

Majid Jadidi, Ph.D.

Assistant Professor, Department of Biomechanics, University of Nebraska-Omaha

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PROFESSIONAL EXPERIENCE

• Assistant Professor	2021 – Present
• <i>Department of Biomechanics, University of Nebraska-Omaha</i>	<i>Omaha, NE</i>
• Graduate Research Assistant	2016 – 2020
• <i>Department of Surgery, University of Nebraska-Medical Center</i>	<i>Omaha, NE</i>
• Graduate Teaching Assistant	2016 – 2017
• <i>Department of Mechanical Engineering, University of Nebraska-Lincoln</i>	<i>Lincoln, NE</i>

EDUCATION

• Ph.D. in Mechanical Engineering - specialized in biomedical engineering	2020
• <i>University of Nebraska-Lincoln</i>	<i>Lincoln, NE</i>
• Minor in Business Administration	
• B.Sc. in Mechanical Engineering	2016
• <i>Isfahan University of Technology</i>	<i>Isfahan, Iran</i>
• Double Major with Industrial Engineering and Systems Management	

GRANTS AND AWARDS

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- **National Institutes of Health (NIH):** Center for Cardiovascular Research in Biomechanics (CRiB)/Research project “Effects of Sex on the Elastogenesis of Vascular Elastic Fibers”, Grant Type: P20, Amount: \$1,292,847, Duration: 2024-2026, Role: Research Project Leader
 - **University of Nebraska Collaboration Initiative:** Vascular Biomechanics in Pregnancy: Integrating Biomechanical Insights for Better Diagnostics and Clinical Management of Hypertensive Disorders of Pregnancy, Amount: \$100,000, Duration: 2022-2023, Role: Principal Investigator
 - **University of Nebraska Collaboration Initiative:** Molecular Characterization of Peripheral Arterial Disease, Amount: \$40,000, Duration: 2022-2023, Role: Principal Investigator
 - **Medical Device Industry, AngioDynamics:** AngioDynamics Laser Evaluation, Amount: \$60,000, Duration: 2022-2023, Role: Co-Principal Investigator

OUTREACH AND COMMUNITY SERVICE

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- Served as a Reviewer for NIH and NSF.
 - Served as a reviewer for over 16 scientific journals and conferences.
 - Served as an organizing committee member on the 3rd, 4th, and 5th Great Plains Biomechanics Conference.
 - Advisor of Biomechanics United Student Group, University of Nebraska-Omaha
 - Organized over 20 outreach activities targeting middle school, high school, and undergraduate students.

TRAINEES

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- **Ph.D. Students**
 - Pedram Kargar: Primary Supervisor, Jan 2025 - Present
 - Ali Zofaghari Sichani: Primary Supervisor, Aug 2023 - July 2024
 - Sayed Ahmadreza Razian: Co-Supervisor, Aug 2021 - Present
 - Ramin Shahbad: Thesis Committee Member, Aug 2021 - Present
 - **Master’s Students**
 - Sanaz Farmani: Primary Supervisor, Aug 2024 - Present
 - Madihah Kazim: Primary Supervisor, Aug 2021 - Aug 2023

- Elham Zamani: Primary Supervisor, Jan 2022 - May 2024
- Pauline Struczewska: Thesis Committee Member, Aug 2021 - Aug 2023

• Undergraduate Students

- Nick Kinsella: Primary Supervisor, Fall 2024 - Present
- Connor Tiedtke: Primary Supervisor, Summer 2023
- Hesam Sedaghat: Co-Supervisor, Jan 2021 - Aug 2021

• High School Students

- Elias Pipinos: Primary Supervisor, Summer 2023, 2024
- Asal Mohammadi: Primary Supervisor, Summer 2021

PUBLICATIONS

- Shahbad, R., Kazim, M., Razian, S. A., Desyatova, A., **Jadidi, M.*** (2025). Variations in Stiffness and Structure of the Human Aorta Along Its Length, *Nature Scientific Reports* (IF 3.8), 15(1), 11120
- Kazim, M., Razian, S., Zamani, E., Varandani, D., Shahbad, R., **Jadidi, M.*** (2024). Mechanical, Structural, and Morphological Differences in the Iliac Arteries, *Journal of the Mechanical Behavior of Biomedical Materials* (IF 3.9), 155, 106535
- Zhang, W.⁼, **Jadidi, M.**⁼, Razian, S., Holzapfel, G., Kamenskiy, A., Nordsletten, D., (2024). A Viscoelastic Constitutive Framework for Aging Muscular and Elastic Arteries, *Acta Biomaterialia* (IF 9.7)
- Shahbad, R. Kamenskiy, A., Razian, S., **Jadidi, M.**, Desyatova, A., (2024). A Effects of Age, Elastin Density, and Glycosaminoglycan Accumulation on the Delamination Strength of Human Thoracic and Abdominal Aortas, *Acta Biomaterialia* (IF 9.7)
- Razian, S., **Jadidi, M.*** (2024). An Optimized Differential Evolution Algorithm for Constitutive Model Fitting of Arteries, *Acta Mechanica* (IF 2.7), 1-26
- Kazim, M., Razian, S., Zamani, E., Varandani, D., Shahbad, R., Desyatova, R., **Jadidi, M.*** (2023). Variability in Structure, Morphology, and Mechanical Properties of the Descending Thoracic and Infrarenal Aorta Around Their Circumference, *Journal of the Mechanical Behavior of Biomedical Materials* (IF 3.9), 150, 106332
- Struczewska, P., Razian, S., Townsend, K., **Jadidi, M.**, Shahbad, R., Zamani, E., Gamache, G., MacTaggart, J., Kamenskiy, A., (2023). Mechanical, Structural, And Physiologic Differences Between Above And Below-Knee Human Arteries, *Acta Biomaterialia* (IF 10.6), 177, 278-299
- Shahbad, R., Pipinos, M., **Jadidi, M.**, Desyatova, A., Gamache, J., MacTaggart, J., Kamenskiy, A., (2023). Structural and Mechanical Properties of Human Superficial Femoral and Popliteal Arteries, *Annals of Biomedical Engineering* (IF 3.8), 1-22
- Zhang, W.⁼, **Jadidi, M.**⁼, Razian, S., Holzapfel, G., Kamenskiy, A., Nordsletten, D., (2023). A Viscoelastic Constitutive Model for Human Femoropopliteal Arteries, *Acta Biomaterialia* (IF 10.6), 170, 68-85
- Razian, S., **Jadidi, M.*** (2023). Histology Image Viewer and Converter (HIVC): A High-Speed Freeware Software to View and Convert Whole Slide Histology Images, *Computer Methods in Biomechanics and Biomedical Engineering-Imaging and Visualization* (IF 2.3), 1-9
- Keiser, C., Maleckis, K., Struczewska, P., **Jadidi, M.**, MacTaggart, J., Kamenskiy, A., (2022). A method of assessing peripheral stent abrasiveness under cyclic deformations experienced during limb movement, *Acta Biomaterialia* (IF 10.6), 153, 333-341
- Kamenskiy, A., **Jadidi, M.**, Desyatova, A., MacTaggart, J., (2022). Biomechanics of the main artery in the lower limb. *Solid (Bio) mechanics: Challenges of the Next Decade*, Springer, 157-179
- **Jadidi, M.**, Poulson, W., Aylward, P., MacTaggart, J., Sanderfer, C., Marmie, B., Pipinos, M., Kamenskiy, A., (2021). Calcification prevalence in different vascular zones and its association with demographics, risk factors, and morphometry, *American Journal of Physiology-Heart and Circulatory Physiology* (IF 4.7), 320.6, H2313-H2323
- Maleckis, K., Keiser, C., **Jadidi, M.**, Anttila, E., Desyatova, A., MacTaggart, J., Kamenskiy, A., (2021). Safe balloon inflation parameters for resuscitative endovascular balloon occlusion of the aorta, *Journal of Trauma and Acute Care Surgery* (IF 3.7), 91, 2, 302-309
- **Jadidi, M.**, Razian, S., Anttila, E., Doan, T., Adamson, J., Pipinos, M., Kamenskiy, A., (2021). Comparison of morphometric, structural, mechanical, and physiologic characteristics of human superficial femoral and popliteal arteries, *Acta Biomaterialia* (IF 10.6), 121, 431-443

- **Jadidi, M.**, Sherifova, S., Sommer, G., Kamenskiy, A., Holzapfel, G., (2021). Constitutive modeling using structural information on collagen fiber direction and dispersion in human superficial femoral artery specimens of different ages, *Acta Biomaterialia* (IF 10.6), 121, 461-474
- **Jadidi, M.**, Razian, S., Habibnezhad, M., Anttila, E., Kamenskiy, A., (2021). Mechanical, structural, and physiologic differences in human elastic and muscular arteries of different ages: comparison of the descending thoracic aorta to the superficial femoral artery, *Acta Biomaterialia* (IF 10.6), 119, 268-283
- **Jadidi, M.**, Habibnezhad, M., Anttila, E., Maleckis, K., Desyatova, A., MacTaggart, J., Kamenskiy, A. (2020). Mechanical and Structural Changes in Human Thoracic Aortas with Age. *Acta Biomaterialia* (IF 10.6), 103, 172-188
- **Jadidi, M.**, Desyatova, A., MacTaggart, J., Kamenskiy, A., (2019). Mechanical stresses associated with flattening of human femoropopliteal artery specimens during planar biaxial testing and their effects on the calculated physiologic stress-stretch state. *Biomechanics and modeling in mechanobiology* (IF 3.6), 18(6), 1591-1605

* Corresponding author = Equal contribution

For a full list of my publications, please see my Google Scholar profile: Google Scholar - Majid Jadidi.

SELECTED CONFERENCE PRESENTATIONS

- **Jadidi, M.***, Razian, S., & Kamenskiy, A. A Machine Learning Approach To Prediction Of Patient-Specific Arterial Wall Mechanical Properties. 19th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering. July 2024. Oral presentation
- Zolfaghari Sichani, A., Razian, S., & **Jadidi, M.***. Effects Of The Loading Rate On The Mechanical Behavior Of Proximal Superficial Femoral Artery. Summer Biomechanics, Bioengineering, and Biotransport Conference. June 2024. Oral presentation
- Razian, S., **Jadidi, M.**, Kamenskiy, A. Differential Effects Of Hypertension On The Morphological, Mechanical, And Physiologic Characteristics Of Male And Female Human Femoropopliteal Arteries. Summer Biomechanics, Bioengineering, and Biotransport Conference. June 2024. Oral presentation
- Shahbad, R., & **Jadidi, M.**, Desyatova, A. Impact of Elastin Fragmentation On The Mechanical Dissection Properties of The Human Descending Thoracic Aorta. Summer Biomechanics, Bioengineering, and Biotransport Conference. June 2024. Oral presentation
- Zolfaghari Sichani, A., Razian, S., & **Jadidi, M.***. Viscoelasticity Of The Human Superficial Femoral Artery: A Study On Loading Rate Dependency. 5th Great Plains Biomechanics Conference. May 2024. Oral presentation
- **Jadidi, M.***, Razian, S., & Kamenskiy, A. Machine Learning Prediction Of Patient-Specific Non-Linear Orthotropic Mechanical Properties Of Human Femoropopliteal Arteries. 9th International Conference on Mechanics of Biomaterials and Tissues. Dec 2023. Oral presentation
- Razian, S., **Jadidi, M.**, & Kamenskiy, A. Sex Differences In Morphological, Mechanical, And Physiological Characteristics Of Human Femoropopliteal Arteries. 9th International Conference on Mechanics of Biomaterials and Tissues. Dec 2023. Oral presentation
- Zamani, E., & **Jadidi, M.*** Breaks in Longitudinal Elastic Fibers of Human Femoropopliteal Arteries. Biomedical Engineering Society Annual Meeting. Oct 2023. Poster presentation
- Razian, S., Kamenskiy, A., & **Jadidi, M.*** An Optimized Method for Constitutive Model Fitting of Soft Tissues Bi-Directional Mechanical Stress-Stretch Data. Summer Biomechanics, Bioengineering, and Biotransport Conference. June 2023. Oral presentation
- Kazim, M., Razian, S., & **Jadidi, M.*** Regional Heterogeneity In The Biomechanics Of Human Aorta. Summer Biomechanics, Bioengineering, and Biotransport Conference. June 2023. Poster presentation
- Kazim, M., Razian, S., & **Jadidi, M.*** Circumferential Differences In The Biomechanics Of The Human Aorta. 4th Great Plains Biomechanics Conference. June 2023. Poster presentation
- Zamani, E., & **Jadidi, M.*** New Insights Into Longitudinal Elastic Fibers In The Human Femoropopliteal Artery. 4th Great Plains Biomechanics Conference. June 2023. Oral presentation
- Zamani, E., & **Jadidi, M.*** Long Breaks in External Elastic Lamina of Human Femoropopliteal Arteries. 3rd Great Plains Biomechanics Conference. May 2022. Poster presentation
- **Jadidi, M.**, Desyatova, A., & Kamenskiy, A. A Microstructurally-Motivated Growth and Remodeling Framework to Describe Aging of Human Femoropopliteal Arteries. Society of Engineering Science. Sep 2020. Online oral presentation
- **Jadidi, M.**, Anttila, E., Habibnezhad, M., Keiser, C., Maleckis, K., Desyatova, A., MacTaggart, J., & Kamenskiy, A. Mechanical Changes in Human Elastic and Muscular Arteries with Age. Summer Biomechanics, Bioengineering, and Biotransport Conference. June 2020. Online oral presentation