Anna Corti

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Born: December, 5th 1994

Research Profile

Currently, I am Untenured Researcher (Junior) at the Dept. of Electronics, Information and Bioengineering of Politecnico di Milano (Italy). I obtained the PhD in Bioengineering at Politecnico di Milano in July 2022 with a thesis entitled "Multiscale modeling of vascular adaptation". Before my current position, I worked as Post-Doctoral Researcher at Dept. of Chemistry, Materials and Chemical Engineering "G. Natta" of Politecnico di Milano until April 2023 and at Dept. of Electronics, Information and Bioengineering of Politecnico di Milano from May 2023 to November 2023.

My current research mainly focuses on image analysis, radiomics and artificial intelligence methods in cancer and cardiovascular field. I have been co-investigator in the project AI-CORPS, funded by Fondazione Regionale per la Ricerca Biomedica, that aims to develop a multicriteria decision model for non-invasive assessment of coronary vulnerable atherosclerotic patients, and I am currently co-investigator in the project AdvaNced Technologies for Human-centrEd Medicine - ANTHEM funded by the National Plan for NRRP Complementary Investments, with the aim of developing a computational predictive model of in-stent restenosis in coronary arteries.

During my doctoral studies, my research focused on the development of multiscale computational frameworks simulating vascular cell dynamics and arterial wall remodeling in response to mechanical and biological cues, through the integration of continuum and discrete modeling approaches. The developed frameworks were used to investigate vascular adaptation processes under various cardiovascular conditions such as atherosclerosis, in-stent restenosis, and restenosis after percutaneous transluminal angioplasty in both idealized and patient-specific scenarios. This research work was part of the project TIME funded by Fondazione CARIPLO.

I have authored 16 scientific papers on international peer-reviewed journals, 2 book chapters, 6 conference proceedings and 28 contributions to national and international conferences (conference abstracts). I presented my research in national and international conferences with 2 plenary talks, 5 invited talks, 17 podium presentations and 3 poster presentations. I am also Guest Editor of Journal of Biomechanics and Review Editor of Frontiers in Medical Technology, section Cardiovascular MedTech. My research was awarded with 11 prestigious national and international awards. Among these, special mentions go to the ESB Best Doctoral Thesis Award in Biomechanics (2023), the VPHi Best Thesis Award in In Silico Medicine (2023) and the GBMA-AIMETA Best Doctoral Thesis in Theoretical and Applied Biomechanics (2023).

Research and Professional Experience

Nov 2023 – Now **Untenured Researcher (Junior)**, *Biosignals, Bioimaging, Bioinformatics Laboratory, Dept. of Electronics, Information and Bioengineering*, Politecnico di Milano, Milan, Italy

Research activity: radiomics and machine learning applications in oncology and cardiovascular fields; Multiscale modeling of cardiovascular biomechanics

May 2023 – Nov 2023 **Postdoctoral researcher**, *Biosignals, Bioimaging, Bioinformatics Laboratory, Dept. of Electronics, Information and Bioengineering*, Politecnico di Milano, Milan, Italy
Research activity: radiomics and machine learning applications in oncology and cardiovascular fields; Multiscale modeling of cardiovascular biomechanics

July 2022 – May 2023 **Postdoctoral researcher**, *Computational Biomechanics Laboratory, Laboratory of Biological Structure Mechanics, Dept. of Chemistry, Materials and Chemical Engineering "G. Natta"*, Politecnico di Milano, Milan, Italy
Research activity: multiscale modeling of atherosclerosis and restenosis following endovascular intervention in coronary and peripheral arteries.

Apr – May 2022 **Visiting PhD student**, *Division of Biomedical Engineering, James Watt School of Engineering*, University of Glasgow, Glasgow, Scotland
Research activity: Computational multiscale modeling of in-stent restenosis in coronary arteries following drug eluting stent implantation. Supervisor: Prof. Sean McGinty

May 2019 – July 2022 **Ph.D student in Bioengineering**, *Laboratory of Biological Structure Mechanics , Dept. of Chemistry, Materials and Chemical Engineering "G. Natta"*, Politecnico di Milano, Milan, Italy
Ph.D. thesis: "Multiscale modeling of vascular adaptation"
Ph.D. supervisors: Professors José F. Rodriguez Matas, Francesco Migliavacca and Claudio Chiastra

February – May 2019 **Research Fellow**, *Laboratory of Biological Structure Mechanics*, Politecnico di Milano, Milan, Italy
Research activity: Finite element modeling of atherosclerotic arteries.

April – October 2018 **Research Fellow**, *Center of Computational Surgery*, Department of Surgery, Houston Methodist Hospital, Research Institute. Houston, Texas, USA
Research activity: Development of a computational model of atherosclerosis, coupling computational fluid dynamics simulations with an agent-based model of cellular dynamics. Supervisor: Prof. Marc Garbey

Education

May 2019 – July 2022 **PhD**, *Bioengineering*, Politecnico di Milano, Milan, Italy.
Thesis: Multiscale modeling of vascular adaptation
Defense: July 11th, 2022 - PhD cum Laude
Research group: TIME project, funded by Fondazione Cariplo and coordinated by Prof. Claudio Chiastra. Collaborations: Politecnico di Torino, University of Florida, Malcom Randall VA Medical Center and Houston Methodist Hospital. PhD Supervisors: Prof. Jose Felix Rodriguez Matas, Francesco Migliavacca and Claudio Chiastra.

2020 **Qualification to practice as industrial engineer, section A**, *Politecnico di Milano and Italian Order of Engineers*, Session II, **Mark**: 91/100

2016 – 2018 **Master of science**, *Biomedical Engineering*, Politecnico di Milano, Milan, Italy. **Mark**: 110L/110
Track: Biomechanics and Biomaterials. Thesis: "An agent-based model of atherosclerotic plaque development: toward a full coupling with a computational fluid dynamics model."

2013 – 2016 **Bachelor of science**, *Biomedical Engineering*, Politecnico di Milano, Milan, Italy. **Mark**: 110/110
Thesis: "In vitro simulation of hydraulic and thermodynamic phenomena occurring during the cooling of cerebral ventricles in rat"

International Experience

April - May 2022 **PhD visiting student**, University of Glasgow. Glasgow, Scotland (1 month)
Collaboration with Dr. Sean McGinty on multiscale modeling of in-stent restenosis after drug eluting stent implantation

April - October 2018 **Research fellow**, Houston Methodist Hospital, Research Institute. Houston, Texas, USA (6 months)
Collaboration with Dr. Marc Garbey and Stefano Casarin on multiscale modeling of atherosclerosis

Awards

2023 **Best Doctoral Thesis in Biomechanics**, ESB
PhD thesis: "Multiscale modelling of vascular adaptation", Corti A.
Funding agency: The European Society of Biomechanics (ESB)
Grant amount: 2000 euros
https://esbiomech.org/esb-awards/best-doctoral-thesis-in-biomechanics/

2023 **VPHi Best Thesis Award in In Silico Medicine**, VPHi
PhD thesis: "Multiscale modelling of vascular adaptation", Corti A.
Funding agency: Virtual Physiological Human Institute (VPHi)
Grant amount: 1000 euros
https://www.vph-institute.org/news/anna-corti-is-the-winner-of-the-vphi-best-thesis-award-2023.html

2023 **Best Doctoral Thesis in Theoretical and Applied Biomechanics**, GBMA-AIMETA
PhD thesis: "Multiscale modelling of vascular adaptation", Corti A.
Funding agency: Biomechanics group of the Italian Association of Theoretical and Applied Mechanics

2022 **Best poster award**, ESB-ITA
Poster presentation: "Self-expandable transcatheter aortic valve mechanical performance: Impact of Nickel-Titanium super-elastic material properties" Carbonaro D., Zambon S., Corti A., Gallo D., Morbiducci U., Audenino A., Chiastra C., XI Annual Meeting of the Italian Chapter of the European Society of Biomechanics (ESB-ITA 2022), Massa, Italy, October 6^{th} – 7^{th}, 2022.
Funding agency: the Italian Chapter of the European Society of Biomechanics (ESB-ITA)
https://www.esb-ita.it/main/info/awards/

2022 **Student Paper Competition – PhD level (finalist)**, ASME-BED/SB3C
Oral presentation: "Multiscale modeling of restenosis after percutaneous transluminal angioplasty: towards a patient-specific analysis" Corti A., Colombo M., Celikbudak C., Büchler P., Migliavacca F., Berceli S., Casarin S., Rodriguez Matas J.F., Chiastra C., Summer Biomechanics, Bioengineering and Biotransport Conference (SB3C), Eastern Shore (MD, USA), June 20^{th} – 23^{th}, 2022
Funding agency: The American Society of Mechanical Engineers – Bioengineering Division (ASME-BED)
Grant amount: 400 US dollars

2022 **Travel Award**, ESB
Oral presentation: "Predicting 1-year in-stent restenosis in femoral arteries through multiscale computational modeling", Corti A., Colombo M., Rozowsky J.M., Casarin S., He Y., Migliavacca F., Rodriguez Matas J.F., Berceli S.A., Chiastra C., *27^{th} Congress of the European Society of Biomechanics (ESB 2022), Porto, Portugal*, June 26^{th} – 29^{th}, 2022.
Funding agency: The European Society of Biomechanics (ESB)
Grant amount: 400 euros
https://esbiomech.org/esb-awards/travel-awards/

2021 **Student Award**, ESB
Oral presentation: "A Finite element - Agent-Based coupled model of restenosis: linking tissue damage to cellular dynamics", Corti A., Colombo M., Colombo F., Berceli S.A., Migliavacca F., Rodriguez Matas J.F., Chiastra C., *26th Congress of the European Society of Biomechanics (ESB 2021), online*, July 11 – 14, 2021.
Funding agency: The European Society of Biomechanics (ESB)
Grant amount: 1000 euros
https://esbiomech.org/esb-awards/esb-student-awards/

2020 **Poster Award**, CAE
Poster presentation: "Patient-specific multiscale modeling of in-stent restenosis: integrating hemodynamics, gene expression and cellular dynamics", Corti A., Colombo M., Casarin S., Rozowsky J.M., He Y., Migliavacca F., Rodriguez Matas J.F., Berceli S.A., Chiastra C., *36th International CAE conference and exhibition*, November 30 – December 4, 2020.
Funding agency: EnginSoft
Grant amount: 1000 euros
http://meeting2020.enginsoft.it/posteraward-finalists.html

2020 **Best VPHi Student Award**, VPH
Oral presentation: "Towards a patient-specific multiscale framework of in-stent restenosis: integration of hemodynamics and gene expression with an agent-based model of cellular dynamics", Corti A., Casarin S., Rozowsky J.M., Colombo M., He Y., Migliavacca F., Rodriguez Matas J.F., Berceli S.A., Chiastra C., *Virtual Physiological Human (VPH 2020), Paris, France*, August 24 – 28, 2020.
Funding agency: Virtual Physiological Human Institute (VPHi)
Grant amount: 500 euros
https://www.vph-institute.org/news/anna-corti-politecnico-di-milano-wins-the-best-vphi-student-award.html

2020 **Travel Award**, Medtronic
Young researcher participation award for the *Virtual Physiological Human Conference (VPH 2020), Paris, France*, 2020.
https://vph2020.sciencesconf.org/resource/page/id/7

2019 **Master Thesis Award**, ESB-ITA
Best master thesis in biomechanics: "An agent-based model of atherosclerotic plaque development: toward a full coupling with a computational fluid dynamics model" *IX Annual Meeting of the Italian Chapter of the European Society of Biomechanics (ESB-ITA 2019), Bologna, Italy*, September 30 – October 1, 2019.
Funding agency: the Italian Chapter of the European Society of Biomechanics (ESB-ITA)
http://www.esb-ita.it/main/info/awards/

Teaching activities

Bioelettromagnetismo e Strumentazione Biomedica - Bioelettromagnetism and biomedical instrumentation, *5 ECTS*, Biomedical Engineering, School of Industrial and Information Engineering (Ing Ind-Inf 1 liv. - ord. 270), Politecnico di Milano, Milan, Italy
Role: contract teaching assistant - excercise lectures
A.Y. 2023-2024 (17 hours)

Fisica Tecnica - Thermodynamics and heat transfer, *5 ECTS*, Biomedical Engineering, School of Industrial and Information Engineering (Ing Ind-Inf 1 liv. - ord. 270), Politecnico di Milano, Milan, Italy
Role: contract teaching assistant - excercise lectures
A.Y. 2019-2020 (20 hours) / 2020-2021 (24 hours) / 2021-2022 (20 hours) / 2022-2023 (18 hours)

Meccanica dei Continui e delle Strutture - Mechanics of continua and structures, *8 ECTS*, Biomedical Engineering, School of Industrial and Information Engineering (Ing Ind-Inf 1 liv. - ord. 270), Politecnico di Milano, Milan, Italy
Role: contract teaching assistant - excercise lectures
A.Y. 2020-2021 (21 hours) / 2022-2023 (11 hours)

Student supervising activities

Co-supervisor of Ph.D. theses in biomedical engineering

- "Predicting carotid plaque vulnerability", by A. Acri, (Università degli Studi di Messina), in progress

- "Radiomics of Lung Cancer", by J. Liu, (Politecnico di Milano), XXXVIII Cycle, in progress
- "Multiscale modeling of atherosclerosis in coronary arteries", by J. L. Warren, (University of Dallas), in progress

Co-supervisor of Master's theses in biomedical engineering

- "Morphometric analysis of mice coronary tree", M. Bovetti (Politecnico di Torino), in collaboration with Houston Methodist Research Institute, in progress (expected graduation July 2024)
- "Hemodynamics of mice coronary tree", E. Sangiorgio (Politecnico di Torino), in collaboration with Houston Methodist Research Institute, in progress (expected graduation July 2024)
- "Multiscale modeling of atherosclerosis in porcine coronary arteries", L. Barbiero (Politecnico di Milano), in collaboration with Politecnico di Torino, Turin, in progress (expected graduation April 2024)
- "Multiscale modeling of in-stent restenosis in coronary arteries following drug-eluting stent implantation", L. Dal Ferro (Politecnico di Milano), in collaboration with University of Glasgow, Glasgow, in progress (expected graduation April 2024)
- "A radiomics-based machine learning approach for the prediction of coronary plaques' vulnerability", G. Di Luzio, S. Di Santi (Politecnico di Milano) 2022-2023
- "A patient-specific multiscale agent-based modeling framework of restenosis after balloon angioplasty in a superficial femoral artery", M. Marradi (Politecnico di Milano), in collaboration with University of Bern (Bern, Switzerland), 2021-2022
- "Combined CT and MRI radiomics for survival analysis in patients with Diffuse Intrinsic Pontine Glioma", C. Veneruso (Politecnico di Milano), 2021-2022
- "Computational modeling of cardiac allograft vasculopathy heart transplant", E. Serafini (Politecnico di Torino), in collaboration with Houston Methodist Hospital (Houston, TX, USA) (Politecnico di Torino), 2021-2022 - **winner of the Master's thesis award "Silvio Cavalcanti - Università di Bologna", from the Gruppo Nazionale di Bioingegneria (GNB)**
- "A multiscale computational framework of restenosis after femoral artery angioplasty: effects of mechanical damage and hemodynamics on cellular dynamics", M. Cardinali and C. Isola (Politecnico di Milano), in collaboration with University of Bern (Bern, Switzerland), 2020-2021
- "Multiscale computational modeling of atherosclerosis in peripheral arteries", T. Armillei and A. Budini (Politecnico di Milano), 2019-2020
- "A finite element - agent based coupled model of restenosis in femoral arteries treated with angioplasty", F. Colombo (Politecnico di Milano), 2019-2020
- "Computational assessment of the impact of stent design and overlapping on human superficial femoral artery hemodynamics", G. Antognoli e A. Colombo (Politecnico di Milano), 2019-2020

Co-supervisor of Bachelor's theses in biomedical engineering

- "Predicting carotid vulnerable plaques through radiomics", A. Lattarini, C. Falappi (Politecnico di Milano) in progress (expected graduation March 2024)
- "Development of a radiomic-based classification model to predict cardiac events from epicardial fat", S. Usai, E. Trasforini, L. Ricco, M. Rossi, (Politecnico di Milano) 2022-2023
- "Development of a radiomic-based signature to predict overall survival from epicardial fat", F. Mulè, G. Morotti, A. Montalbano, P. A. Marotta, (Politecnico di Milano) 2022-2023

Research projects and collaborations

Funded projects

- MUR (Project nr PNC0000003): "ANTHEM: AdvaNced Technologies for Human-centrEd Medicine"
  Years: 2022 – 2026
  Personal role: collaborator
  Grant amount (Politecnico di Milano): 5.857.409 euros

- FRRB Foundation (Project ID 3432721): "AI-CORPS: Trustworthy, integrated Artificial Intelligence tools for predicting high-risk CORonary PlaqueS"
  Years: 2023 – 2026
  Personal role: collaborator
  Grant amount: 1.249.714,4 euros
- CARIPLO Foundation (Project No. 2017.0792): "TIME: From TIssue to Molecular mechanisms of restenosis after peripheral Endovascular interventions"
  Years: May 2018 – Apr 2021
  Personal role: collaborator
  Grant amount: 244.800 euros

Collaborations

- Loris de Cecco, MD, PhD - Istituto Nazionale dei Tumori, Milano, Italy
  Topic: radiogenomic of Head and Neck cancer
- Santi Trimarchi, MD, PhD and Maurizio Domanin, MD, PhD - Policlinico di Milano, Milano, Italy
  Topic: radiomics of carotid plaques
- Heather Hayenga, PhD - University of Texas at Dallas, Texas, USA
  Topic: agent-based modeling of atherosclerosis
- Philippe Buchler, PhD - University of Bern, Bern, Switzerland
  Topic: finite element analysis of percutaneous transluminal angioplasty in patient-specific femoral arteries
- Sean Mcginty, PhD - University of Glasgow, Glasgow, Scotland
  Topic: agent-based modeling of the effect of drug transport in restenosis
- Scott A. Berceli, MD and Yong He, PhD - Organization: University of Florida, Gainesville, Florida, USA
  Topic: multiscale modeling of in-stent restenosis in patient-specific femoral arteries
- Stefano Casarin, PhD - Houston Methodist Hospital, Houston, Texas, USA
  Topic: Computational modeling of cardiac allograft vasculopathy heart transplant
- Umberto Morbiducci, PhD and Giuseppe De Nisco, PhD - Organization: Politecnico di Torino, Turin, Italy
  Topic: Computational modeling of low-density-lipoprotein transport in atherosclerosis
- Gabriella Mosca, PhD - Technical University of Munich, Munich, Germany
  Topic: Continuum modeling of arterial wall remodeling

Membership of scientific societies

Virtual Physiological Human Society, 2020 – now

European Society of Biomechanics , 2020 – now

- Member of the Student Committee, https://esbiomech.org/student-section/student-committee/

Italian chapter of the European Society of Biomechanics, 2020 – now

Positions of trust

Role in Scientific Congresses

- 9th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS2024), June 3rd-7th, 2024, Lisbon, Portugal
  Role: Organizer of the mini-symposium: "Multiscale Modeling of Vascular Growth and Remodeling"
- XIII Annual Meeting Italian Chapter of the European Society of Biomechanics (ESB-ITA 2024), October 3rd-4th, Pescara, Italy
  Role: Member of the Scientific Committee http://www.esb-ita.it/esb-ita24-committees/

- Summer Biomechanics, Bioengineering and Biotransport Conference (SB3C2024), June 11th-14th, 2024, Lake Geneva, Wisconsis, USA
  Role: Reviewer of the abstracts for PhD competition
- 28th Congress of the European Society of Biomechanics, July 9th – 12th, 2023, Maastricht, Netherlands
  Role: Judge of the Best Poster award
- Summer Biomechanics, Bioengineering and Biotransport Conference (SB3C2023), June 4th-8th, 2023, Vail, Colorado, USA
  Role: Reviewer of the abstracts
- Summer Biomechanics, Bioengineering and Biotransport Conference (SB3C2022), June 20th-23rd, 2022, Eastern Shore, MD, USA
  Role: Judge of the Best Poster award

Editorial board of international peer-review journals

- Guest Editor of Journal of Biomechanics (2023 – now) - Special Issue: "Multiscale modeling of vascular adaptation processes"
- Review Editor of Frontiers in Medical Technology - Cardiovascular MedTech (2022 – now)

Reviewer of international peer-reviewed journals

- *Annals of Biomedical Engineering, Frontiers in Cardiovascular Medicine, Computer Methods in Biomechanics and Biomedical Engineering, Helyion, Cardiovascular Engineering and Technology, Computer Methods and Programs in Biomedicine, Fluids, International Journal for Numerical Methods in Biomedical Engineering, Journal of Biomechanics, Physical and Engineering Sciences in Medicine, PLOS ONE, Scientific Reports, Advanced Science*

Research Activity

Author ID

- Researcher ORCID: https://orcid.org/0000-0001-9603-7825
- ResearcherID: GYQ-9091-2022
- Scopus author ID: 57209395629

Author details

- Documents: 24
- Articles: 16
- Book chapters: 2
- Conference proceedings: 6
- Citations: 148 (Scopus)
- h-index: 8 (Scopus)

Conferences

- Conference abstracts: 28
- Plenary talks: 2
- Invited presentation: 3
- Invited seminars: 2
- Podium presentations: 17
- Poster presentations: 3

List of Scientific Publications and Conferences

Papers on international peer-reviewed journals (16)

- Liu J, Corti A, Calareso G, Spadarella G, Licitra L, Corino VDA, Mainardi L. "Developing a robust two-step machine learning multiclassification pipeline to predict primary site in head and neck carcinoma from lymph nodes", *Heliyon*, 2024, 10(2): e24377, https://doi.org/10.1016/j.heliyon.2024.e24377
- Corti A., McQueen A, Migliavacca F, Chiastra C, McGinty S. "Investigating the effect of drug release on in-stent restenosis: a hybrid continuum – agent-based modelling approach", *Computer Methods and Programs in Biomedicine*, 2023, 107739, https://doi.org/10.1016/j.cmpb.2023.107739

- Corti A., De Cecco L, Cavalieri S, Lenoci D, Pistore F, Calareso G, Mattavelli D, de Graaf P, Leemans CR, Brakenhoff RH, Ravanelli M, Poli T, Licitra L, Corino V, Mainardi L. "MRI-based radiomic prognostic signature for locally advanced oral cavity squamous cell carcinoma: development, testing and comparison with genomic prognostic signatures", *Biomarker Research*, 2023, 11(1):69 https://doi.org/10.1186/s40364-023-00494-5. Corti A: corresponding author
- Serafini E*, Corti A*, Gallo D, Chiastra C, Li XC, Casarin S., "An agent-based model of cardiac allograft vasculopathy: toward a better understanding of chronic rejection dynamics", *Frontiers in Bioengineering and Biotechnology*, 2023, 12;11:1190409. https://doi.org/10.3389/fbioe.2023.1190409.
- Muscato F., Corti A., Gambaro F.M., Chiappetta K., Loppini M., Corino V., "Combining deep learning and machine learning for the automatic identification of hip prosthesis failure: development, validation and explainability analysis", *International Journal of Medical Informatics*, 2023, 176, 105095, https://doi.org/10.1016/j.ijmedinf.2023.105095
- Corti A., Migliavacca F., Berceli S.A., Chiastra C., "Predicting 1-year in-stent restenosis in superficial femoral arteries through multiscale computational modelling", *Journal of the Royal Society Interface*, 2023, 20:20220876, https://doi.org/10.1098/rsif.2022.0876
- Carbonaro D., Zambon S., Corti A., Gallo D., Morbiducci U., Audenino A.L., Chiastra C., "Impact of nickel–titanium super-elastic material properties on the mechanical performance of self-expandable transcatheter aortic valves", *Journal of the Mechanical Behavior of Biomedical Materials*, 2023, 138:105623, https://doi.org/10.1016/j.jmbbm.2022.105623.
- Corti A., Colombo M., Migliavacca F., Berceli S.A., Casarin S., Rodriguez Matas J.F., Chiastra C., "Multiscale agent-based modeling of restenosis after percutaneous transluminal angioplasty: effects of tissue damage and hemodynamics on cellular activity", *Computers in Biology and Medicine*, 2022, 147:105753, https://doi.org/10.1016/j.compbiomed.2022.105753.
- Corti A., Colombo M., Rozowsky J.M., Casarin S., He Y., Carbonaro D., Migliavacca F., Rodriguez Matas J.F., Berceli S.A., Chiastra C., "A predictive multiscale model of in-stent restenosis in femoral arteries: linking hemodynamics and gene expression with an agent-based model of cellular dynamics", *Journal of the Royal Society Interface*, 2022, 19:20210871, https://doi.org/10.1098/rsif.2021.0871.
- Chiastra C., Mazzi V., Lodi Rizzini M., Calò K., Corti A., Acquasanta A., De Nisco G., Belliggiano D., Cerrato E., Gallo D., Morbiducci U., "Coronary artery stenting affects wall shear stress topological skeleton", *Journal of Biomechanical Engineering*, 2022, 144(6): 061002, https://doi.org/10.1115/1.4053503.
- Colombo M., Corti A., Gallo D., Colombo A., Antognoli G., Bernini M., McKenna C., Berceli S.A, Vaughan T., Migliavacca F., Chiastra C., "Superficial Femoral Artery Stenting: Impact of Stent Design and Overlapping on the Local Hemodynamics", *Computers in Biology and Medicine*, 2022, 105248, https://doi.org/10.1016/j.compbiomed.2022.105248.
- Corti A., Colombo M., Migliavacca F., Rodriguez Matas J.F., Casarin S., Chiastra C., "Multiscale computational modeling of vascular adaptation: A systems biology approach using agent-based models", *Frontiers in Bioengineering and Biotechnology*, 2021, 9, 744560, https://doi.org/10.3389/fbioe.2021.744560.
- Colombo M., Corti A., Berceli S.A., Migliavacca F., McGinty S., Chiastra C., "3D modelling of drug-coated balloons for the treatment of calcified superficial femoral arteries", *PLOS ONE*, 2021, 16(10): e0256783, https://doi.org/10.1371/journal.pone.0256783.
- Colombo M., He Y., Corti A., Gallo D., Ninno F., Casarin S., Rozowsky J.M., Migliavacca F., Berceli S.A., Chiastra C., "In-Stent Restenosis Progression in Human Superficial Femoral Arteries: Dynamics of Lumen Remodeling and Impact of Local Hemodynamics", *Annals in Biomedical Engineering*, 2021 https://doi.org/10.1007/s10439-021-02776-1.

- Colombo M., He Y., Corti A., Gallo D., Casarin S., Rozowsky J.M., Migliavacca F., Berceli S.A., Chiastra C., "Baseline local hemodynamics as predictor of lumen remodeling at 1-year follow-up in stented superficial femoral arteries", *Scientific Reports*, 11, 1613, 2021, https://doi.org/10.1038/s41598-020-80681-8.
- Corti A., Chiastra C., Colombo M., Garbey M., Migliavacca F., Casarin S., "A fully coupled computational fluid dynamics – agent-based model of atherosclerotic plaque development: Multiscale modeling framework and parameter sensitivity analysis", *Computers in Biology and Medicine*, 2020 118: 103623. https://doi.org/10.1016/j.compbiomed.2020.103623.

Papers on conference proceedings (6)

- Corti A., Mainardi L., Corino V., "Assessing the performance of MRI-radiomic prognostic signatures in head and neck cancer patients: a comparative analysis", In: Badnjević, A., Gurbeta Pokvić, L. (eds) MEDICON'23 and CMBEBIH'23. MEDICON CMBEBIH 2023 2023. IFMBE Proceedings, vol 94. Springer, Cham. pp. 363–368. https://doi.org/10.1007/978-3-031-49068-2˙37.
- Corti A., Migliavacca F., Chiastra C., "How far can we go to in-silico predict in-stent restenosis?", in: Chakfè N., Heim F., de Borst G.J., Meichelboeck W., Hedin U. (Eds) European Symposium on Vascular Biomaterials (ESVB 2023). Strasburg (France), April 19-22, 2023. GEPROVAS, in press
- Liu J., Corti A., Calareso G., Corino V., Mainardi L., "Distinguishing lymph nodes in head and neck cancer patients using MRI-based radiomics", VIII 8th National Congress of Bioengineering (Patron Editore S.r.l.), ISBN: 9788855580113, GNB 2023, Padova (Italy) June 21-23, 2023
- Corti A., Colombo M., Gallo D., Rodriguez Matas J.F., Migliavacca F., Casarin S., Chiastra C., "Relationship between hemodynamics and in-stent restenosis in femoral arteries", in: Chakfè N., Heim F., de Borst G.J., Meichelboeck W., Hedin U. (Eds) European Symposium on Vascular Biomaterials (ESVB 2021). Strasburg (France), November 4-6, 2021. GEPROVAS.
- Corti A., Casarin S., Chiastra C., Colombo M., Migliavacca F., Garbey M., "A Multiscale Model of Atherosclerotic Plaque Development: Toward a Coupling between an Agent-Based Model and CFD Simulations", *Rodrigues J. et al. (Eds) Computational Science – ICCS 2019. Lecture Notes in Computer Science. Springer*, 2019, 11539, 410-423. Print ISBN: 978-3-030-22746-3. Online ISBN: 978-3-030-22747-0. DOI: 10.1007/978-3-030-22747-0_31.
- Colombo M., Corti A., Luraghi G., Rodriguez Matas J.F., Migliavacca F., Pennati G., Chiastra C., "Femoral artery hemodynamics: state of the art of computational analyses and future trends", in: Chakfè N., Heim F., de Borst G.J., Meichelboeck W. (Eds), 11th European Symposium on Vascular Biomaterials (ESVB 2019), 2019, ISBN: 978-2-9544771-3-8.

Book chapters (2)

- Corti A., Colombo M., De Nisco G., Rodriguez Matas J.F., Migliavacca F., Chiastra C., "Computational investigation of the role of low-density lipoprotein and oxygen transport in atherosclerotic arteries", in: Becker S., Kuznetsov A., Pontrelli G., Zhao D., de Monte F., *Modelling of Mass Transport Processes in Biological Media*, Elsevier, ISBN: 9780323857406, https://doi.org/10.1016/B978-0-323-85740-6.00017-0.
- Colombo M., Corti A., McGinty S., Migliavacca F., Chiastra C., "Fluid dynamics and mass transport in lower limbs vessels: effects on restenosis", in: Becker S., Kuznetsov A., Pontrelli G., Zhao D., de Monte F., *Modelling of Mass Transport Processes in Biological Media*, Elsevier, ISBN: 9780323857406, https://doi.org/10.1016/B978-0-323-85740-6.00009-1.

Conferences

Plenary talks (2)

- Corti A., "Multiscale modeling of vascular adaptation", 28th Congress of the European Society of Biomechanics (ESB 2023), July 9th – 12th, 2023, Maastricht, Netherlands
- Corti A., "Multiscale modeling of vascular adaptation", 7th VPH Summer School, June 5th – 9th, 2023, Barcelona, Spain

Invited presentations at National and International Congresses (3)

- Corti A., "Multiscale modeling of vascular adaptation", XXIII Convegno del Gruppo Italiano di Meccanica Computazionale, X Convegno del Gruppo Meccanica dei Materiali, II Convegno del Gruppo di Biomeccanica, July 12th – 14th, 2023, Reggio Calabria, Italy
- Corti A., "How far can we go to in silico predict in-stent restenosis?", 13th European Symposium on Vascular Biomaterials 2023 (ESVB 2023), April 19th – 22nd, 2023, Strasburg, France
- Corti A., "Relationship between hemodynamics and in-stent restenosis in femoral arteries", 12th European Symposium on Vascular Biomaterials 2021 (ESVB 2021), November 4th – 6th, 2021, Strasburg, France

Invited presentations at Seminars (2)

- Corti A. "Patient-specific multiscale modeling of restenosis in femoral arteries following angioplasty" 2nd Biomechanics of the Endovascular Treatments workshop, May 9th 2023, Pavia, Italy
- Corti A. "Relationship between local hemodynamics and in-stent restenosis in superficial femoral arteries" 1st Biomechanics of the Endovascular Treatments workshop, March 5th 2022, Pavia, Italy

Podium presentations at International Congresses (17)

- Corti A., Marradi M., Rodriguez Matas J.F., Chiastra C., "Multiscale modeling to simulate vascular adaptation processes", XII Annual Meeting of the Italian Chapter of the European Society of Biomechanics (ESB-ITA 2023), September 18th – October 18th, 2023, Torino, Italy
- Corti A., Mainardi L., Corino V., "Assessing the performance of MRI-radiomic prognostic signatures in head and neck cancer patients: a comparative analysis", 16 th Mediterranean Conference on Medical and Biological Engineering and Computing (MEDICON) and the 5 th International Conference on Medical and Biological engineering (CMBEBIH) September, 14th - 16th 2023 Sarajevo, Bosnia and Herzegovina
- Corti A., McQueen A., Migliavacca F., Chiastra C., McGinty S., "A multiscale model of in-stent restenosis in coronary arteries integrating drug kinetics with cell dynamics", 28th Congress of the European Society of Biomechanics (ESB 2023), July 9th – 12th, 2023, Maastricht, Netherlands
- Corti A., Colombo M., Rozowsky J.M., Casarin S., He Y., Migliavacca F., Rodriguez Matas J.F., Berceli S.A., Chiastra C., "Predicting 1-year in-stent restenosis in femoral arteries through multiscale computational modeling", 27th Congress of the European Society of Biomechanics (ESB 2022), June 26th-29th, 2022, Porto, Portugal (**winner of the ESB travel award**)
- Corti A., Colombo M., Celikbudak C., Büchler P, Migliavacca F., Berceli S.A., Casarin S., Rodriguez Matas J.F., Chiastra C., "Multiscale modeling of restenosis after percutaneous transluminal angioplasty: towards a patient-specific analysis", Summer Biomechanics, Bioengineering and Biotransport Conference (SB3C2022), June 20-23, 2022, Eastern Shore, MD, USA. (**finalist for the 2022 ASME-BED/SB3C Student Paper Competition – PhD level**)
- Corti A., Colombo M., Rozowsky J.M., Casarin S., He Y., Migliavacca F., Rodriguez Matas J.F., Berceli S.A., Chiastra C., "Prediction of 1-year in-stent restenosis in femoral arteries", The 17th international symposium on Biomechanics in Vascular Biology and Cardiovascular Disease (BVBCD 2022), April 20th-22nd, 2022, Rotterdam, Netherlands

- Corti A., Colombo M., Berceli S. A., Migliavacca F., Rodriguez Matas J. F., Chiastra C., "A multiscale model of restenosis for investigating the effects of tissue damage and hemodynamics on cellular activity after percutaneous transluminal angioplasty", 17^{th} International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE 2021), September 7^{th} – 9^{th}, 2021, online
- Corti A., Colombo M., Colombo F., Berceli S. A., Migliavacca F., Rodriguez Matas J. F., Chiastra C., "A finite element – agent-based coupled model of restenosis: linking tissue damage to cellular dynamics", 26^{th} Congress of the European Society of Biomechanics (ESB 2021), July 11^{th} – 14^{th}, 2021, Milan, Italy, online (**winner of the ESB Student Award 2021**)
- Corti A., Colombo M., Rozowsky J., Casarin S., He Y., Migliavacca F., Rodriguez Matas J.F., Berceli S., Chiastra C., "Integrating mechano-biological factors and cellular dynamics in a patient-specific multiscale model of in-stent restenosis", ANSYS Workshop, 26^{th} congress of the European Society of Biomechanics (ESB 2021), July 11^{th} – 14^{th}, 2021, Milan, Italy, online
- Corti A., Colombo M., Casarin S., Rozowsky J. M., He Y., Bridio S., Migliavacca F., Rodriguez Matas J. F., Berceli S. A., Chiastra C., "Linking gene expression, hemodynamics and cellular dynamics in a patient-specific multiscale model of in-stent restensosis", Summer Biomechanics, Bioengineering and Biotransport Conference (SB3C 2021), June 14^{th} – 18^{th}, 2021, online
- Corti A., Colombo M., Rozowsky J. M., Casarin S., He Y., Migliavacca F., Rodriguez Matas J. F., Berceli S. A., Chiastra C., "An in-silico study of in-stent restenosis: integrating mechano-biological factors and cellular dynamics in a patient-specific multiscale model", Ansys Simulation World (SimWorld 2021), April 20^{th} – 21^{st}, 2021, online
- Corti A., Colombo M., Casarin S., Rozowsky J. M., He Y., Migliavacca F., Rodriguez Matas J. F., Berceli S. A., Chiastra C., "Patient-specific multiscale modeling of in-stent restenosis: integrating hemodynamics, gene expression and cellular dynamics" 36^{th} International CAE conference and exhibition, November 30^{th} – December 4^{th}, 2020, online (**winner of the CAE International Poster Award 2020**)
- Corti A., Casarin S., Rozowsky J. M., Colombo M., He Y., Migliavacca F., Rodriguez Matas J. F., Berceli S. A., Chiastra C., "Towards a patient-specific multiscale framework of in-stent restenosis: integration of hemodynamics and gene expression with an agent-based model of cellular dynamics", Virtual Physiological Human (VPH 2020), Paris, France, August 24^{th} – 28^{th}, 2020, online (**winner of the best VPHi Student Award 2020**)
- Corti A., Casarin S., Rozowsky J. M., Colombo M., He Y., Migliavacca F., Rodriguez Matas J. F., Berceli S. A., Chiastra C., "A multiscale computational framework of in-stent restenosis: linking gene dynamics and hemodynamics to an agent-based model of cellular dynamics", Summer Biomechanics, Bioengineering, and Biotransport Conference (SB3C 2020), June 17^{th} – 20^{th}, 2020, Vail, Colorado, USA, online
- Corti A., Chiastra C., Colombo M., Garbey M., Migliavacca F., Casarin S. "A multiscale model of atherosclerotic plaque development in the femoral artery: coupling blood flow simulations with cellular dynamics in a CFD-ABM framework", 11^{th} European Symposium on Vascular Biomaterials (ESVB 2019), October 17^{th} – 19^{th}, 2019, Strasburg, France
- Corti A., "An agent-based model of atherosclerotic plaque development: toward a full coupling with a computational fluid dynamics model", IX Annual Meeting of the Italian Chapter of the European Society of Biomechanics (ESB-ITA 2019), September 30^{th} – October 1^{st}, 2019, Bologna, Italy (**winner of the ESB-ITA Master Thesis Award 2019**)
- Corti A., Casarin S., Chiastra C., Colombo M., Migliavacca F., Garbey M., "A Multiscale Model of Atherosclerotic Plaque Development: toward a Coupling between an Agent-Based Model and CFD Simulations", International Conference on Computational Science (ICCS 2019), June 12^{th} – 14^{th}, 2019, Faro, Portugal

Poster presentations (3)

- Corti A., McQueen A., Migliavacca F., Chiastra C., McGinty S., "Investigating the effect of drug release on in-stent restenosis: a multiscale model", XI Annual Meeting of the Italian Chapter of the European Society of Biomechanics (ESB-ITA 2022), October 6th – 7st, 2022, Massa, Italy,
- Corti A., Colombo M., Casarin S., Rozowsky J. M., He Y., Migliavacca F., Rodriguez Matas J. F., Berceli S. A., Chiastra C., "Patient-specific multiscale modeling of in-stent restenosis: integrating hemodynamics, gene expression and cellular dynamics", International CAE conference 2020, November 30th – December 4th, 2020, online
- Corti A., Chiastra C., Colombo M., Garbey M., Migliavacca F., Casarin S. "A multiscale model of atherosclerotic plaque development in the femoral artery: coupling blood flow simulations with cellular dynamics in a CFD-ABM framework", 11th European Symposium on Vascular Biomaterials (ESVB 2019), October 17th – 19th, 2019, Strasburg, France

Conference abstracts (28)

- Corti A., Stefanati M., Leccardi M., Cerveri P., Migliavacca F., Corino V., Rodriguez Matas J.F., Mainardi L., Dubini G., "Predicting Coronary Plaque Vulnerability through a Radiomics-Biomechanics Approach", 9th European Congress on Computational Methods in Applied Science and Engineering (ECCOMAS2024), June 3rd – 7th, 2024, Lisbon, Portugal (accepted for oral presentation)
- Warren J., Corti A., Meyer C., Hayenga H.N., "An In-Silico Model of Atherosclerosis Progression in Coronary Arteries Bridging Hemodynamics, Tissue Mechanics, and Pathophysiology", 9th European Congress on Computational Methods in Applied Science and Engineering (ECCOMAS2024), June 3rd – 7th, 2024, Lisbon, Portugal (accepted for oral presentation)
- Serafini E., Sangiorgio E., Bovetti M., Corti A., Gallo D., Chiastra C., Filgueira C., Li X., Casarin S., "Deciphering Cardiac Allograft Vasculopathy: A Multiscale Computational Approach to Improve Heart Transplant Outcomes", 9th European Congress on Computational Methods in Applied Science and Engineering (ECCOMAS2024), June 3rd – 7th, 2024, Lisbon, Portugal (accepted for oral presentation)
- Corti A., Muscato F., Gambaro F., Chiappetta K., Loppini M., Corino V., "Combining deep learning and machine learning for the automatic identification of hip prosthesis failure: Development, validation and explainability analysis", 17th International Joint Conference on Biomedical Engineering Systems and Technologies (BIOSTEC2024), February 21th – 23th, 2024, Rome, Italy (accepted for oral presentation)
- Corti A., Marradi M., Rodriguez Matas J.F., Chiastra C., "Multiscale modeling to simulate vascular adaptation processes", XII Annual Meeting of the Italian Chapter of the European Society of Biomechanics (ESB-ITA 2023), September 18th – 19th, 2023, Torino, Italy (oral presentation)
- Corti A., McQueen A., Migliavacca F., Chiastra C., McGinty S., "A multiscale model of in-stent restenosis in coronary arteries integrating drug kinetics with cell dynamics", 28th Congress of the European Society of Biomechanics (ESB 2023), July 9th– 12st, 2023, Maastricht, Netherlands (oral presentation)
- Corti A., McQueen A., Migliavacca F., Chiastra C., McGinty S., "Investigating the effect of drug release on in-stent restenosis: a multiscale model", XI Annual Meeting of the Italian Chapter of the European Society of Biomechanics (ESB-ITA 2022), October 6th – 7st, 2022, Massa, Italy (poster presentation)
- Carbonaro D., Zambon S., Corti A., Gallo D., Morbiducci U., Audenino A., Chiastra C., "Self-expandable transcatheter aortic valve mechanical performance: Impact of Nickel-Titanium super-elastic material properties", XI Annual Meeting of the Italian Chapter of the European Society of Biomechanics (ESB-ITA 2022), October 6th – 7st, 2022, Massa, Italy (poster presentation)
- Carbonaro D., Zambon S., Corti A., Gallo D., Morbiducci U., Audenino A., Chiastra C., "Self-expanding transcatheter aortic valves: A computational sensitivity study on Nitinol superelastic material parameters", 11th European Solid Mechanics Conference (ESMC 2022), July 4th-8th, 2022, Galway, Ireland

- Corti A., Colombo M., Rozowsky J.M., Casarin S., He Y., Migliavacca F., Rodriguez Matas J.F., Berceli S., Chiastra C., "Predicting 1-year in-stent restenosis in femoral arteries through multiscale computational modeling", 27th congress of the European Society of Biomechanics (ESB 2022), June 26th – 29th, 2022, Porto, Portugal (oral presentation)
- Corti A., Colombo M., Celikbudak C., Büchler P., Migliavacca F., Berceli S., Casarin S., Rodriguez Matas J.F., Chiastra C., "Multiscale modeling of restenosis after percutaneous transluminal angioplasty: towards a patient-specific analysis", Summer Biomechanics, Bioengineering and Biotransport Conference (SB3C 2022), June 20th – 23th, 2022, Eastern Shore, MD, USA (oral presentation)
- Corti A., Colombo M., Rozowsky J.M., Casarin S., He Y., Migliavacca F., Rodriguez Matas J.F., Berceli S., Chiastra C., "Prediction of 1-year in-stent restenosis in femoral arteries", The 17th international symposium on Biomechanics in Vascular Biology and Cardiovascular Disease (BVBCD 2022), April 21st – 22nd, 2022, Rotterdam, Netherlands, (oral presentation)
- Corti A., Colombo M., Gallo D., Rodriguez Matas J.F., Migliavacca F., Casarin S., Chiastra C., "Relationship between hemodynamics and in-stent restenosis in femoral arteries", in: Chakfè N., Heim F., de Borst G.J., Meichelboeck W., Hedin U. (Eds) European Symposium on Vascular Biomaterials (ESVB 2021), November 4th – 6th, 2021, Strasburg, France (oral presentation)
- Corti A., Colombo M., Berceli S., Rodriguez Matas J.F., Chiastra C., "A multiscale model of restenosis for investigating the effects of tissue damage and hemodynamics on cellular activity after percutaneous transluminal angioplasty", 17th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering (CMBBE 2021) and the 5th Conference on Imaging and Visualization, September 7th – 9th, 2021, Bonn, Germany, online (oral presentation)
- Corti A., Colombo M., Colombo F., Berceli S, Migliavacca F., Rodriguez Matas J.F., Chiastra C., "A finite element – agent-based coupled model of restenosis: linking tissue damage to cellular dynamics", 26th congress of the European Society of Biomechanics (ESB 2021), July 11th – 14th, 2021, Milan, Italy, online (oral presentation, Best Student Award)
- Corti A., Colombo M., Rozowsky J., Casarin S., He Y., Migliavacca F., Rodriguez Matas J.F., Berceli S., Chiastra C., "Integrating mechano-biological factors and cellular dynamics in a patient-specific multiscale model of in-stent restenosis", ANSYS Workshop, 26th congress of the European Society of Biomechanics (ESB 2021), July 11th – 14th, 2021, Milan, Italy, online (oral presentation)
- Colombo M., Corti A., Colombo A., Antognoli G., Antonini L., Bernini M., McKenna C., Berceli S., Vaughan T., Migliavacca F., Chiastra C., "Hemodynamic impact of stent design and overlapping in superficial femoral arteries", 26th congress of the European Society of Biomechanics (ESB 2021), July 11th – 14th, 2021, Milan, Italy, online (oral presentation)
- Colombo M., He Y., Corti A., Gallo D., Ninno F., Casarin S., Rozowsky J.M., Migliavacca F., Berceli S., Chiastra C., "Restenosis in human stented superficial femoral artery: remodeling trajectory and role of hemodynamics", 26th congress of the European Society of Biomechanics (ESB 2021), July 11th – 14th, 2021, Milan, Italy, online (oral presentation)
- Corti A., Colombo M., Casarin S., Rozowsky J.M., He Y., Bridio S., Migliavacca F., Rodriguez Matas J.F., Berceli S., Chiastra C., "Linking gene expression, hemodynamics and cellular dynamics in a patient-specific multiscale model of in-stent restensosis", Summer Biomechanics, Bioengineering and Biotransport Virtual Conference (SB3C 2021), June 14th – 18th, 2021, online (oral presentation)
- Colombo M., He Y., Corti A., Gallo D., Ninno F., Casarin S., Rozowsky J.M., Migliavacca F., Berceli S., Chiastra C., "Dynamics of morphological remodeling and impact of hemodynamics on restenosis in human stented superficial femoral arteries", Summer Biomechanics, Bioengineering and Biotransport Virtual Conference, June 14th – 18th, 2021, online (poster presentation)

- Corti A., Colombo M., Rozowsky J. M., Casarin S., He Y., Migliavacca F., Rodriguez Matas J. F., Berceli S. A., Chiastra C., "An in-silico study of in-stent restenosis: integrating mechano-biological factors and cellular dynamics in a patient-specific multiscale model", Ansys Simulation World (SimWorld 2021), April 20th – 21st, 2021, online (oral presentation)
- Colombo M., Corti A., Berceli S., Migliavacca F., McGinty S., Chiastra C., "3D modelling of drug coated balloons for femoral arteries", 21st ECMI Conference on Industrial and Applied Mathematics, April 13th – 15th, 2021, online (oral presentation)
- Corti A., Colombo M., Casarin S., Rozowsky J., He Y., Migliavacca F., Rodriguez Matas J.F., Berceli S., Chiastra C., "Patient-specific multiscale modeling of in-stent restenosis: integrating hemodynamics, gene expression and cellular dynamics", 36th International CAE conference and exhibition, November 30th – December 4th, 2020, online (winner of the CAE International Poster Award 2020)
- Corti A., Casarin S., Rozowsky J., Colombo M., He Y., Migliavacca F., Rodriguez Matas J.F., Berceli S., Chiastra C., "Towards a patient-specific multiscale framework of in-stent restenosis: integration of hemodynamics and gene expression with an agent-based model of cellular dynamics", Virtual Physiological Human (VPH 2020), August 24th – 28th, 2020, Paris, France, online (oral presentation, winner of the best VPHi Student Award 2020)
- Corti A., Chiastra C., Colombo M., Migliavacca F., Casarin S., "Computational modeling of atherosclerosis: sensitivity analysis towards a quantitative calibration", Summer Biomechanics, Bioengineering and Biotransport Virtual Conference (SB3C 2020), June 17th – 20th, 2020, online (oral presentation)
- Corti A., Casarin S., Rozowsky J.M., Colombo C., He Y., Migliavacca F., Rodriguez Matas J.F., Berceli S.A., Chiastra C., "A multiscale computational framework of in-stent restenosis: linking gene dynamics and hemodynamics to an agent-based model of cellular dynamics", Summer Biomechanics, Bioengineering and Biotransport Virtual Conference (SB3C 2020), June 17th – 20th, 2020, online (oral presentation)
- Colombo C., He Y., Corti A., Gallo D., Casarin S., Rozowsky J.M., Migliavacca F., Berceli S.A., Chiastra C., "In-stent restenosis in superficial femoral arteries: dynamic vessel remodeling and impact of local hemodynamics", Summer Biomechanics, Bioengineering and Biotransport Virtual Conference (SB3C 2020), June 17th – 20th, 2020, online (oral presentation)
- Corti A., Chiastra C., Colombo M., Garbey M., Migliavacca F., Casarin S., "A multiscale model of atherosclerotic plaque development in the femoral artery: coupling blood flow simulations with cellular dynamics in a CFD-ABM framework", 11th European Symposium on Vascular Biomaterials (ESVB 2019), October 17th – 19th, 2019, Strasburg, France (oral and poster presentation)

Certifications

Qualification to practice as industrial engineer, section A, *Politecnico di Milano and Italian Order of Engineers*, 2020, Session II, **Mark**: 91/100

First Certificate in English, *Cambridge Assessment English*, 2015

Languages

Italian Mother tongue

English Fluent
2018: 6 months internship in USA **2015**: FCE-B2

German Scholastic

Spanish Good knowledge
2011: DELE-B1

Technical skills and competences

Radiomics

Radiomic feature extraction and radiomic analysis

Artificial Intelligence

Survival analysis, machine learning classification algorithm

Imaging

April 2023: Cardiovascular CTA course, IRCCS Centro Cardiologico Monzino, Milan, Italy. Reconstruction of patient-specific geometries from medical images using 3DSlicer, Vascular Modelling Toolkit (VMTK)

Multiscale modeling

Expert in development of computational multiscale models of vascular adaptation and vascular biomechanics and in the development of fully-automated multiscale frameworks integrating different software (e.g., ABAQUS, ANSYS Fluent, Rhinoceros)

CAD software and Pre-processing

3D modeling with Rhinoceros and Solidworks. Geometry spatial discretization with Fluent meshing, ANSYS ICEM, and HyperMesh

Solid mechanics

Finite-element implicit and explicit, static, quasi-static and dynamic, linear and non-linear analyses with ABAQUS

Fluid dynamics

Steady-state and transient CFD simulations of blood flows in idealized and patient-specific vessel geometries with and without implanted stents using ANSYS Fluent. Post-processing of the results with ANSYS CFD-Post, ParaView, Tecplot, VMTK, and Matlab

Programming

MATLAB, C, Python

Autorizzo al trattamento dati ai sensi del GDPR 2016/679 del 27 aprile 2016 (Regolamento Europeo relativo alla protezione delle persone fisiche per quanto riguarda il trattamento dei dati personali).

Substitute declaration of certification (art. 46 and 47, D.P.R. 445/2000). The undersigned is aware that, pursuant to Art. 76 of the D.P.R. 445/2000, false declarations, false documents and the use of false deeds are punished according to the Penal Code and special laws. All this stated, she declares that all information presented in this curriculum vitae corresponds to truth. I hereby authorize the use of my personal data in accordance to the GDPR 2016/679 – "European regulation on the protection of personal data".