Clemson University
Department of Bioengineering

RESUME BOOK

Fall 2017 Master of Engineering in Biomedical Engineering Students

Fall 2017 Version

Contact:
Jennifer R. Hogan, Coordinator of Professional Development
jrhogan@clemson.edu
864-656-0746
www.clemson.edu/ces/bioe

At Clemson
Department of Bioengineering
301 Rhodes Research Center
Clemson University
Clemson, SC 29634-0905

At MUSC
Clemson-MUSC Joint Bioengineering Program
Medical University of South Carolina
68 President Street – BE 101D – MSC 501
Charleston, SC 29425

CLEMSON
BIOENGINEERING

Training the next generation of thinkers, leaders and entrepreneurs.

About us:

Clemson University's Department of Bioengineering has been widely recognized as a pioneer in the field of biomaterials science and engineering and is renowned for its leadership in biomaterials research and education. One of the oldest in the world, Clemson's bioengineering program began in 1963 with the inception of a Doctor of Philosophy. A Master of Science was added in 1966, a Bachelor of Science in 2006 and most recently, the M. Eng. in Biomedical Engineering began in 2014.

Clemson University is also known as the international birthplace of the field of biomaterials, the building blocks of medical devices. The Society For Biomaterials (SFB), which is the premier professional society in the field of bioengineering, began at Clemson in 1974.

The Department of Bioengineering has experienced unprecedented growth in faculty, personnel, facilities and programs. Clemson has strengthened its commitment to provide a unique learning environment to students and scientists-in-training by integrating state-of-the-art research with education in cardiovascular devices and implantology, orthopaedic materials, tissue engineering, hybrid systems, biophotonics, nanoscale biointerfaces, biomolecular simulations, dental biomaterials, mechanobiology and many other emerging technologies.

In 2011, the Clemson University Biomedical Engineering Innovation Center, CUBEInC, was opened at the Patewood campus of the Greenville Health System. Combining basic research labs, a medical skillslab and technology incubator space, CUBEInC provides a unique platform for Clemson faculty and students to develop high-impact medical technology and devices, and to transfer research and engineering to clinical applications.

Degress Offered: BS (bioelectrical or biomaterials), BS/MS, MEng., MS, PhD

Master of Engineering
M.ENG
BME
Biomedical Engineering

Contents

2017 December Graduates

Nana Ama Gyabeng

2018 Graduates

Antonio Ayala

Christopher Berry

William Bresnihan

Reid Gentry

Mitchell Grant

Anela Holdaway

Timothy Litzinger

Stephanie Mansueti

Jo Ann Martin

Mary Reeves

Matthew Roach

Nana Ama Gyabeng

864-650-8577 | ngyaben@g.clemson.edu | Clemson, SC 29634

Education

Master of Engineering in Biomedical Engineering, Clemson University, Clemson SC **Expected Graduation: December 2017**
Relevant **Classes**: Research Design and Statistics, Biomedical Engineering Device Design Innovation and Product Translation, Medical Device Commercialization (Sales and Marketing, Financial Management), Biomaterials, Industrial Bioengineering, Regulatory and Clinical Affairs, Biomedical Basis for Engineering Replacement, Human Factors Engineering
GPA 3.78/4.0
Certifications: Occupational health and safety management **April-June, 2014**
The Institute for Professional and Executive Development (United Kingdom)
Adult CPR/AED, Child CPR and First Aid **February 2016**

Bachelor of Science in Biomedical Engineering, Kwame Nkrumah University of Science & Technology, Ghana **June 2013**
GPA 3.27/4.0

Selected Technical Knowledge, Other Skills and Languages

Design projects/Project Management Skills	SAP (Beginner)	French (Beginner)
Voice of customer/gate meeting experience	Windchill	Research Ethics
FDA Regulations (GMP/Design Controls	MS Office Suite	C/C++
Risk Assessment (ISO 14971)	Salesforce	Minitab
QSR/ISO 13485, (Regulatory Pathways)	MS Project	Quality Control

Employment Experience

Boston Scientific Corporation, Maple Grove, MN, Research and Development Engineer Intern **May-August 2017**

- Observed, tracked and analyzed product testing to evaluate the significance of design elements to product performance
- Performed product testing, integrated data trackability and assessed product spec capability at various test conditions to align the output with clinically relevant conditions
- Collaborated with internal groups, analyzed data using analytical models, drew conclusions and provided recommendations for pre-design verification needs
- Operated in a cross-functional team based environment to collectively drive tasks to on-time completion to meet project timeline
- Gained exposure to Usability Engineering, analyzed usability techniques and participated in formative evaluation

College of Science, Clemson University, Graduate Administrative Assistant **August 2015-Present**

- Address questions regarding student applications for both domestic and international students
- Assist departmental guests, provide first hand assistance and support to departmental office managers
- Monitor packages, organizes exam documents, maintains and oversees student confidential information

Clemson University Police Department, Student Patrol Officer **March-August 2015**

- Provided on-campus security, secured residential hall buildings, and performed routine patrols
- Assisted students living in residential hall building with information concerning school security protocols and provided necessary assistance

ENGYSIS Biomedical Engineering Company, Ghana, Technical Assistant Intern **May-August 2012**

- Provided hands-on technical support and assisted in the validation of new equipment including; installation and operational qualification
- Trained healthcare personal on the use of equipment
- Maintained open and effective communication with team members to increase overall workforce productivity
- Actively engaged in medical device sales, marketed and assisted with inventory control
- Prepared reports on daily assignments to keep staff up-to-date on tasks

Honors & Leadership Experience and Activities

Honors

- The National Society of Collegiate Scholars (NSCS) **January 2015-Present**
- Honor Society of Alpha Epsilon Lambda (AEL) **November 2015-Present**

Leadership Experience and Activities

- Graduate Student Representative, National Society of Black Engineers, (NSBE) **August 2016-Present**
- Clemson Biomedical Engineering Society, (CBS**)** **August 2016-Present**
- Biomedical Engineering Society, (BMES) **August 2016-Present**
- Community Service Volunteer, Habitat for Humanity **August 2015 & August 2016**
- Community Service Volunteer for the disabled, Camp Spearhead **November 2015 & April 2016**
- Community Service Volunteer, Feed My Starving Children (FMSC) **May-August 2017**

Research and Relevant Projects

Master of Engineering Capstone Design Project, Clemson University **August 2016-April 2017**

Conceptualized and developed an orthopedic depth gauge used by surgeons for measuring bone width during Open Reduction Internal Fixation Surgery for tibia fractures

- Researched suitable designs and assisted in product documentation [510(k)]
- Developed project budget, developed and maintained a daily project schedule using MS Project
- Assisted with preparation of regulatory requirements of product and design of verification testing protocol

School of Nursing, Clemson University, Student Researcher **August 2014- December 2015**

- Assisted in basic research and preparation of cell culture techniques
- Prepared histological sectioning and techniques used in staining
- Worked with breast cancer cell lines using flow cytometer to analyze and evaluate difference in cell cycle stages

Undergraduate Research Project, Kwame Nkrumah University of Science and Technology, Ghana **May 2012- June 2013**

- Developed and validated an Osteoporosis Risk Assessment Tool for patients
- Collected and produced a comprehensive report of osteoporotic patients and developed a software to assess the degree of risk of patients

Antonio Jose Ayala

618 Flamingo Dr. Ladson, SC 29456

aayala@clemson.edu Phone: 843-709-9794

EDUCATION:

Clemson University Anticipated Graduation: May 2018
Master of Engineering in Biomedical Engineering

Clemson University Graduated: May 2017
Bachelor of Science in Bioengineering GPA: 3.51/4.0
Concentration in Biomaterials

Class Experience
Tissue Engineering, Biomaterials, Biomechanics, Biofluids, Statics, Thermodynamics, Cardiovascular Engineering, Sports Engineering, Drug Delivery, Senior Design

RELATED EXPERIENCE:

Tissue Engineering Creative Inquiry Member – 3D Structure Myocardial Regeneration Clemson, SC
Clemson University January 2015 – May 2016

- Collaborated with other students to grow Myocardial cells in a 3D setting
- Worked in tissue engineering lab
- Learned valuable tissue engineering techniques

AdvancmENT Senior Design Member- SpecifiCast Facial Cast Clemson, SC
Clemson University August 2016 – May 2017

- Developed a 3D Printed Patient Specific Facial Cast for a variety of facial fractures
- Worked with an ENT Surgeon at Greenville Health Systems to receive clinical input
- Attended bi-weekly meetings with a faculty advisor, professors, and graduate students to present progress in the product's development
- Designed the process and product using the skills and knowledge learned throughout my bioengineering education
- Completed market research to compare the product to devices currently on the market

WORK EXPERIENCE:

SURP in 3D Imaging of Cardiomyocytes Charleston, SC
Medical University of South Carolina May 2016 – August 2016

- Used a handmade 3D two photon light sheet microscope to take live images and videos of 3D cardiomyocyte spheroids beating
- Conducted research on cardiomyocyte spheroid beating by imaging the involved calcium channels and calcium flow using Flou-4 dye
- NIH Grant Funded
- Used Imaris to compile light sheets into 3D videos showing beating of cardiomyocyte spheroids
- Analyzed 3D videos using MatLab code
- Developed and applied presentation and technical writing skills

CERTIFICATIONS AND SKILLS:

- SOLIDWORKS Mechanical Design - Associate November 2014
- Microsoft Excel, MATLAB, LabView, ImageJ, Imaris

HONORS:

- President's List Fall 2014
- Deans List Spring 2016, Fall 2016
- Palmetto Fellows Scholarship Recipient Fall 2013 –May 2017
- Eagle Scout June 2011
- Kappa Kappa Psi National Honorary Band Fraternity March 2015 – Present
- National Eagle Scout Association April 2013- Present

EXTRACURRICULAR ACTIVITIES:

Clemson University Tiger Band, Member August 2013 – May 2017
Boy Scouts of America, Assistant Scoutmaster April 2013 – Present

Christopher L. Berry, Jr.

cberryj@g.clemson.edu | (843) 810-1630 | 210 Orange Court, Clemson, SC 29631
linkedin.com/in/ChristopherLBerryJr

OBJECTIVE

To obtain a full-time position in biomedical engineering-related fields with emphasis in the medical device industry.

EDUCATION

Clemson University, Clemson, SC
Master of Engineering in Biomedical Engineering — **Expected Graduation:** May 2018
Bachelor of Science in Bioengineering — **GPA:** 3.97/4.00
Theatre Minor — Class of 2017

EXPERIENCE

Clemson University Research Foundation — **Clemson, SC**
Graduate Assistant — August 2017 – Present

- Help identify, evaluate, and protect University IP through the patenting process.
- Support tech commercialization officers through ad hoc market data collection for incorporation into technology commercialization evaluations.
- Support the development of marketing descriptions and materials in the Clemson University IP portfolio.
- Perform early stage market opportunity evaluations for technologies, and develop assessments of the market viability of specific technologies.
- Interact with external companies and startup ventures during contractual transactions, including business development activities, comparable transactional analysis, and technology valuations.

RICOH COMPANY, LTD. — **Kawasaki-shi, Kanagawa, Japan**
Summer Intern – Biofabrication — June – August 2017

- Learned about RICOH's inkjet technology and its innovative application towards bioprinting.
- Constructed inkjet heads and performed various vibrational evaluations.
- Tested inkjet heads under several conditions for optimization using RICOH's Inkjet Mini Bioprinter.
- Prepared presentations of current findings and presented them during company meetings.
- Prepared a summary of work completed during the internship in the forms of a presentation, document, and daily log.
- Read academic articles related to bioprinting research and summarized each in basic English for coworkers.
- Wrote several detailed English protocols on RICOH's methods, such is inkjet head assembly, cell culture, and operation of the Inkjet Mini Bioprinter.

Capstone Senior Design — **Clemson, SC**
SpecifiCast – Team: AdvancemENT — August 2016 – May 2017

- Engaged in the medical device design process from concept to final prototype (needs finding, market analysis, FDA regulations, prototype production plan, verification/validation, etc.)
- Used 3D scanning, 3D printing technology, and CAD to design and manufacture prototypes of a patient-specific facial trauma cast for post-surgical reconstruction and re-injury prevention.
- Created a Design History File, including a MAUDE analysis, DFMEA tables, traceability matrix, project timeline, etc.
- Collaborated closely with clinicians about specific user needs and how our design may or may not be suitable, making adjustments as necessary.
- Hosted frequent meetings with professors and TAs to update them on our progress.

Medical University of South Carolina — **Charleston, SC**
Student Researcher – Summer Undergraduate Research Program — Summer 2015 & Summer 2016

- Research was focused on analyzing RGD and DGEA derived peptide sequences for cell attachment and spreading capabilities with ADSCs and HUVECs, incorporating studies on 2D and 3D hydrogel cell culture.
- Synthesized peptides, 2D and 3D cell culture, cell seeding, microarray printing and analysis, alginate hydrogel synthesis, and generated MATLAB codes to expedite manual processes.
- Prepared formal abstracts, final papers, and presentations of research to variety of faculty.

PUBLICATIONS

- Jia, J., Coyle, R. C., Richards, D. J., Berry, C. L., Barrs, R. W., Biggs, J., ... & Mei, Y. (2016). Development of peptide-functionalized synthetic hydrogel microarrays for stem cell and tissue engineering applications. *Acta Biomaterialia*.

HONORS AND ACTIVITES

Academic

- Clemson University President's/Dean's List — Fall 2013 – Present
- Palmetto Fellows Scholarship Recipient — Fall 2013 – Spring 2017

The Clemson Players

- Actor at Clemson University (will provide acting résumé upon request), volunteer work: set construction and painting.

The Warehouse Theatre

- Actor at The Warehouse Theatre; a small professional theater in Greenville, SC.
- Equity Membership Candidate (EMC) under the Actors' Equity Association.

SKILLS AND RELEVANT COURSEWORK

MATLAB
SolidWorks Mechanical Design – Associate
Autodesk Meshmixer
Autodesk Fusion
3D Printing
Arduino
Basic Finite Element Analysis
Laboratory Skills
Microsoft Office
Data Analysis
Biomaterials
Biomechanics
Functional Human Anatomy
360Materials Processing
Polymer Science Engineering
Thermodynamics
Bioinstrumentation
Sports Engineering
Tissue Engineering
Cardiovascular Engineering and Pathology

William S. Bresnihan

300 Mt. Royall Dr. Mt. Pleasant, SC 29464
(843) 259-1390 Wbresni@g.clemson.edu

Education

Clemson University
Master of Engineering in Biomedical Engineering *May 2018*

Bachelor of Science, Bioengineering *December 2016*
Concentration: Biomaterials Engineering Cum GPA: 3.2/4.0

Experience

Clemson University Applied Biomedical Design Project Clemson, SC
Biomedical Design Senior Project - Team Scopus Instruments Spring 2016- Fall 2016

- Worked on a team of 4 other senior biomedical engineering students
- Designed an accessory tool for an endoscope to aid medical doctors in the event of a food bolus impaction
- Worked with a Gastroenterologist in GHS to get hands-on feedback on the product design
- Hands on experience with prototyping, 510k, and regulatory pathways for medical devices

Chulalongkorn University Biomaterials Engineering Laboratory Bangkok, Thailand
Research Assistant Summer 2015

- Managed a project involving the fabrication of hydrogels for drug delivery
- Designed an experimental protocol to evaluate the encapsulation and loading efficiency of chemotherapeutic drugs within the hydrogels
- Prepared and delivered oral and written reports weekly to the Chulalongkorn Chemical Engineering faculty and graduate students to evaluate progress

Clemson University Nanomedicine Laboratory Clemson, SC
Research Assistant Spring 2014

- Created stock solutions and cell culture media
- Aided in seeding cell plates
- Responsible for sanitizing chemical hoods and general laboratory clean-up

Special Skills

- **MATLAB** technical computing language
- **SOLIDWORKS** 3-D CAD design software
- Certificate in Technology and Entrepreneurship (M. Eng)

Activities, Awards & Interests

- LIFE Scholarship Recipient (August 2012-May 2014, January 2015-May 2016)
- Clemson University Dean's List (Fall 2015, Spring 2016)
- Clemson University President's list (Spring 2016)
- Attended the Sigma Alpha Epsilon Eminent Archon Leadership Institute (January 2014)
- President of Sigma Alpha Epsilon SC Nu Chapter (2014-2015)
  - Organized and presided over weekly chapter meetings
  - Represented SAE at all Inter-fraternity council and President's meetings
  - Planned Philanthropic events
  - Planned and executed annual budget

Reid Gentry

107 Hunt Cliff Ct.
Easley, SC 29642
864-979-8974
rgentry@g.clemson.edu

EDUCATION

Masters of Engineering in Biomedical Engineering Expected May 2018

- *Masters of Business Administration Certificate*

Bachelor of Science in Bioengineering May 2017

- Concentration: Biomaterials GPA: 3.46/4.0
- Clemson University: Clemson, SC, 29634

RELEVANT EXPERIENCE

DEPARTMENT OF BIOENGINEERING, Clemson University, Clemson, SC 2016

Undergraduate Research Assistant

- Responsibilities included researching techniques that have been used to accurately predict concussions and Mild Traumatic Brain Injuries that occur in football
- Determined acceleration experienced on head form for different facemasks and helmets by using a NOCSAE-style drop tower
- Conducted literary reviews, recorded results in a notebook, presented test results, and participated in discussions involving ways to create more accurate tests

SELF-REGIONAL HEALTHCARE, Greenwood, SC 2015

Internship

- Developed Lockout-tagout (LOTO) safety procedures for over 300 pieces of equipment in a self-directed project
- Learned the purpose and mechanics associated with the equipment, which included generators, water heaters, MRI's, boilers, chillers, and other medical devices
- Effectively managed time to complete first time project in ten weeks
- Worked daily with engineers and technicians to locate the equipment's energy sources
- Presented final project to the hospital leadership team

OTHER EXPERIENCE

GATORADE, Clemson, SC 2016 - Present

Assistant Camp Director

- Scheduled the placement and arrangement of hydration stations for all camps at Clemson
- Efficiently used resources to satisfy needs of all the campers
- Managed receiving process of goods on a biweekly basis

HIBBETT SPORTING GOODS**,** Easley, SC 2014

Sales Associate

- Communicated with customers to help sell them the proper equipment
- Managed weekly receiving process and participated in physical inventory

ACADEMIC ACHIEVEMENTS

- Dean's List at Clemson University Fall 2013, Spring 2015, Spring 2016, Fall 2016
- President's List at Clemson University Spring 2017
- Cephus W. Long Scholarship 2015 - Present

TECHNICAL SKILLS

- Computer: MS Word, MS Excel, MS PowerPoint, MS Visio, MiniTab Statistical Software, Autodesk Inventor, Computer programming (MATLAB) and SolidWorks
- Relevant Course Work: Anatomy & Physiology, Biochemistry, Biofabrication, Biomaterials, Biomechanics, Cardiovascular Engineering, Cell Biology, Drug Delivery, Organic Chemistry, Thermodynamics, and Tissue Engineering

Mitchell S. Grant

msgrant@g.clemson.edu
543 Asbury Neely Way
Roebuck, SC 29376
(864)-804-8940

EDUCATION

Master of Engineering in Biomedical Engineering — Graduation May 2018
Clemson University, Clemson, SC

Bachelor of Science in Bioengineering — Graduated May 2017
Clemson University, Clemson, SC — GPA: 3.52
Concentration: *Biomaterials*
Minor: *Chemistry*

EXPERIENCE

DiaxaMed, LLC, Greenville, SC — June 2017 - Present
R & D Internship

- Work in the lab to test, develop, and design AV graft implantable technologies for dialysis patients.
- Supported superiors in managing with external suppliers, process optimization, and preparing for next step of device development.

Senior Design Project, Clemson, SC — August 2016 – May 2017
Precision Orthotech – IM SureGuide

- Used design process and surgeon collaboration to create a novel medical device
- Developed a novel screw guide for intermedullary fracture surgeries that monitored deflection of intermedullary nail

ARCHER Creative Inquiry Research Project, Clemson, SC — 2016-2017
Anderson County Schools – La France Elementary

- Helped disabled children participate in archery program by designing assistive devices
- Used design process, CAD drawings and 3D printing

Clemson Walker Golf Course, Clemson, SC — Summer 2016
Golf Course Maintenance

- Developed new skills at operating expensive equipment
- Required to perform quality work – inspected regularly

SKILLS

Applied Product Design	Solidworks Certified	Matlab
Chemical Synthesis	Cell Culture Technique	Lab Sterilization
Microsoft Office	Clinical Skills	3D Printing

LANGUAGE

Basic knowledge of German

AWARDS/HONORS

South Carolina Palmetto Fellows Scholarship Recipient — 2013-2017
Rice-Vinskus Scholarship Recipient — 2015-2017
Dean's List, Clemson University — Fall 2013, 2014, 2016 Spring 2016, 2017
Coca-Cola Scholarship — Spring 2013

ACTIVITIES

Clemson University Tiger Band & Pep Band — 2013-2017
Clemson University Symphonic Band — Spring 2015

Anela Camdzic Holdaway

470-535-9853 | anelacamdzic@gmail.com | Greenville, SC

Education

Clemson University	Georgia Institute of Technology	University of North Georgia
M.Eng Biomedical Engineering	B.S. Biomedical Engineering	B.S. Physics
Graduating May 2018	Graduated with Highest Honors May 2017	Graduated Summa Cum Laude May 2017
	Overall GPA: 3.72	Overall GPA: 4.0

Skills

CAD Design Software: SolidWorks, Autodesk Inventor and Fusion, Microsoft Software, X-ray tube Operator, Spectrometer UCS-30 Software, 3D Printing, Laser Cutting, Report Drafting, Organized, excellent communicator, strong presentation skills, self-motivated

Work Experience

Replantable Internship • Research Engineer • January – May 2017

Role: Operated as a Research Engineer working toward improving Replantable's hydroponic products

- Organized, set-up, and performed product quality testing
- Utilized test results to provide suggestions for possible product and manufacturing improvements
- Increased product yield by 90%
- Decreased manufacturing lead time by 80%
- Reduced production and labor costs by 50%
- Performed daily maintenance on hydroponic equipment

Project Experiences

Halyard Health Senior Design Project • Research and Development Engineer • January – May 2017

Role: Participated as a group member working toward developing an improved glove dispensing device for Halyard Health

- Developed a glove dispensing device that reduced multiple glove dispensing by 34%
- Reduced production cost of glove dispensing devices by 9.86%
- Ensured that the final device was compliant with all relevant ASTM and FDA standards
- Outlined and conducted an IRB approved user study to determine efficacy of design
- Utilized SolidWorks CAD software and laser cutting for prototype development
- Coordinated with members of Halyard's Engineering, Manufacturing, and Marketing teams

Dry Heat Autoclave Project • Research and Development Engineer • August – December 2016

Role: Participated as a group member working toward developing an improved dry heat autoclave

- Improved energy usage, sterilization techniques, and user interface in a dry heat autoclave
- Performed thermodynamic engineering analysis to determine heating requirements for sterilization
- Redesigned dry heat autoclave parts and created iterative prototypes utilizing SolidWorks CAD software
- Incorporated PID temperature controller into autoclave heating mechanism
- Maintained laboratory notebook

Robotic Capsule Endoscope REU Project • Research and Development Engineer • May – August 2015

Role: Worked to develop an innovative robotic capsule endoscope design for the University of Nebraska – Lincoln

- Improved the stability and localization of a 15 mm x 8 mm robotic capsule endoscope
- Conducted efficacy testing on proposed device designs
- Utilized Inventor CAD software and an Object 3D printer to produce capsule prototypes
- Designed and implemented tensile force testing for capsule prototypes using Instron equipment
- Performed statistical data analysis on force test results
- Solely managed entirety of project and time frame

Shadowing Experiences

- Emory University Ventricular Assistive Device Center in Atlanta, GA in February 2017
- St. Joseph's Gamma Knife Facility in Sandy Springs, GA from December 2016 - January 2017
- Grady Healthcare Emergency Department in Atlanta, GA from February 2015 - May 2015

Timothy K. Litzinger

27 Flintwood Dr, Simpsonville, SC 29681•(864)-704-0186•tklitzinger@gmail.com

Education

Clemson University

Master of Engineering in Biomedical Engineering — Expected May 2018
Bachelor of Science in Bioengineering — May 2017 3.83/4.00
Calhoun Honors College

Research and Work Experience

Biotest Plasma Center — Clemson, SC
Biomedical Technician — July 2017-Present

- Operate phlebotomy equipment, work with donors and processing team to ensure consistent and high quality plasma donations

Elite Spinal Solutions — Clemson, SC
Senior Design Team Project — January 2016-December 2016

- Developed SpineLock, an intervertebral spinal fusion device with a novel worm gear expansion mechanism to increase clinician ease of use and minimize insertion setbacks. Testing modeled after ASTM standards F2077-14 and F2267-04

Seniors Advising Sophomores in Honors — Clemson, SC
Mentor, Research Team Member, Workshop Director — August 2016-May 2017

- Personally mentored 10 sophomore honors students, succeeded in helping students obtain internships and research positions, directed professional development workshops, expanded programs informational database

Laboratory of Orthopaedic Design and Engineering — Clemson, SC
Undergraduate Researcher for Dr. DesJardins — May 2016-January 2017

- Recertified facemasks for Green Gridiron, executed tests to determine validity of testing methods, analyzed and improved lab efficiency bi-weekly

Laboratory of Orthopaedic Tissue Regeneration and Orthobiologics — Clemson, SC
Undergraduate Researcher for Creative Inquiry Group — August 2015-December 2016

- Introduced and implemented method to standardize testing procedures, succeeded with team to decellularize bovine spinal scaffold

Nanyang Technological University Summer Research Internship Program — Singapore
Intern under Bo Liedberg, Ph.D. — June 2015-August 2015

- Verified previous research results on biosensing platforms for lung cancer detection, presented research results

Skills

- Research and Mentoring Background
- Basic German (working towards proficiency)
- Formal training in MatLab and COMSOL
- SolidWorks Certified

Extracurricular Activities

Tau Beta Pi — Clemson, SC

- Aided in new member recruitment for Honors Engineering Society — August 2015-Present

Tutoring — Clemson, SC

- Successfully increased test scores and understanding for STEM students — August 2013-May 2017

Habitat for Humanity and Rebuild Upstate — Clemson, SC

- Volunteer — August 2013-Present

Achievements

- Clemson University President's List (4.00) — January 2016-December 2016
- Clemson University Dean's List (>3.5) — August 2013-December 2015, May 2017
- Palmetto Fellows, Palmetto Pact, Clemson Presidential Scholarship — August 2013-December 2017

STEPHANIE MANSUETI

104 Helton Lane, Fort Mill SC 29708 | 803-367-3807 | smansue@g.clemson.edu

EDUCATION

Clemson University, Clemson, SC
M.Eng in Biomedical Engineering – *Anticipated graduation May 2018*
B.S. in Bioengineering, Materials Concentration – *May 2017* 3.45 / 4.0 GPA

Skills — SolidWorks, MATLAB, Spanish, French
Other Related Coursework —Bioinstrumentation, Electrical Engineering, Cardiovascular Engineering, Biomaterials, Polymer Science and Engineering, Biofluid Mechanics, Statistics, Biochemistry, Multivariable Calculus, Statics, Materials Processing, Thermodynamics, Biomechanics, Human Anatomy, Chemistry, Physics, Organic Chemistry

LEADERSHIP AND TEAM EXPERIENCE

Clemson Applied Bioengineering Design Theory – Clemson, SC *Aug 2016 to May 2017*
Femoral-FIX by VAAS
- Designed a new fixation device for superficial femoral artery stent grafts to treat occlusion with a team of four other senior bioengineers from Clemson University
- Collaborated with a clinician at Greenville Health System to ensure project validity and advancement
- Produced biweekly presentations on progress, and developed a prototype using SolidWorks, 3D printing, and materials provided by the Clemson Bioengineering department

Tri-County Young Life Leader – Walhalla, SC *April 2014 to May 2017*
- Volunteered at Walhalla High School 2-3 times per week and spent time with high school girls outside of school hours
- Led a meeting every Monday night with a team of 8 other Young Life leaders from Clemson for 4+ hours consisting of games, music, skits, and speakers

WORK EXPERIENCE

Gastro-Intestinal Surgical Specialists -- Mount Pleasant, SC *Jun 2016 to Aug 2016*
Office Intern
- Shadowed physician on-call in the office and operation room
- Organized older documents by archiving paper records into the computer record system
- Performed any other tasks to alleviate office pressure including answering phones and writing down messages

United Way – Rock Hill, SC *Jun 2014 to Jul 2014*
Camp Tutor
- Tutored middle-school aged students in a variety of educational subjects, particularly mathematics and science
- Discussed daily with a team of tutors ways to creatively present educative topics and subjects

Charanda Mexican Grill and Cantina – Rock Hill, SC *May 2011 to Aug 2017*
Host / Server
- Presented customers to seating assignments based on server rotation in a 40-table facility
- Handled requests and sold up to $600 of food and drinks in a 5-hour shift, 4-6 tables at a time

ACHIEVEMENTS AND MEMBERSHIPS

Palmetto Fellows Scholarship *Aug 2013 — May 2017*
Clemson University Deans List *2013, 2015, 2016, 2017*
Biomedical Engineering Society (BMES)
Tri-county Young Life *April 2014 — May 2017*
Women in Science and Engineering (WISE)

JO ANN MARTIN
joannm@clemson.edu
(772)209-0530

125 Anderson Hwy Apt. 303
Clemson, SC 29631

2037 SW Stratford Way
Palm City, FL 34990

EDUCATION

Master of Engineering in Biomedical Engineering — May 2018
Clemson University, Clemson, SC
Green MD Certification

Bachelor of Science in Biomedical Engineering — May 2017
University of Florida, Gainesville, FL
Magna Cum Laude
Minors: Spanish
GPA 3.58/4.00

TRAINING AND TECHNICAL SKILLS

High Performance Liquid Chromatography (HPLC), UV-VIS/fluorescence, Fourier Transform Infrared Spectroscopy (FT-IR), Differential Scanning Calorimetry (DSC), Cell culture and aseptic techniques, Scanning Electron Microscopy (SEM), Circular dichroism (CD), Enzyme-linked Immunosorbent Assay (ELISA)

WORK EXPERIENCE

Research and Development Intern — October 2016 - July 2017
NovaBone, Gainesville, FL
- Prepared formulations of dental and orthopedic implants
- Packaged formulations using aseptic technique
- Carried out stability testing for devices subjected to accelerated and real time aging

Teaching Assistant- College of Business — August 2016 - July 2017
University of Florida, Gainesville, FL
Professor: Dr. Van Oostrom
- Held office hours every week to assist students with any ongoing concerns and questions
- Graded and gave feedback on major assignments throughout the semester

RESEARCH EXPERIENCE

Undergraduate Research- Biomedical Sciences — August 2016 - July 2017
University of Florida, Gainesville, FL
Faculty advisor: Dr. Jon Dobson; Graduate mentor: Adam Monsalve
- Binded magnetic iron oxide nanoparticles to aptamers to target VEGFR2 receptor proteins on endothelial cells
- Applied the use of an external magnetic field to mechanically stimulate cell receptors and promote angiogenesis
- Verified binding efficiency and receptor activation via ELISA

Undergraduate Research- Materials Science — August 2015 - August 2016
University of Florida, Gainesville, FL
Faculty advisor: Dr. Christopher Batich; Graduate mentor: Michael Kwan
- Carried out thermal decomposition to fabricate samarium oxide nanoparticles
- Aided in the development of a fabrication method for samarium iron-garnet nanopowder

Research Experience for Undergraduates (REU)- Soft Materials — June - July 2015
Pennsylvania State University, Materials Science and Engineering, University Park, PA
Faculty advisor: Dr. James H. Adair; Graduate mentor: Welley S. Loc
- Synthesized nanoparticles in reverse-micelles and removed residual surfactant with HPLC
- Successfully improved image contrast of CPSNPs with osmium for STEM/EDS analysis
- Trained in giving professional oral and poster presentations

INVOLVEMENT

Mentor- Biomedical Engineering — August 2015 – May 2017
Vice President- University of Florida Club Volleyball — August 2013 – Present

AWARDS

BMES Travel Award — September 2016
University of Florida College of Engineering Dean's List — Fall 2016-Fall 2015, Spring 2014
Recipient of the Mildred Robideau Scholarship — August 2013
Congressional Medal of Honor Award (Bronze and Silver) — December 2011

PUBLICATIONS

Welley S. Loc, Samuel S. Linton, Gail L. Matters, Christopher O. McGovern, Todd E. Fox, Christopher M. Gigliotti, Xiaomeng Tang, Amra Tabakovic, **Jo Ann Martin**, Gary A. Clawson, Jill P. Smith, Peter J. Butler, Mark Kester, and James H. Adair, "Effective Encapsulation and Biological Activity of Phosphorylated Chemotherapeutics in Calcium Phosphosilicate Nanoparticles for the Treatment of Pancreatic Cancer," Nanomedicine: NBM.

MARY REEVES

109 Blue Wing Dr., Gilbert, SC, 29054 ♦ c: 828-550-3970 ♦ mlreeve@clemson.edu

EDUCATION

Clemson University, May 2017
Bachelor of Science in Bioengineering, Concentration in Biomaterials

Clemson University, Anticipated Graduation: May 2018
Masters of Engineering in Bioengineering

ACADEMIC EXPERIENCE

Clemson University, *Senior Thesis Project*, August 2016 – May 2017
- Completed market analysis, patent review, FDA regulatory and reimbursement pathway, budget plan, verification and validation testing for prototype based on design theory and transforming clinical need
- Implemented 3D CAD design applications for the prototype in congruence with additive manufacturing implementation to enhance patient-specific features

Clemson University, *Undergraduate Research – Platelet Adhesion*, August 2016 – May 2017
- Implemented biohazard safety protocol to ensure efficient laboratory practices
- Utilized SolidWorks to design experiment-specific pieces to reduce material waste

Clemson University, *NASA Zero Gravity Design Project*, January 2015 – December 2015
- Conducted research for NASA to design and develop a device to stabilize bone fractures and accelerate fracture healing during exploration missions
- Optimized cast design to fit specific parameters for microgravity environment with a focus on application efficiency, cost effectiveness, safety, and innovative design
- Oversaw data analysis of material testing for prototype

WORK EXPERIENCE

North American Rescue, LLC, *Product Implementation Specialist Intern*, June 2017 – August 2017
- Developed and designed new products to maintain market competitiveness
- Managed post-market clinical evaluations to ascertain regulatory compliance with national and international regulatory bodies

University of Georgia, *REU in Nanotechnology and Biomedicine*, May 2015 – August 2015
- Utilized Abaqus to simulate cortical folding in the brain comparing different core-to-cortex thickness, stiffness ratios, and multiple parameters of a fetal brain tumor (or similar growth anomaly)

PUBLICATIONS AND PRESENTATIONS

Raleigh Convention Center, *2015 Southeast BMES Regional Conference*, October 2015
Journal of Computer Methods in Biomechanics and Biomedical, *Mechanical role of a growing solid tumor on cortical folding*, Volume 20, Issue 11, July 2017

CERTIFICATIONS AND SKILLS

SOLIDWORKS Mechanical Design – Associate, April 2015
MATLAB, Abaqus, Minitab, Solder

HONORS

Dean's List – Fall 2014, Fall 2015, Spring 2016
Palmetto Fellows Scholarship Recipient, Fall 2013 – Spring 2017

PROFESSIONAL SOCIETIES

Undergraduate Clemson Bioengineering Society (UCBS) – September 2014 – May 2017
Society of Women's Engineering (SWE) – September 2015 – May 2017

EXTRACURRICULAR ACTIVITIES

Clemson Women's Ultimate (Frisbee) Club Team; Member, Treasurer, President; August 2015 – Present

Matthew Roach

Home Address: 1 Somerleaf Way, Simpsonville, SC, 29681
Email: mcroach@clemson.edu **Mobile:** 864-735-4751

EDUCATION

Clemson University

Master of Engineering in **Biomedical Engineering** **May 2018**

Bachelor of Science in **Bioengineering** with concentration in **Biomaterials** **May 2017**
GPA: **3.5 / 4.0**

RELEVENT WORK EXPERIENCE

Capstone Senior Design Project – AuriClear **Fall 2016 – Spring 2017**

- Primary Inventor of Provisional Patent
- Designed a novel tympanostomy tube (**AuriClear**) with a removable film lining that allows occlusions to be removed by a doctor in an office setting, preventing additional surgery
- Our design reduces surgical risk and lowers cost of procedure from around $2,800 to about $50
- Conducted risk analysis, IP searches, conformed to FDA regulations, and drafted research grant proposals

Bionic Arm Creative Inquiry **2016 –Spring 2017**

Prototype Engineer

- Designed and implemented innovative processes to achieve motion in bionic arm prototypes
- Drew device components using CAD, 3D printed parts, and fabricated prototypes
- Conducted research to determine device features desired by amputees

Prototype Manufacturer – (Paid) **Summer 2016**

- Designed and fabricated bionic arm prototype in preparation for biomedical symposium
- Wrote and carried out testing protocols for grip strength, energy consumption, and mechanical specifications

Tent Technician– Professional Party Rentals **2015 –Present**

- Received two raises and led teams in the assembly of tents for weddings, parties, and city-wide events

LEADERSHIP EXPERIENCE

Bionic Arm Creative Inquiry **Spring 2017**

Project Manager

- Oversaw operations and delegated tasks towards completion of an innovative bionic arm prototype

Treasurer

- Managed overall expenses, completed orders for materials, and participated in project fundraising

Clemson Bionics Student Organization **Fall 2016 – Present**

Cofounder and Treasurer

- Founded club and managed all expenses, collected dues, and ordered materials

Youth Soccer Coach

Head Coach - CESA Soccer Club **Fall 2013**

- Head coach of U6 soccer team

Assistant Coach – YMCA **Spring 2016 & 2017**

- Assistant coach for U8 & U10 soccer teams

Volunteer Experience

- Advent United Methodist Usher
- GAIHN
- Youth Soccer Coach
- Habitat for Humanity

ACADEMIC ACHIEVEMENTS

ACC InVenture Prize Competition - Winner of Clemson University Nomination (AuriClear) **Spring 2017**
President's List **Fall 2014**
Dean's List **Spring 2014, Spring 2016, Fall 2016, Spring 2017**
1st Place Popular Vote FOCI Creative Inquiry Competition (Bionic Arm CI) **Spring 2016**

SKILLS and CERTIFICATIONS

Prototyping	SolidWorks - CSWA Certified
Biomedical Research	CITI Certification – Responsible Research Conduct & Investigation in Biomedical Research
Coding	MatLab, Arduino, Python