



Paul Warren



Ph.D. Candidate, BME

3D Printing for Tissue Engineering and Regenerative Medicine

Research emphasis:

Key research areas include biomaterials and scaffold fabrication for tissue engineering and regenerative medicine applications with a focus on 3D printing-based methods. Paul is currently working on the development of a custom direct-write electrospinning system for creating fibrous structures that better resemble the dimensions and architecture of native collagenous extracellular matrix in musculoskeletal soft tissues such as ligaments and the knee meniscus.

Applications:

- Biomaterials / scaffold fabrication
- Fibrous tissue engineering

Research Strengths:

- Electrospinning-based 3D printing
- FDM 3D printing
- MATLAB, SolidWorks, ImageJ
- Mechanical testing

Publications and Abstracts:

Cone, S.G., Warren, P.B., Fisher, M.B. Rise of the pigs: Utilization of the porcine model to study musculoskeletal biomechanics and tissue engineering during skeletal growth. *Tiss Eng C* 23(11): 763-780. 2017.

Warren, P.B., Huebner, P., Spang, J.T., Shirwaiker, R.A., Fisher, M.B. Engineering 3D-bioplotting scaffolds to induce aligned extracellular matrix deposition for musculoskeletal soft tissue replacement. *Conn Tiss Res* 58(3-4): 342-354. 2017.

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