

Stanford



Skyler St. Pierre

Ph.D. Student in Mechanical Engineering, admitted Autumn 2020

Bio

BIO

I research soft tissue biomechanics in Professor Ellen Kuhl's Living Matter Lab using a combination of computational methods, including physics-based machine learning, and experimental methods, including rheology and biaxial extension. I have studied tissues ranging from human brain to plant-based meat. My work has applications in improving simulations of human health and disease and creating more sustainable global food systems.

HONORS AND AWARDS

- Wu Tsai Human Performance Alliance Honorary Fellowship, Wu Tsai Human Performance Alliance
- Leadership in Inclusive Teaching Fellowship, Stanford Center for Teaching and Learning
- DARE Fellowship, Stanford VPGE
- EDGE-STEM Doctoral Fellowship, Stanford VPGE
- NSF GRFP, NSF

EDUCATION AND CERTIFICATIONS

- M.S., Stanford University , Mechanical Engineering (2022)
- B.S., Worcester Polytechnic Institute , Biomedical Engineering (2019)

LINKS

- Google Scholar: <https://scholar.google.com/citations?user=MD-9jLoAAAAJ&hl=en>
- ORCID: <https://orcid.org/0000-0001-9774-8709>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

biomechanics, machine learning, computational modeling

LAB AFFILIATIONS

- Ellen Kuhl, Living Matter Lab (9/20/2020)

Publications

PUBLICATIONS

- **Mechanical, rheological, and sensory characterization of lion's mane mushroom steak.** *Current research in food science*
St Pierre, S. R., Boyle, L., Vervenne, T., Darwin, E. C., Goodson, M. A., Palomares, M., Zhang, N., Kuhl, E.

2026; 12: 101403

- **Probing mycelium mechanics and taste: The moist and fibrous signature of fungi steak.** *Acta biomaterialia*
Vervenne, T., St Pierre, S. R., Famaey, N., Kuhl, E.
2025
- **Texture profile analysis and rheology of plant-based and animal meat.** *Food research international (Ottawa, Ont.)*
Dunne, R. A., Darwin, E. C., Perez Medina, V. A., Levenston, M. E., St Pierre, S. R., Kuhl, E.
2025; 205: 115876
- **Biaxial testing and sensory texture evaluation of plant-based and animal deli meat.** *Current research in food science*
St Pierre, S. R., Sibley, L. S., Tran, S., Tran, V., Darwin, E. C., Kuhl, E.
2025; 10: 101080
- **The mechanical and sensory signature of plant-based and animal meat.** *NPJ science of food*
St Pierre, S. R., Darwin, E. C., Adil, D., Aviles, M. C., Date, A., Dunne, R. A., Lall, Y., Parra Vallecillo, M., Perez Medina, V. A., Linka, K., Levenston, M. E., Kuhl, E.
2024; 8 (1): 94
- **Mimicking Mechanics: A Comparison of Meat and Meat Analogs.** *Foods (Basel, Switzerland)*
St Pierre, S. R., Kuhl, E.
2024; 13 (21)
- **Sex-specific cardiovascular risk factors in the UK Biobank.** *Frontiers in physiology*
St Pierre, S. R., Kaczmariski, B., Peirlinck, M., Kuhl, E.
2024; 15: 1339866
- **On sparse regression, Lp regularization, and automated model discovery** *International Journal for Numerical Methods in Engineering*
McCulloch, J. A., St. Pierre, S. R., Linka, K., Kuhl, E.
2024
- **Discovering the mechanics of artificial and real meat** *COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING*
St Pierre, S. R., Rajasekharan, D., Darwin, E. C., Linka, K., Levenston, M. E., Kuhl, E.
2023; 415
- **Automated model discovery for human brain using Constitutive Artificial Neural Networks** *Acta Biomaterialia*
Linka, K., St. Pierre, S. R., Kuhl, E.
2023
- **Principal-stretch-based constitutive neural networks autonomously discover a subclass of Ogden models for human brain tissue** *Brain Multiphysics*
St. Pierre, S. R., Linka, K., Kuhl, E.
2023; 4
- **Sex Matters: A Comprehensive Comparison of Female and Male Hearts.** *Frontiers in physiology*
St Pierre, S. R., Peirlinck, M., Kuhl, E.
2022; 13: 831179
- **Condensation tendency and planar isotropic actin gradient induce radial alignment in confined monolayers** *ELIFE*
Xie, T., St Pierre, S. R., Olanont, N., Brown, L. E., Wu, M., Sun, Y.
2021; 10
- **Patterning Neuroepithelial Cell Sheet via a Sustained Chemical Gradient Generated by Localized Passive Diffusion Devices** *ACS BIOMATERIALS SCIENCE & ENGINEERING*
Li, N., Yang, F., Parthasarathy, S., St Pierre, S., Hong, K., Pavon, N., Pak, C., Sun, Y.
2021; 7 (4): 1713-1721