Anastasia S. Desyatova

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University of Nebraska Omaha
Omaha NE 68182
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EDUCATION

Ph.D., Mechanical Engineering and Applied Mechanics, 2012
Department of Mechanical and Materials Engineering
University of Nebraska-Lincoln

B.S., Civil Engineering, 2005
Department of Civil Engineering
Saratov State Technical University, Russia

ACADEMIC APPOINTMENTS

2019 - current **Assistant Professor**
Department of Biomechanics
University of Nebraska Omaha, Omaha, NE

2018 – 2019 **Instructor**
Department of Surgery
University of Nebraska Medical Center, Omaha, NE

2015 – 2018 **Post-doctoral Fellow, NIH/NHLBI**
Department of Surgery
University of Nebraska Medical Center, Omaha, NE

2013 – 2015 **Post-doctoral Research Associate**
Department of Mechanical and Materials Engineering
University of Nebraska-Lincoln, Lincoln, NE

2012 **Instrument Specialist** (part-time)
Biomechanics, Biomaterials and Biomedicine (BM^3) Instrumentation Facility
University of Nebraska-Lincoln, Lincoln, NE

2006 – 2012 **Graduate Research Assistant**
Department of Engineering Mechanics, Department of Mechanical and Materials Engineering
University of Nebraska-Lincoln, Lincoln, NE

2005 – 2006 **Researcher**
Laboratory of Mathematical Modeling in Biomechanics
Saratov State University, Saratov, Russia

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RESEARCH INTERESTS

- Windkessel-preserving stent-grafts for aortic repair.
- Characterization of aortic growth and remodeling in young patients after thoracic endovascular reconstruction (TEVAR) and investigation of long-term performance and durability of different stent-graft designs.
- Computational and constitutive modeling of femoropopliteal arteries under complex mechanical deformations during limb flexion, and computational assessment of stent-artery interactions.
- Engineering of interfaces on micro and nano scales to create materials with improved toughness and durability.

GRANTS AND RESEARCH SUPPORT

Active

Center for Cardiovascular Research in Biomechanics (CRiB)
Funding Agency: NIH P20 (PI: Kamenskiy)
Project Period: 2024-2029
Budget: $11,058,034
Role: Research Core PI and Administrative Core Associate Director

Myocardial cell death mechanisms due to TEVAR-induced aortic stiffening
Funding Agency: NU Collaborative Initiative
Project Period: 2023-2025
Budget: $97,032
Role: PI

Effects of aortic compliance and Windkessel reduction on cardiac and aortic pathophysiology
Funding Agency: NIH R01 (1R01HL147128)
Project Period: 2019 - 2024
Budget: $3,040,498
Role: PI

Optimized stents selection for the femoropopliteal artery
Funding Agency: NIH R01 (2R01HL125736)
Project Period: 2014 - 2025
Budget: $6,263,882
Role: Investigator (MPI: Kamenskiy/MacTaggart)

Completed

Computational tool to assess performance of the aortic trauma stent-grafts
Funding agency: NIH F32 (F32HL124905)

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Project Period: 2015 - 2018
Budget: $165,354.00
Role: PI

HONORS & AWARDS

2023 Most promising new invention, UneMed, November 2nd, 2023.

2021 Peer Collaboration Mini-grant by UNO WiSTEM Pro^2 in collaboration with Center for Faculty Excellence and the NASA Nebraska Space Grant

2018 NSF travel award for participation in the "Finding your inner modeler" workshop as a project presenter.

2015-2018 Ruth L. Kirschstein Postdoctoral Individual National Research Service Award, NIH/NHLBI.

2013 NSF travel grant to participate in the Midwest Plant Cell Dynamics conference.

2011 NSF travel grant for participation in the ASME Society-Wide Micro/Nano Technology Poster Forum at IMECE

2011 NSF travel award to participate in a Student Poster Symposium at the ASME International Mechanical Engineering Congress and Exposition in Denver, CO

2011 NSF ADVANCE travel award to participate in a Negotiating the Ideal Faculty Position workshop at Rice University, Houston, TX

2010 Graduate student fellowship award from the University of Nebraska-Lincoln

2005 B.S. degree summa cum laude (GPA 4.0), Saratov State Technical University, Russia

2004 Fellowship from the President of the Russian Federation to outstanding university students

2003 1st degree diploma for the best scientific and innovative work among young scientist and students of all Russian universities

PATENTS AND INVENTIONS

- Windkessel-preserving aortic stent-graft. USA Provisional patent application. April 2018.
- Windkessel-preserving aortic stent-graft. USA patent application. WO2019-213161. Filed April 2019. Published 2021-08-05. Docket No:18104US; serial No: 17/051,097; international publication number: US2021-0236260.
- Provisional Patent. Peripheral Stents, Kamenskiy, A., MacTaggart J.N., Desyatova A., Ahmadi, A. Filing date: January 13, 2023.

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PUBLICATIONS

Refereed Journals Publications

Journal	Impact Factor
Nature Plant	18.0
Annals of Surgery	9.0
Acta Biomaterialia	9.7
Bone	4.6
Journal of Vascular Surgery	4.3
Journal of the Royal Society Interface	4.1
Annals of Biomedical Engineering	3.8
Osteoporosis International	3.6
Journal of Trauma and Acute Care Surgery	3.4
Journal of Mechanical Behavior of Biomedical Materials	3.9
Biomechanics and Modeling in Mechanobiology	3.5
Journal of Biomechanics	2.4
Journal of Vascular and Endovascular Surgery	1.1

* As corresponding author

Shahbad R., Pipinos M., Jadidi M., **Desyatova A**, Gamache J., MacTaggart J., Kamenskiy A. Structural and mechanical properties of human superficial femoral and popliteal arteries. *Annals of Biomedical Engineering*. Vol. 52, pp 794-815, 2024.

Kazim, M., Razian, S. A., Zamani, E., Varandani D., Shahbad R., Zolfaghari A., **Desyatova A**, Jadidi M.. Mechanical, structural, and morphological differences in the iliac arteries. *Journal of the Mechanical Behavior of Biomedical Materials*. V155. 2024, 106535.

Kazim, M., Razian, S. A., Zamani, E., Varandani D., Shahbad R., **Desyatova A**, Jadidi M.. 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*. V150. 2024, 106332.

Kimmel DB, Vennin S, **Desyatova** A, Turner JA, Akhter MP, Lappe JM, Recker RR. Bone architecture, bone material properties, and bone turnover in non-osteoporotic women with fragility fracture. Osteoporosis International. 33 (5). 2022. doi: 10.1007/s00198-022-06308.

Maleckis K., Keiser C., Jadidi M., Anttila E., **Desyatova A.**, MacTaggart J., Kamenskiy A. Safe balloon inflation parameters for resuscitative endovascular balloon occlusion of the aorta. *Journal of Trauma and Acute Care Surgery.* 91 2, 302-309, 2021.

Kamenskiy A., 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. *Annals of Surgery*. V 274 (6), pp. 1089-1098. 2021. doi: 10.1097/SLA.0000000000003768.

Jadidi M., Habibnezhad M., Anttila E., Maleckis K., **Desyatova A**., MacTaggart J., Kamenskiy A. Mechanical and structural changes in human thoracic aortas with age. *Acta Biomaterialia*. V103, pp172-188, 2020. doi: 10.1016/j.actbio.2019.12.024.

***Desyatova A**, MacTaggart J, Kamenskiy A. Effects of longitudinal pre-stretch on the mechanics of human aorta before and after thoracic endovascular aortic repair (TEVAR) in trauma patients. *Biomechanics and Modeling in Mechanobiology*. 19(1), pp 401-413, 2020. doi: 10.1007/s10237-019-01217-2.

Rokidi S., Paschalis E.P., Klaushofer K., Vennin S., **Desyatova A**., Turner J.A., Watson P., Lappe J., Akhter M.P., Recker R.R. Organic matrix quality discriminates between age- and BMD-matched fracturing versus non-fracturing post-menopausal women: A pilot study. *Bone*. V127, pp 207-214. 2019. doi: 10.1016/j.bone.2019.06.017.

Jadidi M., **Desyatova A**., MacTaggart J., Kamenskiy A. 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*. Vol18(6), pp1591-1605, 2019. doi: 10.1007/s10237-019-01162-0.

Anttila E., Balzani D., **Desyatova A**., Deegan P., MacTaggart J., Kamenskiy A. Mechanical damage characterization in human femoropopliteal arteries of different ages. *Acta Biomaterialia*. V90, pp225-240. 2019. doi: 10.1016/j.actbio.2019.03.053.

MacTaggart J, Poulson W, Seas A, Deegan P, **Desyatova A**, Maleckis K, Kamenskiy AV. Stent design affects femoropopliteal artery deformation. *Annals of Surgery*. V270(1), pp180-187. 2019. doi:10.1097/SLA.0000000000002747.

Desyatova A, Poulson W, MacTaggart J, Maleckis K, Kamenskiy AV. Cross-sectional pinching in human femoropopliteal arteries due to limb flexion, and stent design optimization for maximum cross-sectional opening and minimum intramural stresses. *Journal of the Royal Society Interface*. V15 (145). 2018. doi: 10.1098/rsif.2018.0475.

Maleckis K, Anttila E, Aylward, P., Poulson W., **Desyatova A**, MacTaggart J, Kamenskiy AV. Nitinol stents in the femoropopliteal artery: a mechanical perspective on material, design, and performance. *Annals of Biomedical Engineering*. V 46(5), pp. 684-704. 2018. doi:10.1007/s10439-018-1990-1.

Desyatova A., MacTaggart J., Romarowski R., Poulson W., Conti M., Kamenskiy A. Effect of aging on mechanical stresses, deformations, and hemodynamics in human femoropopliteal artery due to limb flexion. *Biomechanics and Modeling in Mechanobiology*. V17(1), pp. 181-189. 2018. doi: 10.1007/s10237-017-0953-z.

Desyatova A., MacTaggart J., Kamenskiy A. Constitutive modeling of human femoropopliteal artery biaxial stiffening due to aging and diabetes. *Acta Biomaterialia*. V64, pp50-58. 2017. doi: 10.1016/j.actbio.2017.09.042.

Maleckis K., Deegan P., Poulson W., Sievers C., **Desyatova A**., MacTaggart J., Kamenskiy A.

Comparison of femoropopliteal artery stents under axial and radial compression, axial tension, bending, and torsion deformations. *Journal of Mechanical Behavior of Biomedical Materials*. V75, pp160-168. 2017. doi: 10.1016/j.jmbbm.2017.07.017.

Desyatova A., Poulson W., Deegan P., Lomneth C., Seas A., Maleckis K., MacTaggart J., Kamenskiy A. Limb flexion-induced twist and associated intramural stresses in the human femoropliteal artery. *Journal of the Royal Society Interface*. V14(128). 2017. doi: 10.1098/rsif.2017.0025.

Vennin S, **Desyatova A**, Turner JA , Watson PA, Lappe JM, Recker, RR, Akhter MP. Intrinsic material property differences in bone tissue from patients suffering low-trauma osteoporotic fractures, compared to matched non-fracturing women. *Bone*. V97, pp 233-242. 2017. doi: 10.1016/j.bone.2017.01.031

***Desyatova A**., MacTaggart J., Poulson W., Deegan P., Lomneth C., Sandip A., Kamenskiy A. The choice of a constitutive formulation for modeling limb flexion-induced deformations and stresses in the human femoropopliteal arteries for different ages. *Biomechanics and Modeling in Mechanobiology.* V16(3), pp 775-785. 2017. doi: 10.1007/s10237-016-0852-8.

Kamenskiy A, Seas A, Deegan P, Poulson W, Antilla E, Sim S, **Desyatova A**, MacTaggart J. Constitutive description of human femoropopliteal artery aging. *Biomechanics and Modeling in Mechanobiology.* V16(2), pp 681-692. 2017. doi:10.1007/s10237-016-0845-7.

MacTaggart JN, Poulson WE, Akhter M, Seas A, Thorson K, Phillips NY, **Desyatova AS**, Kamenskiy AV. Morphometric roadmaps to improve accurate device delivery for fluoroscopy-free resuscitative endovascular balloon occlusion of the aorta. *The Journal of Trauma and Acute Care Surgery*. 80(6), pp. 941-6. 2016. doi: 10.1097/TA.0000000000001043.

Kamenskiy A, Seas A, Bowen G, Deegan P, **Desyatova A**, Bohlim N, Poulson W, MacTaggart J. In situ longitudinal pre-stretch in the human femoropopliteal artery. *Acta Biomaterialia*. V32, pp. 231-237. 2016. doi: 10.1016/j.actbio.2016.01.002.

Yanagisawa M., **Desyatova A.S.**, Belteton S., Mallery E., Turner J. A., Szymanski D. B. Patterning mechanisms of cytoskeletal and cell wall systems during leaf trichome morphogenesis. *Nature Plant*. V1, No 15014. 2015. doi:10.1038/nplants.2015.14.

Kamenskiy A.V., Pipinos I.I., Dzenis Y.A., Phillips N.Y., **Desyatova A.S.**, Kitson J., Bowen R., MacTaggart J.N. Effects of age on the physiological and mechanical characteristics of human femoropopliteal arteries. *Acta Biomaterialia*. V11, pp 304-313. 2015. doi: 10.1016/j.actbio.2014.09.050.

MacTaggart JN, Phillips NY, Lomneth CS, Pipinos II, Bowen R, Baxter BT, Johanning J, Longo GM, **Desyatova AS**, Moulton MJ, Dzenis YA, Kamenskiy AV. Three-dimensional bending, torsion, and axial compression of the femoropopliteal artery during limb flexion. *Journal of Biomechanics.* V47(10), pp 2249-2256. 2014. doi: 10.1016/j.jbiomech.2014.04.053.

Kamenskiy AV, Dzenis YA, MacTaggart J, **Desyatova AS**, Pipinos II. In vivo three-dimensional

blood velocity profile shapes in the human common, internal and external carotid arteries. *Journal of Vascular Surgery*. V54 (4), pp.1011-1020. 2011. doi: 10.1016/j.jvs.2011.03.254.

Kamenskiy A.V., Pipinos I.I., **Desyatova A.S.**, Salkovskiy Y.E., Kossovich L.Y., Kirillova I.V., Bockeria L.A., Morozov K.M., Polyaev V.O., Lynch Th.G., Dzenis Yu.A. Finite element model of the patched human carotid. *Journal of Vascular and Endovascular Surgery*. V43 (6), pp. 533-541. 2009. doi: 10.1177/1538574409345030.

Bockeria LA, Pirzhalaishvili ZK, Morozov KM, Kamenskiy AV, Salkovskiy YE, **Desyatova AS**, Dzenis YA, Kossovich LY, Kirillova IV, Guliaev YP, Ostrovskiy NV, Polyaev VO. Reconstruction of the carotid artery using various patching materials: search for the optimal material to improve the outcomes of the carotid bifurcation repair. *Annals of Surgery*. V2, pp. 5-19. 2008 (in Russian).

***Desyatova A.S.**, Zhigalov M.V., Krys'ko V.A., Saltykova O.A. Dissipative dynamics of geometrically nonlinear Bernoulli-Euler beams. *Mechanics of Solids*. V43 (6), pp. 128-136. 2008.

Bockeria LA, Morozov KM, Kossovich LY, Kirillova IV, Guliaev YP, **Desyatova AS**, Kamenskiy AV, Salkovskiy YE, Ostrovskiy NV, Polyaev VO. Endarterectomy and Patching of the Human Carotid Artery Using Different Materials. *Biomedical Technologies and Radio Electronics*. V12, pp. 33-41. 2006 (in Russian)

Ostrovskiy NV, Kirillova IV, **Desyatova AS**, Kamenskiy AV, Polyaev VO. Use of computer technologies for comparison of patch materials used to close carotid endarterectomies. *Issues of Reconstructive and Plastic Surgery*. V2 (17), pp. 42-45. 2006 (in Russian)

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. *Saratov Scientific Medical Journal*. V2 (12), pp. 32-42. 2006 (in Russian)

Desyatova A.S., Krysko V.A. Vibrations of the Euler-Bernoulli's beam on the Winkler and Vlasov foundations. *Construction*. No 7 (547), pp. 20 – 27. 2004 (in Russian)

Journal Papers in Preparation/Under review

***Desyatova A**, Pipinos I, A. Kamenskiy, MacTaggart J. Computational study of the effect of thoracic trauma stent-graft design on aortic intramural stresses in different age groups. *In preparation*.

Shahbad, R., ***Desyatova A**. Effect of age and demographics on dissection properties of human descending thoracic and abdominal aortas. *In preparation*.

Books and book chapters

Kamenskiy, A., Jadidi, M., **Desyatova**, A., MacTaggart, J. Biomechanics of the main artery in the lower limb. In: Sommer, G., Li, K., Haspinger, D.C., Ogden, R.W. (eds) Solid

(Bio)mechanics: Challenges of the Next Decade. Studies in Mechanobiology, Tissue Engineering and Biomaterials, vol 24. Springer, Cham. Doi: 10.1007/978-3-030-92339-6_7.

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. Chapter in Methods of Computer Diagnostic in Biology and Medicine. Textbook for students of nano and biomedical departments. Saratov. - 120 pages. P74-95. 2007 (in Russian).

Publications at Professional Conferences

Shahbad, R., **Desyatova, A**. Impact of elastin fragmentation on the mechanical dissection properties of the human descending thoracic aorta. Summer Biomechanics, Bioengineering and Biotransport Conference SB3C 2024. June 11-14, 2024.

Shahbad, R., **Desyatova, A**. Age-related elastin fragmentation increases the aortic dissection susceptibility. Great Plains Biomechanics. May 29th, 2024.

Ahmadi, A., **Desyatova, A**. Effect of twist on intramural stresses of femoropopliteal artery: a Finite Element study. Great Plains Biomechanics. May 29th, 2024.

Shahbad, R., **Desyatova, A**. Glycosaminoglycan accumulation increases the susceptibility of aortic media to dissection. Student Research and Creative Activity Fair. UNO. March 22, 2024.

Ahmadi, A., **Desyatova, A**. The effect of a constitutive formulation on limb flexion-induced stresses in the human femoropopliteal artery: a patient-specific study. Student Research and Creative Activity Fair. UNO. March 22, 2024.

Ahmadi, A. **Desyatova, A**. The Effect of a Constitutive Formulation on Limb Flexion-Induced Stresses in the Human Femoropopliteal Artery: a Patient Specific Study. 9th International Conference on Mechanics of Biomaterials and Tissues ICMOBT 2023. December 16-20, 2023.

Shahbad, R., **Desyatova, A**. Is Glycosaminoglycan Accumulation in Aortic Media Associated with Higher Susceptibility to Aortic Dissection? Insights from Peel Test. 9th International Conference on Mechanics of Biomaterials and Tissues ICMOBT 2023. December 16-20, 2023.

Ahmadi, A., **Desyatova, A.** Effect of twist on complex deformations of femoropopliteal artery in a finite element study. Society of Engineering Sciences. October 8-11th, 2023.

Kuniyil, S. **Desyatova, A.** Characterization of aortic physiologic strains in a swine model before and after thoracic endovascular repair using intravascular ultrasound. Great Plains Biomechanics. June 4-5th, 2023.

Ahmadi, A. **Desyatova, A**. Method of applying twist to complex femoropopliteal artery deformations in a finite element study. Summer Biomechanics, Bioengineering and Biotransport Conference SB3C 2023. June 4-8, 2023.

Shahbad, R., **Desyatova, A**. Pulse wave velocity increases with extending the length of vascular stent-grafts. Summer Biomechanics, Bioengineering and Biotransport Conference SB3C 2023. June 4-8, 2023.

Shahbad, R., **Desyatova, A.**, Jadidi, M., Kamenskiy, A. Mechanical and structural characteristics of human superficial femoral and popliteal arteries. European Symposium on Vascular Biomaterials. April 19-22, 2023.

Kuniyil, S. **Desyatova, A.** Characterization of aortic physiologic strains in a swine model before and after thoracic endovascular repair using intravascular ultrasound. Student research and creative activity fair. UNO. March 24th, 2023.

Shahbad, R., **Desyatova, A.** Does increasing the length of stent graft augment the arterial stiffness? Student research and creative activity fair. UNO. March 24th, 2023.

Ahmadi, A. **Desyatova, A**. Modeling of combined twist and bending deformations of the femoropopliteal artery. Student research and creative activity fair. UNO. March 24th, 2023.

Ahmadi, Ali. **Desyatova, A**. Effect of stent design on the femoropopliteal artery deformations and stresses. Great Plains Biomechanics. May 18th, 2022.

Kuniyil, S. **Desyatova, A.** Assessment of left ventricular contractility after thoracic endovascular aortic repair (TEVAR) in swine. Great Plains Biomechanics. May 18th, 2022.

Shahbad, R., **Desyatova, A**. Development of a flow circuit to replicate blood circulation in aorta. Great Plains Biomechanics. May 18th, 2022.

Ahmadi, Ali. **Desyatova, A**. Effect of stent design on intramural stresses of the femoropopliteal artery. Student research and creative activity fair. UNO. March 4th, 2022.

Kuniyil, S. **Desyatova, A**. Assessment of left ventricular contractility after thoracic endovascular aortic repair (TEVAR) in swine. Student research and creative activity fair. UNO. March 4th, 2022.

Shahbad, R., **Desyatova, A**. Development of a flow circuit to study the effect of Windkessel function reduction on cardiovascular hemodynamics. Student research and creative activity fair. UNO. March 4th, 2022.

Kimmel DB, **Desyatova A**, Lappe JM, Vennin S., Turner JA, Akhter MP, Recker RR,. Cortical thickness and bone material properties are related to fragility fracture in post-menopausal women with normal bone mineral density. Annual meeting of the American Society for Bone and Mineral Research. Sep 30 – Oct 3 2021. Published in Journal of Bone and Mineral Research 37, p 244, 2022.

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. Abstract for oral presentation. Meeting was postponed to November 2020 and transferred to virtual format due to COVID-19.

Jadidi M., **Desyatova A**., Kamenskiy A. A microstructurally motivated growth and remodeling framework to describe aging of human femoropopliteal arteries. Abstract for virtual oral presentation. Society of Engineering Sciences. October, 2020.

Jadidi M., Anttila E., Habibnezhad M., Keiser M., Maleckis K., **Desyatova A**., MacTaggart J., Kamenskiy A. Mechanical changes in human elastic and muscular arteries with age. Abstract for platform presentation. Summer Biomechanics, Bioengineering and Biotransport Conference SB^3C2020. Vail. June 17-20, 2020.

Desyatova A. Comparison of two stent-graft designs used for thoracic endovascular aortic repair (TEVAR) in young trauma patients. Abstract for platform presentation. Summer Biomechanics, Bioengineering and Biotransport Conference SB^3C2020. Vail. June 17-20, 2020. Submitted.

Kamenskiy A, 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. Abstract for poster presentation. International Society for Applied Cardiovascular Biology – ISACB+ISVTE 2019. Zurich, Switzerland. June 19-21. 2019

Paschalis E, Rokidi S, Klaushofer K, Vennin S, **Desyatova A**, Turner J, Watson P, Lappe J, Akhter M, Recker R. Organic Matrix Quality discriminates between age-and BMD-matched fracturing versus non-fracturing post-menopausal women. Annual meeting of the American Society for Bone and Mineral Research. Sept 28 – Oct 1 2018. In *Journal of Bone and Mineral Research*, vol. 33, pp. 311-311

Desyatova A., Szymanski D. Multi-scale mechanical modeling of leaf epidermal morphogenesis. Abstract for platform presentation. Finding your inner modeler. Chicago. August 16-17, 2018.

Desyatova A., Pipinos I., MacTaggart J. Effects of age and longitudinal pre-stretch on the mechanics of young human aorta repaired with a thoracic trauma stent-graft. Abstract for poster presentation. 8th World congress of biomechanics. July 8-12, 2018.

Desyatova A., Pipinos I., MacTaggart J. On the importance of incorporating longitudinal aortic prestretch in computational models of aortic stent-grafting. Abstract for platform presentation. 7th International conference on mechanics of biomaterials and tissues – ICMOBT2017. December 10-14, 2017.

Desyatova A., MacTaggart J., Romarowski R., Poulson W., Conti M., Kamenskiy A. Effect of aging on mechanical stresses, deformations, and homodynamics in human femoropopliteal artery due to limb flexion. Abstract for poster presentation. 7th International conference on mechanics of biomaterials and tissues – ICMOBT2017. December 10-14, 2017.

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Desyatova A., MacTaggart J., Poulson W., Deegan P., Lomneth C., Kamenskiy A. Torsion and intramural stresses in the human femoropopliteal artery due to limb flexion. Abstract for platform presentation. 5th International conference on computational and mathematical biomedical engineering – CMBE2017. April 10-12, 2017.

Desyatova A., Poulson W., Deegan P., Lomneth C., MacTaggart J., Kamenskiy A. The effect of limb flexion on torsional deformations and stresses in the human femoropopliteal artery. Abstract for poster presentation. Biomedical Engineering Society Annual meeting. October 5-8, 2016.

Desyatova A., Poulson W., Deegan P., Lomneth C., MacTaggart J., Kamenskiy A. Effect of aging on arterial stresses due to limb flexion. Abstract for platform presentation. 15th Biennial meeting of International Society for Applied Cardiovascular Biology. Banff, Canada. September 7-10, 2016.

Desyatova AS, MacTaggart J., Lomneth C., Dzenis Y., Kamenskiy A. Effects of stenting on the natural limb flexion-induced deformations of the human femoropopliteal artery. Abstract for platform presentation. 6th International Conference on Mechanics of Biomaterials and Tissues. Waikoloa, HI. December 6-10, 2015

Desyatova AS, Rudrappa D, Blum P, Turner J. Characterization of thermomechanical properties of recombinant resilin using atomic force microscopy. Abstract for platform presentation. 23rd World Forum on Advanced Materials PolyChar23. Lincoln, NE. May 11-15, 2015

Stockdale T., Andalib MN, **Desyatova AS**, Cheng S, Dzenis Y. Manufacturing of polyimide fiber-reinforced nanocomposites. Abstract for poster presentation. 23rd World Forum on Advanced Materials PolyChar23. Lincoln, NE. May 11-15, 2015

Desyatova AS, Yanagisawa M, Belteton S, Turner JA, Szymanski D. Experimental and computational approaches to discover how cytoskeleletal and cell wall systems control cell morphogenesis. Abstract for platform presentation. Plant Biology 2014. Portland, OR. July 12-16, 2014

Yanagisawa M, **Desyatova AS**, Belteton S, Turner JA, Szymanski D. Integration of ROP signaling with cytoskeletal and cell wall systems during Arabidopsis trichome morphogenesis. Abstract for platform presentation. Keystone Symposia 2014: Plant signaling. Breckenridge, CO. February 5-10, 2014

Yanagisawa M, **Desyatova AS**, Belteton S, Mallery E., Fessenden A., Turner JA, Szymanski D. ARP2/3 mediated patterning of cytoskeletal and cell wall systems during leaf trichome morphogenesis. Abstract for platform presentation. MidWest Plant Cell Dynamics. Madison, WI. June 4-6, 2014.

Desyatova AS, Belteton S, Yanagisawa M, Wu T-C, Szymanski D, Umulis DM, Turner JA. Computational Modeling of Plant Trichome Branch Growth Using Finite Element and Imaging Approaches. Society of Engineering Science. Providence, RI. July 28-31, 2013

Desyatova AS, Belteton S, Yanagisawa M, Wu T-C, Szymanski D, Umulis DM, Turner JA. Modeling of Trichome Branch Growth by Combining Imaging and Finite Element

Approaches. MidWest Plant Cell Dynamics. Madison, WI, June 5-7, 2013

Desyatova AS, Dzenis YA. Engineered Interfaces: Towards Next Generation Supertough Structural Materials. NSF Student Poster Symposium at the 2011 ASME International Mechanical Engineering Congress and Exposition. Denver, CO, Nov. 11-17, 2011

Desyatova AS, Dzenis YA. Engineering of Interfaces at Multiple Scales. ASME Society-Wide Micro and Nano Technology Forum at the 2011 ASME International Mechanical Engineering Congress and Exposition. Denver, CO, Nov. 11-17, 2011

Kamenskiy AV, Dzenis YA, **Desyatova AS**, Lynch TG, MacTaggart JN, Pipinos II. Toward optimal hemodynamics in the endarterectomized carotid: a finite element study. J of Surg Research. Abstracts for the Fifth Annual Academic Surgical Congress. San Antonio, TX. V158(2). P302. Feb 3-5, 2010.

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TEACHING EXPERIENCE

- Biostatistics in Biomechanics I BMCH 8030/9031. University of Nebraska Omaha. 2020, 2021, 2022, 2023.
- Ethics of Scientific Research BMCH 1100. University of Nebraska Omaha. 2020, 2023.
- Engineering Statics MECH 223. University of Nebraska Lincoln. 2013
- Elements of Material Science METL360. Lab section. University of Nebraska Lincoln. 2011
- Strength of Materials ENGM324. University of Nebraska Lincoln. 2010.

MEMBERSHIPS & CERTIFICATES

2016 International Society for Applied Cardiovascular Biology (ISACB)

adesyatova@unomaha.edu

2013 Society of Engineering Sciences (SES)

2012 LabVIEW Associate Developer

2009 American Society of Mechanical Engineers (ASME)

SYNERGISTIC ACTIVITIES

- Multidisciplinary collaborations with biological and medical teams at University of Nebraska Medical Center and Purdue University.

- Served as an *ad hoc* reviewer for NIH SBIB Special Emphasis Panel, NSF Graduate Research Fellowship Program, Great Plains IDEA-CTR Pilot Program.

- Serving as a Review Editor in *Frontiers in Cardiovascular Medicine, Atherosclerosis and Vascular Medicine* section.

- Served as a reviewer for *Acta Biomaterialia, Journal of the Royal Society Interface, Scientific Reports, Journal of Biomechanics and Modeling in Mechanobiology, Frontiers in Bioengineering and Biotechnology, Mechanics of Soft Materials, International Journal for Numerical Methods in Biomedical Engineering*, *Physiological Reports*, *Journal of Clinical Medicine*, *Plant Physiology Journal*, *Diagnostics,* and others.

- Served on University-wide Award for Distinguished Research or Creative Activity (ADROCA), CEHHS Student Affairs Committee, Biomechanics Department Graduate and Doctoral Program Committees at UNO; on a selection committee for the Undergraduate Creative Activities & Research Experiences (UCARE) at UNL.

- Helped to develop and maintain the Biomechanics, Biomaterials and Biomedicine (BM^3) Instrumentation facility at UNL.