William Wan
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SUMMARY OF QUALIFICATIONS

Areas of special expertise include mechanical testing and mathematical modeling of biological tissues, small animal surgery, and imaging of biological tissues

EDUCATION

Georgia Institute of Technology Atlanta, GA
Doctor of Philosophy, Bioengineering December 2011
Dissertation Topic: The role of fibulin-5 in the growth and remodeling of mouse carotid arteries
GPA: 3.75/4.00

Georgia State University Atlanta, GA
Early Childhood Education Certificate May 2002

The University of Texas at Austin Austin, TX
Bachelor of Science, Mechanical Engineering Honors May 2001
GPA: 3.75/4.00

WORK EXPERIENCE

Genzyme Corporation (now part of Sanofi) Framingham, MA
Graduate Co-op, Biomaterials, Science and Engineering department July 2010 – December 2010

- Characterized properties (crosslink time, swelling, degradation, modulus) of hydrogels used in *in vivo* studies
- Developed assay for measuring dissolution time of polyethylene glycol (PEG) macromers
- Assisted in rabbit and rat surgeries and necropsies and prepared frozen tissue/gel samples
- Presented experimental findings at biweekly group meetings

Georgia Institute of Technology Atlanta, GA
Graduate Research Assistant August 2005 – Present

- Selected as one of eight trainees on an NIH-funded Cellular and Tissue Engineering Training Grant
- Wrote Labview programs for controlling test equipment and for executing mechanical test protocols
- Developed mathematical models to predict how blood vessels adapt to cardiovascular diseases
- Performed mechanical tests and confocal and multiphoton microscopy of intact mouse carotid arteries
- Maintained a breeding colony of knockout mice and performed PCR genotyping
- Mentored undergraduate students in independent research projects
- Performed statistical analysis on experimental data and reported conclusions in peer-reviewed journals
- Led effort to implement cluster computing techniques; decreased simulation time from weeks to days.

Teaching Assistant: Mechanics of Deformable Bodies (40 students) Spring 2008

- Developed and delivered lectures on strain energy, pressure vessels and composite beams
- Created and graded exam and homework problems
- Held weekly office hours

Teach For America Atlanta, GA
Corps member, Alumni 2001 – 2005
Teach For America is a highly selective national service corps of recent college graduates who commit to teach in under-resourced public schools.
M. A. Jones Elementary School, 1st grade teacher, August 2002 – May 2005

- Co-wrote successful grants worth $3000 for reading programs and community meetings
- Averaged 1.5 years of student academic growth in each school year
- Developed tools for analyzing and tracking results of standardized student assessments
- Implemented after school tutorial and enrichment program
- Organized and led monthly parent workshops held within the community
- Planned large-scale annual events on Corps Member Advisory Committee (~200 attendees)

Oglethorpe Elementary School, 2nd grade teacher, August 2001 – August 2002

- Developed theme-based, long-term plans for all academic subjects
- Designed and implemented automated system for tracking grades and producing weekly progress reports
- Member of Student Support Committee, contributed feedback in student support team meetings

SKILLS

Matlab	Imaris	Labview programming	Experimental device design
AutoCad	Aseptic technique	Machine shop equipment	Confocal and multi-photon microscopy
LINUX	Small animal surgery	Histological techniques	Polymerase Chain Reaction (PCR)

CONFERENCE PRESENTATIONS

- **Wan W.**, Wang R., Gleason R., (2012) "Biomechanical and Microstructural Properties of Common Carotid Arteries in Fibulin-5 Null Mice During Maturation," 8th European Solid Mechanics Conference, podium presentation
- **Wan W.**, Gleason R., (2011) "Collagen fiber angle quantification of carotid arteries from fibulin-5 null mice," ASME Summer Bioengineering Conference, poster
- **Wan W.**, Yanagisawa H., Gleason R., (2009) "Biomechanical and microstructural properties of fibulin-5 null mice," ASME Summer Bioengineering Conference, podium presentation
- **Wan W.**, Hansen L., Gleason R., (2009) "A 3-D constrained mixture model for vascular growth and remodeling," ASME Summer Bioengineering Conference, podium presentation
- Hansen L, **Wan W.**, Gleason R., (2009) "Microstructurally motivated constitutive models for mouse arteries," ASME Summer Bioengineering Conference, poster
- **Wan W.**, Gleason R., (2007) "Imaging cells and ECM in live, pressurized mouse arteries," 7th Annual Southeast Multiphoton Confocal Microscopy User Group Meeting and Workshop, podium presentation

PEER-REVIEWED JOURNAL ARTICLES

- **Wan W**, Gleason RL. Biomechanical and microstructural maturation of mouse carotid arteries in fibulin-5 null mice. American Journal of Physiology: Heart and Circulatory Physiology. (in revision)
- **Wan W**, Dixon JB, Gleason RL (2012). Constitutive Modeling of Mouse Carotid Arteries Using Experimentally Measured Microstructural Parameters. Biophysical Journal, 102(12), 2916-2925.
- Maiellaro-Rafferty K, Weiss D, Joseph G, **Wan W,** Gleason RL, and Taylor WR. Catalase overexpression in aortic smooth muscle prevents pathological mechanical changes underlying abdominal aortic aneurysm formation. American Journal of Physiology - Heart and Circulatory Physiology 301(2): H355-H362, 2011.
- **Wan W,** Hansen L, and Gleason RL. A 3-D constrained mixture model for mechanically mediated vascular growth and remodeling. Biomechanics and Modeling in Mechanobiology 9: 403-419, 2010.
- **Wan W,** Yanagisawa H, and Gleason RL. Biomechanical and Microstructural Properties of Common Carotid Arteries from Fibulin-5 Null Mice. Annals of Biomedical Engineering 38: 1-13, 2010.
- Hansen L, **Wan W,** and Gleason RL. Microstructurally-motivated constitutive modeling of mouse arteries cultured under altered axial stretch. Journal of Biomechanical Engineering 131: 11, 2009.
- Zaucha M, Raykin J, **Wan W**, Gauvin, R, Auger F, Germain L, Gleason RL. "A Novel Biaxial Computer Controlled Bioreactor and Biomechanical Testing Device for Vascular Tissue Engineering." Tissue Engineering Part A 15: 3331-3340, 2009.
- Gleason RL, **Wan W**. Theory and Experiments for Mechanically-Induced Remodeling of Tissue Engineered Blood Vessels. Advances in Science and Technology (57) 226-34, 2008

EXTRACURRICULAR ACTIVITIES

- Bioengineering Graduate Student Advisory Committee – Secretary, 2007-2008; Treasurer 2008-2009
- Graduate Student Senate – Mechanical Engineering Senator, 2007-2008; Coordinating Officer, 2008
- KIPP: STRIVE Academy (public middle school) – created student behavior tracking database and coded website using standards-compliant HTML and CSS

AWARDS AND RECOGNITION

- Trainee on NIH-funded Cellular and Tissue Engineering (CTEng) Training Grant, 2008-2009
- Project Grad Community Grant - Implementation of classroom listening centers, 2002-2003
- Project Grad Community Grant - Peer tutorial program involving fourth and first grade students, 2003-2005
- Project Grad Community Grant - Monthly community parent workshops, 2002-2003