

Stanford



Jason Szafron

Postdoctoral Scholar, Cardiology

 Curriculum Vitae available Online

Bio

BIO

Jason Szafron is a Parker B. Francis Fellow in the lab of Alison Marsden co-mentored by Marlene Rabinovitch studying growth and remodeling in the pulmonary vasculature. He completed his PhD in biomedical engineering at Yale University as an NSF Graduate Research Fellow, where his dissertation work focused on the design of tissue engineered vascular grafts for use in the Fontan procedure. His long-term research goal is to use validated computer models to understand disease origins and develop novel treatment approaches for cardiovascular disease.

HONORS AND AWARDS

- Parker B Francis Fellowship, Francis Family Foundation (07/2022)
- T32 Training Fellowship, National Institutes of Health (03/2021)
- Image-Based Biomedical Modeling Travel Fellowship, Center for Integrative Biomedical Computing (07/2016)
- Best Poster Award, Yale Vascular Biology and Therapeutics Institute (10/2016, 10/2017)
- NSF Graduate Research Fellowship, National Science Foundation (09/2015)
- Robert E. Apfel Graduate Fellowship, Yale University (09/2015)
- Engineering Honors, Texas A&M University (05/2015)
- Honors Fellow, Texas A&M University (05/2015)
- Undergraduate Summer Research Grant, Texas A&M University (05/2013)
- William Hyman Scholarship in Biomedical Engineering, Texas A&M University (09/2014)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, Yale University (2020)
- Master of Science, Yale University (2018)
- Bachelor of Science, Texas A&M University College Station (2015)

STANFORD ADVISORS

- Alison Marsden, Postdoctoral Faculty Sponsor

LINKS

- Google Scholar Profile: <https://scholar.google.com/citations?user=gbVHsS0AAAAJ&hl=en>
- ResearchGate Profile: https://www.researchgate.net/profile/Jason_Szafron

Publications

PUBLICATIONS

- **Vascular dimorphism ensured by regulated proteoglycan dynamics favors rapid umbilical artery closure at birth** *ELIFE*
Nandadasa, S., Szafron, J. M., Pathak, V., Murtada, S., Kraft, C. M., O'Donnell, A., Norvik, C., Hughes, C., Catterson, B., Domowicz, M. S., Schwartz, N. B., Tran-Lundmark, K., Veigl, et al
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- **Spontaneous reversal of stenosis in tissue-engineered vascular grafts.** *Science translational medicine*
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- **Differential outcomes of venous and arterial tissue engineered vascular grafts highlight the importance of coupling long-term implantation studies with computational modeling** *ACTA BIOMATERIALIA*
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2019; 94: 183-194
- **Optimization of Tissue Engineered Vascular Graft Design Using Computational Modeling.** *Tissue engineering. Part C, Methods*
Szafron, J. M., B Ramachandra, A., Breuer, C. K., Marsden, A. L., Humphrey, J. D.
2019
- **Immuno-driven and Mechano-mediated Neotissue Formation in Tissue Engineered Vascular Grafts** *ANNALS OF BIOMEDICAL ENGINEERING*
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- **In vivo development of tissue engineered vascular grafts: a fluid-solid-growth model.** *Biomechanics and modeling in mechanobiology*
Latorre, M., Szafron, J. M., Ramachandra, A. B., Humphrey, J. D.
2022
- **Tissue engineered vascular grafts transform into autologous neovessels capable of native function and growth.** *Communications medicine*
Blum, K. M., Zbinden, J. C., Ramachandra, A. B., Lindsey, S. E., Szafron, J. M., Reinhardt, J. W., Heitkemper, M., Best, C. A., Mirhaidari, G. J., Chang, Y., Ulziibayar, A., Kelly, J., Shah, et al
2022; 2: 3
- **Publisher Correction: Hemodynamic performance of tissue-engineered vascular grafts in Fontan patients.** *NPJ Regenerative medicine*
Schwarz, E. L., Kelly, J. M., Blum, K. M., Hor, K. N., Yates, A. R., Zbinden, J. C., Verma, A., Lindsey, S. E., Ramachandra, A. B., Szafron, J. M., Humphrey, J. D., Shin'oka, T., Marsden, et al
2021; 6 (1): 47
- **Hemodynamic performance of tissue-engineered vascular grafts in Fontan patients.** *NPJ Regenerative medicine*
Schwarz, E. L., Kelly, J. M., Blum, K. M., Hor, K. N., Yates, A. R., Zbinden, J. C., Verma, A., Lindsey, S. E., Ramachandra, A. B., Szafron, J. M., Humphrey, J. D., Shin'oka, T., Marsden, et al
2021; 6 (1): 38
- **From Uniaxial Testing of Isolated Layers to a Tri-Layered Arterial Wall: A Novel Constitutive Modelling Framework** *ANNALS OF BIOMEDICAL ENGINEERING*
Giudici, A., Khir, A. W., Szafron, J. M., Spronck, B.
2021
- **Effects of Braiding Parameters on Tissue Engineered Vascular Graft Development** *ADVANCED HEALTHCARE MATERIALS*
Zbinden, J. C., Blum, K. M., Berman, A. G., Ramachandra, A. B., Szafron, J. M., Kerr, K. E., Anderson, J. L., Sangha, G. S., Earl, C. C., Nigh, N. R., Mirhaidari, G. M., Reinhardt, J. W., Chang, et al
2020; 9 (24): e2001093
- **Vascular adaptation in the presence of external support - A modeling study.** *Journal of the mechanical behavior of biomedical materials*
Ramachandra, A. B., Latorre, M., Szafron, J. M., Marsden, A. L., Humphrey, J. D.
2020; 110: 103943

- **Electrospun Tissue-Engineered Arterial Graft Thickness Affects Long-Term Composition and Mechanics** *TISSUE ENGINEERING PART A*
Wu, Y., Szafron, J. M., Blum, K. M., Zbinden, J. C., Khosravi, R., Best, C. A., Reinhardt, J. W., Zeng, Q., Yi, T., Shinoka, T., Humphrey, J. D., Breuer, C. K., Wang, et al
2021; 27 (9-10): 593-603
- **Computer-Controlled Biaxial Bioreactor for Investigating Cell-Mediated Homeostasis in Tissue Equivalents** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
Eichinger, J. F., Paukner, D., Szafron, J. M., Aydin, R. C., Humphrey, J. D., Cyron, C. J.
2020; 142 (7)
- **A computational bio-chemo-mechanical model of in vivo tissue-engineered vascular graft development** *INTEGRATIVE BIOLOGY*
Khosravi, R., Ramachandra, A. B., Szafron, J. M., Schiavazzi, D. E., Breuer, C. K., Humphrey, J. D.
2020; 12 (3): 47-63
- **Revealing the glass transition in shape memory polymers using Brillouin spectroscopy** *APPLIED PHYSICS LETTERS*
Steelman, Z. A., Weems, A. C., Traverso, A. J., Szafron, J. M., Maitland, D. J., Yakovlev, V. V.
2017; 111 (24): 241904
- **Stress Analysis-Driven Design of Bilayered Scaffolds for Tissue-Engineered Vascular Grafts** *JOURNAL OF BIOMECHANICAL ENGINEERING-TRANSACTIONS OF THE ASME*
Szafron, J. M., Breuer, C. K., Wang, Y., Humphrey, J. D.
2017; 139 (12)
- **Shape memory polymers with enhanced visibility for magnetic resonance- and X-ray imaging modalities** *ACTA BIOMATERIALIA*
Weems, A. C., Szafron, J. M., Easley, A. D., Herting, S., Smolen, J., Maitland, D. J.
2017; 54: 45-57
- **Design and Characterization of an Endovascular Mechanical Thrombectomy Device** *JOURNAL OF MEDICAL DEVICES-TRANSACTIONS OF THE ASME*
Szafron, J. M., Muschenborn, A. D., Maitland, D. J.
2014; 8 (2)
- **Porous media properties of reticulated shape memory polymer foams and mock embolic coils for aneurysm treatment** *BIOMEDICAL ENGINEERING ONLINE*
Muschenborn, A. D., Ortega, J. M., Szafron, J. M., Szafron, D. J., Maitland, D. J.
2013; 12: 103