

Jacqueline Bliley
Carnegie Mellon University
Department of Biomedical Engineering
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EDUCATION/ RESEARCH EXPERIENCE

- 2016-present **PhD Candidate, Carnegie Mellon University** Pittsburgh, PA
Department of Biomedical Engineering
GPA: 3.78
Advisor: Adam Feinberg, Ph.D.
• Created engineered heart muscle tissue to model embryonic development and heart disease
- 2012-2016 **Research Fellow, University of Pittsburgh** Pittsburgh, PA
Department of Plastic Surgery
Advisors: Kacey Marra, Ph.D., Peter Rubin M.D.
• Responsible for organizing and implementing nerve conduit projects (including rodent and non-human primate projects)
• Responsible for analysis and banking of SVF cell isolate obtained from all clinical trials in our laboratory, as well as standardization of fat graft preparation within the operating room
- 2010-2012 **Masters in Medical Sciences, Boston University** Boston, MA
Department of Graduate Medical Sciences
GPA: 3.88
Advisors: Hee-Young Park, Ph.D., Kacey Marra, Ph.D.
• Wrote thesis entitled, "Encapsulation of growth factors in acellular nerve allografts for peripheral nerve regeneration"
- 2006-2010 **Bachelor of Science, Duquesne University** Pittsburgh, PA
Major: Health Management System
GPA: 3.68
Advisor: Sarah Woodley, Ph.D.
• Completed an independent three credit internship to determine the acute and chronic effects of corticosteroids on behavior, metabolism, and neurogenesis.
• Employed as a field assistant to analyze the impacts of ecological stressors on the stress responses of salamanders

ACADEMIC AWARDS & HONORS

- **Presidential Fellowship**, College of Engineering, Carnegie Mellon University, Pittsburgh, PA. January 2020-December 2021.
- **1st Place Oral Presentation Award**, Biomaterials Day, Case Western Reserve University, Cleveland, OH. October 2019.
- **Outstanding Teaching Assistant Award**, Department of Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA. May 2019.
- **3rd Place Best Basic Science Award**. American Heart Association Fellows Day. Pittsburgh, PA. January 2019.
- **1st Place Poster Award**. Biomaterials Day, Carnegie Mellon University/University of Pittsburgh, Pittsburgh PA. November 2018.
- **Dowd Fellowship**. Carnegie Mellon University, Pittsburgh PA, September 2018-September 2019
- **STAR (Student Travel Award Recognition) Award**. Society for Biomaterials Annual Meeting, Minneapolis, MN. April 2017.
- **Best Oral Presentation Student and Young Investigator Section**. Tissue Engineering and Regenerative Medicine International Society World Congress, Boston, MA. September 2015.
- **National Science Foundation Travel Award**. Regenerative Medicine: Technologies Enabling Novel Therapies. Hilton Head, SC. March 2015.
- **Outstanding Health Management Systems Student Award**. Duquesne University, Pittsburgh, PA. May 2010.

PUBLICATIONS

1. Shiwarski DJ; Tashman JW; Tsamis A; **Bliley JM**; Blundon M; Aranda-Michel E; Jallerat Q; Szymanski J; McCartney B;

- Feinberg AW; **Fibronectin-Based Nanomechanical Biosensors to Map 3D Strains in Live Cells and Tissues.** BioRxiv Feb 2020 (Posted).
2. Rastogi SK; **Bliley JM**; Matino L; Garg R; Santoro F; Feinberg AW; Cohen-Karni T; **Three-dimensional fuzzy graphene ultra-microelectrodes for sub-cellular electrical recordings.** Nano Research. Feb 2012 (Accepted).
 3. **Bliley JM** #; Fadia NB #; DiBernardo, GA; Crammond DJ; Schilling BK; Sivak WN; Spiess AM; Washington KM; Waldner M; Tsung LH; James IB; Minter DM; Tompkins-Rhoades C; Kim DY; Schweizer R; Bourne DA; Cottrill AR; Panagis GE; Schusterman MA; Egro FM; Campwala IK; Simpson T; Weber DJ; Gause T; Brooker JE; Josyula T; Guevara AA; Repko AJ; Mahoney CM; Marra KG; **Long-Gap Peripheral Nerve Repair Through Sustained Release of a Neurotrophic Factor in Non-Human Primates.** Science Translational Medicine. Jan 2019.
 4. Lee A; Hudson A; Shiwarski DJ; Tashman JW; Hinton TJ; Yerneni S; **Bliley JM**; Campbell PG; Feinberg AW; **3D Bioprinting of Collagen to Rebuild Components of the Human Heart.** Science, 02 Aug 2019: 482-487.
 5. Kalmykov A; Huang C; **Bliley JM**; Shiwarski D; Tashman J; Abdullah Arif; Rastogi K; Shukla S; Mataev E; Feinberg AW; Hsia JK; Cohen-Karni T; **Organ on e-chip: Three dimensional self rolled biosensor array for electrical interrogations of electrogenic spheroids.** Science Advances, 23 Aug 2019, Vol 5, no 8.
 6. Bourne DA; **Bliley JM**; James I; Rubin J.P; **Changing the Paradigm of Craniofacial Reconstruction: A Prospective Clinical Trial of Autologous Fat Transfer for Craniofacial Deformities.** Annals of Surgery (2019).
 7. Passipieri J; Dienes J; Frank J; Glazier J; Portell A; Venkatesh K; **Bliley JM**; Grybowski D; Schilling B; Marra K; Christ G; **Adipose Stem Cells Enhance Nerve Regeneration and Muscle Function in A Peroneal Nerve Ablation Model.** Tissue Engineering Part A (2019).
 8. Bourne D; Thomas RD; **Bliley JM**; Haas G; Wyse A; Donnenberg A; Donnenberg VS; Chow I; Cooper R; Coleman S; Marra K; Pasquina P; Rubin JP; **Amputation Site Soft Tissue Restoration Using Adipose Stem Cell Therapy.** Plastic and Reconstructive Surgery (2018).
 9. Waldner M; Wensheng Z; James I; Allbright K; Havis E; **Bliley JM**; Almadori A; Schweizer R; Plock J; Washington K; Gorantla V; Solari M; Marra KG; Rubin JP; **Characteristics and Immunomodulating Functions of Adipose-Derived and Bone Marrow-Derived Mesenchymal Stem Cells Across Defined Human Leukocyte Antigen Barriers.** Frontiers in Immunology (2018).
 10. Rastogi SK; **Bliley JM**; Shiwarski DJ; Garg R; Feinberg AW; Cohen-Karni T; **Graphene Microelectrode Arrays for Electrical and Optical Measurements of Human Stem Cell-Derived Cardiomyocytes.** Cel. Mol. Bioeng. 11: 407(2018).
 11. Allbright KO; **Bliley JM**; Havis E; Kim DY; DiBernardo GA; Grybowski D; Waldner M; James IB; Sivak WN; Rubin JP; Marra KG; **Delivery of adipose-derived stem cells in poloxamer hydrogel improves peripheral nerve regeneration.** Muscle and Nerve (2018).
 12. **Bliley JM**; Rubin JP; **Nomenclature of the Stromal Vascular Fraction.** In book: Fat Injection: From Filling to Regeneration, pp. 67-81 (2018).
 13. **Bliley JM**; Argenta AE; Satish L; McLaughlin MM; Marra KG; Rubin JP; **Administration of Adipose-Derived Stem Cells Enhances Vascularity, Induces Collagen Deposition, and Enhances Dermal Adipogenesis in Burn Wounds.** Burns. (2016).
 14. **Bliley JM**; Satish L; McLaughlin MM; Kling RE; Day JR; Grahovac TL; Kokai LE; Zhang W; Marra KG; Rubin JP; **Imaging the Stromal Vascular Fraction During Soft Tissue Reconstruction.** Plastic and Reconstructive Surgery (2015).
 15. **Bliley JM**; Sivak WN; Minter DM; Tompkins-Rhoades C; Day J; Williamson G; Liao HT; Marra KG; **Ethylene Oxide Sterilization Preserves Bioactivity and Attenuates Burst Release of Encapsulated Glial Cell Line Derived Neurotrophic Factor from Tissue Engineered Nerve Guides For Long Gap Peripheral Nerve Repair.** ACS Biomaterials Science and Engineering (2015).
 16. Unadkat J; Schneider J; **Bliley JM**; Tsuji W; Gorantla V; Marra K; Solari M; Spiess A; **Sustained Locoregional Targeted Delivery of Fk506 in Vascularized Composite Allotransplantation.** Plastic and Reconstructive Surgery (2015).
 17. Lannau B; **Bliley JM**; James I; Wang S; Sivak WN; Kang K; Johnson J; Fowler J; Spiess A. **Long-term Patency of Primary Arterial Repair and the Modified Cold Intolerance Symptom Severity Questionnaire.** Plastic and Reconstructive Surgery Global Open. (2015)
 18. Sivak, WN; **Bliley JM**; Marra, K.G; **Polymeric biomaterials for peripheral nerve regeneration: fabrication and use of a polycaprolactone guide.** In book: Axon Growth and Regeneration. Volume 1162 of the series Methods in Molecular Biology pp 139-148. (2014).
 19. Sivak W; White J; **Bliley JM**; Tien L; Liao HT; Kaplan D; Marra K; **Delivery of Chondroitinase ABC (ChABC) and Glial Cell-derived Neurotrophic Factor (GDNF) from Silk Fibroin Conduits Enhances Peripheral Nerve Regeneration.** Journal of Tissue Engineering and Regenerative Medicine. (2014)
 20. **Bliley JM**; Marra KG; **Polymeric Biomaterials as Tissue Scaffolds.** In book: Stem Cell Biology and Tissue Engineering in Dental Sciences, pp.149-161. (2014).
 21. Philips BJ; Grahovac, TL; Valentin JE; Chung CW; **Bliley JM**; Pfeifer ME; Roy SB; Dreifuss S; Kelmendi-Doko A; Kling R.E; Ravuri SK; Marra KG; Donnenberg VS; Donnenberg AD; Rubin JP; **Prevalence of endogenous CD34+ adipose stem cells predicts human fat graft retention in a xenograft model.** Plastic and reconstructive surgery. 132: pp. 845-858. (2013).
 22. **Bliley JM**; Woodley SK; **The effects of repeated handling and corticosterone treatment on behavior in an**

amphibian (Ocoee salamander: *Desmognathus ocoee*). Physiology and Behavior, 105(5): pp. 1132-1139. (2012)
23. Ricciardella LF; **Bliley JM**; Feth CC; Woodley SK; **Acute stressors increase plasma corticosterone and decrease locomotor activity in a terrestrial salamander (*Desmognathus ochrophaeus*)**. Physiology and Behavior, 101(1): pp. 81-86. (2010)

INVITED PRESENTATIONS

1. Bliley JM; Vermeer M; Feinberg AW; **Mechanical Loading of Engineered Cardiac Tissues Induces a Disease Phenotype in Patient Specific Engineered Heart Muscle Tissues**. Bioengineered Organs Initiative Meeting, February 21, 2019, Pittsburgh, PA.
2. Bliley JM; Vermeer M; Feinberg AW; **Cardiac Tissue Engineering: From In Vitro Disease Models to 3D Bioprinted Heart Scaffolds**. McGowan Institute Injury, Repair and Regenerative Medicine Seminar Series, December 5, 2017, Pittsburgh, PA.
3. Bliley JM; Marra KG; **Regeneration of Long Gap Median Nerve Defects and Functional Reinnervation of the Abductor Pollicis Brevis Muscle Using Novel Tissue Engineered Nerve Guides in a Non-Human Primate Model**. McGowan Institute Injury, Repair and Regenerative Medicine Seminar Series, February 2, 2016, Pittsburgh, PA.

ORAL PRESENTATIONS

1. Bliley JM; Lee A; Hinton TJ; Hudson A; Shiwerski D; Tashman J; Yerneni S; Campbell PG; Feinberg AW; **Perfused 3D Printed Collagen Tubes Support Tissue Viability**. Biomaterials Day. Case Western Reserve University. Cleveland OH. October 2019.
2. Bliley JM; Lee A; Hinton TJ; Hudson A; Shiwerski DI Tashman J; Yerneni S; Campbell PG; Feinberg AW; **Perfused 3D Printed Collagen Tubes Support Tissue Viability**. McGowan Retreat. Pittsburgh PA. March 2019
3. Bliley JM; Lee A; Hinton TJ; Hudson A; Shiwerski D; Tashman J; Yerneni S; Campbell PG; Feinberg AW; **3D Printed Collagen Tubes as Scaffolds for Engineering Functional Human Muscle**. Biomedical Engineering Society Meeting. Atlanta GA. October 2018.
4. Bliley JM; Duffy R; Batalov I; Vermeer M; Kalmykov A; van der Meer P; Feinberg A; **Cardiac Microtissues with Integrated Force Sensors for Non-Invasive Readout of Contractile Function**. Society for Biomaterials Annual Meeting. Minneapolis, MN. April 2017.
5. Bliley JM; Bourne D; Havis E; James IB; Schroth R; Dees A; DiBernardo G; Grybowski D; Wang S; Kokai L; Kelmendi-Doko A; Mahoney C; Sivak W; Marra K; Rubin JP; **The Effects of Cold Storage And Poloxamer 188 Treatment on Stromal Vascular Fraction Viability And Volume Retention of Fat Grafts**. Robert H. Ivy Society of Plastic Surgeons at Omni Bedford Springs Resort and Spa. Pittsburgh, PA. April 2016
6. Bliley JM; Satish L; McLaughlin MM; Kling RE; Day JR; Grahovac TL; Kokai LE; Zhang W; Marra KG; Rubin JP; **Imaging the Stromal Vascular Fraction During Soft Tissue Reconstruction**. 58th Ohio Valley Society of Plastic Surgeons meeting, Covington, KY. May, 2015
7. Bliley JM; Bourne D; James I; Sivak W; Wang S; Schroth RI Marra KG; Rubin JP; **Reconstruction following craniofacial trauma with stromal vascular fraction enriched fat grafts: Correlating in vitro findings with clinical outcomes**. International Federation for Adipose Therapeutics and Science. New Orleans, LA. November, 2015
8. Bliley JM; Bourne D; James I; Kostereva N; Waldner M; Grybowski D; Sivak WN; Schweizer R; Schroth RN; Minter DM; Simpson T; Tompkins-Rhoades C; Taylor A; Dees A; Washington KM; Spiess AM; Crammond DJ; Marra KG; **Regeneration of Long Gap Median Nerve Defects and Functional Reinnervation of the Abductor Pollicis Brevis Muscle Using Novel Tissue Engineered Nerve Guides in a Non-Human Primate Model**. TERMIS. Boston, MA. September, 2015.
9. Bliley JM; Sivak WN; Minter DM; Schweizer R; Bourne D; James I; Kostereva N; Schroth RN; Simpson T; Tompkins-Rhoades C; Taylor A; Washington KM; Spiess AM; Crammond DJ; Marra KG; **Interim Analysis of Long Gap Median Nerve Regeneration Through Novel Tissue Engineered Nerve Guides in a Non-Human Primate Model**. Regenerative Medicine: Technologies Enabling Novel Therapies. Hilton Head, South Carolina. March, 2015
10. Bliley J.M; Bourne D; James I; Kostereva N; Waldner M; Grybowski D; Sivak WN; Schweizer R; Schroth RN; Minter DM; Simpson T; Tompkins-Rhoades C; Taylor A; Dees A; Washington KM; Spiess AM; Crammond DJ; Marra KG; **Regeneration of Long Gap Median Nerve Defects and Functional Reinnervation of the Abductor Pollicis Brevis Muscle Using Novel Tissue Engineered Nerve Guides in a Non-Human Primate Model**. UPMC Plastic Surgery Resident Research Day. Pittsburgh, PA. June, 2015
11. Bliley JM; Argenta A; Satish L; McLaughlin M; Marra K; Rubin JP; **Use of Adipose derived stem cells for the improvement of burn wound healing**. Robert H. Ivy Society of Plastic Surgeons at Omni Bedford Springs Resort and Spa. Bedford, PA. May 2014
12. Bliley JM; Sivak WN; Minter DM; Liberatore R; Schroth RN; Liao HT; Schweizer R; Gause T; Simpson T; Hokanson J; Tompkins-Rhoades C; Washington K.M; Spiess AM; Weber D; Crammond DJ; Marra KG; **Interim Analysis of Long Gap Median Nerve Regeneration Through Novel Tissue Engineered Nerve Guides in a Non-Human Primate Model**. UPMC Plastic Surgery Resident Research Day. Pittsburgh, PA. June, 2014

13. Bliley JM; Grahovac TL; McLaughlin MM; Kling RE; Philips BJ; Day JR; Satish L; Marra KG; Rubin JP; **Identification of the Minimum Cell Dose Necessary to Increase Fat Graft Retention.** University of Pittsburgh Plastic Surgery Resident Research Day. Pittsburgh, PA. June 2013
14. Bliley JM; Grahovac TL; McLaughlin MM; Kling RE; Philips BJ; Day JR; Satish L; Marra KG; Rubin JP; **Identification of the Minimum Cell Dose Necessary to Increase Fat Graft Retention.** International Federation of Adipose Therapeutics and Science. New York City, NY. November 2013.
15. Bliley JM; Grahovac TL; Nayar HS; Philips BJ; Courcoulas AP; Marra KG; Rubin JP; **Correlating Body Mass Index (BMI) to Adipose Stem Cell Functionality and Fat Graft Retention.** University of Pittsburgh Plastic Surgery Resident Research Day. Pittsburgh, PA. July 2012
16. Bliley JM; Grahovac TL; Nayar HS; Philips BJ; Courcoulas AP; Marra KG; Rubin JP; **Correlating Body Mass Index (BMI) to Adipose Stem Cell Functionality and Fat Graft Retention.** International Federation of Adipose Therapeutics and Science. Quebec, Canada. October 2012
16. Bliley JM; Feth CC; Woodley SK; **Acute Stress Response as an Adaptive Mechanism in Salamanders.** Duquesne University Summer Research Symposium. Pittsburgh, PA. July 2009.

POSTER PRESENTATIONS

1. Bliley JM; Duffy R; Batalov I; Vermeer M; Kalmykov A; van der Meer P; Feinberg A; **Dynamic Mechanical Loading Induces a Disease Phenotype in Disease Engineered Cardiac Tissues.** ISSCR, Los Angeles CA. June 2019
2. Bliley JM; Duffy R; Batalov I; Vermeer M; Kalmykov A; van der Meer P; Feinberg A; **Dynamic Mechanical Loading Induces a Disease Phenotype in Disease Engineered Cardiac Tissues.** American Heart Association Fellows Day, Pittsburgh PA. January 2019.
3. Bliley JM; Duffy R; Batalov I; Vermeer M; Kalmykov A; van der Meer P; Feinberg A; **Dynamic Mechanical Loading Induces a Disease Phenotype in Disease Engineered Cardiac Tissues.** Biomaterials Day, November 2018, Pittsburgh PA.
4. Bliley JM; Duffy R; Batalov I; Vermeer M; Kalmykov A; van der Meer P; Feinberg A; **Cardiac Microtissues with Integrated Force Sensors for Non-Invasive Readout of Contractile Function.** Keystone Conference: Molecular Mechanisms of Heart Development. Keystone, CO. March 2017.
5. Bliley JM; Bourne D; James I; Kostereva N; Waldner M; Grybowski D; Sivak WN; Schweizer R; Schroth RN; Minter DM; Simpson T; Tompkins-Rhoades C; Taylor A; Dees A; Washington KM; Spiess AM; Crammond DJ; Marra KG; **Evaluation of Clinical Alternatives to Nerve Autograft in Long Gap Median Nerve Defects.** Regenerative Medicine: Technologies Enabling Novel Therapies. Hilton Head, South Carolina. March 2016
6. Bliley JM; Bourne D; Havis E; James IB; Schroth R; Dees A; DiBernardo G; Grybowski D; Wang S; Kokai L; Kelmendi-Doko A; Mahoney C; Sivak W; Marra K; Rubin JP; **The Effects of Cold Storage And Poloxamer 188 Treatment on Stromal Vascular Fraction Viability And Volume Retention of Fat Grafts.** McGowan Institute for Regenerative Medicine Retreat. Nemaacolin Woodlands Resort, PA. March, 2016
7. Bliley JM; Bourne D; James I; Kostereva N; Waldner M; Grybowski D; Sivak WN; Schweizer R; Schroth RN; Minter DM; Simpson T; Tompkins-Rhoades C; Taylor A; Dees A; Washington KM; Spiess AM; Crammond DJ; Marra KG; **Evaluation of Clinical Alternatives to Nerve Autograft in Long Gap Median Nerve Defects.** McGowan Institute for Regenerative Medicine Retreat. Nemaacolin Woodlands Resort, PA. March, 2016
8. Bliley JM; Sivak WN; Minter DM; Schweizer R; Bourne D; James I; Kostereva N; Schroth R.N; Simpson T; Tompkins-Rhoades C; Taylor A; Washington KM; Spiess AM; Crammond DJ; Marra KG; **Interim Analysis of Long Gap Median Nerve Regeneration Through Novel Tissue Engineered Nerve Guides in a Non-Human Primate Model.** McGowan Institute for Regenerative Medicine Retreat. Nemaacolin Woodlands Resort, PA. March, 2015
9. Bliley JM; Bourne D; James I; Kostereva N; Sivak WN; Schweizer R; Schroth RN; Minter DM; Simpson T; Tompkins-Rhoades C; Taylor A; Dees A; Washington KM; Spiess AM; Crammond DJ; Marra KG; **Regeneration of Long Gap Median Nerve Defects and Function Reinnervation of the Abductor Pollicis Brevis Muscle Using Novel Tissue Engineered Nerve Guides in a Non-Human Primate Model.** Military Health System Research Symposium. Fort Lauderdale, FL. August, 2015
10. Bliley JM; Sivak WN; Crammond DJ; Minter D; McLaughlin MM; Liberatore R; Schroth RN; Liao HT; Simpson T; Hokanson J; Williamson G; Tompkins-Rhoades C; Washington K; Spiess A; Weber D; Marra KG; **An Interim Analysis of Outcomes following 5-cm Median Nerve Defect Repair in Non-Human Primates.** Plastic Surgery Research Council. New York City, NY. March 2014
11. Bliley JM; Sivak WN; Minter DM; McLaughlin MM; Liberatore R; Schroth RN; Liao HT; Gause T; Simpson T; Hokanson J; Tompkins-Rhoades C; Williamson G; Washington KM; Spiess AM; Weber D; Crammond DJ; Marra KG; **Interim Analysis of Long Gap Median Nerve Regeneration Through Novel Tissue Engineered Nerve Guides in a Non-Human Primate Model.** Military Health System Research Symposium. Fort Lauderdale, FL. August 2014
12. Bliley JM; Minter DM; McLaughlin MM; Sivak W; Washington KM; Spiess AM; Crammond DJ; Rubin JP; Marra KG; **Establishing a pre-clinical 5-centimeter median nerve defect in a *Rhesus macaque* model.** McGowan Institute for Regenerative Medicine Retreat. Nemaacolin Woodlands Resort, PA. March, 2013

13. Bliley JM; Minter DM; McLaughlin MM; Sivak W; Washington KM; Spiess AM; Crammond DJ; Rubin JP; Marra KG; **Establishing a pre-clinical 5-centimeter median nerve defect in a *Rhesus macaque* model.** Regenerative Medicine: Technologies Enabling Novel Therapies. Hilton Head, South Carolina. March 2013
14. Bliley JM; Grahovac TL; Nayar HS; Philips BJ; Courcoulas AP; Marra KG; Rubin JP; **Correlating Body Mass Index (BMI) to Adipose Stem Cell Functionality and Fat Graft Retention.** University of Pittsburgh Surgery Resident Research Day, Pittsburgh, PA. May 2013
15. Bliley JM; Lin YC; Minter DM; Oh S; Kaplan DL; Van Dyke M; Smith T; Pixley S; Rubin JP; Marra KG; **Strategies for Enhanced Peripheral Nerve Repair.** Boston University Science and Engineering Day. Boston, MA. March 2012
16. Bliley JM, Lin YC; Minter DM; McLaughlin MM; Oh S; Kaplan DL; Van Dyke M; Smith T; Pixley S; Rubin JP; Marra KG; **Strategies for Enhanced Peripheral Nerve Repair.** McGowan Institute for Regenerative Medicine Retreat. Nemaconlin Woodlands Resort, PA. March, 2012
17. Bliley JM; Grahovac TL; Nayar HS; Philips BJ; Courcoulas AP; Marra KG; Rubin JP; **Correlating Body Mass Index (BMI) to Adipose Stem Cell Functionality and Fat Graft Retention.** Plastic Surgery Research Council. Ann Arbor, MI. June 2012
18. Bliley JM; Lin YC; Minter DM; McLaughlin MM; Oh S; Kaplan DL; Van Dyke M; Smith T; Pixley S; Rubin JP; Marra KG; **Strategies for Enhanced Peripheral Nerve Repair.** Annual Symposium on Regenerative Rehabilitation. Pittsburgh, PA. November 2012
19. Bliley JM; Lin YC; Minter DM; McLaughlin MM; Oh S; Kaplan DL; Van Dyke M; Smith T; Pixley S; Rubin JP; Marra KG; **Strategies for Enhanced Peripheral Nerve Repair.** Vision Restoration: Regenerative Medicine in Ophthalmology, Pittsburgh, PA. May 2012
20. Bliley JM; Woodley SK; **Acute Effects of Corticosteroids in Salamanders.** Duquesne University Undergraduate Research and Scholarship Symposium. Pittsburgh, PA. February 2010
21. Bliley JM; Woodley SK; **The Effects of Chronic Stress on Salamander Behavior and Body Condition.** Western Pennsylvania Undergraduate Symposium at Geneva College. Beaver Falls, PA. April, 2010
22. Bliley JM; Feth CC; Woodley SK; **Acute Stress Response as an Adaptive Mechanism in Salamanders.** Duquesne University Undergraduate Summer Research Symposium. Pittsburgh, PA. July 2009
23. Bliley JM; Feth CC; Woodley SK; **Effects of Chemosensory Cues on Locomotor Activity in the Salamander.** Duquesne University Undergraduate Research and Scholarship Symposium. Pittsburgh, PA. April 2009

MENTORING EXPERIENCE

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| 1. Kristina Kim (Chemistry Undergraduate) "Extracellular Matrix Shrink-Wrapped Cardiomyocytes To Repair Injured Heart Muscle" Carnegie Mellon University, Pittsburgh, PA. | September 2019-Present |
| 2. Madison Stiefbold (MSE Undergraduate) "Extracellular Matrix Shrink-Wrapped Cardiomyocytes" Carnegie Mellon University, Pittsburgh, PA. | Fall 2018-Spring 2019 |
| 3. Xining Gao (MSE/BME Undergraduate) "Fibronectin-Based Nanofibrous Scaffolds for Engineering Functional Human Heart Muscle" Carnegie Mellon University, Pittsburgh, PA. | Summer 2017-May 2020 |
| 4. Mohamed Eltaeb (Computational Neuroscience Undergraduate) "Endothelial Cell Tubular Fragments to Create Tissue Microvasculature" Carnegie Mellon University, Pittsburgh, PA. | Summer 2017-May 2020 |
| 5. Sabrina Liu (MSE/BME Undergraduate) "3D printed musculoskeletal actuators for soft robotic applications" Carnegie Mellon University, Pittsburgh, PA. | September 2016-May 2017 |
| 6. Raahul Sriram (ChemE Undergraduate) "Enhancing Viability of Injected Fat with Poloxamer-based Hydrogels" University of Pittsburgh, Pittsburgh, PA | January 2016- July 2016 |
| 7. Makenna Laffey (High School Student) "Bioactivity of Chemotherapeutic Agents in Polymeric Microspheres" University of Pittsburgh, Pittsburgh, PA | Summer 2015 |
| 8. Aaron Dees (BME Undergraduate) "Enhancing Viability of Injected Fat With Poloxamer-Based Hydrogels" University of Pittsburgh, Pittsburgh, PA | May 2014-May 2016 |
| 9. Ana Taylor (BME Undergraduate) "Encapsulation and Bioactivity of Chemotherapeutic Agents in Polymeric Microspheres" University of Pittsburgh, Pittsburgh, PA | May 2014-May 2015 |
| 10. Margaret Weber (High School Student) "Quantifying Schwann Cells and Nerve Fiber Density in Regenerating Nerves" | Summer 2014 |

University of Pittsburgh, Pittsburgh, PA

11. **Casey Tompkins-Rhoades (BME Undergraduate)**

May 2013-July 2016

"In Vitro Evaluation of GDNF-releasing Tissue Engineered Nerve Guides"

University of Pittsburgh, Pittsburgh, PA

12. **James Day (BME Undergraduate)**

August 2013-May 2014

"In Vivo Imaging of Stem Cells in Fat Grafts"

University of Pittsburgh, Pittsburgh, PA

13. **Gregory Williamson (Rehabilitation Sciences Undergraduate)**

January 2013-August 2013

"Histomorphometric Analysis of Non-Human Primate Peripheral Nerves"

University of Pittsburgh, Pittsburgh, PA

14. **Maria Sierra (High School Student)**

Summer 2012

"The Effect of Body Mass Index on Adipose Derived Stem Cell Function"

University of Pittsburgh, Pittsburgh, PA

TEACHING OUTREACH PROGRAMS

1. Bliley JM; **Neuronal and Cardiac Tissue Engineering**. Central Catholic Tissue Engineering Initiative. Pittsburgh, PA. January 2016.
2. Bliley JM; **Imaging the Stromal Vascular Fraction During Soft Tissue Reconstruction**. Central Catholic Tissue Engineering Initiative. Pittsburgh, PA. December 2015.
3. Bliley JM; **Using Poloxamer-Based Hydrogels to Deliver Adipose-Derived Stem Cells for Nerve Tissue Engineering**. Carnegie Mellon Summer Academy for Mathematics and Science program. Pittsburgh, PA. August 2015.
4. Bliley JM; **Growth Factor Delivery in Nerve Tissue Engineering**. Central Catholic Tissue Engineering Initiative. Pittsburgh, PA. February 2015.
5. Bliley JM; **Neuronal Tissue Engineering**. Central Catholic Tissue Engineering Initiative. Pittsburgh, PA. February 2014.
6. Bliley JM; **Neuronal Tissue Engineering**. PTEI Tissue Engineering Camp. McGowan Institute for Regenerative Medicine. Pittsburgh, PA. August 2012

PATENTS

1. PCT/US2018/000165. "3D Microtissues with Integrated Mechanical Loading and Non-invasive Readout of Tissue Generated Stress and Strain".
2. PCT/US18/060788. "Systems And Methods For Reconstruction Of Nerve Defects"

TEACHING EXPERIENCE

Stem Cell Engineering Teaching Assistant

Carnegie Mellon University

42-698 Stem Cell Engineering

Fall 2019

- Assisted in giving lectures on biomaterials, cell signaling, and current applications of stem cells.
- Held office hours to assist with completion of group projects.
- Course Instructor/Supervisor: Adam Feinberg Ph.D.

Tissue Engineering Laboratory Teaching Assistant

Carnegie Mellon University

46-142 Tissue Engineering

Spring 2018 and Spring 2019

- Prepared laboratory materials and experiments for students (including cell culture, microncontact printing, 3D tissue fabrication, and 3D printing).
- Answered students' questions and helped them to set up and complete the experiments.
- Assisted in student development and execution of group final projects.

PROFESSIONAL SERVICE & ACTIVITIES

Memberships: Biomedical Engineering Society, Society for Biomaterials

Positions: President of Society for Biomaterials Carnegie Mellon University's Student Chapter

Reviewer: Scientific Reports