Lenarda, **A. Gizzi**, and M. Paggi. *A generalized electromechanical framework for intestinal motility: Incorporating self-contact*. 8th International Conference on Computational Contact Mechanics ICCCM2025, July 2-4 2025, Munich (DE).

**2024:**

3. A. Pandolfi, M.L. De Bellis, **A. Gizzi**, and M. Vasta. *Multiscale and statistical approaches to model the microstructure of collagen in human cornea*. EUROMECH Colloquium 642. Multiscale and Multiphysics Modelling for Advanced and Sustainable Materials. 23 - 27 September, 2024, Rome (IT).
4. M. Vasta, **A. Gizzi**, C.J. Cyron, and C. Falcinelli. *Homogenized constrained mixture models for the evolution of fiber distributions in soft tissue*. EUROMECH Colloquium 642. Multiscale and Multiphysics Modelling for Advanced and Sustainable Materials. 23 - 27 September, 2024, Rome (IT).
5. M.S. Henke, S. Brandstaeter, **A. Gizzi**, R.C. Aydin, C.J. Cyron. *Computational Modelling of the Human Gastric Peristalsis*. VPH Conference, 4-6 September 2024, Stuttgart (DE).
6. V. Zare, **A. Gizzi**, A. Grillo, W. Herzog, and S. Federico. *Force-enhancement in muscle as a remodelling phenomenon*. Canadian Society for Biomechanics (CSB) Conference 19 - 22 August, Edmonton AB (CA).
7. R.T. Djoumessi, P. Lenarda, **A. Gizzi**, and M. Paggi. *Electromechanical modeling of colon motility*. ESB2024, June 30 - July 3, Edinburgh, UK.
8. L. Zoboli, D. Bianchi, M. Marino, and **A. Gizzi**. *Multiphysics behaviour of photo-activated polymers for tissue bioprinting*. EMMC19 - 19th European Mechanics of Materials Conference. May 29 - 31, Madrid (ES).
9. M. Pulcinelli, D. Lo Presti, L. Zoboli, D. Bianchi, **A. Gizzi**, and E. Schena. *Design, Fabrication and Metrological Characterization of a 3D-Printed Tactile Sensor Based on Fiber Bragg Technology for Breast Palpation*. 2024 IEEE International Workshop on Metrology for Industry 4.0 & IoT (MetroInd4.0 & IoT). 29 - 31 May, 2024, Florence (IT).
10. F. Caruso Lombardi, A. Crispino, R. Verzicco, **A. Gizzi**, and F. Viola. *High-fidelity numerical simulations of ventricular fibrillation*. ECCOMAS 3 - 7 June, 2024, Lisbon (PT).
11. A. Crispino, A. Loppini, A. Gizzi, C. Cherubini, and S. Filippi. *Experimental-based mathematical modeling of thermo-electric spatio-temporal cardiac excitation*. INdAM Workshop "Mathematical and Numerical Modeling of the Cardiovascular System", 15 - 19 April, 2024, Rome (IT).

**2023:**

12. V. Zare, **A. Gizzi**, A. Grillo and S. Federico. *Force-enhancement in muscle as a remodelling phenomenon*. Annual Alberta Biomedical Engineering Conference. 27 - 28 October, 2023, Banff (CA).
13. A. Pandolfi, M.L. De Bellis, **A. Gizzi** and M. Vasta. *Multiscale and statistical approaches to model the microstructure of collagen in human cornea*. ECCOMAS CMCS. 10 - 13 October, 2023, Eindhoven.
14. F. Bianconi, E. De Vita, D. Lo Presti, C. Massaroni, D. Bianchi, A. Iadicicco, S. Campopiano, E. Schena and **A. Gizzi**. *Optimization of photothermal laser ablation using an experimental-numerical approach on agarose phantom*. ESB-ITA, 18 - 19 September, 2023.
15. L. Zoboli, D. Bianchi, G. Vairo, M. Marino, and **A. Gizzi**. *Advanced constitutive modelling of polymers for tissue bioprinting applications*. 10th GACM Colloquium on Computational Mechanics for Young Scientists from Academia and Industry, 10 - 13 September, 2023.
16. D. Bianchi, L. Zoboli, C. Falcinelli, and **A. Gizzi**. *Integration of numerical homogenization and finite element analysis for production optimization of 3D printed flexible insoles*. 10th GACM Colloquium on Computational Mechanics for Young Scientists from Academia and Industry, 10 - 13 September, 2023.
17. A. Crispino, A. Loppini, I. Uzelac, H. Chionuma, S. Filippi, F.H. Fenton, and **A. Gizzi**. *A cross-species thermo-electric characterization of alternans development on synchronous voltage-calcium fluorescence signals under pacing-down restitution protocols*. XLIII Dynamics Days Europe, 3 - 8 September, 2023.

18. P. Lenarda, D. Preve, D. Bianchi, and **A. Gizzi**. *Phase field modeling and FEM simulation of bone fracture occurring in human vertebra after screws fixation procedure*. Joint Conference of the AIMETA Groups GIMC, GMA and GBMA, 12 - 14 July, 2023.
19. D. Bianchi, L. Zoboli, C. Falcinelli, and **A. Gizzi**. *Optimizing structure of 3D printed flexible Insoles through homogenization and finite element analysis*. Joint Conference of the AIMETA Groups GIMC, GMA and GBMA, 12 - 14 July, 2023.
20. L. Zoboli, D. Bianchi, G. Vairo, M. Marino, and **A. Gizzi**. *Mechanical modelling of polymers for edible tissue bioprinting applications*. Joint Conference of the AIMETA Groups GIMC, GMA and GBMA, 12 - 14 July, 2023.
21. A. Pandolfi, M.L. De Bellis, **A. Gizzi**, and M. Vasta. *Modelling the degeneration of the collagen architecture in a microstructural model of the human cornea*. 28th European Society of Biomechanics, 9 - 12 July, 2023.

**2022:**

22. **A. Gizzi**, L. Molinari, and L. Gerardo-Giorda. *Multi-field and multi-scale thermo-hyperelastic constitutive modeling of cardiac radiofrequency catheter ablation*. Workshop of the IRP Coss&Vita, 24 - 27 October, 2022.
23. **A. Gizzi**, M. Vasta, M.L. De Bellis, and A. Pandolfi. *A micro-chemo-mechanics modeling approach of collagen degeneration in the human cornea*. Workshop of the IRP Coss&Vita, 24 - 27 October, 2022.
24. A. Crispino, A. Loppini, I. Uzelac, F.H. Fenton, **A. Gizzi\***, and S. Filippi. *Methodological analysis of dual voltage-calcium whole-heart optical signals during restitution pacing under different thermal states*. ESGCO Conference, 9 - 12 October, 2022.
25. M. Horning, A. Loppini, J. Erhardt, F.H. Fenton, S. Filippi, and **A. Gizzi**. *Optical ultrastructure of cardiac tissue helps to reproduce discordant alternans by in silico data assimilation*. ESGCO Conference, 9 - 12 October, 2022.
26. **A. Gizzi**, M.L. De Bellis, M. Vasta, and A. Pandolfi. *A Lennard-Jones potential modeling approach to reaction-diffusion induced degeneration in the collagen microstructure of the human cornea*. XXV AIMETA Congress, 4 - 9 September 2022.
27. D. Bianchi, C. Falcinelli, L. Molinari, A. di Martino, and **A. Gizzi**. *Fracture risk assessment in instrumented metastatic vertebra*. XXV AIMETA Congress, 4 - 9 September 2022.
28. M. Vasta, M.L. De Bellis, **A. Gizzi**, and A. Pandolfi. *Statistical formulation of reinforcing collagen structure in keratoconic human cornea*. XXV AIMETA Congress, 4 - 9 September 2022.
29. **A. Gizzi**, A. Pandolfi, and M. Vasta. *Electro-active soft materials with distributed fibers*. EUROMECH Colloquium on Mechanics of Soft Active Polymers, 24 - 25 August 2022.
30. **A. Gizzi**, C.J. Cyron, C. Falcinelli, and M. Vasta. *Growth and remodeling in living soft tissues: A statistics-based approach*. 15th World Congress of Computational Mechanics (WCCM2022), 31 July - 5 August 2022.
31. **A. Gizzi**, C.J. Cyron, C. Falcinelli, and M. Vasta. *A statistics-based approach of growth and remodeling in soft biological tissues*. 11th European Solid Mechanics Conference (ESMC2022), 4 - 8 July 2022.
32. C. Falcinelli, D. Bianchi, L. Molinari, A. Di Martino, and **A. Gizzi**. *Fracture analysis of instrumented metastatic vertebra*. 11th European Solid Mechanics Conference (ESMC2022), 4 - 8 July 2022.
33. R. Aydin, S. Brandstätter, S. Fuchs, A. Gerbauer, **A. Gizzi**, S. Elser, M. Kolb, M. Notohamiprodjo, R. Marcus, K. Nikolaou, C. Cyron. *Simulating gastric electromechanics on patient-specific geometries*. USNC/TAM Austin, Texas, June 19 - 24, 2022.
34. **A. Gizzi**, L. Molinari, and L. Gerardo-Giorda. *A thermodynamics-based thermoelastic constitutive model of cardiac radiofrequency ablation*. 8th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS2022), 5 - 9 June 2022.
35. M. Vasta, **A. Gizzi**, M.L. De Bellis, and A. Pandolfi. *Stochastic modeling of structural collagen in human cornea lamellae*. 18th European Mechanics of Materials Conference (EMMC18), 4 - 6 April 2022.
36. P. Lenarda, **A. Gizzi**, and M. Paggi. *Meso-scale computational modelling of nonlinear couplings within excitable deformable cells*. 18th European Mechanics of Materials Conference (EMMC18), 4 - 6 April 2022.
37. L. Molinari, L. Gerardo-Giorda, and **A. Gizzi**. *A generalized thermo-hyperelastic constitutive model of cardiac radiofrequency ablation*. 18th European Mechanics of Materials Conference (EMMC18), 4 - 6 April 2022.

38. A. Loppini, J. Erhardt, F.H. Fenton, S. Filippi, M. Hörning, and **A. Gizzi**. *Realistic mathematical modeling of cardiac dynamics based on tissue ultra-structure*. Dynamics Days 2022, Georgia Institute of Technology, USA, 7 - 8 January, 2022.

**2021:**

39. A. Loppini, **A. Gizzi**, C. Cherubini, F.H. Fenton, and S. Filippi. *Spatiotemporal correlation of cardiac tissue and its variation in response to temperature*. Annual Meeting of DPG and DPG-Tagung (DPG Meeting) of the Condensed Matter Section (SKM), 27 September - 1 October 2021.
40. A. Pandolfi, M.L. De Bellis, **A. Gizzi** and M. Vasta. *On the collagen structure organization in the human cornea: How to explain ectasia*. International Workshop on "The Evolving Nonlinear Continuum Panorama", September 20-24, 2021 Castro Urdiales (ES).
41. **A. Gizzi**, M.L. De Bellis, M. Vasta, and A. Pandolfi. *Patient-specific biomechanical modeling of the human cornea: microstructural collagen degeneration*. 26th ESB Congress, July 11-14, 2021, Milan (IT).
42. A. Barone, M.G. Carlino, **A. Gizzi**, S. Perotto, and A. Veneziani. *Efficient estimation of cardiac conductivities: A proper generalized decomposition approach*. 26th ESB Congress, July 11-14, 2021, Milan (IT).
43. C. Falcinelli, L. Molinari, A. Di Martino, and **A. Gizzi**. *Computational fracture analysis of screw-bone interaction in a patient-specific vertebra model*. 26th ESB Congress, July 11-14, 2021, Milan (IT).
44. L.M. Treml, **A. Gizzi**, and E. Bartocci. *Cardiac Hybrid Cellular Automata simulation for 2D cardiac dynamics*. 26th ESB Congress, July 11-14, 2021, Milan (IT).
45. C. Falcinelli, L. Molinari, A. Di Martino, and **A. Gizzi**. *Computational fracture analysis of screw-bone interaction in a patient-specific vertebra model*. 26th ESB Congress, July 11-14, 2021, Milan (IT).
46. M.G. Carlino, A. Barone, **A. Gizzi**, S. Perotto, and A. Veneziani. *Proper Generalized Decomposition Method for an Efficient Estimation of Cardiac Conductivities*. YIC2021, VI ECCOMAS Young Investigators Conference, July 7, 2021, Valencia (E).
47. **A. Gizzi**, M.L. De Bellis, A. Pandolfi, and M. Vasta. *A microstructural degeneration model of the human cornea*. 5th SoftMech - Soft Tissue Modeling, 1st-3rd June, 2021, Glasgow (UK).
48. **A. Gizzi**, C. Falcinelli, C.J. Cyron, and M. Vasta. *A statistical framework of growth and remodeling in fiber-reinforced tissues*. 5th SoftMech - Soft Tissue Modeling, 1st-3rd June, 2021, Glasgow (UK).
49. **A. Gizzi**. *Thermo-electric visco-elastic modeling of the heart with nonlinear diffusion*. 5th SoftMech - Soft Tissue Modeling, 1st-3rd June, 2021, Glasgow (UK).
50. A. Loppini, A. Barone, **A. Gizzi**, C. Cherubini, F.H. Fenton, and S. Filippi. *Thermo-electrical coupling in cardiac dynamics*. BPS.

**2020:**

51. **A. Gizzi**, A. Loppini, C. Cherubini, R. Ruiz-Baier, and S. Filippi. *Orthotropic electro-visco-elastic computational modelling of the heart*. Modelling the Cardiac Function. 31st Aug - 2nd Sept, 2020, Milan (IT).
52. A. Loppini, **A. Gizzi**, C. Cherubini, F.H. Fenton, and S. Filippi. *Thermal effects and correlation analysis on cardiac tissue*. Modelling the Cardiac Function. 31st Aug - 2nd Sept, 2020, Milan (IT).
53. A. Barone, **A. Gizzi**, F.H. Fenton, S. Filippi, and A. Veneziani. *Experimental validation of a variational data assimilation method for cardiac conductivity estimation* Modelling the Cardiac Function. 31st Aug - 2nd Sept, 2020, Milan (IT).

**2019:**

54. **A. Gizzi**, R. Ruiz-Baier, A. Loppini, C. Cherubini, and S. Filippi, *Electromechanics of active soft tissues: Competing mechanisms of stress and stretch contributions to electrical diffusivity*. Congress of the Italian Association for Theoretical and Applied Mechanics (AIMETA), Rome, September 15-19, 2019 (IT).
55. M. Vasta, **A. Gizzi**, and A. Pandolfi *A microstructural model of the human cornea: Cross-link interaction between collagen fibrils*. AIMETA Congress, Rome, September 15-19, 2019 (IT).
56. C. Falcinelli, **A. Gizzi**, A. Di Martino, and G. Vairo. *A patient-specific mechanical modeling of metastatic femurs*. AIMETA Congress, Rome, September 15-19, 2019 (IT).

57. A. Barone, **A. Gizzi**, F.H. Fenton, and A. Veneziani. *Cardiac conductivity estimation by a variational data assimilation procedure: Analysis and validation*. WAVES2019, 14th International Conference on Mathematical and Numerical Aspects of Wave Propagation, Vienna, August 25-30, 2019 (AT).
58. **A. Gizzi**, *Collagen architecture of the human cornea: A micromechanical perspective of fiber interlacing*. Congress of the European Society of Biomechanics (ESB2019), Vienna, July 7-10, 2019 (AT).
59. S. Brandstaeter, S.L. Fuchs, **A. Gizzi**, R.C. Aydin, and C.J. Cyron. *Active-strain electromechanics of gastric tissue*. ESB2019, Vienna, July 7-10, 2019 (AT).
60. C. Falcinelli, **A. Gizzi**, A. Di Martino, G. Vairo. *FE modeling of poroelastic metastatic femurs: influence of lytic lesions on strength features*. ESB2019, Vienna, July 7-10, 2019 (AT).
61. E. Mondaldo, D. Bianchi, M. Marino, **A. Gizzi**, G. Vairo. *Multiscale and multiphysics modeling of arterial tissues: Coupling WSS alterations and constitutive remodeling*. ESB2019, Vienna, July 7-10, 2019 (AT).
62. C. Falcinelli, **A. Gizzi**, A. Di Martino, G. Vairo. *Strength assessment of metastatic femurs via a refined constitutive approach*. Sino-Italian Workshop on Biomechanics, Rome, July 1-3, 2019.
63. C. Cherubini, R. Ruiz-Baier, **A. Gizzi**, A. Loppini, S. Filippi. *Thermo-electro-mechanical mathematical modeling of cardiac tissue*. Workshop Maths from the Body, Venice, June 6-8, 2019.
64. C. Falcinelli, **A. Gizzi**, A. Di Martino, G. Vairo. *Failure process in metastatic femurs by accounting for bone-metastasis interaction: A patient-specific finite element study*. Coupled2019, VIII International Conference on Coupled Problems in Science and Engineering, Barcelona (ES), June 3-5, 2019.
65. A. Barone, A. Veneziani, F.H. Fenton, and **A. Gizzi**. *Cardiac conductivity estimation by a variational data assimilation procedure: Analysis and validation*. The Eleventh IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory. Univ Georgia, April 17-19, 2019 (USA).
66. **A. Gizzi**, R. Ruiz-Baier, A. Loppini, C. Cherubini, F.H. Fenton, and S. Filippi. *Multiphysics constitutive modelling of active deformable biological media*. Workshop RCM 2019 Graduate School "Multiscale Methods for Interface Couplings", Leibniz University of Hannover (DE), March 20-22, 2019.
67. C. Falcinelli, L. Molinari, **A. Gizzi**, A. Di Martino, V. Denaro. *Effect of screw insertion trajectory on the mechanical response of L4 vertebrae: a computational finite element study*. Spine and Spinal Disorders Conference, University of Rome Campus Bio-Medico, 22-23 April, 2019.
68. S. Brandstaeter, S.L. Fuchs, **A. Gizzi**, R.C. Aydin, and C.J. Cyron. *Active-strain electromechanics for the computational modelling of gastric peristalsis*. GAMM February 18-22, 2019, Vienna (AT).
69. M. Vasta, **A. Gizzi**, and A. Pandolfi. *A microstructural model of crosslink interaction between collagen fibrils in the human cornea*. GAMM – 90th Annual Meeting of the International Association of Applied Mathematics and Mechanics, February 18-22, 2019, Vienna (AT).

**2018:**

70. M. Vasta, **A. Gizzi**, and A. Pandolfi. *Spectral decomposition for the constitutive modeling of distributed fiber-reinforced tissues*. GIMC-GMA Conference, 13-14 September, 2018, Ferrara (IT).
71. A. Pandolfi, **A. Gizzi**, and M. Vasta. *Theoretical and computational modeling of visco-electro-elastic active tissues with distributed fibers*. The 11th International Conference on the Mechanics of Time Dependent Materials, MTDM, 4-7 September, 2018, Milano (IT).
72. C. Falcinelli, **A. Gizzi**, and G. Vairo. *Characterization of femoral nonlinear behavior through patient-specific CT-based FE modeling*. 9th International Conference on Computational Methods ICCM, 6-10 August, 2018, Rome (IT).
73. C. Falcinelli, **A. Gizzi**, G. Vairo, A. Di Martino. *Patient-specific nonlinear computational modeling of metastatic femurs: Influence of the bone-metastasis interaction on femur strength*. 13th World Congress on Computational Mechanics, WCCM XIII, July 22-27, 2018, New York (USA).
74. A. Montanino, **A. Gizzi**, M. Vasta, M. Angelillo, and A. Pandolfi *Effect of the collagen fibrils architecture on the corneal mechanical response*. 6th National Congress of Bioengineering, GNB, June 25-27, 2018, Milan (IT).

75. C. Falcinelli, **A. Gizzi**, A. Di Martino, and G. Vairo. *Femur mechanics via a CT-based computational model accounting for bone non-linear constitutive response*. ESMC2018, Bologna (IT), July 2-6, 2018.
76. D. Bianchi, **A. Gizzi**, M. Marino, and G. Vairo. *A novel flow-tissue multiscale strategy for the analyses of vascular physiopathology*. ESMC2018, Bologna (IT), July 2-6, 2018.
77. M. Vasta, **A. Gizzi**, and A. Pandolfi. *Theoretical and computational modeling of hyperelastic fiber-reinforced soft materials via a multivariate statistical approach*. ESMC2018, Bologna (IT), July 2-6, 2018.
78. **A. Gizzi**, M. Vasta, and A. Pandolfi. *Biomechanics of human cornea modeled via a generalized statistical approach*. EMMC16, Nantes (F), March 26-28, 2018.

**2017:**

79. P. Lenarda, **A. Gizzi**, and M. Paggi. *Multi-field contact modeling of excitable biological cells: A computational framework*. ICBT17, Hannover (DE), November 6-8, 2017.
80. D. Bianchi, **A. Gizzi**, M. Marino, and G. Vairo. *A novel flow-tissue multiscale formulation for the computational modelling of aneurysms*. ICBT17, Hannover (DE), November 6-8, 2017.
81. C. Falcinelli, **A. Gizzi**, and G. Vairo. *Risk assessment of femur failure: A finite element computational model accounting for the influence of biphasic metastatic lesion*. ICBT17, Hannover (DE), November 6-8, 2017.
82. P. Lenarda, **A. Gizzi**, and M. Paggi. *A computational framework for contact, adhesion and mechano-transduction between excitable deformable cells*. ESB-ITA 2017, Rome (IT), 2017.
83. M. Vasta, **A. Gizzi**, and A. Pandolfi. *A stochastic model of stroma: Interweaving variability and compressed fibril exclusion*. ESB-ITA 2017, Rome (IT), September 28-29, 2017.
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