

Europass Curriculum Vitae



PERSONAL INFORMATION

Surname
Name
E-mail
Nationality
Current position

Soliveri

Luca

luca.soliveri@unibg.it / luca.soliveri@marionegri.it

Italian

Researcher – PostDoc Position

Università degli Studi di Bergamo

MEMBERSHIPS

European Society for Artificial Organs (ESAO)

European Society of Biomechanics (ESB)

Italian National Bioengineering Group (GNB)

WORK EXPERIENCE

Date (from – to)
Name and address
of firm/university

Type of business or sector
Type of employment
Main activities and responsibilities

2025 - present

Università degli Studi di Bergamo

Dipartimento di Ingegneria Gestionale, dell'Informazione e della Produzione

Via Pasubio, 7/B, 24044 Dalmine BG

Research – Academic - Bioengineering

Postdoc research fellow

Development and application of computational and experimental methods for studying the effect of high-frequency wall vibrations on vascular remodeling.

Date (from – to)
Name and address
of firm/university

Type of business or sector
Type of employment
Main activities and responsibilities

2021 -2024

Istituto di Ricerche Farmacologiche Mario Negri IRCCS

Laboratorio di Medical Imaging, Dipartimento di Ricerca Bioingegneria

Centro Aldo e Cele Daccò, Villa Camozzi, Via Gian Battista Camozzi, 24020 Ranica (BG)

Research - Bioengineering

Research fellow

Development and application of computational methods for studying morphological and hemodynamic changes associated with the onset and progression of vascular diseases.

EDUCATION AND TRAINING

Date (from – to)
Name and type of organisation
providing education and training
Principal subjects/occupational
skills covered

2021 - 2024

Politecnico di Milano

Dipartimento di Elettronica, Informazione e Bioingegneria

Development and application of computational methods to investigate the effect of flow-induced vascular vibrations on vascular remodeling of arteriovenous fistulas for hemodialysis.

Thesis: *High-frequency wall vibrations in arteriovenous fistula: unveiling a novel*

Title of qualification awarded	<i>mechanobiological stimulus for adverse vascular remodeling</i> PhD in Bioengineering - Diploma cum Laude
Date (from – to)	19-30 June, 7-15 August 2023
Name and type of organisation providing education and training	University of California, San Diego - University of Oslo - Simula Research Laboratory
Principal subjects/occupational skills covered	Assessment of the impact of rheological parameters and boundary conditions in computational fluid dynamics models for the calculation of hemodynamic stresses in cerebral aneurysms.
Education/ training	9th annual Joint Summer School in Computational Physiology 2023
Date (from – to)	May - June 2022
Name and type of organisation providing education and training	Simula Research Laboratory
Principal subjects/occupational skills covered	Department of Computational Physiology, Oslo, Norway Modeling the effect of perivascular tissues for fluid-structure interaction simulations.
Education/ training	Guest PhD Student
Date (from – to)	2018 - 2020
Name and type of organisation providing education and training	Università degli Studi di Bergamo
Principal subjects/occupational skills covered	Scuola di Ingegneria Study of technologies and management processes in healthcare, with a specific focus on chronic diseases. Thesis: <i>Study of the fluid dynamics in patient-specific 3D models of arteriovenous fistulae for hemodialysis</i>
Title of qualification awarded	Master's Degree in Engineering and Management for Health - Final mark: 110/110 cum Laude
Date (from – to)	2015 -2018
Name and type of organisation providing education and training	Università degli Studi di Bergamo
Principal subjects/occupational skills covered	Scuola di Ingegneria Study of healthcare processes, biological principles, pathologies, diagnostic tools used in clinical settings, and biomedical technologies. Thesis: <i>Ricostruzione di modelli patient-specific 3D per lo studio dei cambiamenti strutturali ed emodinamici della fistola arterovenosa per emodialisi</i>
Title of qualification awarded	Bachelor Degree in Ingegneria delle Tecnologie per la Salute Final mark: 103/110
Date (from – to)	September 2017 – January 2018
Name and type of organisation providing education and training	Istituto di Ricerche Farmacologiche Mario Negri IRCCS
Principal subjects/occupational skills covered	Laboratorio di Medical Imaging, Dipartimento di Bioingegneria Reconstruction of 3D models of arteriovenous fistulas for hemodialysis based on magnetic resonance imaging, for computational fluid dynamics studies.
Education/ training	Curricular internship
Date (from – to)	2010-2015
Name and type of organisation providing education and training	Liceo Scientifico Statale Filippo Lussana
Title of qualification awarded	Scientific High School Diploma

PERSONAL SKILLS AND COMPETENCES

Mother tongue	Italian
Other language(s)	English
reading	Good (B2)
writing	Good (B2)

speaking

Good (B2)

TECHNICAL SKILLS AND COMPETENCES

- Excellent knowledge and expertise in using software for medical image processing and reconstruction of 3D anatomical models (VMTK, ImageJ, ParaView, Meshmixer).
- Excellent knowledge and expertise in using open-source and commercial software for performing computational fluid dynamics and fluid-structure interaction simulations (OpenFoam, SimVascular, turtleFSI, FeniCS, VaMPy).
- Knowledge of operating systems: Windows, Linux, Mac OS.
- Excellent knowledge of Office software packages (Word, Excel, PowerPoint, Outlook).
- Good programming skills in Python.
- Good skills in result processing and statistical analysis: R.
- Basic knowledge (for use in university projects): MATLAB, Solid Edge, Overleaf, Jupyter.
- Good expertise in using ultrasound equipment acquired during participation in clinical studies.

SOCIAL SKILLS AND COMPETENCES

- Excellent interpersonal skills acquired in educational, sports, and professional environments.
- Currently engaged in research activities in a multicultural environment and maintain professional relationships with various organizations, clinical centers, and national and international research groups.
- Actively participate in hospital clinical studies, requiring constant interaction with healthcare professionals and patients.
- Strong communication skills developed through active participation in international congresses (oral presentations and posters).
- Have participated in competitive team sports (soccer) for 20 years.
- Since 2017, have been coaching young soccer players.

ORGANISATIONAL SKILLS AND COMPETENCES

- Excellent organizational skills developed through numerous team-working activities in educational, sports, and professional settings.
- Strong ability to work independently and problem solving.
- Excellent coordination skills developed through supervising the research activities of students and graduates, as well as coaching young soccer players.
- Strong organizational and communication skills gained through supporting teaching activities as a tutor, participating in sports practice, and organizing summer camps.

DRIVING LICENCE

Driving license B

PUBLICATIONS

ARTICLES

- Soliveri L, Poloni S, Brambilla P, Zerbi S, Cabrini G, Caroli A, Remuzzi A, Valen-Sendstad K, Bozzetto M, *The role of high-frequency wall vibrations in adverse vascular remodeling of arteriovenous fistula for hemodialysis* (under review)
- Soliveri L, Stoenoiu M, Bozzetto M, Meris F, Robberechts T, Hammer F, Danse E, Toubiana L, Januszewicz A, Januszewicz M, Remuzzi A, Caroli A, Persu A, *Computational assessment of fibromuscular dysplasia-related renal artery stenosis: a feasibility study* (under review)
- Soliveri L, Poloni S, Brambilla P, Caroli A, Remuzzi A, Bozzetto M, Valen-Sendstad K, *High Frequency Vessel Wall Vibrations Associate with Stenosis Formation and Arteriovenous Fistula Failure*, Kidney Medicine, 2024
- Poloni S, Soliveri L, Caroli A, Remuzzi A, Bozzetto M, *The Potential of Sound Analysis to Reveal Hemodynamic Conditions of Arteriovenous Fistulae for Hemodialysis*, Annals of Biomedical Engineering, 2024
- Carrara E, Soliveri L, Poloni S, Bozzetto M, Campiglio C, *Effects of high-frequency mechanical stimuli on flow related vascular cell biology*, The International Journal of Artificial Organs, 2024
- Soliveri L, Bruneau D, Ring J, Bozzetto M, Remuzzi A, Valen-Sendstad K, *Toward a*

	<i>physiological model of vascular wall vibrations in the arteriovenous fistula</i>, Biomechanics and Modeling in Mechanobiology, 2024 • Soliveri L, Bozzetto M, Brambilla P, Caroli A, Remuzzi A, <i>Hemodynamics in AVF over time: a protective role of vascular remodeling towards flow stabilization</i>, The International Journal of Artificial Organs, 2023 • Bozzetto M, Soliveri L, Volpi J, Remuzzi A, Barbieri A, Lanterna L, Lanzarone E, <i>Computational fluid dynamic modeling of flow-altering surgical procedures: feasibility assessment on saccular aneurysm case study</i>, Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization, 2022 • Bozzetto M, Soliveri L, Poloni S, Brambilla P, Curtò D, Condemi GC, Cefali P, Spina I, A Villa, Caroli A, Remuzzi A, <i>Arteriovenous fistula surgery with VasQ™ device: a feasibility study to reveal hemodynamic implications</i>, The Journal of Vascular Access, 2022
CONFERENCE PAPER	• Soliveri L, Bozzetto M, Brambilla P, Caroli A, Remuzzi A, <i>The role of hemodynamics in arteriovenous fistula remodelling and failure. A CFD longitudinal study</i>, Convegno Nazionale di Bioingegneria, GNB, VIII Congress of the National Group of Bioengineering, Padova, June 21-23, 2023 • Arrigoni A, Cumetti M, Greco A, Soliveri L, Vitali A, <i>A design method of tele-rehabilitation platforms for post-stroke patients based on consumer technology</i>, Studies in Health Technology and Informatics, dHealth 2021, 15th Annual Conference on Health Informatics meets Digital Health, Vienna, May 11-12, 2021
BOOK CHAPTERS	• Nozaleda G, Poloni S, Soliveri L, Valen-Sendstad K, <i>Impact of Modeling Assumptions on Hemodynamic Stresses in Predicting Cerebral Aneurysm Rupture Status</i>, Computational Physiology: Simula Summer School 2023. Springer Nature, 2024
ABSTRACT AND CONGRESS PARTICIPATION	• Yamamoto K, Soliveri L, Bozzetto M, Campiglio CE, Remuzzi A, Lanterna L, Valen-Sendstad K, <i>High-frequency wall vibration correlates with the growth of vertebralbasilar dolichoectasia aneurysm</i>, ESB2025 - 30th Congress of the European Society of Biomechanics, Zurich, July 6–9, 2025 (oral presentation) • Poloni S, Soliveri L, Ring J, Remuzzi A, Bozzetto M, Valen-Sendstad K, <i>Vascular wall vibrations of arteriovenous fistula propagate through surrounding tissue: a fluid-structure interaction study</i>, ESB2025 - 30th Congress of the European Society of Biomechanics, Zurich, July 6–9, 2025 • Soliveri L, Poloni S, Cabrini G, Brambilla P, Zerbi S, Caroli A, Remuzzi A, Valen-Sendstad K, Bozzetto M, <i>Association between high-frequency wall vibrations and adverse vascular remodeling in arteriovenous fistulae: a fluid-structure interaction longitudinal study</i>, VAS2025 - 14th Congress of the Vascular Access Society, Padova, April 3-5, 2025 • Poloni S, Zerbi S, Ghilardini C, Soliveri L, Condemi C, Caroli A, Remuzzi A, Bozzetto M, <i>Sound characteristics and blood flow monitoring in arteriovenous fistulas: insights from the VASOUND study</i>, VAS2025 - 14th Congress of the Vascular Access Society, Padova, April 3-5, 2025 • Campiglio CE, Carrara E, Poloni S, Ripamonti M, Soliveri L, Valen-Sendstad K, Remuzzi A, Bozzetto M, <i>In-vitro investigation of the role of mechanical vibrations on vascular remodeling</i>, Advances in Mechanobiology Congress, Naples, 27-30 April 2025 • Soliveri L, Poloni S, Bozzetto M, Cabrini G, Remuzzi A, Valen-Sendstad K, <i>Understanding the role of high-frequency vascular vibrations in arteriovenous fistula failure</i>, ESAO2024 - 50th European Society of Artificial Organs Congress, Aachen, September 08 – 11, 2024 (oral presentation) • Poloni S, Soliveri L, Bruneau D, Remuzzi A, Bozzetto M, Valen-Sendstad K, <i>Simulating arteriovenous fistula sounds: a fluid-structure interaction approach</i>, ESAO2024 - 50th European Society of Artificial Organs Congress, Aachen, September 08 – 11, 2024 • Soliveri L, Poloni S, Bozzetto M, Cabrini G, Remuzzi A, Valen-Sendstad K, <i>Exploring Arteriovenous Fistula Wall Vibrations: A Fluid-Structure Interaction Longitudinal Study</i>, ESB2024- 29th Congress of the European Society of Biomechanics, Edinburgh, June 30 – July 3, 2024 (oral presentation) • Poloni S, Soliveri L, Bozzetto M, Bruneau D, Remuzzi A, Valen-Sendstad K, <i>Generation of Arteriovenous Fistula Sounds through Fluid-Structure Interaction Simulations</i>, ESB2024 - 29th Congress of the European Society of Biomechanics, Edinburgh, June 30 – July 3, 2024

- Soliveri L, Bozzetto M, Stoenoiu M, Meris F, Robberechts T, Remuzzi A, Caroli A, Persu A, *Computational assessment of fibromuscular dysplasia-related renal artery stenosis: a feasibility study*, ESB2024 - 29th Congress of the European Society of Biomechanics, Edinburgh, June 30- July 3, 2024
- Soliveri L, Stoenoiu M, Bozzetto M, Meris F, Robberechts T, Remuzzi A, Caroli A, Persu A, *Computational fluid dynamic simulations to assess hemodynamical significance of fibromuscular dysplasia-related renal artery stenosis: a feasibility study*, ESH2024 - 33rd European Meeting on Hypertension, Berlin, May 31-June 3, 2024
- Soliveri L, Bozzetto M, Brambilla P, Caroli A, Remuzzi A, *The role of hemodynamics in arteriovenous fistula remodeling and failure*, ESB-ITA - XII Annual Meeting of the Italian Chapter of the European Society of Biomechanics, Torino, September 18-19, 2023
- Bozzetto M, Soliveri L, Remuzzi A, Valen-Sendstad K, *Vascular wall vibrations in AVF: a novel mechanobiological stimulus?*, ESB-ITA - XII Annual Meeting of the Italian Chapter of the European Society of Biomechanics, Torino, September 18-19, 2023
- Bozzetto M, Soliveri L, Meris F, Remuzzi A, Robberechts T, Stoenoiu M, Persu A, Caroli A, *Computational fluid dynamic simulations in stenotic renal arteries: a novel non-invasive method to guide intervention?*, 5th International Renal Imaging meeting, Ghent, September 11/12, 2023
- Soliveri L, Bozzetto M, Brambilla P, Caroli A, Remuzzi A, *A longitudinal study in a patient-specific AVF; vascular remodeling as a protective mechanism for flow stabilisation?*, ESAO2023- 49th Annual Congress of the European Society for Artificial Organs, Bergamo, August 29 - September 01, 2023 (**oral presentation**)
- Bozzetto M, Soliveri L, Remuzzi A, Valen-Sendstad K, *Wall vibrations in the arteriovenous fistula for hemodialysis: a novel mechanobiological stimulus?*, ESAO2023 - 49th Annual Congress of the European Society for Artificial Organs, Bergamo, August 29 - September 01, 2023
- Poloni S, Soliveri L, Bozzetto M, Caroli A, Remuzzi A, *Blood flow conditions and sounds in arteriovenous fistula for hemodialysis*, ESAO2023 - 49th Annual Congress of the European Society for Artificial Organs, Bergamo, August 29 - September 01, 2023
- Soliveri L, Bozzetto M, Brambilla P, Caroli A, Remuzzi A, *Longitudinal study in a patient-specific AVF; vascular remodelling as a protective mechanism for flow stabilisation?*, VAS2023 - 13th Congress of the Vascular Access Society, Porto, April 27-29, 2023 (**oral presentation**)
- Bozzetto M, Soliveri L, Remuzzi A, Valen-Sendstad K, *Transitional flow in AVF: is there a correlation between wall vibrations and stenosis development?*, VAS2023 - 13th Congress of the Vascular Access Society, Porto, April 27-29, 2023 (**oral presentation**)
- Soliveri L, Bozzetto M, Poloni S, Caroli A, Remuzzi A, *Hemodynamic effects of VasQ device in arteriovenous fistula surgery*, WCB 2022 - 9th World Congress of Biomechanics 2022 Taipei, July 10-14, 2022 (**oral presentation**)
- Soliveri L, Bozzetto M, Redaelli A, Remuzzi A, and Valen-Sendstad K, *Characterization of vessel wall vibrations of an arteriovenous fistula over the maturation period*, CMBE22 - 7th International Conference on Computational and Mathematical Biomedical Engineering, Milan, June 27-29, 2022 (**oral presentation**)
- Bozzetto M, Soliveri L, Caroli A, Poloni S, Mallios A, Remuzzi A, *Uso del dispositivo VasQ per la creazione della fistola arterovenosa per emodialisi: l'effetto sulle condizioni emodinamiche*, SICVE 2021 - XIX Congresso Nazionale della Società Italiana di Chirurgia Vascolare ed Endovascolare, Cagliari, October 13-15, 2021
- Bozzetto M, Soliveri L, Caroli A, Poloni S, Mallios A, Remuzzi A, *What happens after AVF creation surgery? Longitudinal MRI-based 3D geometric model and CFD analysis reveals flow instability that can be limited by an external support device*, ESVS 2021 - 35th European Society for Vascular Surgery, Rotterdam, September 28-29, 2021
- Bozzetto M, Soliveri L, Poloni S, Caroli A, Remuzzi A, *What happens after AVF creation surgery? Longitudinal patient-specific CFD analyses reveal flow instabilities that can be limited by an external support*, ESAO 2021 - 49th Annual Congress of the European Society for Artificial Organs, London, September 7-11, 2021
- Bozzetto M, Soliveri L, Poloni S, Caroli A, Mallios A and Remuzzi A, *What happens after fistula closure? Longitudinal MRI-based 3D geometric model and CFD analysis reveals flow instability that can be limited by an external support device*, VAS 2021 - 12th Congress of the Vascular Access Society, Berlin, April 6-9, 2021
- Bozzetto M, Soliveri L, Caroli A, Mallios A, Remuzzi A, *What happens after fistula closure? Longitudinal MRI-based 3D geometric model and CFD analysis reveals flow instability that*

	can be limited by an external support device, ASDIN 2021 - American Society of Diagnostic and Interventional Nephrology 17th Virtual Annual Scientific Meeting, February 17-21, 2021 Bozzetto M, Soliveri L, Brambilla P, Remuzzi A, Caroli A, <i>Coupling magnetic resonance imaging and computational fluid dynamic simulations in the renal arteries: a feasibility study</i>, ISMRM Workshop on Kidney MRI Biomarkers, Philadelphia/Lisbon, September 10-12, 2021
GRANTS	Cariplo InnovaWelfare, <i>AVF-MONITOR: un nuovo dispositivo indossabile per il monitoraggio dell'accesso vascolare nei pazienti in emodialisi</i>, 2025-2026, Role: PI
AWARDS	- ESAO 2025 PhD Gold Award - 30th ESAO Congress (2025) - Finalist GBMA Best PhD Thesis in Theoretical and Applied Biomechanics (2025) - ARMR Travel Grant: Grant di aggiornamento e formazione scientifica 2024/2025 - Finalist ESB Student Award - 29th ESB Congress (2024) - Bronze IFAO Presentation Award - 49th ESAO and IFAO Congress (2023) - ESAO-SAGE-Research Award (2023)
TEACHING ACTIVITY	- Tutor of the Course <i>Biomechanics and Medical Device Simulations</i>, Master in Medical Engineering, Università degli Studi di Bergamo, Dipartimento di Ingegneria Gestionale, dell'Informazione e della Produzione, academic year: 2024/25, 2023/24 - Tutor of the Course <i>Image-based Biomechanics Lab</i>, Master in Medical Engineering, Università degli Studi di Bergamo, Dipartimento di Ingegneria Gestionale, dell'Informazione e della Produzione, academic year: 2024/25 - Tutor of the Course <i>Biofluids and Microfluidics Lab</i>, Master in Medical Engineering, Università degli Studi di Bergamo, Dipartimento di Ingegneria Gestionale, dell'Informazione e della Produzione, academic year: 2024/25
ADDITIONAL INFORMATION	
SUPERVISOR OF MASTER'S THESIS STUDENTS	<i>Unlock the power of Resona 9 ultrasound machine: an observational study to set up and test new advanced vascular imaging protocols</i>, Student: Stijn Segers., Visiting Student from the University of Maastricht, academic year: 2024-2025 <i>Computational fluid dynamic simulation in stenotic renal arteries: a comparative analysis of pulsatile and steady state simulations</i>, Student: Giacomelli D, Advisor: Remuzzi A, Co-Advisor: Soliveri L, Master's Degree in Engineering and Management for Health, Università degli Studi di Bergamo, academic year: 2024-2025 <i>Impact of Modeling Assumptions on Hemodynamic Stresses in Predicting Cerebral Aneurysm Rupture Status</i>, Student: Battistella M., Visiting Student from the University of Maastricht, academic year: 2023-2024 <i>Fluid-structure interaction simulations in patient-specific 3D models of arteriovenous fistula: the effect of vascular wall vibrations on vessels remodelling</i>, Student: Cabrini G, Advisor: Remuzzi A, Co-Advisor: Soliveri L, Master's Degree in Engineering and Management for Health, Università degli Studi di Bergamo, academic year: 2022-2023 <i>Computational fluid dynamic simulations in stenotic renal arteries: a novel non-invasive method to guide intervention</i>, Student: Meris F, Advisor: Remuzzi A, Co-Advisor: Soliveri L, Master's Degree in Engineering and Management for Health, Università degli Studi di Bergamo, academic year: 2022-2023 <i>CFD study on Complex Intracranial Aneurysms and respective physiological conditions to investigate the role of morphology and hemodynamic in the process of pathological vessel wall remodeling</i>, Student: Bernini M, Advisor: Lanzarone E, Co-Advisor: Soliveri L, Master's Degree in Engineering and Management for Health, Università degli Studi di Bergamo, academic year: 2021-2022 <i>Computational fluid dynamic modeling of flow-altering surgical procedures in complex cerebral aneurysms</i>, Student: Volpi J, Advisor: Lanzarone E, Co-Advisor: Soliveri L, Master's Degree in Engineering and Management for Health, Università degli Studi di Bergamo, academic year: 2020-2021

OTHER CERTIFICATIONS / COURSES

- AAL English Language B2 (certified by Università degli Studi di Bergamo), 15/01/2019
- Percorso di potenziamento Cariplo InnovaWelfare – fase 2, online course, May-Oct 2025
- Bootcamp InnovaWelfare Cariplo: Cariplo Factory, Milan, 14-15/01/2025
- Good clinical practice (GCP) certificate, online course, 04/10/2024
- XLII Annual School of GNB: the Bioengineering of Sport, Brixen, 11-14/09/2023
- Nature Masterclass, Getting Published: Effectively Communicating Your Research, University of California San Diego, 08/08/2023
- Statistic and R – edX, HarvardX PH525.1x, online course, 16/11/2021

REVIEWING ACTIVITY

- Scientific Reports
- The International Journal of Artificial Organs (IJAO)
- The Journal of Vascular Access (JVA)
- Reviewer for the ESB Student Award 2025

Bergamo, 11/09/2025

autorizzo al trattamento dei dati personali ai sensi del Regolamento
UE n.679/2016 e del D.Lgs. 196/2003 e successive modificazioni