

DYYYY M. BXXX

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EDUCATION:

- 2010 **University of Pennsylvania**, Philadelphia, PA
PhD Candidate Bioengineering, Defended 6/10/2010, Graduation: August 2010
“Combinatorial Polymer Synthesis and High-throughput Screening Technology to Identify Optimal Approaches for Mineralized Tissue Engineering”
Thesis advisor: Dr. Jason A. Burdick
- 2004-2005 **Northwestern University**, Chicago, IL
PhD Candidate Biomedical Engineering
Transferred to University of Pennsylvania
- 2003 **University of Louisville**, Louisville, KY
Master of Engineering in Mechanical Engineering
Graduated with Highest Honors
“Effect of Wall Shear Stress upon Occludin Expression within HUVECs: An In Vitro Model Study”
Thesis advisor: Dr. Robert S. Keynton
- 2000 **University of Louisville**, Louisville, Kentucky
Bachelors of Science in Mechanical Engineering
Graduated with Highest Honors

EXPERIENCE:

- 2007-2008 Graduate Teaching Assistant, Department of Bioengineering
University of Pennsylvania, Philadelphia, PA
BE 512: Biomaterials – Laboratory development and oversight
- 2005 Graduate Teaching Assistant, Department of Biomedical Engineering
Northwestern University, Evanston, IL
BE 346: Tissue Engineering – Oversaw lab experiments, graded reports
- 2002-2004 Research Engineer, Bioengineering Program
University of Louisville, Louisville, KY
- 1999-2002 Research Assistant, Department of Mechanical Engineering
University of Louisville, Louisville, KY
- 1999-2000 Teaching Assistant, Department of Mechanical Engineering
University of Louisville, Louisville, KY
ME 180: Intro to Computer Aided Engineering – Instructor and grader
- 1998-2001 Cooperative Engineering Intern
General Electric, Louisville, KY

HONORS AND AWARDS:

- 2010 Best Poster: Tissue Engineering Session, Northeast Bioengineering Conference: Biomaterials Day
- 2009 University of Pennsylvania GAPSA Travel Grant
- 2007 University of Pennsylvania GSAC Travel Grant
- 2002 University of Louisville Honored Graduate (Commencement Student Speaker)
- 2002 University of Louisville Outstanding Graduating Student Award

2001	Honorable Mention in Bioengineering Division: Masters of Science Student Paper Competition at the 2001 ASME International Congress and Exposition in New York City
2001	University of Louisville Bennett M. Brigman Award
2000,2001	University of Louisville ASME – Pi Tau Sigma Award
1996-2000	University of Louisville Presidential Scholarship
1999	University of Louisville Colonel James E. Veech Scholarship
1996-1997	University of Louisville Dean Robert C. Ernst Scholarship

SKILLS:

Laboratory	Mammalian cell culture, Fluorescent microscopy, Assay characterization, High-throughput screening assay development and experimentation, Immunohistochemistry, Paraffin embedded histology, Real-Time PCR, Instron mechanical testing, Dynamic mechanical analyzer, ATR-FTIR, ¹ H-NMR, GPC, Some polymer synthesis, Microcomputed tomography
Surgical	Rat and mouse animal handling, Rat models in subcutaneous implantation, intramuscular implantation, critical-sized cranial defect, and femur window defect
Computer	Microsoft Office, Adobe Photoshop, ImageJ, Kaleidagraph, JMP IN, ChemDraw, Six Sigma techniques
Hobbies	NCAA and High School Football Official

PUBLICATIONS:Articles in Peer-Reviewed Journals

1. **Bxxx DM**, Motlekar NA, Diamond SL, Mauck RL, Garino JP, Burdick JA. High-throughput Screening of a Small Molecule Library for Promoters and Inhibitors of Mesenchymal Stem Cell Osteogenic Differentiation. *Biotechnology and Bioengineering. In press.*
2. **Bxxx DM**, Chung C, Hankenson KD, Garino JP, Burdick JA. Identification of Osteoconductive and Biodegradable Polymers from a Combinatorial Polymer Library. *J Biomed Mater Res A*. 2010. 93(A): 807-16.
3. Peters A, **Bxxx DM**, Burdick JA. High-throughput and combinatorial technologies for tissue engineering applications. *Tissue Eng Part B Rev*. 2009. 15(3):225-39.
4. Tan AR, Ifkovits JL, Baker BM, **Bxxx DM**, Mauck RL, Burdick JA. Electrospinning of photocrosslinked and degradable fibrous scaffolds. *J Biomed Mater Res A*. 2008. 87(A): 1034-43.
5. **Bxxx DM**, Ifkovits JL, Mozia RI, Katz JS, Burdick JA. Controlling Poly(β -amino ester) Network Properties through Macromer Branching. *Acta Biomaterialia*. 2008. 4(2): 207-17.
6. **Bxxx DM**, Erickson IE, Burdick JA. Influence of macromer molecular weight and chemistry on poly(β -amino ester) network properties and initial cell interactions. *J Biomed Mater Res A*. 2008. 85(3):731-41.
7. Anderson DG, Tweedie CA, Hossain N, Navarro SM, **Bxxx DM**, Van Vliet KJ, Langer R, Burdick JA. A combinatorial library of photocrosslinkable and degradable materials. *Adv Mat* 2006. 18(19): 2614-8.
8. Klinge CM, Blankenship KA, Risinger KE, Bhatnagar S, Noisin EL, Sumanasekera WK, Zhao L, **Bxxx DM**, Keynton RS. Resveratrol and estradiol rapidly activate MAPK signaling through estrogen receptors alpha and beta in endothelial cells. *J Biol Chem*. 2005. 280(9):7460-8.

National and International Meetings

1. **Bxxx DM**, Burdick JA. Screening Materials and Soluble Compounds for Mineralized Tissue Engineering. 36th Annual Northeast Bioengineering Conference, New York, NY, March 26-28, 2010. Poster Presentation.

2. **Bxxx DM**, Burdick JA. High-throughput Screening of Promoters and Inhibitors of Mesenchymal Stem Cell Osteogenic Differentiation. BMES Annual Meeting, Pittsburgh, PA, October 7-10, 2009. Poster Presentation.
3. **Bxxx DM**, Marguiles B, Hankenson KD, Burdick, JA. Screening of a Biodegradable Polymer Library for Optimal Scaffolding for Mineralized Tissue Engineering. ASME Summer Bioengineering Conference, Lake Tahoe, CA, June 17-21, 2009. Mow Symposium: Orthopaedic Tissue Engineering Oral Presentation.
4. **Bxxx DM**, Burdick JA. Biodegradable Poly(β -Amino Ester)s as Substrates for Mineralized Tissue Formation. ACS 236th National Meeting and Exposition, Philadelphia, PA, August 17-21, 2008. Oral Presentation.
5. Chung C, **Bxxx DM**, Ifkovits JL, Burdick JA. Controlling Novel Photocrosslinked Biomaterial Properties through Macromer Structure. Abst Pap Am Chem Soc – PMSE, Boston, MA, August 2007.
6. **Bxxx DM** and Burdick JA. Macromer Molecular Weight and Branching Influences Poly(β -amino ester) Properties and Cellular Interactions. Tissue Engineering and Regenerative Medicine International Society Annual Meeting, Toronto, ON, Canada, June 2007.
7. **Bxxx DM**, Erickson IE, Tan A, Burdick JA. Controlling Polymer Properties and Cellular Interactions through Poly(β -amino ester) Macromer Structure. SFB Annual Meeting. Chicago, IL. April 18-21, 2007. Poster Presentation.
8. **Bxxx DM**, Burdick JA. Screening Photocrosslinked, Degradable Poly(β -Amino Ester) Networks for Bone Tissue Engineering. BMES Annual Meeting. Chicago, IL. October 11-14, 2006. Poster Presentation.
9. **Bxxx DM**, Bhatnagar S, Noisin EL, Keynton RS, Klinge CM. Effect of Shear Stress on MAPK Activation and Occludin Expression in Human Endothelial Cells. NASA Cell Science Conference, Palo Alto, CA, Feb. 26-28, 2004. Oral Presentation.
10. Noisin EL, Bhatnagar S, **Bxxx DM**, Keynton RS, Klinge CM. Effect of Hypergravity on Endothelial Cell Responses. NASA Cell Science Conference, Palo Alto, CA, Feb. 26-28, 2004.
11. **Bxxx DM**, Keynton RS, Bhatnagar S, Noisin EL, Lei Z, Sumanasekera WK, Klinge CM. Effect of Shear Stress and Hypergravity on MAPK and Occludin in Human Endothelial Cells. Proceedings of the 21st Annual Houston Conference on Biomedical Engineering Research, p. 158, 2004. Oral Presentation.
12. Noisin EL, **Bxxx D**, Bhatnagar S, Keynton RS, Klinge CM. Impact of shear stress, hypergravity, and vibration on rapid Estrogen induced Nitric Oxide synthesis in human endothelial cells. (Abstract 14) Great Lakes Nuclear Receptor Conference, Medical College of Ohio in Toledo, OH. November 15, 2003.
13. **Bxxx DM**, Ehringer WD, Alexander JS, Xu Y, Roussel, Jr TJ, Keynton RS. Wall Shear Stress Regulation of Occludin Expression in Human Umbilical Vein Endothelial Cells. Proceedings of the 2002 Joint Institute for Electrical and Electronic Engineers (IEEE) – Engineering in Medicine and Biology (EMBS)/Biomedical Engineering Society (BMES) Conference, Houston, TX, 2002. Oral Presentation.
14. **Bxxx, DM**, Ehringer WD, Alexander JS, Yang X, Roussel TJ, Keynton RS. Role of Wall Shear Stress on Occludin Expression within Human Umbilical Vein Endothelial Cells. Proceedings of the 2001 International Mechanical Engineering Congress and Exposition Bioengineering Division, New York City, NY, 2001. Master Student Paper Competition Oral Presentation.

Local Meetings

1. **Bxxx DM**, Burdick JA. High-throughput Screening of Promoters and Inhibitors of Mesenchymal Stem Cell Osteogenic Differentiation. Penn Center for Musculoskeletal Disorders Scientific Symposium. Philadelphia, PA. October 14, 2009. Poster Presentation.

2. **Bxxx DM**, Burdick JA. Biodegradable Poly(β -Amino Ester)s as Substrates for Mineralized Tissue Formation. Penn Center for Musculoskeletal Disorders Scientific Symposium. Philadelphia, PA. November 12, 2008. Poster Presentation.
3. **Bxxx DM**, Burdick JA. Screening Photocrosslinked, Degradable Poly(β -Amino Ester) Networks for Bone Tissue Engineering. Research Forum @Penn Engineering. Philadelphia, PA. February 20, 2007. Poster Presentation.
4. **Bxxx DM**, Burdick JA. Screening Photocrosslinked, Degradable Poly(β -Amino Ester) Networks for Bone Tissue Engineering. Penn Center for Musculoskeletal Disorders Scientific Symposium. Philadelphia, PA. November 29, 2006. Poster Presentation.