## PERSONAL DATA


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|---|---|
| Name: | **Alexey V. Kamenskiy** |
| Campus Address: | Department of Biomechanics<br>University of Nebraska Omaha<br>Biomechanics Research Building, RM230<br>Omaha, NE 68182 |
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### CONTENTS

akamenskiy@unomaha.edu



## EDUCATION

**Ph.D., Engineering Mechanics, 2009**
Department of Engineering Mechanics
University of Nebraska-Lincoln

**M.S., Mechanics and Applied Mathematics, 2004**
Department of Mathematical Theory of Elasticity & Biomechanics
Saratov State University, Russia

## ACADEMIC APPOINTMENTS

2020 - current — **Professor and Chair**
Department of Biomechanics
University of Nebraska Omaha
Department of Surgery (adjunct)
University of Nebraska Medical Center

2019 - 2020 — **Professor**
Department of Biomechanics
University of Nebraska Omaha
Department of Surgery (adjunct)
University of Nebraska Medical Center

2019 — **Tenure**
Department of Surgery
University of Nebraska Medical Center

2017 – 2019 — **Associate Professor**
Department of Surgery
University of Nebraska Medical Center

2012 – 2017 — **Assistant Professor**
Department of Surgery
University of Nebraska Medical Center

akamenskiy@unomaha.edu

Department of Mechanical and Materials Engineering (adjunct, 2013)
University of Nebraska-Lincoln

Department of Biomechanics (adjunct, 2013)
University of Nebraska Omaha

Department of Biochemistry and Molecular Biology (adjunct, 2016)
University of Nebraska Medical Center

2010 – 2012 **Research Assistant Professor**
Department of Mechanical and Materials Engineering
University of Nebraska-Lincoln

2005 – 2009 **Graduate Research Assistant**
Department of Engineering Mechanics
University of Nebraska-Lincoln

2004 – 2005 **Senior Researcher**
Laboratory of Mathematical Modeling in Biomechanics
Saratov State University

2002 – 2004 **Researcher**
Laboratory of Mathematical Modeling in Biomechanics
Saratov State University

## RESEARCH INTERESTS

- Experimental and computational vascular mechanobiology and mechanophysiology.
- Vascular pathology and aging.
- Devices and materials for open and endovascular repair.

## GRANT/CONTRACT SUPPORT

**Active**

**Center for Cardiovascular Research in Biomechanics (P20GM152301)**
Funding Agency: NIH P20 (COBRE)
Project Period: 02/15/2024 – 01/31/2029
Budget: $11,058,034
Role: PI

**Optimized Stents for the Femoropopliteal Artery (R01HL125736)**
Funding Agency: NIH R01
Project Period: 2020-2025
Budget: $2,695,295
Role: PI (MPI with Jason MacTaggart)

**Axially Prestretched Elastomeric Nanofibrillar Graft (APENG) for Lower Extremity Arterial**

**Reconstructions**
Funding Agency: NIH R61/R33 (NHLBI)
Project Period: 2024-2027
Budget: $1,120,476
Role: Investigator (PI: Kaspars Maleckis)

**Computational Modeling of Thrombosis in Calcified Peripheral Arteries**
Funding Agency: University of Nebraska Collaboration Initiative
Project Period: 2023-2025
Budget: $150,000
Role: PI (MPI with Jason MacTaggart and Nitesh Nama)

**Completed**

**Effects of Aortic Compliance and Windkessel Reduction on Cardiac and Aortic Pathophysiology (R01HL147128)**
Funding Agency: NIH R01 (NHLBI)
Project Period: 2019-2024
Budget: $3,040,498
Role: Investigator (PI: Anastasia Desyatova)

**Effect of cell-based therapies on functional, hemodynamic, and histologic outcomes in a porcine model of peripheral arterial disease (R01 AG062198)**
Funding Agency: NIH R01 (NIA)
Project Period: 2019-2024
Budget: $3,808,812
Role: Investigator (PI: Pipinos/Carlson)

**Large Animal Model of Controlled Vascular Calcification**
Funding Agency: University of Nebraska Collaboration Initiative
Project Period: 2022-2024
Budget: $148,968
Role: PI (MPI with Jason MacTaggart)

**AngioDynamics laser evaluation**
Funding Agency: AngioDynamics
Project Period: 2022-2023
Budget: $59,553
Role: PI

**Evaluating Inferior Vena Cava Filter Performance in Women Using Patient-Specific Computational Modeling (FDA 75F40119P10653)**
Funding Agency: FDA
Project Period: 2019-2021
Budget: $145,432
Role: Investigator (PI: Brent Craven)

**Optimal Stent Selection for the Femoropopliteal Artery (R01HL125736)**
Funding Agency: NIH R01

Project Period: 2014-2020
Budget: $3,568,587
Role: PI (MPI with Jason MacTaggart)

**Rapid Acute Endovascular Management of Non-Compressible Truncal and Junctional Hemorrhage and Long-Term Analysis of Stent-Graft Durability in Young Military Trauma Populations (W81XWH-16-2-0034, Log 14361001)**
Funding Agency: The U.S. Army Medical Research and Materiel Command (USAMRMC)
Project Period: 2016-2020
Budget: $1,429,240
Role: PI (MPI with Jason MacTaggart)

**Mechanical Evaluation of Stents (2 projects)**
Funding Agency: QMedics
Project Period: 2019-2020
Budget: $17,709
Role: Investigator (PI: Maleckis)

**Concurrent Development of Ex Vivo and In Vivo Models for Study of Vascular Injury, Remodeling and Regeneration**
Funding Agency: UNMC Mary and Dick Holland Regenerative Medicine Program
Project Period: 2015-2018
Budget: $300,000
Role: Investigator (PI: Baxter)

**AquaBlade catheter for treatment of Aortic Dissection**
Funding Agency: UNMC Proof Of Concept grant
Project Period: 2017-2018
Budget: $210,000
Role: PI (MPI with Jason MacTaggart)

**Endovascular Skills for Trauma and Resuscitative Surgery (ESTARS) Curriculum Analysis and Development of Strategic Transition Plan (FA4600-12-D-9000)**
Funding Agency: The U.S. Army Medical Research and Materiel Command (USAMRMC)
Project Period: 2016-2017
Budget: $266,378
Role: Co-PI (MPI MacTaggart/Evans/Schlitzkus/Kamenskiy)

**Evaluation of Supera Pro Devices for Overall Performance and Ease of Use, With Focus on Deployment Accuracy in Diseased Arteries**
Funding Agency: Abbott Vascular
Project Period: 2016-2017
Budget: $38,630
Role: PI (MPI with Jason MacTaggart)

**Mechanical and Morphological Analysis of a Novel Electrospun Nanofiber Arterial Substitute in a Swine Model of Atherosclerosis**
Funding Agency: Nebraska Research Initiative
Project Period: 2012-2015
Budget: $100,000
Role: Investigator (PI: MacTaggart)

**Assessment of the Retrievable Endovascular Arterial Markers in a Cadaver Model of Peripheral Arterial Disease: A Pilot Study**
Funding Agency: Abbott Vascular
Project Period: 2015
Budget: $6,294
Role: PI (MPI with Jason MacTaggart)

**Quantitative Assessment of the Influence of Vascular Mimetic Implant SUPERA and Its Competitor Conventional SFA Stent on the Natural Limb-Induced Deformations of the Femoropopliteal Artery: A Pilot Study**
Funding Agency: Abbott Vascular
Project Period: 2014
Budget: $9,110
Role: PI (MPI with Jason MacTaggart)

**Modeling-Assisted Imaging to Optimize Surgical Interventions**
Funding Agency: University of Nebraska-Lincoln/University of Nebraska Medical Center
Project Period: 07/01/2010 – 06/30/2011
Budget: $50,000
Role: Investigator (MPI: Dzenis/MacTaggart)

## PATENTS & INVENTIONS

**Full patents**

1. Bypass graft. Filing date: Oct 05, 2019.
   Docket No: 19017PCT. Serial No: PCT/US2019/054401. Published on 2020-04-09. International publication number: WO2020/072717.
   Docket No: 19017US. Serial No: 17/282,564. Published on 04/02/2021. International publication number: US2021-0338412.

2. Automatically Deployable Intravascular Device System. Filing date: July 03, 2019.
   Docket No: 18001PCT. Serial No: PCT/US2019/040489. Published on 01/09/2020. International publication number: WO2020/010194.
   Docket No: 18001US. Serial No: 17/258,100. Published on 2021-09-16. International publication number US2021-0282950.
   US Patent number 12,138,186 B2. Date issued: Nov 12, 2024.

3. Stent-graft. Filing date: April 30, 2019. Licensed to Vessel Wave Technologies in 2021.
   Docket No: 18104PCT. Serial No: PCT/US2019/030041. Published on 11/7/2019. International publication number: WO2019-213161.
   Docket No: 18104US. Serial No: 17/051,097. Published on 2021-08-05. International publication number: US2021-0236260.

4. Surgical Devices and Methods (additional modifications to intravascular cutting device Aquablade). Filing date: 06/13/2018. Licensed to Vessel Wave Technologies in 2021.
   Docket No: PCT/US18/37334.
   US Patent number 11,806,040 B2. Date issued: Nov 7, 2023.

5. Automated Retrievable Hemorrhage Control System. Filing Date: 03/10/2016.

Docket No: 15041PCT. Serial No: PCT/US2016/021728. Published on September 15, 2016. International publication number: WO2016/145163.
Docket No: 15041US. Serial No: 15/556,922. Published on 03/08/2018. International publication number: US2018/0064565.
US Patent number 10,758,386. Date: 09/01/2020.

6. Surgical Snare Device. Filing Date: 29/04/2015.
   Docket No: 14024PCT. Serial No: PCT/US15/28227. Published on November 5, 2015. International publication number: WO2015-168249.
   Docket No: 14024US. Serial No: 15/307,403. Published on 05/04/2017. International publication number: US2017/0119410.

7. Fluid Jet Arterial Surgical Device (Aquablade). Filing date: 11/19/2014. Most Promising Invention of 2013-2014 Award. Licensed to Vessel Wave Technologies in 2021.
   Docket No: 14003. Serial No: 14/548,046. Published on 05/21/2015. International publication number: US2015-0142030.
   US Patent number 9,782,195. Date: Oct 10, 2017.

8. Model-Based Systems and Methods For Analyzing And Predicting Outcomes Of Vascular Interventions And Reconstructions. Filing date: Sep 29, 2011.
   Docket No: 84831-400919. US-20120084064-A1.

**Provisional patents / New Invention Notifications:**

1. Peripheral Stents. Provisional patent application. January 2023, 2024. December 2024.

2. Bypass Graft With Segmentally Variable Tension and Longitudinal Pre-Stretch. Provisional patent application. October 2018.

3. Windkessel-preserving aortic stent-graft. Provisional patent application. April 2018.

4. Manufacturing Technology of Biaxially Non-Linear and Anisotropic Nanofiber-based Vascular Graft Materials. Provisional patent application. January 2018.

5. Modular Endovascular Trainer. Provisional patent application 62/501,164. May 2017.

6. Retrievable Occluding Stent Graft Device. Provisional patent application. March 2015.

7. A Device for Pre-Operative Diagnostic Evaluation of Arterial Mechanics. Provisional patent application. 2013.

8. Temporary Endovascular Graft Repair of the Aorta (TEGRA) with Vascular Access, Hemorrhage Control, and Intravascular Navigation Equipment (VAHCINE) kit. Provisional patent application. 2013.

9. Model-Based Systems and Methods For Analyzing And Predicting Outcomes Of Vascular Interventions And Reconstructions. Provisional patent application. Sept 2010.

## SERVICE & CONSULTING

akamenskiy@unomaha.edu

**Editorial Boards**

- Biomechanics and Modeling in Mechanobiology (IF 3.0). Editorial Board Member. 2025
- Frontiers in Cardiovascular Medicine (IF 6.1). Atherosclerosis and Vascular Medicine. Associate Editor. 2023

**Journal Reviewer**

- Journal of the American College of Cardiology
- European Heart Journal
- Acta Biomaterialia
- Journal of the American Heart Association
- Atherosclerosis, Thrombosis, and Vascular Biology
- Stroke
- Nature: Scientific Reports
- Reviews in Biomedical Engineering
- Biomechanics and Modeling in Mechanobiology
- PLOS ONE
- Atherosclerosis
- Journal of Applied Physiology
- American Journal of Physiology: Heart and Circulatory Physiology
- Vascular Surgery
- Biomaterials Applications
- Mechanical Behavior of Biomedical Materials
- Computer Methods and Programs in Biomedicine
- Numerical Methods in Biomedical Engineering
- Anatomy
- Angiology
- Annals of Biomedical Engineering
- Academic Radiology
- Advances in Medical Sciences
- BioMedical Engineering Online
- Computers in Biology and Medicine
- Microvascular Research
- Journal of Vascular Diagnostics and Interventions
- Journal of Vascular Research
- Annals of Vascular Surgery
- Journal of Engineering in Medicine
- Cardiovascular Engineering and Technology
- Numerical Methods in Biomedical Engineering

**Conference Organization**

- 2023. Panel Chair. European Symposium on Vascular Biomaterials. Strasbourg, France. April 19-21, 2023.
- 2022 one of the organizers (along with Daniel Balzani, Gerhard Holzapfel, Igor Karsaj, and Michele Marino) of the mini-symposium “Models for Computational Analyses of Cardiovascular Biomechanics” at the 5$^{th}$ African Conference on Computational Mechanics.
- 2021 Chair “New Trends in Cardiovascular Research” at the International Society for Applied Cardiovascular Biology (ISACB) conference. March 13. Virtual.

- 2018 Reviewer for Biomedical Engineering Society (BMES) Annual Meeting.
- 2018 Session Chair, 4th Annual Regenerative Medicine Symposium.
- 2018 Member of the International Society for Applied Cardiovascular Biology (ISACB) Mentorship Committee.

**Proposal Reviewer**

- Department of Defense (DoD). Spring 2025.
- National Institutes of Health (NIH). National Heart, Lung, and Blood Institute (NHLBI). Mentored Transition to Independence Review Committee (MTI). Scientist Reviewer. Spring 2025.
- Department of Defense (DoD). Summer 2024.
- National Institutes of Health. National Institute of General Medical Sciences (NIH/NIGMS) COBRE Phase I Centers (P20) review panel. Summer 2024.
- National Institutes of Health. Special Emphasis Panel/Scientific Review Group 2024/05 HLBP-P (12) 2. Scientific Reviewer. Winter 2024.
- Department of Defense (DoD). Fall 2023.
- National Institutes of Health (NIH). National Heart, Lung, and Blood Institute (NHLBI). PAR-21-271 and PAR-21-271. K99/R00 Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC) Postdoctoral Career Transition Award to Promote Diversity. Scientist Reviewer. Fall 2023.
- Department of Defense (DoD). Summer 2023.
- National Institutes of Health (NIH). National Heart, Lung, and Blood Institute (NHLBI). Mentored Transition to Independence Review Committee (MTI). Scientist Reviewer. Spring 2023.
- Department of Defense (DoD). Winter 2023.
- National Institutes of Health (NIH). National Heart, Lung, and Blood Institute (NHLBI). HL23-013 and HL23-014 “Catalyze: Product Definition – Device Prototype Design and Testing, Diagnostic Disease Target Identification and Assay Development, and Research Tool Development (R61/R33 - Clinical Trial Not Allowed). Scientist Reviewer. Fall 2022.
- Department of Defense (DoD). Fall 2022.
- Department of Defense (DoD). Fall 2022.
- Department of Defense (DoD). Summer 2022.
- National Institutes of Health (NIH). National Heart, Lung, and Blood Institute (NHLBI). Mentored Transition to Independence Review Committee (MTI). Scientist Reviewer. Summer 2022.

- Nebraska Collaborative Initiative Grant Proposal reviewer. Spring 2022.
- Department of Defense (DoD). Spring 2022.
- National Institutes of Health (NIH). National Heart, Lung, and Blood Institute (NHLBI). Mentored Transition to Independence Review Committee (MTI). Scientist Reviewer. Fall 2021.
- Department of Defense (DoD). Summer 2021.
- Department of Defense (DoD). Spring 2021.
- Nebraska Collaborative Initiative Grant Proposal reviewer. Spring 2021.
- National Institutes of Health (NIH). National Heart, Lung, and Blood Institute (NHLBI). Mentored Transition to Independence Review Committee (MTI). Scientist Reviewer. Spring 2021.
- Department of Defense (DoD). Fall 2020.
- Department of Defense (DoD). Summer 2020.
- Department of Defense (DoD). Summer 2020.
- National Institutes of Health (NIH). National Heart, Lung, and Blood Institute (NHLBI). Mentored Transition to Independence Review Committee (MTI). Scientist Reviewer. Summer 2020.
- Department of Defense (DoD). Winter 2020.
- National Institutes of Health (NIH). National Heart, Lung, and Blood Institute (NHLBI). Mentored Transition to Independence Review Committee (MTI). Scientist Reviewer. Fall 2019.
- Department of Defense (DoD). 2019.
- Department of Defense (DoD). 2019.
- National Institutes of Health (NIH). National Heart, Lung, and Blood Institute (NHLBI). Mentored Transition to Independence Review Committee (MTI). Scientist Reviewer. Fall 2018.
- National Institutes of Health (NIH). National Heart, Lung, and Blood Institute (NHLBI). Special Emphasis Panel, RFA-17-015, Bold New Bioengineering Methods and Approaches for Heart, Lung, Blood and Sleep Disorders and Diseases, Lung and Blood Disorders (R21). Scientist Reviewer. 2018.
- Department of Defense (DoD). 2018.
- National Institutes of Health (NIH). National Heart, Lung, and Blood Institute (NHLBI). Mentored Transition to Independence Review Committee (MTI). Scientist Reviewer. Spring

2018.

- Department of Defense (DoD). 2018.
- National Institutes of Health (NIH). National Heart, Lung, and Blood Institute (NHLBI). Bold New Bioengineering Methods for Heart, Lung, Blood and Sleep Disorders and Diseases (ZHL1 CSR-P (F1)). Scientist Reviewer. 2017.
- Department of Defense (DoD). 2017.
- Department of Defense (DoD). 2017.
- Department of Defense (DoD). 2017.
- Department of Defense (DoD). 2016.
- State of Israel Ministry of Science, Technology and Space. Scientific Reviewer. 2014.
- Stanford Synchrotron Radiation Lightsource. Scientific Reviewer. 2013.
- Outstanding Thesis Award from UNL College of Engineering. Reviewer. 2012.
- Fonds Wetenschappelijk Onderzoek Research Foundation – Flanders. Reviewer. 2011.

## HONORS & AWARDS

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|---|---|
| 2024 | UNO Award for Distinguished Research or Creative Activity (ADROCA) |
| 2024 | Dean's Excellence in Research Professorship |
| 2023 | Most Promising New Invention award (peripheral stent) from UneMed |
| 2019 | Acta Biomaterialia Reviewer Award For Significant Contributions to the Quality of the Journal |
| 2017 | Recognition of Service Award, University of Nebraska Medical Center |
| 2015 | New Investigator Award, University of Nebraska Medical Center |
| 2014 | Most Promising Invention for 2013-2014 Award (Aquablade), University of Nebraska Medical Center |
| 2012 | Alien of Extraordinary Ability honored by U.S. Department of State |
| 2011 | Folsom Distinguished Doctoral Dissertation Award Finalist, UNL |
| 2010 | Outstanding Doctoral Dissertation Award, College of Engineering, UNL |
| 2009 | Graduate Student Fellowship Award, UNL |
| 2004 | Russian Federation National Fellowship Grant A04-2.10-1136 to Support |

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|---|---|
| | Talented Graduate Students |
| 2004 | M.S. degree summa cum laude (GPA 4.0), Saratov State University |
| 2004 | European Science Foundation Fellowship Grant To Support Practical Training Abroad, Unit of Physical and Engineering Sciences. Scientific program on Experimental and Theoretical Investigation of Complex Polymer Structures |
| 1999 | Perfect 100% Standardized Russian Federation National College Testing Score |

## MEMBERSHIPS & OFFICES IN PROFESSIONAL SOCIETIES

| | |
|---|---|
| 2021 | National Strategic Research Institute fellow |
| 2017 | European Society of Biomechanics |
| 2016 | International Society for Applied Cardiovascular Biology |
| 2014 | Biomedical Engineering Society |
| 2013 | American Physiological Society |
| 2013 | American Heart Association |
| 2011 | Society of Engineering Science |
| 2009 | American Society of Mechanical Engineers |

## PRESENTATIONS

* Presenting author

### Invited Presentations and Talks

1.* **Kamenskiy AV.** Modeling-Assisted Imaging to Optimize Carotid Open and Endovascular Repair. Surgery Grand Rounds. University of Nebraska Medical Center, Omaha, NE. Feb 7. 2012.

2.* **Kamenskiy AV.** Mechanics-Based Optimization of Carotid Open and Endovascular Repair. Covidien. Mar 28. 2012.

3.* **Kamenskiy AV.** Mechanics-Based Optimization of Carotid Open and Endovascular Repair. Cook Medical. MED Institute. Mar 9. 2012.

4.* **Kamenskiy AV.** Current Projects in Biomedical Engineering at UNMC. Surgical Research Forum Seminar Series. University of Nebraska Medical Center, Omaha, NE. March 13. 2013.

5.* **Kamenskiy AV.** Deformation of the Femoropopliteal Artery During Knee Flexion. Surgical

Research Forum Seminar Series. University of Nebraska Medical Center, Omaha, NE. June 11. 2013.

6.* **Kamenskiy AV**. Current Projects in Biomedical Engineering at UNMC: Research Update. Surgery Grand Rounds. University of Nebraska Medical Center, Omaha, NE. Feb 27. 2013.

7.* **Kamenskiy AV**. Center for Advanced Surgical and Engineering Applications. Creighton University Medical Center Seminar. Omaha, NE. April 25. 2014.

8.* **Kamenskiy AV**. Biomechanics of the Femoropopliteal Artery Disease. Creighton University Medical Center. Department of Biomedical Sciences Seminar. Omaha, NE. Sept 30. 2014.

9.* **Kamenskiy AV**. Femoropopliteal Artery Structure and Biomechanics. University of Minnesota. Department of Surgery and Department of Biomedical Engineering Seminar. Feb 05. 2015.

10.* **Kamenskiy AV**. Femoropopliteal Artery Structure and Biomechanics. Stevens Institute of Technology Seminar Series. Department of Biomedical Engineering, Chemistry and Biological Sciences. Hoboken, NJ. Feb 24. 2015.

11.* **Kamenskiy AV**, MacTaggart JN. Structure, Properties and Function of the Human Femoropopliteal Artery. 13th US National Congress on Computational Mechanics. Keynote presentation. San Diego, CA. July 28. 2015.

12.* **Kamenskiy AV**, MacTaggart J, Herber K. KETV Chronicle – Peripheral Arterial Disease. October 18th. 2015.

13.* **Kamenskiy AV**. Collaboration for Advanced Surgical and Engineering Applications. Seminar Series of the Department of Mechanical & Materials Engineering. University of Nebraska-Lincoln. Lincoln, NE. Sept 27. 2016.

14.* **Kamenskiy AV.** Biomechanics of the Femoropopliteal Artery: The Role of Engineering in Improving Treatment Modalities for Peripheral Arterial Disease. Department of Biomechanics and the Center for Research in Human Movement Variability. University of Nebraska Omaha. Sept 30. 2016.

15.* **Kamenskiy AV.** Engineering Strategies to Improve Treatment of Peripheral Arterial Disease. NWI Research Seminar. VA Omaha. Nov 4. 2016.

16.* **Kamenskiy AV.** Towards Improving Treatment Modalities for Peripheral Arterial Disease. Biomedical Engineering Seminar Series. College of Engineering. University of Wisconsin-Madison. Feb 20. 2017.

17.* **Kamenskiy AV.** Towards Improvement of Endovascular Treatment Modalities for Peripheral Arterial Disease. Seminar Series of the College of Engineering. University of Massachusetts Amherst, MA. March 27. 2017.

18*. **Kamenskiy AV.** Surgical and Engineering Collaborations at the University of Nebraska Medical Center: Working Together to Improve Endovascular Treatment of Peripheral Arterial Disease. MARC U*STAR/HHMI Undergraduate Scholars Program Seminar Series. University of Maryland, Baltimore County. Baltimore, MD. April 7. 2017.

19.* **Kamenskiy AV.** Towards Improvement of Endovascular Treatment Modalities for Peripheral Arterial Disease. Regenerative Medicine Symposium. Mahoney State Park, NE. April 21. 2017.

20.* **Kamenskiy AV**. Physiology and Pathophysiology of Human Femoropopliteal Artery. Department of Cellular and Integrative Physiology Seminar Series. University of Nebraska Medical Center, Omaha, NE. Sept 8th. 2017.

21.* **Kamenskiy AV**. Pathophysiology of Human Femoropopliteal Arteries. Surgical Research Forum Seminar Series. University of Nebraska Medical Center. Jan 10th. 2018.

22.* **Kamenskiy AV**. Stenting for Peripheral Arterial Disease in the Lower Limb. College of Engineering Invited Seminar. Northeastern University. Feb 28th. 2018.

23.* **Kamenskiy AV**. Endovascular Treatment of Atherosclerotic Occlusive Disease in the Femoropopliteal Artery. University of Cincinnati Engineering Seminar Series. March 22. 2018.

24.* **Kamenskiy AV**. Endovascular Treatment of Peripheral Arterial Disease in the Lower Extremity. University of South Carolina Engineering Seminar Series. April 26th. 2018.

25.* **Kamenskiy AV**. Biomechanics and Mechanobiology of the Femoropopliteal Artery in the Lower Limb. University of Nebraska Omaha. Department of Biomechanics Seminar Series. June 18th. 2018.

26.* **Kamenskiy AV**. Biomechanics and Mechanobiology of the Femoropopliteal Artery in the Lower Limb. Department of Civil Engineering and Architecture. University of Pavia. Italy. July 2nd. 2018.

27.* **Kamenskiy AV**. Biomechanics and Mechanobiology of the Femoropopliteal Artery in the Lower Limb. Policlinico San Donato. San Donato Milanese. Italy. July 4nd. 2018.

28.* **Kamenskiy AV.** Elastic fibers in muscular arteries: structure, function, and changes with age. Gordon Conference on Elastin, Elastic Fibers & Microfibrils: Elastic Tissues and Regulation of Growth Factor Signaling in Development, Homeostasis and Disease. Manchester, NH. July 21-26. 2019.

29.* **Kamenskiy AV.** Translational Research Projects in the Collaboration for Advanced Surgical and Engineering Applications laboratory. University of Texas San Antonio. February 25. 2020.

30.* **Kamenskiy AV.** Yes, Submit the R01. Biomechanics Seminar Series. University of Nebraska Omaha. Omaha, NE. April 4th. 2020.

31.* **Kamenskiy AV.** Pick Your Research Focus Area Strategically: A Case Study in Cardiovascular Biomechanics. Biomechanics Seminar Series. University of Nebraska Omaha. Omaha, NE. Aug 28th. 2020.

32.* **Kamenskiy AV.** Vascular Research Using Human Donor Tissues. Live On Nebraska. Omaha, NE. Sept 14th. 2020.

33.* **Kamenskiy AV.** Biomechanics of the Femoropopliteal Artery. Neurosurgery Grand Rounds.

UNMC. February 9. 2022.

34.* **Kamenskiy AV.** Biomechanics of the Femoropopliteal Artery In the Lower Limb. Cardiovascular Implant Durability Conference (CVID). Monterey, CA. April 4-6. 2022.

35.* **Kamenskiy AV.** Biomechanics of the Main Artery In the Lower Limb. International Symposium in Honor of Professor Gerhard A. Holzapfel's 60th Birthday. Graz, Austria. June 30-July 1. 2022.

36.* **Kamenskiy AV.** Mechanophysiology of Human Femoropopliteal Arteries in the Lower Extremity and Its Changes With Age and Disease. Society of Engineering Science. College Station, TX. October 16-19. 2022.

37.* **Kamenskiy AV.** Biomechanics of the Femoropopliteal Artery in the Lower Limb. University of Michigan BME 500 Seminar. February 16. 2023.

38.* **Kamenskiy AV**. Mechanical and Structural Changes in the Thoracic Aorta With Age. European Symposium on Vascular Biomaterials. Strasbourg, France. April 19-21, 2023.

39.* **Kamenskiy AV**. Mechanical and Structural Characteristics of Human Superficial Femoral and Popliteal Arteries. European Symposium on Vascular Biomaterials. Strasbourg, France. April 19-21, 2023.

40.* **Kamenskiy AV**. Vascular Research Using Human Donor Tissues. Live On Nebraska. Omaha, NE. June 28, 2023.

41.* **Kamenskiy AV**. Biomechanics of the Femoropopliteal Artery in the Lower Limb. Omaha VA Medical Center Seminar. Omaha, NE. March 1, 2024.

42.* **Kamenskiy AV**. Center for Cardiovascular Research in Biomechanics. Center for Heart and Vascular Research Retreat. Omaha, NE. March 16, 2024.

43.* **Kamenskiy AV**. Advancing Translational Vascular Research Using Human Donor Tissues. Live On Nebraska. Omaha, NE. December 19, 2024.

44.* **Kamenskiy AV**. Biomechanical Implications of Aging in Elastic and Muscular Arteries. The Michigan Biology of Cardiovascular Aging lecture. April 15, 2025.

**Oral Presentations at National and International Meetings**

1.* Nedorezov PF, **Kamenskiy AV**. Analysis of Steady State Oscillations of Thick Viscoelastic Plates with Simply Supported Edges. XIII Conference on Mathematical Modeling and Boundary Problems. Samara, Russia. May 29-31. 2003.

2.* Nedorezov PF, **Kamenskiy AV**. Steady State Oscillations of Thick Viscoelastic Plates with Simply Supported Edges. VI International Engineering Conference Devoted to 75-year Anniversary of S.A. Simbirzev. St. Petersburg, Russia. Jan 28-29. 2004.

3.* **Kamenskiy AV**, Salkovskiy YE. Modeling the Blood Flow in the Carotid Artery with Distensible Walls Using Finite Element Method. All-Russian Scientific Conference on Mathematical Modeling and Boundary Problems. Samara, Russia. May 26-28. 2004.

4.* **Kamenskiy AV**, Kirillova I, Ostrovskiy NV, Polyaev VO, Salkovskiy YE. Modeling of the Blood Flow in the Carotid Artery Bifurcation in Healthy, Diseased and Endarterectomized States. Bakoulev Center for Cardiovascular Surgery Conference on Cardiovascular Diseases. Moscow, Russia. Nov 10-13. 2004.

5.* Polyaev VO, **Kamenskiy AV**, Salkovskiy YE. Influence of the Hemodynamic Factors on the Localization of the Atherosclerosis in the Carotid Artery Bifurcation. XII International Conference Current Problems in Applied Anatomy and Surgery. St. Petersburg, Russia. Sep 9. 2004.

6.* Desyatova AS, **Kamenskiy AV**. Modeling of the Human Carotid Artery Reconstruction Using Different Repair Materials. III All-Russian Scientific Conference. Samara, Russia. May 29-31. 2006.

7. Kossovich LY, Kirillova IV, Guliaev YP, Ivanov DV, **Kamenskiy AV**, Salkovskiy YE, Desyatova AS, Bockeria LA, Morozov KM, Ostrovskiy NV, Polyaev VO. Revascularization of the Carotid Artery Using Different Patching Materials: Numerical Analysis and Clinical Results. Biomechanics 2007. St Petersburg, Russia. Jan 29-31. 2007.

8.* **Kamenskiy AV,** Kirillova IV, Morozov KM. Carotid Artery Repair Using Different Patching Materials. XVIII International Conference on Continuum Mechanics. Saratov, Russia. Aug 27 – Sep 1. 2007.

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10.* **Kamenskiy AV**, Dzenis YA. Mechanical Justification for the Need to Perform Carotid Artery Repair in Patients with Severe Atherosclerotic Disease. XIII Conference of Cardio-Vascular Surgeons. Moscow, Russia. Nov 25-28. 2007.

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17.* **Kamenskiy AV,** Dzenis YA, Desyatova AS, Lynch TG, MacTaggart JN, Pipinos II. Toward Optimal Hemodynamics in the Endarterectomized Carotid: A Finite Element Study. 5th Annual Academic Surgical Congress. San Antonio, TX. Feb 3-5, 2010.

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20.* **Kamenskiy AV,** Pipinos II, MacTaggart JN, Dzenis YA. Evaluation of Predictive Capabilities of Fung-Type and Structurally-Motivated Constitutive Models for Describing the Complex Mechanical Behavior of Soft Tissues. 48th Annual Technical Conference Of Society of Engineering Science. Evanson, IL. October 12-14. 2011.

21.* **Kamenskiy AV,** Pipinos II, MacTaggart JN, Dzenis YA. Comparative Analysis of Strain-Based and Invariant-Based Soft Tissue Constitutive Models: Experimental Evaluation of Predictive Capabilities. 4th International Conference on the Mechanics of Biomaterials and Tissues. Waikoloa, HI. December 11-15. 2011.

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25.* **Kamenskiy AV,** Kazmi SAJ, Pemberton MA, Pipinos II, Dzenis YA, Lomneth CS, Phillips NY, MacTaggart JN. Biaxial Mechanical Properties of the Human Thoracic And Abdominal Aorta, Common Carotid, Subclavian, Renal and Common Iliac Arteries. 9th Annual Academic Surgical Congress. San Diego, CA. Feb 4-6. 2014.

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27. Gnuse T, Maleckis K, MacTaggart J, **Kamenskiy AV**, Dzenis Y. Mechanically Accurate

Nanofibrous Vascular Graft Materials. 23rd World Forum on Advanced Materials: Biomaterials, Drug Delivery and Tissue Engineering Symposium. Lincoln, NE. May 11-15. 2015.

28.* **Kamenskiy AV**, Miserlis D, Adamson P, Adamson M, Knowles T, Neme J, Koutakis P, Phillips N, Pipinos I, MacTaggart N. Detailed Morphometric Analysis of 3D Vascular Anatomy of the Chest, Abdomen, Pelvis and Upper Thigh for the Optimized Design of Endovascular Devices Targeted to Different Patient Populations. BMES/FDA Frontiers in Medical Devices Conference. College Park, MD. May 18-20. 2015.

29. Desyatova AS, MacTaggart JN, Lomneth CS, Dzenis YA, **Kamenskiy AV**. Effects of Stenting on the Natural Limb Flexion-Induced Deformations of the Human Femoropopliteal Artery. 6th International Conference on Mechanics of Biomaterials and Tissues. Waikoloa, HI. December 6-10. 2015.

30.* **Kamenskiy AV**, Seas A, Desyatova AS, Deegan P, Bowen G, MacTaggart JN. *In Situ* Longitudinal Pre-Stretch in the Human Femoropopliteal Artery. 6th International Conference on Mechanics of Biomaterials and Tissues. Waikoloa, HI. December 6-10. 2015.

31. MacTaggart J, Poulson W, Akhter M, Seas A, Thorson K, Phillips N, Desyatova A, **Kamenskiy AV**. Morphometric Roadmaps to Improve Device Delivery for Fluoroscopy-Free Balloon Occlusion of the Aorta. 11th Annual Academic Surgical Congress. Jacksonville, FL. February 2-4. 2016.

32. Poulson W, **Kamenskiy AV**, Sim S, Deegan P, MacTaggart J. The Popliteal Artery Demonstrates More Elastin Breaks than the Superficial Femoral Artery. Scientific Forum program at the American College of Surgeons 2016 Clinical Congress. Washington, DC. Oct 16-20. 2016.

33. Desyatova A, Poulson W, Deegan P, Lomneth C, MacTaggart J, **Kamenskiy AV**. Effect of Ageing on Arterial Stresses Due to Limb Flexion. International Society for Applied Cardiovascular Biology 15th Biennial Meeting. Banff, Alberta, Canada. Sept 7-10. 2016.

34. Desyatova A, MacTaggart J, Poulson W, Deegan P, Lomneth C, **Kamenskiy AV**. Torsion and Intramural Stresses in the Human Femoropopliteal Artery Due to Limb Flexion. Predictive Computational Vascular Mechanics. 5th International Conference and Mathematical Biomedical Engineering – CMBE 2017. Pittsburgh, PA. 10-12 April. 2017.

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36. Takahashi K, Patterson J, Papachatzis N, Slivka D, Myers S, **Kamenskiy AV**, Pipinos I. Foot Biomechanics and Thermoregulation: Implications for Tissue Complications in Diabetes and Peripheral Artery Disease. IDeA Central Region meeting in Sioux Falls, SD. June 8th, 2017.

37.* **Kamenskiy AV**. Constitutive Modeling of Human Femoropopliteal Artery Biaxial Stiffening due to Aging and Diabetes. 7th International Conference on Mechanics of Biomaterials and Tissues. Waikoloa, HI. Dec 10-14, 2017.

38. Maleckis K, Dzenis Y, **Kamenskiy AV**, MacTaggart J. Biomimetic Nanofiber-Based Graft Material for Vascular Applications. 7th International Conference on Mechanics of Biomaterials and Tissues. Waikoloa, HI. Dec 10-14, 2017.

39. Marmie B, Sanderfer C, Fuchs J, Pipinos M, Tommeraasen M, Aylward P, **Kamenskiy AV**, MacTaggart J. Feasibility of Fluoroscopy-Free Endovascular Navigation in Trauma Patients of Different Ages. 13th Annual Academic Surgical Congress. Jan 30 – Feb 01, 2018.

40. **Kamenskiy AV.** Effects of Age and Risk Factors on the Mechanical and Structural Characteristics of Human Femoropopliteal Arteries. World Congress of Biomechanics. July 8 – 12, 2018.

41.* **Kamenskiy AV.** Elastic fibers in muscular arteries: structure, function, and changes with age. Gordon Conference on Elastin, Elastic Fibers & Microfibrils: Elastic Tissues and Regulation of Growth Factor Signaling in Development, Homeostasis and Disease. Manchester, NH. July 21-26. 2019.

42.* **Kamenskiy AV**, Aylward P, Desyatova A, DeVries M, Wichman, C, MacTaggart J. Endovascular Repair of Blunt Thoracic Aortic Trauma Is Associated With Increased Left Ventricular Mass, Hypertension, and Off-Target Aortic Remodeling. Vascular Research Initiatives / Atherosclerosis, Thrombosis, and Vascular Biology Conference. Chicago, IL. May 5-7. 2020. Virtual oral presentation.

43. Jadidi M, Anttila E, Habibnezhad M, Keiser C, Maleckis K, Desyatova A, MacTaggart J, **Kamenskiy AV**. Mechanical Changes in Human Elastic and Muscular Arteries With Age. Summer Biomechanics, Bioengineering, and Biotransport Conference ($SB^3C$-2020). Vail, CO. June 17-20. 2020. Virtual oral presentation.

44. Jadidi M, **Kamenskiy AV**. Changes in the Biomechanics of Human Aortas and Femoropopliteal Arteries With Age. 5th Annual Human Movement Variability Conference & 1st Annual Great Plains Biomechanics Conference. Vitual conference. September 4. 2020.

45. Struczewska P, Shahbad R, Desyatova A, **Kamenskiy AV**. Assessment of Microstructural Damage to Human Femoropopliteal Arteries During and After Balloon Angioplasty. Omaha, NE. Student Research and Creative Activity Fair. Omaha, NE. March 4, 2022.

46. Razian, SA, Jadidi M, **Kamenskiy AV**. Software to View and Convert Microscopic Histological Images. 3rd Annual Great Plains Biomechanics Conference. Omaha, NE. May 18, 2022.

47. Struczewska P, Shahbad R, Desyatova A, **Kamenskiy AV**. A Method for Evaluating the Effectiveness of Balloon Angioplasty in Human Femoropopliteal Arteries Using X-Ray Microtomography. 3rd Annual Great Plains Biomechanics Conference. Omaha, NE. May 18, 2022.

48*. Keiser C, Maleckis K, MacTaggart J, **Kamenskiy AV**. Comparative Assessment of Peripheral Stent Abrasiveness Under Cyclic Deformations Experienced During Limb Flexion. Vascular Research Initiatives Conference. May 11, 2022.

49. Razian SA, Jadidi M, **Kamenskiy AV**. Using Machine Learning Regression Methods to Predict Morphological Characteristics of Human Femoropopliteal Arteries. Great Planes Biomechanics Conference. June 2023.

50. Struczewska P, **Kamenskiy AV**. Mechanical and Structural Characterization of the Above and Below-Knee Human Lower Extremity Arteries. Great Planes Biomechanics Conference. June 2023.

51. Struczewska P. **Kamenskiy AV**. Comparison of the Biaxial Mechanical Characteristics of the Above and Below-Knee Human Peripheral Arteries. 15th Annual Student Research and Creative Activity Fair. 2023.

52. Razian S, **Kamenskiy AV**, Jadidi M. An Optimized Method for Constitutive Model Fitting of Soft Tissues Bi-Directional Mechanical Stress-Stretch Data. SB3C. June 2023.

53*. Razian S, Jadidi M, Zamani E, Kazim M, Struczewska P, Shahbad R, **Kamenskiy AV**. Sex Differences in Morphological, Mechanical, and Physiological Characteristics of Human Femoropopliteal Arteries. 9th International Conference on Mechanics of Biomaterials and Tissues. December 2023.

54. Razian S, **Kamenskiy AV**, Jadidi M. Optimizing Differential Evolution for Fitting Constitutive Models of Bi-Directional Mechanical Stress-Stretch Data in Soft Tissues. 16th Annual Student Research and Creative Activity Fair. March, 2024.

55. Razian S, Jadidi M, **Kamenskiy AV**. Differential Effects of Hypertension On The Morphological, Mechanical, and Physiologic Characteristics of Male and Female Human Femoropopliteal Arteries. SB3C. June 2024.

56. Jadidi M, Razian S, **Kamenskiy AV**. A Machine Learning Approach To Prediction of Patient-Specific Arterial Wall Mechanical Properties. 19th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering. Vancouver, Canada. 30 July – 1 August, 2024.

57. Desyatova A, Shahbad R, **Kamenskiy AV**, Kuniyil S, Gamache J, Maleckis K, MacTaggart J. Compliant Aortic Stent-Grafts Attenuate Left Ventricular Mass and Pulse Wave Velocity Increases Compared to Stiff Commercial TEVAR Stent-Grafts in a Preclinical Porcine Model. ISACB. Vienna, Austria. Oct 5-8, 2024.

58. Rail Gilyazov, Jason MacTaggart, Barbara Batista de Oliveira, Maksim Glushkov, Paul Deegan, **Kamenskiy AV**. Effects of Orbital Atherectomy and Balloon Angioplasty on the Treatment of Calcified Femoropopliteal Arteries. Office of Research and Creative Activity Fair. Omaha, NE. April 11, 2025.

59. Vahid Mohammadi, Jason MacTaggart, **Kamenskiy AV**. Designing a Portable, Autonomous Robotic Device for Guidewire or Catheter Insertion in Interventional Procedures. Office of Research and Creative Activity Fair. Omaha, NE. April 11, 2025.

**Poster Presentations at National and International Meetings**

1.* **Kamenskiy AV**, Pipinos II, Desyatova AS, Salkovskiy YE, Kossovich LY, Kirillova IV, Bockeria LA, Morozov KM, Polyaev VO, Lynch TG, Dzenis YA. Finite Element Model of the Patched Human Carotid Bifurcation. 32nd Annual Meeting of the Midwestern Vascular Surgical Society. Madison, WI. Sep 11-13. 2008.

2.* **Kamenskiy AV**, Pipinos II, Desyatova AS, Salkovskiy YE, Kossovich LY, Kirillova IV, Bockeria LA, Morozov KM, Polyaev VO, Lynch TG, Dzenis YA. Finite Element Model of the Endarterectomized and Patched Human Carotid Bifurcation. Nebraska EPSCoR. Lincoln, NE. Sep 29. 2009.

3.* **Kamenskiy AV,** Pipinos II, MacTaggart JN, Dzenis YA. Nonlinear Coupled Modeling of Patched Carotids: Towards Biomechanics-Assisted Optimization of Grafts and Surgery Interventions. 4th International Conference on the Mechanics of Biomaterials and Tissues. Waikoloa, HI. December 11-15. 2011.

4.* **Kamenskiy AV**, Lomneth C, Pipinos II, Longo GM, Johanning J, Baxter BT, MacTaggart JN. Method to Quantify Femoropopliteal Artery Deformation During Knee Flexion. Arteriosclerosis, Thrombosis, and Vascular Biology. Lake Buena Vista, FL. May 1-3. 2013.

5. Seas A, **Kamenskiy AV**, MacTaggart JN, Baxter BT. Semi-Automated Quantitative Characterization of Elastin in the Wall of the Human Superficial Femoral Artery. SURP UNMC. Omaha, NE. Aug. 2014.

6.* **Kamenskiy AV**, Nusz S, Hunter W, Desyatova A, Ruhlman M, Pipinos I, MacTaggart J. Effects of Demographics and Clinical Risk Factors on Human Femoropopliteal Artery Histopathology. Atherosclerosis, Thrombosis and Vascular Biology / Peripheral Vascular Disease Conference. San Francisco, CA. May 7-1. 2015.

7. Seas A, MacTaggart JN, **Kamenskiy AV**. Effects of Demographics and Risk Factors on the Elastic Strain Energy of Human Superficial Femoral Arteries. 6th International Conference on Mechanics of Biomaterials and Tissues. Waikoloa, HI. December 6-10. 2015.

8. Poulson W, **Kamenskiy AV**, Deegan P, Lomneth C, MacTaggart J. Effects of Tethering Branches on Limb Flexion-Induced Deformations of the Human Femoropopliteal Artery. Atherosclerosis, Thrombosis and Vascular Biology. Nashville, TN. May 5-7. 2016.

9. Poulson W, **Kamenskiy AV**, Deegan P, Lomneth C, MacTaggart J. The Popliteal Artery Demonstrates Significantly Higher Torsion than the Superficial Femoral Artery During Limb Flexion. Scientific Forum at the American College of Surgeons 2016 Clinical Congress. Washington, DC. Oct 16-20. 2016.

10.* Reilly A, Poulson W, Sim S, Deegan P, **Kamenskiy AV**, MacTaggart J. Femoropopliteal Artery Calcification is Associated with Ageing, Diabetes, Elastin Fiber Degradation, and Anisotropic Stiffening. International Society for Applied Cardiovascular Biology 15th Biennial Meeting. Banff, Alberta, Canada. Sept 7-10. 2016.

11.* **Kamenskiy AV**, Seas A, Poulson W, Deegan P, Sim S, Desyatova A, MacTaggart J. Constitutive Description of Human Femoropopliteal Artery Ageing. International Society for Applied Cardiovascular Biology 15th Biennial Meeting. Banff, Alberta, Canada. Sept 7-10. 2016.

12.* Desyatova A, Poulson W, Deegan P, Lomneth C, MacTaggart J, **Kamenskiy AV**. The Effect of Limb Flexion on Torsional Deformations and Stresses in the Human Femoropopliteal Artery. Biomedical Engineering Society Annual Meeting. Minneapolis, MN. Oct 5-8. 2016.

13. Seas A, MacTaggart J, Castellanos Mariajose, **Kamenskiy AV**. Use of Neural Networks to Predict Peripheral Artery Pathology. Biomedical Engineering Society Annual Meeting.

Minneapolis, MN. Oct 5-8. 2016.

14. Poulson W, Rodgers A, Batra R, Deegan P, **Kamenskiy AV**, MacTaggart J. Intramural Structural Changes in Human Femoropopliteal Arteries with Age. Atherosclerosis, Thrombosis, and Vascular Biology. Minneapolis, MN. May 4-6. 2017.

15. Maleckis K, Deegan P, Sievers C, Desyatova A, MacTaggart J, **Kamenskiy AV**. Mechanical Evaluation of Peripheral Artery Stents. BMES/FDA Frontiers in Medical Devices Conference. College Park, MD. May 16-18. 2017.

16. Poulson W, Forney E, Adamson A, MacTaggart J, **Kamenskiy AV**. Geometric Features of the Carotid Artery at Baseline Improve Prediction of Stenosis Severity at Follow-up. Midwestern Vascular 2017 41st Annual Meeting. Chicago, IL. Sept 7-9. 2017.

17.* Desyatova A, MacTaggart J, Romarowski R, Poulson W, Conti M, **Kamenskiy AV**. Effect of Aging on Mechanical Stresses, Deformations, and Hemodynamics in Human Femoropopliteal Artery Due to Limb Flexion. 7th International Conference on Mechanics of Biomaterials and Tissues. Waikoloa, HI. Dec 10-14, 2017.

18. Anttila E, Deegan P, **Kamenskiy AV**. Experimental and Constitutive Assessments of Damage in Human Femoropopliteal Arteries of Different Ages. 7th International Conference on Mechanics of Biomaterials and Tissues. Waikoloa, HI. Dec 10-14, 2017.

19. Jadidi M, Desyatova A, **Kamenskiy AV**. Mechanical Stresses Associated with Flattening of the Human Femoropopliteal Artery Specimens during Planar Biaxial Testing. 7th International Conference on Mechanics of Biomaterials and Tissues. Waikoloa, HI. Dec 10-14, 2017.

20*. MacTaggart J, Poulson W, Seas A, Deegan P, Lomneth C, Desyatova A, Maleckis K, **Kamenskiy AV**. Stent Designs Differentially Influence Limb Flexion-Induced Femoropopliteal Artery Deformations. World Congress of Biomechanics. July 8-12. 2018.

21. Romarowski R, Conti M, Auricchio F, Morgani S, **Kamenskiy AV**. Age and Risk Factors Promote Abnormal Hemodynamics and Differentially Influence Aortic Calcification. World Congress of Biomechanics. July 8-12. 2018.

22*. Maleckis K, Deegan P, Kalil T, MacTaggart J, **Kamenskiy AV**. Safe Balloon Occlusion Pressures and Volumes For Resuscitative Endovascular Balloon Occlusion of the Thoracic and Abdominal Aorta. 2018 Military Health System Research Symposium (MHSRS). August 20-23. 2018.

23. Sanderfer C, Marmie B, Fuchs J, Tommeraasen M, Pipinos M, Aylward P, **Kamenskiy AV**, MacTaggart J. Effects of Belly Curvature on the Accuracy of Simulated Fluoroscopy-Free Endovascular Navigation. 2018 Military Health System Research Symposium (MHSRS). August 20-23. 2018.

24*. Maleckis K, **Kamenskiy AV**, Lichter E, Deegan R, MacTaggart J. Mechanically Biomimetic Nanofibrillar Elastomeric Vascular Graft Demonstrates Rapid Endothelialization and Complete Integration Into The Porcine Iliac Artery Wall as Opposed to Conventional ePTFE. 16th Biannual International Society of Applied Cardiovascular Biology. Bordeaux, France. Sept 16-19. 2018.

25. Maleckis K, Desyatova A, **Kamenskiy AV**, Aylward P, MacTaggart J. Windkessel-preserving Aortic Stent-Graft. Biomedical Engineering Society (BMES) meeting. Atlanta, GA. Oct 17-20. 2018.

26. Aylward P, **Kamenskiy AV**, Wichman C, Lyons C, Prathivadhi-Bhay S, Pipinos M, Venkataraman V, Poulson W, MacTaggart J. Stent Design Affects Femoropopliteal Artery Stenosis Rates. Vascular Research Initiatives (VRIC). Boston, MA. May 3. 2019.

27*. **Kamenskiy AV**, Maleckis K, Keiser C, Aylward P, Desyatova A, MacTaggart J. Biomimetic Reinforced Nanofibrillar Elastomeric Bypass Grafts With Physiologic Longitudinal Pre-Stretch For Below-Knee Lower Extremity Peripheral Arterial Disease. International Society of Applied Cardiovascular Biology. Zurich, Switzerland. June 19-21. 2019.

28. Jespersen K, Aylward P, **Kamenskiy AV**, MacTaggart J. Fluoroscopy-free REBOA Zone 1 aortic cannulation in perfused human cadavers: how often do we miss? Military Health System Research Symposium (MHSRS). Kissimmee, FL. Aug. 2019

29. Freel C, Keiser C, Jadidi M, Sim S, Salkovskiy Y, Maleckis K, Desyatova A, **Kamenskiy AV**, MacTaggart J. Non-Destructive Characterization of Peripheral Arteries Using Intravascular Ultrasound. Summer Undergraduate Research Program. University of Nebraska Medical Center. August 12. 2021.

30. Razian, SA, Jadidi M, **Kamenskiy AV**. Design and Development of Software With a Graphical User Interface to Display and Convert Multiple Microscopic Histology Images. Student Research and Creative Activity Fair. Omaha, NE. March 4, 2022.

31. Razian S, Jadidi M, **Kamenskiy AV**. The Effects of Demographics and Risk Factors on the Morphological Characteristics of Human Femoropopliteal Arteries. 15th Annual Research and Creative Activity Fair. 2023.

32. Pipinos M, Amato-Hanner E, Jadidi M, MacTaggart J, **Kamenskiy AV**. Limb Flexion Compresses The Anterior Tibial Artery and Changes The Anterior Tibial Take-Off Angle In a Sex-Dependent Manner. ATVB. Chicago, IL. May 15-18, 2024.

33*. MacTaggart J, Gamache J, **Kamenskiy AV**. A Porcine Model of Controlled Peripheral Artery Calcification. ISACB. Vienna, Austria. October 5-8, 2024.

34. Desyatova A, **Kamenskiy AV**. Tissue Analysis Core (TAC) Capabilities at the Center for Cardiovascular Research in Biomechanics (CRiB). ISACB. Vienna, Austria. October 5-8, 2024.

35. Rail Gilyazov, Paul Deegan, Jason MacTaggart, **Kamenskiy AV**. Prevalence of Arterial Calcification Assessed with micro-CT. Office of Research and Creative Activity Fair. Omaha, NE. April 11, 2025.

36. Barbara Batista de Oliveira, **Kamenskiy AV**, Frazer Heinis, Shaheed Merani, Pranav Renavikar, Jason MacTaggart. Large Animal Model of Aortoiliac Calcification. Second Annual UNMC Transplant Symposium. March 3, 2025.

37. Barbara Batista de Oliverira, Jason MacTaggart, **Kamenskiy AV**. Peripheral Artery Calcification Disrupts Lower Extremity Biomechanics in a Swine Model. Vascular Research Initiatives Conference. Baltimore, MD. April 22, 2025.

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## PUBLICATIONS

| Journal | Impact Factor |
|---|---|
| European Heart Journal (1) | 39.3 |
| Annals of Surgery (3) | 13.8 |
| Acta Biomaterialia (17) | 10.6 |
| Atherosclerosis, Thrombosis, and Vascular Biology (2) | 10.5 |
| Journal of the American College of Surgeons (1) | 5.1 |
| Journal of Vascular Surgery (4) | 4.9 |
| The American Journal of Physiology: Heart and Circulatory Physiology (2) | 4.7 |
| Journal of the Royal Society Interface (2) | 4.3 |
| Annals of Biomedical Engineering (3) | 3.9 |
| Journal of the Mechanical Behavior of Biomedical Materials (1) | 3.9 |
| Journal of Endovascular Therapy (1) | 3.5 |
| Journal of Trauma and Acute Care Surgery (2) | 3.4 |
| Surgery (1) | 3.4 |
| Biomechanics and Modeling in Mechanobiology (6) | 2.9 |
| Journal of Biomechanics (1) | 2.7 |
| Journal of Surgical Research (1) | 2.2 |
| Journal of Biomechanical Engineering (1) | 1.9 |
| Journal of Vascular and Endovascular Surgery (1) | 1.1 |

**Articles Published in Scholarly Journals**

* Corresponding author

1. Nedorezov PF, **Kamenskiy AV**. Analysis of Self-Heating of Simply Supported Thick Viscoelastic Plates under Steady State Oscillatory Loads. In Russian. *Mechanics of Deformable Media*. V15. P87-94. 2004.

2. Nedorezov PF, **Kamenskiy AV**. Steady State Oscillations of Thick Viscoelastic Plates with Simply Supported Edges. In Russian. *Durability of Materials and Structures*. P292-301. 2004.

3.* **Kamenskiy AV**, Salkovskiy YE, Polyaev VO. Numerical Modeling of the Carotid Artery Endarterectomy and Patching Using Autografts. In Russian. *Reconstructive and Plastic Surgery: Special Edition*. V3-4(10-11). P45-48. 2004.

4.* Kossovich LY, Kirillova IV, Guliaev YP, Desyatova AS, **Kamenskiy AV**, Salkovskiy YE, Ostrovskiy NV, Polyaev VO, Morozov KM. Revascularization of the Human Carotid Artery Using Different Patching Materials. In Russian. *Saratov Scientific Medical Journal*. V2(12). P32-42. 2006.

5.* Ostrovskiy NV, Polyaev VO, Kirillova IV, Desyatova AS, **Kamenskiy AV**. Using Computer Technologies for Comparative Assessment of Patch Materials Which Are Used in Carotid Endarterectomy. In Russian. *Issues of Reconstructive and Plastic Surgery*. V2(17). P42-45. 2006.

6.* Bockeria LA, Morozov KM, Kossovich LY, Kirillova IV, Guliaev YP, Desyatova AS, **Kamenskiy AV**, Salkovskiy YE, Ostrovskiy NV, Polyaev VO. Revascularization of the Human Carotid Artery Using Different Patching Materials. In Russian. *Biomedical Technologies and Radio Electronics*. V12. P33-41. 2006.

7. Bockeria LA, Kirillova IV, Gulyaev YP, Morozov KM, Shumilina MV, Pirzhalaishvili ZK, **Kamenskiy AV**, Chenskaya YA, Ostrovskiy NV. Mathematical Modeling of Bifurcation of Carotid Artery (To Question of Load Distributions in Asymmetric Bifurcations). In Russian. *Regional Blood Circulation and Microcirculation*.V5. P5-12. 2006.

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9.* **Kamenskiy AV**. Finite Element Model the Carotid Bifurcation. In Russian. *Journal of Saratov State University: Mathematics, Mechanics, Informatics*. V7(1). P48-54. 2007.

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14. **Kamenskiy AV**, Dzenis YA, MacTaggart JN, Kazmi SAJ, Lynch TG, Pipinos II. Nonlinear Mechanical Behavior of the Human Common, External and Internal Carotid Arteries In Vivo. *Journal of Surgical Research*. V176. P329-336. 2012. PMID: 22099586.

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With Flattening of Human Femoropopliteal Artery Specimens During Planar Biaxial Testing and Their Effects on Physiologic Stress-Stretch State. *Biomechanics and Modeling in Mechanobiology*. May 2019. PMID: 31069592.

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43. Evans C, Schlitzkus L, Schiller A, **Kamenskiy AV**, MacTaggart J. Comparison of Simulation Models For Training A Diverse Audience To Perform Resuscitative Endovascular Balloon Occlusion Of The Aorta. *Journal of Endovascular Resuscitation and Trauma Management*. Vol. 3(3). Oct 2019. DOI.

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50. Maleckis K, **Kamenskiy AV**, Lichter E, Oberley-Deegan R, Dzenis Y, MacTaggart J. Mechanically Tuned Vascular Graft Demonstrates Rapid Endothelialization and Integration Into the Porcine Iliac Artery Wall. *Acta Biomaterialia*. 2021 Feb 4;S1742-7061(21)00075-1. doi: 10.1016/j.actbio.2021.01.047. PMID: 33549808.

51*. Jadidi M. Poulson W, Aylward P, MacTaggart J, Sanderfer C, Marmie B, Pipinos M, **Kamenskiy AV**. Calcification Prevalence in Different Vascular Zones and Its Association With Demographics, Risk Factors, and Morphometry. *American Journal of Physiology: Heart and Circulatory Physiology*. 2021 Jun 1;320(6):H2313-H2323. PMID: 33961507.

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57*. Zhang W, Jadidi M, Razian SA, Holzapfel G, **Kamenskiy AV**, Nordsletten D. A Viscoelastic Constitutive Framework for Aging Muscular and Elastic Arteries. *Acta Biomaterialia*. 2024 Oct 15:188:223-241. doi: 10.1016/j.actbio.2024.09.021. Epub 2024 Sep 18. PMID: 39303831

58. Shahbad R, **Kamenskiy AV**, Razian SA, Jadidi M, Desyatova A. Effects of Age, Elastin Density, and Glycosaminoglycan Accumulation on the Delamination Strength of Human Thoracic and Abdominal Aortas. *Acta Biomaterialia*. 2024 Nov:189:413-426. doi: 10.1016/j.actbio.2024.10.010. Epub 2024 Oct 11. PMID: 39396627.

59*. **Kamenskiy AV**, Pipinos I, Tian Y, de Oliveira B, Orton D, Liu X, MacTaggart J. Vascular Calcification Amplifies Limb Flexion-Induced Arterial Deformations and Causes Intermittent Vessel Pinching. *Annals of Surgery*. 2025. Accepted in April 2025.

60*. **Kamenskiy AV**, de Oliveira B, Heinis F, Renavikar P, Eberth J, MacTaggart J. Large Animal Model of Controlled Peripheral Artery Calcification. *Acta Biomaterialia*. 2025. Accepted in April 2025.

61. Lanzer P, Schurgers L, Twarda-Clapa A, Ferraresi R, Hui H, **Kamenskiy AV**, Chen Y,

Hamana T, Fok Pak-Wing, Milan A, Virmani R, St Hilaire C. Medial Arterial Calcification in Aging and Disease: Review of Current Evidence. European Heart Journal. 2025. Accepted for publication in May 2025.

**Invited Editorials and Commentaries**

1. **Kamenskiy AV**. Hemodynamics of the Carotid Artery Bifurcation Repaired with Primary Closure and Patch Angioplasty Techniques. Invited Article Commentary. *Journal of Vascular Surgery*. 67(3):897-898. March 2018. PMID: 29477202.

**Books & Book Chapters**

1. **Kamenskiy AV**, Salkovskiy YE. Blood Vessels Biomechanics Using Finite Element Simulation Suite ANSYS. Textbook for Undergraduate Students. In Russian. Saratov. -100 pages. 2005.

2. Kossovich LY, Kirillova IV, Guliaev YP, Kossovich EL, **Kamenskiy AV**, Salkovskiy YE, Desyatova AS, Ostrovskiy NV, Polyaev VO, Morozov KM. Mathematical Modeling of Blood Vessels Behavior. In Russian. Chapter in Methods of Computer Diagnostics in Biology and Medicine. Textbook for students of Nano and Biomedical Departments. In Russian. Saratov. - 120 pages. P74-95. 2007.

3. Kossovich LY, Kirillova IV, Gulaev YP, Ivanov DV, **Kamenskiy AV**, Polyaev VO, Ostrovskiy NV, Morozov KM. Mathematical Modeling of Human Carotid in Healthy, Affected or Post-Corrective Surgery Conditions. Chapter in Topical Problem in Solid Mechanics. Editors NK Gupta, AV Manjirov. Elite Publishing House Pvt. Ltd. India, IIT Dilhi. P235-250. 2008.

4. Goliadkina AA, Ivanov DV, **Kamenskiy AV**, Kirillova IV, Salkovskiy YE, Safonov RA, Schuchkina OA. Computer-Aided Design of Blood Vessels with SolidWorks. Textbook for undergraduate students. In Russian. Saratov. -153 pages. 2011.

5. **Kamenskiy AV**, Jadidi M, Desyatova A, MacTaggart J. Biomechanics of the Main Artery in the Lower Limb. Chapter in Solid (Bio)mechanics: Challenges of the Next Decade. Springer. pp 157–179. 2022.

6. Jadidi M, Kazim M, Razian SA, **Kamenskiy AV**. Mechanical and Structural Changes in the Thoracic Aorta With Age. Chapter for the European Symposium on Vascular Biomaterials. 2023.

7. Shahbad R, Desyatova A, Jadidi M, **Kamenskiy AV**. Mechanical and Structural Characteristics of Human Superficial Femoral and Popliteal Arteries. Chapter for the European Symposium on Vascular Biomaterials. 2023.

8. Vogel J, Berg B, Dawson J, **Kamenskiy AV**. Flexible Implantable Device Shape History. Chapter in Measuring the Physiologic Use Conditions of Medical Devices. Editors Walt Baxter, Ryan Lahm. Springer. ISBN 978-3-031-62763-7. P125-160. 2024.

akamenskiy@unomaha.edu

## COURSES DEVELOPED

- Vascular Mechanobiology. Graduate. 3crh.

  The course focuses on the mechanobiology of human arteries and includes a theoretical framework for applying engineering principles to study human vasculature, lectures on the most common vascular diseases and treatment options, and hands-on experimental studies of arterial behavior.

  Taught to graduate students of the University of Nebraska Omaha and University of Nebraska-Lincoln as Advanced Biomechanics II (PE 9460-001) in Spring 2016.

- Nebraska Endovascular Skills for Trauma (NEST) course. This course is offered nationally to front-line trauma care providers.

## COURSES TAUGHT

- Nebraska Endovascular Skills for Trauma (NEST) course. Electronic simulation module. National course offered to front-line trauma care providers. Taught at the University of Nebraska Medical Center. July 2017.

- Lectures on vascular mechanobiology as part of MECH 438/838 Mechanics of Biomaterials Engineering course taught by Dr. Linxia Gu at the University of Nebraska-Lincoln. 2016 and 2017.

- Vascular Mechanobiology (PE 9460-001 Advanced Biomechanics). University of Nebraska Omaha. 2016.

- Engineering Statics ENGM 223. Undergraduate. University of Nebraska-Lincoln. 2011.

- Strength of Materials ENGM324. Undergraduate. University of Nebraska-Lincoln. 2011.

- Computational Biomechanics. Undergraduate. Saratov State University, Saratov, Russia. 2005.

- Strength of Materials for Engineers. Undergraduate. Saratov State University, Saratov, Russia. 2004.

## STUDENTS & TRAINEES

**Junior Faculty**

2022 – Nitesh Nama. Assistant Professor. UNL Mechanical & Materials Engineering.
Mentor on the AHA Career Development Award.

2016 – 2019 Kota Takahashi. Assistant Professor. UNO
Role: Part of mentoring team on COBRE focused on muscle biomechanics.

**Residents**

2024 Barbara Batista de Oliveira. UNMC/UNO.

2023 - 2024 Jennifer Gamache. UNMC.

2017 – 2019 Paul Aylward. Surgery. UNMC.

2015 – 2017 William Poulson. Surgery. UNMC.

**Post-doctoral Fellows**

2020 Yury Salkovskiy. Biomechanics. UNO

2017 – 2019 Kaspars Maleckis. Surgery. UNMC.

2015 – 2019 Anastasia Desyatova. Surgery. UNMC.
Role: Consultant on NIH F32 fellowship.

**Graduate Students**

2025 - Maksim Glushkov. UNO Biomechanics. PhD program.
Role: Primary advisor.

2025 - Behzad Vahedi. UNO Biomechanics. PhD program.
Role: Primary advisor.

2024 Mohammad Arjomandi. UNO Biomechanics. PhD program.

2023 - Rail Gilyazov. UNO Biomechanics. MSc program.
Role: Primary advisor.

2023 Sahel Mohamadi. UNO Biomechanics. PhD program.

2023 - Vahid Mohammadi. UNO Biomechanics. PhD program.
Role: Primary advisor.

2021 – Sayed Ahmadreza Razian. UNO Biomechanics. PhD program. GRACA award recipient in 2022.
Role: Primary advisor.

2021 – 2023 Pauline Struczewska. UNO Biomechanics. MSc program. GRACA award recipient in 2022.
Role: Primary advisor.

2018 – 2022 Courtney Keiser. UNL Mechanical & Materials Engineering Dpt. PhD program.
Role: Primary advisor.
Winner of the WE Local Collegiate Competition in 2020 with a stent-graft project.
Winner of the UNL College of Engineering's Graduate Complete Engineer Award

2016 – 2020 Majid Jadidi. UNL Mechanical & Materials Engineering Dpt. PhD program.
Role: Primary advisor.

2016 – 2021 Eric Anttila. UNL Mechanical & Materials Engineering Dpt. PhD program.

Role: Primary advisor.

2019 Calvin Lam. UNMC MD/PhD student research rotation.

2019 Kathryn Jespersen, UNMC. Graduate student rotation.

2017 – 2019 Eliezer Lichter. UNMC PhD program.
Role: Graduate committee member.

2017 – 2018 Thang Nguyen. UNMC MSIA program.
Role: Graduate committee member.

2015 – 2016 Kaspars Maleckis. UNL Mechanical & Materials Engineering Dpt. PhD program.
Role: Co-Advisor with Dr. Yuris Dzenis.

**International Graduate Students**

2024 Simone Capuano. Politecnico di Torino, Italy.
MS Project co-adviser with Claudio Chiastra and site advisor at UNO.

2022 - 2023 Masoud Arabbeiki Zefreh. Mechanical Engineering. Politecnico Di Torino, Italy.
MS Project co-adviser with Claudio Chiastra.

2022 - 2023 Francesco Giovanniello. Mechanical Engineering. McGill University, Canada.
External Examiner of PhD thesis. Supervisor Marco Amabili.

2017 Rodrigo Romarowski. Civil Engineering and Architecture, University of Pavia, Italy

2015 – 2016 Giulia Campanile. MS Student. Politecnico di Milano.
Role: Co-Advisor with M. Conti and F. Migliavacca.

**Medical Students**

2023 Margarita Pipinos. UNMC.

2023 Elizabeth Amato-Hanner. UNMC.

2022 Kaylee Townsend. LiveOn Nebraska & National University of Ireland, Galway.

2018 - 2021 Sruti Prathivadhi-Bhay. UNMC. UneMed EMET track.

2017 Miles Tommeraasen. UNMC.

2017-2019 Blake Marmie. UNMC. UneMed

2017-2019 Van Christian Sanderfer. UNMC.

2016 Anna Adamson. UNMC.

2016 Eric Forney. UNMC

2016 Cole Sievers. UNMC.

2016 Hannah Johnke. UNMC.

2016 Alexis Rogers. UNMC.

2016 Noah Hammond. UNMC.

2016 – 2019 Ethan Monhollon. UNMC. UneMed.

2016 Austin Reilly. UNMC.

2015 – 2016 Joseph Marion. UNMC.

2015 – 2016 Patrick Kirkland. UNMC.

2013 – 2016 Peter Adamson. UNMC.

2013 – 2015 Micah Adamson. UNMC.

2015 Katherine Thorson. UNMC.

2012 – 2013 Tom Knowles. Creighton University Medical Center.

2012 – 2013 Jamil Neme. Creighton University Medical Center.

2012 – 2015 Nicholas Phillips. UNMC. Also undergraduate UNL Biological Systems Engineering student in 2012, 2013, 2014 and 2015.

**Undergraduate Students**

2022 Anna Pipinos. University of California San Diego.

2021 Coleman Freel. University of Wisconsin Madison.

2020-2021 Hessan Sedaghat.

2018 Carter Lyons.

2018 Vikram Venkataraman.

2017, 2018 Thomas Kalil. Electrical Engineering. Notre Dame

2017 Jonathan Fuchs. Biomedical Engineering. Saint Louis University.

2017, 2018 Margarita Pipinos.

2014 – 2017 Andreas Seas. MARC U*STAR program student. UMBC.
UNMC summer student in 2014 and 2015.
*Recipient of Barry Goldwater Scholarship.*
Current position: MD/PhD student at Duke.

2015 – 2016 Nick Bohlim. Undergraduate summer student. UNL. Biological Systems Engineering.

2015 Maheen Akhter. Undergraduate summer student. USC.

2014 – 2015 Grant Bowen. Undergraduate summer student. Rhodes College, TN.

**Laboratory Personnel**

2023 Rakhi Chowdhury. UNMC/UNO.

2016 – 2021 Sylvie Sim. Researcher. UNMC.

2015 – 2019 Paul Deegan. Researcher. UNMC.

2014 – 2015 Sheridan Nusz. Researcher Technologist. UNMC.

2013 Justin Kitson. Researcher Technologist. UNMC.

## SYNERGISTIC ACTIVITIES

- Director of the NIH-funded COBRE Center for Cardiovascular Research in Biomechanics (CRiB).

- Co-Director of Collaboration for Advanced Surgical and Engineering Applications (CASEA) laboratory to support translational research efforts of biomedical engineers and vascular surgeons. Facility has equipment for mechanical and structural characterization of soft tissues, arterial flow simulation, cell culture, image analysis, prototyping, and computational modeling.

- Built one of the largest databases of human artery mechanical and structural properties for constitutive modeling and device validation.

- Multidisciplinary and intercampus collaborations with Graz University of Technology (Austria), Institute of Mechanics and Shell Structures (Germany), University of Pavia (Italy), Politecnico di Milano (Italy), Politecnico di Torino (Italy), Technion (Israel), Saratov State University (Russia), Drexel, University of Michigan, University of Pittsburgh, Washington University in St. Louis, University of Nebraska-Lincoln, University of Nebraska Omaha, University of Nebraska Medical Center, VA Nebraska-Western Iowa Medical Center, Creighton University, Douglas County Hospital, Live On Nebraska.