DAMION T. DIXON

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PERSONAL SUMMARY

Ph.D. candidate within the School of Environmental, Civil, Agricultural and Mechanical Engineering (ECAM) at the University of Georgia. My research primarily focuses on the development and testing of novel composite materials to be used in the construction of 3D-printed bone replacements — specifically, my research aims to mimic the electromechanical properties of healthy bone tissue through the use of conductive and piezoelectric materials. Ultimately, the goal of this work is to alleviate issues related to critically-sized bone defects and the limitations surrounding allograft bone tissue and currently used synthetic grafts.

EDUCATIONAL BACKGROUND

University of Georgia **Athens, GA**
Doctor of Philosophy (Ph.D.), *Engineering – Mechanics and Materials Emphasis* 2018–Present
Prospectus Title: *Electro-mechano Responsive Scaffolds: Towards a More Biomimetic Bone Tissue Replacement*
Advisor: Dr. Cheryl T. Gomillion, Ph.D.

Georgia Southern University **Statesboro, GA**
Bachelor of Science (B.S.), *Mechanical Engineering* 2015–2018
HOPE Scholarship Recipient
Honors: Dean's List (Spring '15 & Fall '17)

MONETARY AWARDS & SCHOLARSHIPS

- *SREB Doctoral Scholar* – Southern Regional Education Board's Minority Ph.D. Fellowship Program (**2019**)
- *GEF Scholarship* – Georgia Engineering Foundation (**2019**)
- *Dire Needs Project Award* – University of Georgia, College of Engineering (**2018**)
- *Charles Robert Pound, Sr. Engineering Scholarship* – Georgia Southern University (**2017**)

PEER-REVIEWED JOURNAL PUBLICATIONS

Papers Published or Under Review

2. **Dixon, D.T.**; Gomillion, C.T. 3D-Printed Conductive Polymeric Scaffolds with Direct Current Electrical Stimulation for Enhanced Bone Regeneration (submitted to *Journal of Biomedical Materials Research Part B: Applied Biomaterials*).

1. **Dixon, D.T.**; Gomillion, C.T. Conductive Scaffolds for Bone Tissue Engineering: Current State and Future Outlook. *J. Funct. Biomater.* **2022**, 13, 1. https://doi.org/10.3390/jfb13010001

Papers in Progress

1. **Dixon, D.T.**; Gomillion, C.T. The Role of Mechanotransduction in Bone Tissue Repair and Regeneration.

RESEARCH PRESENTATIONS

4. "3D-Printed Conductive Polymeric Scaffolds with DC Electrical Stimulation for Enhanced Bone Regeneration" [Poster]; (**2022, Apr**). *Society For Biomaterials 2022 Annual Meeting and Exposition*, **Baltimore, MD**.

3. "3D-Printed Conductive Polymeric Scaffolds with DC Electrical Stimulation for Enhanced Bone Regeneration" [Oral]; (**2022, Feb**). *Engineering in Healthcare: Industry and Research Symposium (EHIRS), Biomedical Engineering Society at The Ohio State University*, **Virtual**.

2. "Evaluation of Conductive Polymeric Scaffolds for Potential Bone Tissue Regeneration" [Poster]; (**2021, Apr**). *Institute of Biological Engineering (IBE) 2021 Annual Conference*, **Virtual**. Abstract accepted for 2020; canceled.

1. “Evaluation of Conductive Polymeric Scaffolds for Potential Bone Tissue Regeneration” [Poster]; (**2019, Apr**). *Regenerative Bioscience Center (RBC) Fellows Symposium*, University of Georgia, **Athens, GA**.

RESEARCH EXPERIENCE

Graduate Research Assistant 2018–Present

Advisor: Dr. Cheryl T. Gomillion, Ph.D. (University of Georgia, College of Engineering)

- Research focuses on the design and validation of conductive/piezoelectric 3D-printed scaffolds for bone tissue regeneration
- Applies mechanical engineering knowledge to tissue engineering research
- Manages laboratory equipment and updates online chemical inventory regularly
- Develops protocols and trains new lab members on mammalian cell culture and other related techniques

Undergraduate Research Assistant 2017–2018

Advisor: Dr. Majibur Khan, Ph.D. (Georgia Southern University, Allen E. Paulson College of Engineering and Information Technology)

- Studied techniques for solution spinning of high-performance nanofibers for structural application
- Completed several interdisciplinary projects and secured funding through undergraduate research grants

RESEARCH AWARDS, RECOGNITION & TRAVEL FUNDING

- *UGA Small Club Allocations Fund* – UGA SGA Small Clubs Allocations Committee (**2022**)
  - As President of the University of Georgia Student Chapter of the Society For Biomaterials (SFB) I secured funding for members to attend the 2022 annual conference in Baltimore, MD
  - Total travel funds received ($605.00)
- *Graduate Presenter Award* – Institute of Biological Engineering Annual Conference (**2021**)
- *Best Undergraduate Engineering Poster* – Georgia Southern University (**2017**)

MENTORING EXPERIENCE

Ph.D. Research Mentor, University of Georgia, College of Engineering 2018–Present

- Eric Okanume (LSAMP/CURO Scholar)
- Destani Jackson (NSF NanoBio REU)

TEACHING EXPERIENCE

Graduate Teaching Assistant, University of Georgia, College of Engineering 2018–2019

- ENGR 4990R: Undergraduate Research Thesis (Capstone) – Spring ‘19
- ENGR 2120H: Engineering Statics (Honors) – Fall ‘18

Peer Tutor, Georgia Southern University, College of Science and Mathematics 2016–2017

- MATH 2242: Calculus II – Spring ‘17
- MATH 1401/1441: Calculus I – Fall ‘16

VOLUNTEERING

Equity Engineers Council, University of Georgia, College of Engineering 2021–Present

- Founding member and co-leader
- This leadership group helps to initiate ideas, activities, programs, and resources to better serve and support minority student groups within the College of Engineering

Summer Biomechanics, Bioengineering and Biotransport Conference (SB^{3}C) 2021

- Served as student ambassador for the annual conference
- Co-hosted sessions and moderated Q&A for session chair

PROFESSIONAL AFFILIATIONS

†Indicates leadership role at the University level (UGA or GSU)

- †Society For Biomaterials (SFB) 2022–Present
- †National Society of Black Engineers (NSBE) 2016–2020
- American Society of Mechanical Engineers (ASME) 2016–2017

SKILLS & CERTIFICATION

Programming, Modeling and Simulation Skills

Proficient: MATLAB; AutoCAD; SOLIDWORKS; ANSYS

Certifications

SOLIDWORKS Associate (CSWA)

Current as of Feb 2022