

# Majid Jadidi, Ph.D.

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

Email: mjadidi@unomaha.edu Phone: (402) 554-3251

## EDUCATION

---

- **Ph.D. in Mechanical Engineering - specialized in biomedical engineering** Aug 2016 - Dec 2020  
*University of Nebraska-Lincoln*  
**Minor in Business Administration**  
*Dissertation: Biomechanics of Elastic and Muscular Arteries in the Context of Aging*  
*Lincoln, NE*
- **B.Sc. in Mechanical Engineering** Aug 2011 - July 2016  
*Isfahan University of Technology*  
**Double Major with Industrial Engineering and Systems Management**  
*Isfahan, Iran*

## PROFESSIONAL EXPERIENCE

---

- **Assistant Professor** Jan 2021 – Present  
*Department of Biomechanics, University of Nebraska-Omaha*  
*Omaha, NE*
- **Graduate Research Assistant** Dec 2016 – Dec 2020  
*Department of Surgery, University of Nebraska-Medical Center*  
*Omaha, NE*
- **Graduate Teaching Assistant** Aug 2016 – May 2017  
*Department of Mechanical Engineering, University of Nebraska-Lincoln*  
*Lincoln, NE*

## TEACHING EXPERIENCE

---

- **BMCH 4690/8696: Cardiovascular Biomechanics** Fall 2023  
*Average Evaluations: 5/5*
- **BMCH 4690/8696: Cardiovascular Biomechanics** Fall 2022  
*Average Evaluations: 4.5/5*
- **BMCH 3000: Biomechanical Statics & Dynamics** Fall 2021  
*Average Evaluations: NA*

## PUBLICATIONS

---

- 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), In press
- Razian, S., **Jadidi, M.**\* (2024). An Optimized Differential Evolution Algorithm for Constitutive Model Fitting of Arteries, *Acta Mechanica* (IF 2.7), In press
- 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 10.633), *Acta Biomaterialia* (IF 10.633), 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), *Annals of Biomedical Engineering* (IF 3.8), 1-22
- Zhang, W.<sup>=</sup>, **Jadidi, M.**<sup>=</sup>, Razian, S., Holzapfel, G., Kamenskiy, A., Nordsletten, D., (2023). A Viscoelastic Constitutive Model for Human Femoropopliteal Arteries, *Acta Biomaterialia* (IF 10.633), 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 2.269), 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 10.633), 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 4.733), 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 3.697), 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 10.633), 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 10.633), 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 10.633), 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 10.633), 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 3.62), 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](#).

## INVITED TALKS

---

- Adult-to-Pediatric Translation in Cardiovascular Biomechanics, Child Health Research Institute Pediatric Heart & Vascular Diseases Mini Research Summit, Jan 2024
- Translating Adult Vascular Biomechanics to Pediatric Applications, Child Health Research Institute Seminar Series, Oct 2023
- Biomechanics of Human Arteries in the Context of Aging, UNO Biomechanics Seminar Series, Sep 2021

## CONFERENCE PRESENTATIONS

---

- 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. Accepted for 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. Accepted for Oral presentation
- **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. Accepted for 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. Accepted for 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
- Kazim, M., Razian, S., & **Jadidi, M.**\* Regional Heterogeneity In The Biomechanics Of The Human Aorta. 4th Great Plains Biomechanics Conference. June 2023. Oral 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.**, & Kamenskiy, A. Changes in the Biomechanics of Human Aortas and Femoropopliteal Arteries with Age. 1st Great Plains Biomechanics Conference. 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
- **Jadidi, M.**, Desyatova, A., & Kamenskiy, A. Mechanical Stresses Associated with Flattening of the Human Femoropopliteal Artery Specimens During Planar Biaxial Testing. 7th International Conference on Mechanics of Biomaterials and Tissues. Dec 2017. Poster presentation

## TRAINEES

---

### • Ph.D. Students

- Ali Zofaghari Sichani: Primary Supervisor, Aug 2023 - Present
- Sayed Ahmadreza Razian: Co-Supervisor, Aug 2021 - Present
- Ramin Shahbad: Thesis Committee Member, Aug 2021 - Present

### • Master's Students

- Madihah Kazim: Primary Supervisor, Aug 2021 - Aug 2023
- Elham Zamani: Primary Supervisor, Jan 2022 - Present
- Pauline Struczewska: Thesis Committee Member, Aug 2021 - Aug 2023

### • Undergraduate Students

- Connor Tiedtke: Primary Supervisor, Summer 2023
- Hesam Sedaghat: Co-Supervisor, Jan 2021 - Aug 2021

### • High School Students

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

## GRANTS AND AWARDS

---

- **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:** Molecular Characterization of Peripheral Arterial Disease, Amount: \$40,000, Duration: 2022-2023, Role: Principal Investigator
- **Medical Device Industry, AngioDynamics:** AngioDynamics Laser Evaluation, Amount: \$50,000, Duration: 2022-2023, Role: Co-Principal Investigator