Noel M. Naughton
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Education

University of Saint Thomas in Saint Paul, MN **2010 – 2014**
B.S. in Mechanical Engineering, Minor in Catholic Studies (Magna Cum Laude)

University of Illinois at Urbana-Champaign **2014 – 2016**
M.S. in Mechanical Engineering
Master's Thesis: *A Lattice Boltzmann Method of Diffusion-Weighted Magnetic Resonance Imaging in Skeletal Muscle*

University of Illinois at Urbana-Champaign **2016 – 2019 (expected)**
Ph.D. in Mechanical Engineering
Dissertation: *Determination of Skeletal Muscle Microstructure from Diffusion MRI and Relationship with Muscle Quality*

Research Experience

NSF Graduate Research Fellow – University of Illinois at Urbana-Champaign **2016 – 2019**
Graduate Research Assistant – University of Illinois at Urbana-Champaign **2014 – 2016, 2019**
Undergraduate Research Assistant – University of St. Thomas **2012 - 2014**

Grants & Awards

XSEDE startup allocation – 50,000 CPU hours and 5000 GPU hours on SDSC Comet cluster

Publications & Patents

Plourde, B., Abraham, J., Plourde, D., Pakonen, R., Gikling, A. and Naughton, N., Wts Llc, 2016. *Fluid heating system*. U.S. Patent Application 14/954,292.

Naughton, N. , Plourde, B. , Stark, J. , Hodis, S. and Abraham, J. (2014) Impacts of waveforms on the fluid flow, wall shear stress, and flow distribution in cerebral aneurysms and the development of a universal reduced pressure. *Journal of Biomedical Science and Engineering*, **7**, 7-14. doi: 10.4236/jbise.2014.71002.

Publications in Process

Naughton, N. , Tennyson C. , and Georgiadis J. , "Lattice Boltzmann method for simulation of diffusion magnetic resonance imaging physics in heterogeneous tissue models," *Journal of Computational Physics,* (under review).

Naughton, N. and Georgiadis J., "Comparison of two-compartment exchange and continuum models of dMRI in skeletal muscle," *Physics in Medicine and Biology*, (in revision).

Naughton, N. and Georgiadis J., "Global Sensitivity Analysis of Skeletal Muscle dMRI: Effects of

Microstructural and PGSE Pulse Parameters," *Magnetic Resonance in Medicine*, (in preparation).

Naughton, N. and Georgiadis J., "Histology informed simulations of diffusion MRI in skeletal muscle explains transverse ellipticity of diffusion tensor," *NMR in Biomedicine,* (in preparation).

Naughton, N. and Georgiadis J., "Polynomial meta-model of diffusion MRI in skeletal muscle," *IEEE Transactions in Medical Imaging*, (in preparation).

Conference Presentations and Posters

"Connecting Diffusion MRI to Skeletal Muscle Microstructure: Leveraging Meta-Models and GPU-acceleration" PEARC 2019 (July 2019), Chicago, Illinois (platform presentation)

"Comparison of dMRI Models for Skeletal Muscle Microstructure Estimations with Numerical Simulations and Myocardial Porcine Phantom" ISMRM Annual Meeting (May 2019), Montreal, Canada (poster)

"Polynomial Meta-Model of Bloch-Torrey Equation for Track-based Regularization of Microstructural Inversion" ISMRM Annual Meeting (May 2019), Montreal, Canada (poster)

"Fascicle Ellipticity as an Explanation of Transverse Anisotropy in Diffusion MRI Measurements of Skeletal Muscle" ISMRM Annual Meeting (May 2019), Montreal, Canada (poster)

"Microstructural Parameter Estimation of Skeletal Muscle using Random Forest Model of dMRI" ISMRM Annual Meeting (May 2018), Montreal, Canada (poster)

"Estimation of Extracellular Matrix Diffusion Properties in Decellularized Porcine Myocardium from DTI" ISMRM Annual Meeting (June 2018), Paris, France (poster)

"Effect of Exercise on Myocellular Lipid Content and Diffusion Tensor Imaging Measurements," Biomedical Engineering Society Annual Meeting (October 2017), Phoenix, Arizona (platform presentation)

"Effect of Sarcolemma Water Permeability on Muscle DTI Measures Following Exercise," Biomedical Engineering Society Annual Meeting, (October 2016), Minneapolis, Minnesota (platform presentation)

Teaching, Leadership, and Professional Experience

Assistant Rowing Coach – University of Illinois Rowing Club **2015 – 2018**

Graduate Teaching Assistant – University of Illinois at Urbana-Champaign **2017**
ME 520: Conductive Heat Transfer

Undergraduate Teaching Assistant – University of St. Thomas **2013 – 2014**
Introduction to Heat Transfer, Finite Element Analysis & Introduction to Fluid Mechanics Lab

Design Engineer – WTS **2014**

Special Projects Intern – IT Department, University of St. Thomas **2013 - 2014**

Leadership Intern – Center of Catholic Studies, University of St. Thomas **2012 - 2014**

Resident Advisor – Ireland Hall, University of St. Thomas **2011 – 2013**

Professional Societies

- International Society for Magnetic Resonance in Medicine (ISMRM)
- Biomedical Engineering Society (BMES)
- Society of Catholic Scientists (SCS)

Graduate Courses

Year	Semester	Course Title	Grade	Instructor
2014	Fall	Magnetic Resonance imaging	B+	Zhi-Pei Liang
2014	Fall	Intermediate Heat Transfer	A	Nenad Miljkovic
2015	Spring	Intermediate Gas Dynamics	A-	M. Quinn Brewster
2015	Spring	Heat Conduction	A	Arne Pearlstein
2015	Fall	Viscous Flow and Heat Transfer	A	M. Quinn Brewster
2015	Fall	Mathematical Methods I	A-	Prashant Mehta
2016	Spring	Convective Heat Transfer	A-	Nenad Miljkovic
2016	Spring	Mathematical Methods II	A	Prashant Mehta
2016	Spring	Continuum Mechanics	B	Harley Johnson
2016	Fall	Intermediate Fluid Mechanics	A-	Randy Ewoldt
2016	Fall	Computational Mechanics	A	Paul Fisher
2017	Spring	Soft Solids	A	Sascha Hilgenfeldt
2017	Spring	Computational Fluid Mechanics	B	Carlos Pantano-Rubino
2017	Fall	Solid Mechanics I	B+	Petros Sofronis
2017	Fall	Viscoelasticity Theory	A	Harry Hilton
2019	Spring	Science Communication for Mechancial Engineers	N/A	Amy Wagoner Johnson