Clemson University
Department of Bioengineering

RESUME BOOK

SPRING 2020 Bachelors of Science in Bioengineering

Concentrations: Biomaterials or Bioelectrical

Spring 2020 Version

Contact:
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Department of Bioengineering
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Clemson University
Clemson, SC 29634-0905

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.

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.

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

NOTE: On average, about 100 students graduate from our undergrad program each May. This document represents those who are pursuing industry and chose to submit their resume for this document. Normally we see the following post graduation: Industry 25%, Graduate school 53% (half of those enter the Master's of Engineering), Medical/Professional School 16%, Gap 5%.

2020 GRADUATES

Matthew Brown
Michaela Cattell
Isabella Dicillo
Delayne DiGangi
Rebecca Dorsey
Julia Hannam
Mara Hartsell
Melissa Judge
Patricia Konczal
Quan Le
Parker Liggett
John Lineburger
Jessica Link
Andrew Losier
Kate Magee
Colleen Martin
Nicole Meilinger
Elliot Mercado
Hayden Pagendarm
Amanda Sall
Taylor Sanders
Kyle Schindler
Molly Servine
Karenna Smith
Madison Stiglich
Sama Vineeth
Julie Wagner

Matthew J. Brown

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Current:
2976 University Station
Clemson, SC 29633-1001

Permanent:
406 Netherland Lane
Simpsonville, SC 29681

Education

Clemson University **May 2020**
Bachelor of Science, Bioengineering
Minor in Business Administration

Relevant Experience

Senior Design **January 2019 – Current**

- Collaborate with a team to work with clinicians to identify a problem and design a marketable solution to the problem.
- Our project was to improve the echocardiogram stress test to make it more efficient and accurate

Bionic Arm Creative Inquiry **January 2018 – December 2018**

- Collaborated to develop testing procedures and evaluated capacitance as proximity sensor
- Worked with a group to meet weekly deadlines established by the project manager
- Presented results at BMES

Creative Inquiry Micro Fluids **August 2015 – December 2015**

- Worked with a grad student to analyze the effects of magnetism to alter fluid flow
- Discovered how micro fluids have the ability to travel with magnetic particles

Work Experience

Jet's Pizza Manager Simpsonville, SC **June 2014 – Present**

- Functioned as store closing Manager and trained new Crew Members
- Communicated with customers and crew to provide excellent service

Production Associate at MAU for BMW **June 2019 – August 2019**

- Performed special task for BMW
- Performed tasks quickly and effectively with minimal errors
- Identified errors with product before product made it through production

Resident Assistant at Clemson **August 2018 – May 2019**

- Leader for first year students by serving as a role model and helping them succeed
- Organize events for residents to enhance their learning experience while at college

Research at Clemson **March 2018 – July 2018**

- Worked in a lab to irradiate pig tendons in small doses to determine what effect the radiation would have on the functionality of the tendons

Relevant Courses

Physics • Calculus • Differential Equations • Chemistry • Electrical Engineering • Statics • Accounting
Biology • Material Science • Statistics • Biomechanics • Biochemistry • Bioinstrumentation • Marketing
Management

Technical Skills

SolidWorks Certified • MATLab • 3D printing software • MS Office Programs • Statistical Analysis

Extra-Curricular Activity

Clemson Bionics Club Member **August 2017 – Present**
Clemson Undergrad Society of Bioengineers Member **August 2017 – Present**
Clemson University 3D Printing Club Member **January 2016 – January 2017**

Michaela Christine R. Cattell

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EDUCATION

Clemson University • Expected Graduation: May 2020

- Major: Bioengineering, Concentration: Biomaterials
- GPA: 3.97
- Calhoun Honors College
- President's List: 2016-2018, Spring 2019

WORK EXPERIENCE

Research and Product Development Bioengineer, Humimic Medical 05/2019 – Present

- Research, design, and evaluate complex medical phantoms and other medical training tools.
- Collaborate with Prisma Health clinicians to take an idea from its initial conception to a marketable product.

Capstone Senior Design Project, Clemson University 08/2019 – Present

- Work with a pulmonologist to design and create an improved endotracheal intubation fixation device.

Resident Assistant, Clemson University 08/2017 – Present

- Serve as a mentor for 27 residents, organize community programs, and advise residents on personal and academic issues.

Lab Assistant, Genetics and Biochemistry Department, Clemson University 02/2017 – 05/2018

- Worked with a team to organize and complete preparation for 3 laboratories.

Researcher & Writer, Gardener Publications LLC, Columbia, SC Summers 2016 & 2017

- Gathered information for, wrote, & proofread articles for multiple digital and print platforms.
- Worked with businesses to promote their events, specials, etc.

RESEARCH EXPERIENCE

Researcher, University of Tokyo, Dr. Horacio Cabral 05/2018 – 07/2018

- Worked to enhance mitochondria targeting activities through the attachment of a newly developed ligand.
- Gained skills in fluorescence microscopy and proton nuclear magnetic resonance (H-NMR) spectroscopy.

Creative Inquiry: Designing with Doctors 08/2018 – 05/2019

- Developed medical applications for local company Humimic Medical's simulation gelatin.

Creative Inquiry: Designing Medical Devices for the Developing World 08/2017 – 05/2018

- Worked to design an infant warming and monitoring system to accommodate the needs of low-resource countries in collaboration with students at Arusha Technical College in Tanzania.

Creative Inquiry: Sustainable Designs for Developing and Recovering Communities 08/2016 – 05/2017

- Designed and implemented prototypes to support oyster spat attachment in the ACE Basin.

INVOLVEMENT

- Undergraduate Clemson Bioengineering Society (UCBS)
- Tau Beta Pi – The Engineering Honors Society

ISABELLA DICILLO
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(440) 596-9012
idicill@clemson.edu

EDUCATION

Bachelors of Science in Bioengineering May 2020
Clemson University, Clemson, SC GPA: 3.53/4.00
Concentration: Electrical

EXPERIENCE

Fall 2019-Spring 2020 — SENIOR DESIGN CAPSTONE, Clemson, SC
Senior Design Teammate
- Currently collaborating with a group to find and address a problem and need in orthopedics to eventually develop a working solution

June 2019-Present — PROACTIVE MD, Greenville, SC
Summer Intern
- Collaborated with the Patient Advocate team to organize and run listening posts and outreach events to engage patients, study the Patient Advocate dashboard and offer insight into further development, rebrand and create documents and PowerPoints for providers and patients
- Created an all-inclusive, resourceful site with these tools for providers and employees
- Shadowed the providers within the company
- Organized a new onboarding presentation for the company, became a resource and communication tool between patients and the providers, and made appointments for patients
- Worked with other departments, such as marketing and program value, to develop patient education and data reporting
- Currently developing a smartphone application for St. Jude's Children's Hospital

Fall 2018-Spring 2019 — CREATIVE INQUIRY: CLEMSON UNIVERSITY, Clemson, SC
Undergraduate Research in Bioinstrumentation
- Collaborated in a team with a mentor to develop and design an ultrasound hand motion analysis and feedback system for sonographers
- Created a system which consisted of an ultrasound transducer simulator with a strap-on IMU to detect uncomfortable hand motions and positions, analyze the data, and give feedback to the user

Aug. 2015-Aug. 2017 — DERMATOLOGY ASSOCIATES OF CLEVELAND, INC., Gates Mills, OH
Receptionist/Nurse's Assistant
- Ran rooms, answered phones, made appointments, assisted doctors, sterilized instruments and restocked rooms with necessary supplies
- Filed biopsies, cultures, reports, and letters from other doctors, scanned files and worked with the new computer system, collaborated with others to ease the merger between two dermatology companies

SKILLS AND RELEVANT COURSEWORK

- MATLAB
- SolidWorks: CSWA
- Microsoft Software Programs
- Adobe Photoshop/InDesign
- Bioinstrumentation, Physiology
- Biomechanics, Biomaterials
- Materials Science, Statics, Biochemistry
- Circuits, Logic, Signals

HONORS AND ACTIVITIES

- Dean's List, Spring/Fall 2017, Spring/Fall 2018, Spring 2019
- Member; Secretary, UCBS
- Nordstrom Fashion Board Member
- Member, BMES
- Member, Clemson AMSA

DELAYNE DI GANGI

Phone: 815.690.5400 | ddigang@clemson.edu | Crystal Lake IL 60014 | https://www.linkedin.com/in/delayne-di-gangi-310594145/

Education

Clemson University | Engineering GPA 3.57/4.0 | Cumulative GPA 3.43/4.0 | Clemson, SC | Bioengineering – Biomaterials | Anticipated graduation May 2020

Bioengineering Experience

RICOH, Kawasaki Japan | May 2019 – August 2019

Research and Development Intern – Bioprinting Division

- Conducted research concerning the fabrication and evaluation of neural cell networks using neurons derived from human IPSCs for bioprinting neural laminates
- Investigated techniques for axon guidance and organization

Microbiology Laboratory Clemson University, Clemson SC | January 2019 – Present

Student Laboratory Assistant – Microbiology Laboratory

- Conducted hands-on laboratory activities including cell culture of human keratinocytes and fibroblasts for the purpose of developing 3D human skin equivalents
- Performed histology imaging (confocal and light microscopy) of samples sent from Johns Hopkins University researchers to determine specific microbial effects on skin

Tissue Engineering and Regenerative Medicine Laboratory Clemson University, Clemson SC | August 2017 – Present

Undergraduate Research Laboratory Assistant – Cardiovascular Laboratory

- Conducted hands-on laboratory activities including: 2D and 3D cell culture, histology, immunodetection methods (seeding, sectioning, staining), imaging, gene and protein expression
- Performed literature review, experimental design, research documentation, and presentation of results

Senior Design Laboratory Clemson University, Clemson SC | August 2018 – May 2019

Team Member – Bioengineering Senior Design Theory

- Collaborated with the AMEDD team along with domestic and international anesthesiologists to develop a new design for warming devices in the operating room to reduce infection, burning and hypothermia for the patient called the ThermoSnug
- Followed an industry-modeled design gate process and performed literature research, engineering product design, and data analysis on on the device designed

Medical University of South Carolina, Clemson SC | August 2018 – May 2019

Creative Inquiry Team Member – Engineering Product Design

- Participated in a disciplinary and multidisciplinary team research project involving the design of a bio fabricated guidewire using Solidworks software
- Collaborated with Dr. Kent Edwards, a urology specialist, from the Medical University of South Carolina on challenges involving the method of multiple guidewire usage for kidney stone removal

Northwestern Memorial Hospital | December 17, 2018 – December 21, 2018

Laboratory Volunteer – Comprehensive Transplant Center

- Shadowed Dr. Jason Wertheim Vice Chair for Research, Department of Surgery in the organ transplantation laboratory
- Observed kidney organoid histology, microsurgery, collagen hydrogel synthesis and flow cytometry

Polymer Physics Bioengineering Laboratory, University of Tokyo, Japan | May 2018 – July 2018

Laboratory Assistant Summer Intern – Biomedical Applications of Hydrogels

- Tested behavior of Tetra-PEG hydrogel swell ability and the use of this hydrogel as a clogging agent for varicose vein treatment
- Used dynamic light scattering (DLS) technique to analyze the properties of the gel
- Learned to work in an unfamiliar laboratory setting along with a language barrier while gaining cultural knowledge as well as laboratory experience
- Performed literature review, experimental design, research documentation, and presentation of results

Volunteer Work and Activities

Deans List | Fall 2015, Spring 2016, Spring 2017, Fall 2017, Fall 2018, Spring 2019
Selected for the National Society of Leadership and Success at Clemson University | August 2019
Won crowd favorite at the senior design symposium in Greenville South Carolina | May 2019
Chi Omega Sorority | Make a Wish Foundation Volunteer & Bioengineering Mentor | August 2016 - Present
Sigma Alpha Lambda National Leadership and Honors Organization | August 2017 – Present
Women in Science Engineering Club | August 2016 – Present
Trew Friends Organ Donation Team Secretary | August 2016 - Present
Undergraduate Clemson Bioengineering Society | August 2017 – Present
Intramural Sports – Indoor and outdoor soccer, flag football, basketball, volleyball | August 2016 – Present

Skills

Microsoft Office Suite (Word, Excel, PowerPoint)	Matlab	Solidworks	Problem Solving
Histology (Seeding, Sectioning, Staining, Imaging)	Gel Zymography	Electrophoresis	Immunofluorescence Assay
Presentation Skills	Mammalian Cell Culture	Adaptability	Aseptic Technique
Live/dead Cell Viability Assay	IPSC Culture	Microscopy (confocal, light)	Western Blot
Immunohistochemistry	RNA Isolation	Protein Isolation	Hemocytometer Cell Counting

Beckilyn Dorsey

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EDUCATION

Clemson University | B.S. Bioengineering | Concentration: Biomaterials | GPA: 3.55/4.00 | May 2020

SKILLS: Matlab, SolidWorks, Microsoft Office, Minitab, R Software, M-Files

EXPERIENCE

Research and Development Intern

Diaxamed, LLC | Greenville, SC | August 2018 - Present

- Developing a Dialysis Access and Sealed Graft while providing start-up support
- Creating protocols, executing tests, and writing reports for characterization analyses
- Assisting with the development and testing of pre-clinical test articles
- Designing an apparatus to coat the grafts
- Reviewing and summarizing literature based on topics of interest
- Developed a leak tester to determine the permeability of new grafts
- Instrumental in transferring 10+ years of historical and current documents into a new document management system
- Analyzed the historical documents and utilized that information to aid in the development of metadata cards for the new document management system

Research and Development Intern

ATEX Technologies | Pinebluff, NC | May — August 2018

- One of four interns chosen to work in product development (5 main projects)
- Nonwoven finishing process — set up and ran a DOE to determine the best parameters for the finishing of nonwoven materials
- Partially oriented yarn (POY) aging study — tested POYs that had been in normal and accelerated aging conditions to determine how they change over time
- Analysis of radiopaque samples — analyzed textiles containing radiopaque materials to determine the range of depths in the body at which they remained identifiable
- Polyglycolic acid (PGA) yarn degradation — tested PGA yarn that had been stored in different conditions to determine which storage method would be best to slow the rate of degradation
- Graft development-developed a process to meet required specifications for kink resistant graft

Senior Design | Fall 2019-Spring 2020

- Developing a medical device that will be beneficial to the clinical area of pediatric neurosurgery
- Working with pediatric neurosurgeon and other clinicians to receive feedback

Engineering the Intervertebral Disc, Creative Inquiry | Fall 2019-Present

- Creating a scaffold, modeled from bovine intervertebral disc (IVD), to tissue engineer an IVD
- Utilizing different techniques to decellularize bovine IVD
- Analyzing previous cell seeding studies as well as continuing to seed bovine IVDs with cells

Image Guided Drug Delivery to the Brain, Creative Inquiry | Spring 2018

- Designed nanoparticles with the goal of delivering contrast agents to glioblastomas
- Developed a process for forming polymersomes and loading them with fluorescent dye
- Experimented with different methodologies for targeting glioblastoma cells

Bionic Arm, Creative Inquiry | Spring 2017-Fall 2017

- Used Solidworks to construct a prosthetic arm that imitates the appearance of a real arm

- Programmed an Arduino that allows the user to feel through pressure and temperature sensors
- Honed team building skills to foster cross discipline collaboration

ACTIVITIES AND HONORS

Palmetto Fellows Recipient

UCBS — PULSE Chair

NewSpring Church — KidSpring Volunteer

Fellowship of Christian Athletes

JULIA K. HANNAM

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EDUCATION

Clemson University, Clemson, South Carolina *May 2020*
Bioengineering, Bachelor of Science **GPA: 3.80/4.0**
Concentration: Biomaterials

- President's List: 2016, Dean's List: 2017-2019

RELEVANT EXPERIENCE

Edwards Lifesciences | Irvine, CA *May 2019-August 2019*
Research and Development Intern: Tissue Engineering

- Developed and executed SOPs for immunohistochemical analysis methods to evaluate potential tissue retrieved from animal studies for next generation heart valves
- Established competency regarding tissue biomechanical characterization through using MTS, Instron, and water absorption testing on hydrogels and biological tissue obtained from both benchtop models and animal studies
- Responsible for performing installation qualification testing on new technologies brought into the lab
- Investigated new technologies for potential business development and designed a landscape of tissue engineering methods

Undergraduate Cardiomyocyte Research | Clemson, SC *August 2018- Present*
Cardiovascular Tissue Engineering and Regenerative Medicine Laboratory

- Responsible for differentiating human adipose derived stem cells into cardiomyocytes by adding various growth factors to their microenvironments
- Used histology techniques to locate microaneurysms in diabetic rat cardiac tissue (H&E, Trichrome,Trichrome – VVG)

Undergraduate Microbiology Research | Clemson, SC *January 2019- Present*
Paid Undergraduate Research

- Goal: Create 3D skin equivalents using keratinocytes and fibroblasts that will mimic both structural and immunogenic properties of human by applying skills in cell culture and histology
- Designed a protocol to conduct experiments influenced by existing approaches found in scientific literature

Nanyang Technological University | Singapore, Singapore *May 2018- July 2018*
Laboratory Research Assistant, NSF Fellowship Recipient

- Analyzed the effect of aging on latent fingerprints using MALDI-ToF-MS to identify the change in composition of sweat
- Generated prototypes to improve storage system for forensic scientist's that collect fingerprints at a crime scene

Undergraduate Neurosurgery Research | Clemson, SC *January 2018- December 2018*
Creative Inquiry: Preoperative Planning for Neurosurgery

- Goal: Invent a pressure system to improve preoperative planning for neurosurgery by using force sensitive resistors
- Constructed experiments to test relevant hypotheses and organize meetings to brainstorm project ideas
- Presented project strategies at ***Society for Biomaterials*** conference in Atlanta, Georgia (April 2018)

WORK EXPERIENCE

Bonefish Grill | Brick, NJ *April 2016- Present*
Host/Server

- Mastered communication skills by working diligently with coworkers and resolving conflicts with customers
- Excelled in customer service and assured customers had a positive and welcoming experience

ACTIVITES

Undergraduate Clemson Bioengineering Society, *Member* *2018-Present*
Alpha Chi Omega: Theta Lambda, *Member of the Academic Committee* *2016-Present*

- Responsible for holding members accountable for maintaining academic integrity and satisfying grade requirements
- Mentored and tutored younger members in engineering to advise them to prosper both inside and outside the classroom

TECHNICAL SKILLS

Solidworks | Cell Culture | Excel | MALDI-ToF-MS | Histology | Data Analysis | Matlab | Instron

Mara Jules Hartsell

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712A Smoke Rise Dr., Central, SC 29630 (704)-609-4319

EDUCATION

Bachelor of Science in Bioengineering Expected Graduation: May 2020
Concentration: Biomaterials, GPA 3.25
Clemson University, *Clemson, South Carolina*

EXPERIENCE

Environmental Health and Safety Intern Sept. 2019-Present
Arthrex, *Pendleton, South Carolina*

- Evaluation of adequacy of safety controls through OSHA and internal standards; development of new safety training
- Perform Machine Safety Validations, Job Hazard Analysis, and Chemical Hazard Analysis
- Assist with all employee training, permit applications, industrial hygiene monitoring, and audits/inspections

Technical and Engineering Services Intern May 2019-Aug. 2019
Pharma Tech Industries, *Royston, Georgia*

- Development of Quality System Documents (packaging components, master batch records, product/put-up specifications) and Process Validation Protocol for new $1MM technology transfer of a prescription drug product.
- Authored new standard operating procedure for commercial packaging equipment to establish procedure for product changeover to reduce equipment downtime; Increased operation efficiency by 2% based on company's KPI standards
- Updated SOP for commercial packaging equipment to reduce cleaning time during product changeover; Increased annual revenue by $120k
- Drafted Annual Drug Product Review for a prescription drug; Review of trending analytical data, open projects and corrective actions, customer complaints, and product defects in order to ensure the quality of the product.
- Authored and executed a comparison study of product contact parts for extrusion-molding machine to prove equivalency between the parts; Replaced existing part to optimize commercial production; Decreased spending by $50k
- Developed safety training assessment for the 1910 I Respirator PAPR suit worn by employees during the manufacturing process that included information regarding usage, hazards, and an OSHA medical examination.

Accounting Office Assistant Sept. 2012-June 2017
Jud Kuhn Chevrolet**,** *Little River, South Carolina*

- Afternoon receptionist answering a multi-line ESI phone system, directing calls to 45 employees; responsible for filing all accounting documents for four departments
- Processed invoices from vendors, reconciled statements and issued monthly checks for a $2.2 million annual accounts payable; Reconciled cash, checks, and credit cards daily for the parts, service, and sales departments.

PROJECTS AND AFFILIATIONS

Senior Design | Team Member | *Clemson University* Aug. 2019-Present

- Intensive development and evaluation of a novel medical device designed to improve the work of pediatric neurosurgeons throughout a nine-month period with a collaborative team of five senior bioengineers

Global Health Design of Medical Devices | Research Team Member | *Clemson University* Aug. 2018-May 2019

- Design and formation of a low-cost breast pump for mothers in developing nations that will deactivate HIV; Research of methods for deactivating the HIV virus to reduce mother-to-child transmission
- Development of a novel filter using various materials and testing of flow rates

Rehabilitation Engineering and Hippotherapy | Research Team Member | *Clemson University* Jan. 2018-May 2018

- Creation of an assisted horse saddle using SolidWorks to benefit cerebral palsy patients
- Conducted biomechanical analysis to assess stress/strain improvements associated with therapeutic horseback riding

RELEVANT SKILLS AND COURSEWORK

SolidWorks, cGMP, Root Cause Analysis, Statistics, Orthopaedics, Bioinstrumentation, Biomechanics, Polymer Engineering

LEADERSHIP AND INVOLVEMENT

Society of Women Engineers | *Fundraising Officer 18-19* Aug. 2016-Present
Undergraduate Clemson Bioengineering Society | *Professional Development Officer* Aug. 2016-Present
Sigma Kappa Sorority, Kappa Pi Chapter | *Scholarship Committee* Aug. 2016-Present

Melissa Judge

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EDUCATION

Clemson University, Clemson, SC May 2020
Bachelor of Science in Bioengineering **GPA: 3.98/4.00**
Bioelectrical Engineering Concentration, Medial Device Sales Program
Calhoun Honors College, *Thesis*: *Computational Modeling of Microstructures in Tendons*

Clemson University President's List

Franklin and Marshall College, Lancaster, PA August 2016 – May 2017
Bachelor of Arts Candidate in Bioinformatics, Pre-Biomedical Engineering

NCAA Varsity Student Athlete – Women's Lacrosse

TECHNICAL SKILLS

Computer: Python, R Programming, Java, MATLAB, Arduino, C Programming, C++, Linux/UNIX, Bash Shell, SolidWorks AutoCAD, FreeSurfer, SPSS, SQL, LT SPICE, Excel, PowerPoint, Outlook, Microsoft Office Suite, Photoshop
Lab: Operating Room, Ultrasound, Tendon Dissection, IR and NMR spectroscopy, Gel Electrophoresis, Immunohistologies, Skeletal Staining, Titration, Distillation, Crystallization, Chromatography, Mechanical Testing

RELATIVE EXPERIENCE

Biomedical Senior Design, Clemson University August 2019 – Present
Senior Design Team Member
- Design and develop a medical device to solve a clinically important need with the help of a diverse team and collaboration with clinical professionals
- Understand FDA design regulations of cGMP and 21CFR to create an FDA Design History File

Soft Tissue Microstructure Lab, Clemson University January 2018 – Present
Research Team Leader
- Create a tendon stretching robotic device using Arduinos to test the tendons ability to withstand mechanical stresses
- Use sensor technologies and computational modulating through C programming to model the effects of repetitive motion, angle of the stress and magnitudes of the force to simulate a baseball pitcher
- Investigate soft tissue microstructures as it relates to sports injuries using ultrasound technology

Bioinformatics Systems Genetics Lab, Clemson University August 2017 – Present
Big Data Analysis Team Member
- Compare Autism patient genomes to unaffected individual genomes from the same family using machine learning and data analysis to determine the various genetic mutations in those with Autism
- Compare gene networks of normal human tissue data with cancerous tumors from The Cancer Genome Atlas database
- Optimize next-generation sequencing (NGS) to analyze workflows faster and to control bulk data transfers

Anne Arundel Medical Center, Annapolis, MD
Simulation to Advance Learning and Innovation Center (SAIL) Intern June 2019 – August 2019
- Determine if OB/GYN patients treated with pre-anesthesia testing had improved perioperative outcomes through data acquisition and statistical analysis
- Use Vicon camera sensors and EMG to analyze the ergonomic forces on laparoscopic surgeons

Bayside Insurance Associates, Inc., Chester, MD May 2019 – August 2019
Marketing Intern
- Create and implemented marketing programs which led to leads in sales
- Developed and refined databases for existing and new business

Robotics Team, Clemson University January 2018 – January 2019
Robotic Developer Team Member
- Develop robot networks using C++ to program them to complete specific tasks at IEEE Southeastcon
- Design the robot through SolidWorks to meet the requirements defined by IEEE in the competition guidelines

Bassett Lab, SUNFEST REU at University of Pennsylvania, Philadelphia, PA May 2018 – August 2018
Undergraduate Researcher (Paper Available)
- Analyze brain networks through computational modeling of Network Control Theory to individualize the predicted the amount of electric stimulus in regions of the brain from a given energy input based on individual's fMRI and DWI data
- Results support that network control models of brain dynamics can capably individualize the predicted output of electrical simulation

OTHER WORK EXPERIENCE

Work Study, Athletic Department, Franklin & Marshall College, Lancaster, PA	August 2016 – May 2017
Sales Associate, Tommy Bahama, Queenstown, MD	June 2016 – August 2016
Waitress, Prospect Bay Country Club, Grasonville, MD	May 2014 – August 2017

LEADERSHIP AND EXTRACURRICULAR ACTIVITIES

Research Team Leader, Soft Tissue Ultrasound Lab, Clemson University	May 2019 – Present
President (2018 – 2019); Secretary (2019 – 2020), Club Lacrosse Team, Clemson University	September 2017 – Present
Member, Tau Beta Pi Engineering Honors Society, Clemson University	January 2018 – Present
Member, Undergraduate Clemson Bioengineering Society, Clemson University	January 2018 – Present
Member, Delta Zeta Sorority, Clemson University	August 2017 – August 2019
Member, IEEE Robotics Team, Clemson University	January 2018 – January 2019
Member, Technical Sales Club, Clemson University	January 2018 – May 2018
Member, Varsity Lacrosse Team, Franklin & Marshall College	August 2016 – May 2017
Clemson University President's List	Fall 2017, Spring 2018, Fall 2018, Spring 2019
Franklin and Marshall College Dean's List, Honor's List	Fall 2016, Spring 2017

Patricia (Trish) H. Konczal

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School Address: 111 College Street, Unit 600, Clemson, SC 29631

Education

Clemson University Clemson, SC
B.S. Bioengineering, Biomaterials Concentration May 2020
GPA: 3.05

Work Experience

Biotest Pharmaceuticals, Clemson SC December 2018- Current
Biomedical Technician
Determine eligibility of applicants, conduct series of diagnostic tests, collect blood samples and conduct blood tests, requires CLIA certification.

SmartSense LLC, Greenville SC May 2019 – August 2019
Biomedical Engineering Intern
Sensor based engineering start up, responsibilities included grant writing, development of medically focused sensors.

Clemson University General Engineering, Clemson SC August 2017 – December 2017
Undergraduate Teaching Assistant
Assisted professor in lecture, held tutoring hours, graded student work.

Research

Laboratory for Retrieval Research and Reprocessing of Medical Devices
Undergraduate Researcher
Focus on 3D imaging of hernia mesh after in vivo function in human. Component of a larger project that is geared towards the development of a better hernia mesh device.

Creative Inquiry, Water Quality and Correlation to Kidney Stone Formation
Data Collection Collaborator
Collected data on the location of water systems, water quality, and mapped water distribution. Gathered statistical information regarding the occurrence of kidney stones.

Clemson University Senior Design
This is a program in which students work with local clinicians to develop an innovative medical device. Requires market research, investigation of FDA regulatory affairs, development, modification and commercialization of device.

Involvement and Community Service

Theta Tau Professional Engineering Fraternity
Calhoun Honors College
Engineers Without Borders –Nicaragua Water Project
Team Lead
Works in collaboration with a community to develop a clean water system and increase the standard of living. Involves the design of a water system sanitation and implementation.

Undergraduate Clemson Society of Bioengineers
Study Abroad at Lund University in Sweden
Spent six months living in the university town of Lund, Sweden. Took language classes as well as medical and engineering classes. Visited several biomedical and biotechnology industries.

Honors and Awards

Valedictorian, Woodmont High School
International Baccalaureate Diploma Recipient
Dean's List, Clemson University

Technical Skills and Coursework

Excel Matlab Maya SolidWorks – Certified Software Associate Biomechanics Biomaterials
Biofluid Mechanics Bioinstrumentation Materials Processing Orthopaedics Engineering

Quan Dio Le

(C) 208-906-4063 Easley, SC 29642 quan.dio.le@gmail.com U.S. Citizen

Academically trained in Biongineering at a Tier One University, entry-level experienced in Biotechnology industry, skilled in Instrumentation and Automation

EDUCATION: Clemson University, B.Sc. in Bioengineering Expected Graduation: Dec. 2020

SKILLS:

- **Hardware:** Microlab robot, power supply, micrometer, environmental oven, calipers, force gage, digital multimeter, digital microscope
- **Computer applications:** R, Solidworks, Matlab, Excel

RELATED WORK EXPERIENCE:

Clemson University, Clemson, SC February 2019-Present

Undergraduate Researcher at Multiscale Bioelectromechanics Laboratory

- Research Title: Ubent Fiber Optics Biosensors
- Supervisor: Melissa McCullough
- Responsibility: Benchtop prototyping fiber optic biosensors

Charles River Laboratories, Charleston, SC Dec. 2017, May 2018-August 2018

Engineering Intern

- Component reliability testing and modeling: Heater strip electromigration lifetime, cooling fan temperature storage lifetime
- Measuring System Analysis (MSA): Gage Repeatability and Reproducibility of endotoxin cartridge thickness with a micrometer
- Automatic Endotoxin testing with a Microlab Robot
- Environmental testing of instrument: Temperature effects on robot functionality
- Failure analysis of returned instruments from customers

OTHER WORK EXPERIENCE:

Spartanburg Community College, Spartanburg, SC August 2018-December 2018

Physical Science Laboratory Assistant

- Preparation of CHM 100, BIO 100, 101 labs
- Laboratory and preparation room maintenance

PUBLICATIONS:

- Quan Le and Huy Le, "Heater Strip Vendor Qualification," CRL Internal report (2018)
- Quan Le, "MCS150 Fan Reliability Test," CRL Internal report (2018)
- Quan Le, Kathryn LeBarron and Huy Le, "Gage R&R on Endotoxin Cartridge Thickness," CRL Internal report (2018)

LEADERSHIP & INVOLVEMENT:

- Dual Enrollment Scholarship at Northshore Community College; Lynn, MA (2014)
- The National Society of Leadership and Success (2017-present)
- Undergraduate Clemson Bioengineering Society; Clemson, SC (2017-present)
- Biological Sciences Undergraduate Club; Clemson, SC (2017-present)

PARKER G. LIGGETT

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pligget@g.clemson.edu

OBJECTIVE

Seeking an opportunity to perform hands-on bioengineering work to assist in my goal of attending medical school after the completion of my undergraduate degree.

EDUCATION

Bachelors of Science in Bioengineering — 2016-Present
Clemson University, Clemson, SC — GPA: 3.88/4.00
Concentration: Biomaterials

EXPERIENCE

ACADEMIC SUCCESS CENTER (ASC) — Clemson University
Peer Assisted Learning (PAL) Leader — August 2018-Present

- Communicated weekly with assigned professor, undergraduate students, and supervisors while attending classes of my professor
- Facilitated a collaborative group environment in two PAL sessions every week in order to foster the continuous growth of students into self-sufficient learners
- Mentored 400 undergraduate students per semester by giving tips and tricks for being successful in college classes as well as advice from the perspective of another Clemson student

CLEMSON'S BEACH PROGRAM — Medical University of South Carolina, Charleston, SC
Undergraduate Bioengineering Researcher — May-June 2018

- Performed cell culture research for six weeks using human umbilical cord vein endothelial cells
- Analyzed the effect of various peptides on the promotion of angiogenesis in a beads assay
- Shadowed orthopaedic surgeons and radiologists during total knee arthroplasty and spinal fusion surgery as well as an intensivist in the intensive care unit

CREATIVE INQUIRY- INTERVERTEBRAL DISC ENGINEERING — Clemson University
Undergraduate Bioengineering Researcher — January 2019-Present

- Performed research focused on improving the current methods of treatment for degenerative disc disease through the evaluation of bovine tail intervertebral discs (IVD)
- Tested the effectiveness of an improved decellularization protocol involving compression and decalcification of the bovine tail IVDs
- Assessed the cytocompatibility of the decellularized IVD scaffold after recellularization with ovine adipose derived stem cells

BIOENGINEERING SENIOR DESIGN — Clemson University
Undergraduate Bioengineering Student — August 2019-Present

- Identified clinical needs after speaking to a practicing orthopaedic surgeon
- Designed a prototype for an expandable wire mesh including a cannulated screw for the promotion of osteointegration during ACL reconstructive surgery
- Completed an industry-modeled gate process focused towards commercialization of project designs

OUTSIDE HILTON HEAD — Hilton Head Island, SC
Dock Hand and Kiosk Attendant — May-August 2016, 2017

- Checked in customers for kayak and paddle board rentals as well as outdoor excursion boat trips
- Loaded and unloaded customers into and onto kayaks and paddle boards
- Prepared and docked pontoon boats for rentals

GIUSEPPI'S PIZZA AND PASTA HOUSE — Hilton Head Island, SC
Food Runner — June-August 2019

- Organized and orchestrated distribution of food in an efficient manner while assisting other staff members with their duties
- Ensured that the correct food was being sent to tables by effectively communicating with different kitchen sections
- Provided point of contact between front-of-house and back-of-house staff

AWARDS/HONORS

Eagle Scout with 1 Bronze, Gold, and Silver Palm	December 2015
SC Palmetto Fellows Scholarship	2016 Fall Semester-Present
SC Palmetto Fellows Enhancement	2017 Fall Semester-Present
Clemson Palmetto Pact Scholarship	2016 Fall Semester-Present
President's List, Clemson University	2016 & 2018 Fall, 2018 & 2019 Spring Semesters
Dean's List, Clemson University	2017 Spring & Fall Semesters

ACTIVITIES

Member, Alpha Lambda Delta Honor Society	January 2017-Present
Member, Tau Beta Pi Honor Society	April 2018-Present
Member, Undergraduate Clemson Bioengineering Society	August 2018-Present

SKILLS

Matlab Coding
CAD: Solidworks
Cell Culture
Microsoft Office
Statics Analysis
Leadership
Time management
Problem Solving
Motivation
Adaptability
Planning
Communication
Customer Service

John Paul Lineberger

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Education

Clemson University
Bachelor of Science, Bioengineering
Graduation Date: Spring 2020 GPA: 3.32/4.0

Relevant Coursework

- Engineering Graphics and Design with CAD Software
- Principles of Engineering with MATLAB
- Cell Biology/Biochemistry
- Biomaterials/Lab Operations
- Bioinstrumentation
- IBM-Watson Integration Research
- Biomedical Device Regulations and Legislation
- Analysis of Physiological Processes and Biomechanics
- Material Processing and Manufacturing
- Transport Phenomena and Biofluid Mechanics

Experience

Machine Learning Research Assistant, Clemson University ECE, 4-9/2019

- Created AI solutions for university research partners using Pytorch, TensorRT, and NVIDIA JetPack SDK
- Integrated machine learning applications by designing and producing all-in-one prototype solutions
- Solved image recognition and machine vision problems using deep learning
- Presented at weekly team meetings and conferences

Special Projects Associate, NUS Consulting Group, (6-9/2017, 5-9/2018, 12/2018)

- Responsible for the creation of the Data Entry Manual for all North American offices and documentation for data entry workshops
- Management of utility usage database for clients across North America, Eastern Asia, and Australia
- Working with clients to investigate and report on utility-based issues
- Translations of utility bills including Spanish, French, Korean, Japanese, and German

Campus Leadership / Activities

President, Clemson Quadcopter Club, 8/2017- Present

- Managed day to day operations of running a 35+ student organization
- Negotiating deals with sponsors and formation of CDRA policies
- Teaching workshops on carbon frame design, soldering, electronics handling, and basic quadcopter programming

Researcher, Clemson-IBM Watson Development Creative Inquiry, 01/2018 – present

- Working with IBM and Clemson Researchers to develop new ways to improve and investigate issues using IBM's Watson Technology
- AI applications in medical device imaging in collaboration with Prisma Health's Trauma Centers
- Presenting and constructing the use of Watson in Clemson's Precision Agriculture Project to IBM Executives

Member, Undergraduate Clemson Bioengineering Society, 11/2017- present

Member, Clemson Photography Club, 01/2017 – present

Professional and Technical Skills

- Data Analysis
- Technical Writing
- MATLAB
- Solidworks (Associates Certification)
- VBA Coding in Excel
- Machine Learning
- Python
- Manned Aerial Vehicle Operations
- Unmanned Vehicle Operations
- 3D Prototyping
- Soldering
- PID Loop Controllers (Betaflight)
- Computer building, troubleshooting, and diagnostics
- Adobe After Effects, Premiere, and Photoshop
- Digital Photography
- Microcontrollers

Jessica Link

103 Honeysuckle Lane, Summerville, SC, 29485; (843)-209-4329, jrlink@g.clemson.edu

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EDUCATION

Clemson University, Clemson, SC — December 2019
Bachelors of Science in Bioengineering (Biomaterials Concentration) — GPA: 3.06
Senior Design, Clemson, SC

- Worked in a team of 4 to develop a new medical device, including producing a prototype and analyzing FDA approval paths

SPECIAL SKILLS: Matlab Proficient, SolidWorks CSWA Certified, Arduino Basic, American Red Cross CPR/AED Certified

RELATED EXPERIENCE

Janssen Research & Development, Spring House, PA, *Mechanistic & Investigative Toxicology Co-Op* — February 2019-August 2019

- Completed in vitro assays to determine the mitochondrial and overall cellular toxicity of ~200 compounds
- Created data reports detailing toxicities of compounds including IC50 values
- Assessed accuracy/precision of current experimental methods to analyze mitochondrial toxicity
- Presented findings in local & global meetings to ~50 colleagues
- Communicated updates weekly and monthly to mentor, department, and global team

Medical University of South Carolina Summer Undergraduate Research Program, Charleston, SC, *Intern* — May-August 2017

- Researched the role of Syncytin A & SIRPβ-1 on the survival of osteoclasts under microgravity
- Practiced Western blot analysis, siRNA transfection, solution and buffer preparation, and mass spectroscopy analysis
- Wrote final report describing methods and results and presented to audience of ~20 peers and advisors

NASA Space Grant Palmetto Academy, Charleston, SC, *Research Intern* — May-July 2016, May-July 2017

- Designed experiment to test the role of the SIRPβ-1 gene on osteoclast autophagy activity in microgravity
- Practiced cell culturing/staining, PCR analysis, cDNA synthesis, RNA isolation, and gel electrophoresis
- Helped improve and maintain equipment, such as the Rotary Cell Culture System
- Presented findings in end-of-term summit to ~20 advisors and peers via presentation and final written report

Clemson Engineers for Developing Countries, Clemson, SC — September 2015- January 2017

- Researched production of biofuels for use in underdeveloped countries and biodigester installation in rural Haiti
- Presented research, plans, and budget updates to ~50 peers/supervisors monthly and ~15 potential investors

LEADERSHIP EXPERIENCE

Johnson & Johnson Intern & Co-Op Association, Spring House, PA, *Professional Development Chair* — February 2019-August 2019

- Organized a day-long Lean Thinking Yellow Belt training day for 20 interns/co-ops
- Selected to attend the 2019 J&J Women In Leadership Conference with ~30 other co-ops/interns from across company

Clemson University Society of Women in Engineering, *Conference Chair* — April 2018-May 2019, September 2015-

- Attended the 2015, 2016 SWE National Conferences & organized travel for 12 to the 2018 conference

Clemson University Fellowship of Christian Athletes, Clemson, SC, *Mission Trip Group Leader* — March 2016-March 2018

- Co-led a group of 12 college students in service, worship, critical conversation, and collaborative activities in Memphis, TN
- Attended the annual Spring Break Mission Trip 2 times to Indianapolis, IN and Baltimore, MD

PEER-REVIEWED PUBLICATION

Ethiraj P, **Link JR**, Sinkway JM, Brown GD, Parler WA, Reddy SV. Microgravity modulation of syncytin-A expression enhance osteoclast formation. *J Cell Biochem*. 2018; 1-8.

PRESENTATIONS

"Microgravity regulation of autophagy in preosteoclast cells" Medical University of South Carolina, August 2017; "The role of syncytin-A in osteoclast formation and survival" NASA, 2017; "Osteoclast formation and survival under microgravity" NASA, 2016

OTHER ACTIVITIES

Clemson General Engineering Undergraduate Teaching Assistant, Clemson, SC — August 2019-December 2019

- Assisted a professor in class by helping 45 students understand Matlab coding software & held weekly study hall sessions

Roper St. Francis SCRUBS Hospital Shadowing Program, Charleston, SC*, Volunteer* — June-August 2018

- Volunteered across various areas (oncology, labor & delivery, ICU, etc.) of a hospital

AWARDS AND HONORS

Member Undergraduate Clemson Bioengineering Society; Member of Sigma Alpha Lambda National Honor Society; Society of American Military Engineers Scholarship (x4) ; Coastal Community Foundation Scholarship (x4); Member of Clemson University's National Residence Hall Honorary; National Society of Collegiate Scholars; Clemson University Dean's List; Science National Honor Society Scholarship; South Carolina Palmetto Fellows Scholarship; South Carolina Law Enforcement Officers Association Scholarship

Andrew Losier

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Objective

To obtain a full-time position that will build on my three rotations of manufacturing and biotechnology experience.

Education

Clemson University – Clemson, SC May 2020 Graduation
Dixon Fellow at Calhoun Honors College
Bachelor of Science – Bioengineering, Minor – Business Administration
GPA 3.97 (154 Credits Completed)

Work Experience

Becton Dickinson – Moncks Corner, SC May 2017 – December 2018
Cooperative Engineer – Process Technology R&D
Achieved a year's worth of experience over three, semester long rotations.

- Executed a feasibility study resulting in possible 600% increase of unit production;
- Performed fishbone analysis and experimental trials to enhance manufacturing output;
- Completed validation with cost saving implications on Penrose tubing; and
- Designed parts to improve accuracy of ventricular balloon testing via SolidWorks.

Robert Bosch Packaging Technology, Inc. – Allendale, NJ May 2019 – August 2019
Mechanical Design Intern June 2018 – August 2018

- Designed and prototyped parts for the next generation visual inspection machine; and
- Executed a Factory Acceptance Test for two semi-automatic inspection machines.

Clemson University – Clemson, SC January 2019 – Present
Undergraduate Teaching Assistant August 2016 – May 2017

- Supported the ENGR 1020/2080 professor by serving as an in-class resource; and
- Held weekly three-hour student tutoring sessions and provided homework support.

Boswell Engineering – Franklin Lakes, NJ May 2016 – July 2016
Engineering Intern

- GPS located, mapped, and inputted outfalls for storm water system per US DEP; and
- Trained seven Borough of Franklin Lakes employees on ArcGIS software.

Volunteer Experience

Clemson Habitat for Humanity
Vice President January 2017 – December 2017
Fundraising Officer January 2016 – December 2016

Professional Skills

- Dassault Systemes CWSA Associate level certified for SolidWorks Mechanical Design
- Proficient in MATLAB and the Microsoft Office Suite (Word, PowerPoint, and Excel)

Awards and Other Activities

- Tau Beta Pi National Engineering Honor Society
- Alpha Eta Mu Beta National Biomedical Engineering Honor Society
- President's List – Fall 2015, Spring 2016, Fall 2016, Fall 2017, and Spring 2019 Semesters

KATE MAGEE

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EDUCATION

Bachelor of Science in Bioengineering Spring 2020
Clemson University Calhoun Honors College Clemson, SC
Biomaterials Concentration GPA: 3.74/4.00

RELEVANT EXPERIENCES

Bioengineering Senior Design, Clemson University Team Member Clemson, SC
- Designed and developed a medical device to treat issues in vascular medicine in a diverse team August 2019-Present
- Utilized needs screening and design controls process to develop a feasible solution to a real-world problem

BMES Coulter College, Clemson University Bioengineering Representative Medtronic, Minneapolis, MN
- Developed a medical technology concept with a team to address a need related to CHD patients July 2019
- Designed a business model for the product that benefited low resource facilities
- Pitched the product to physicians, Medtronic engineers, and venture capitalists

Organic Biomaterials: Tissue Engineering Lab, Creative Inquiry Research Team Leader Clemson, SC
- Present weekly findings and improvements to the model's function and usability to the adviser August 2017- Present
- Represented team at the annual Sigma Xi research meeting in San Francisco October 2018
- Manage the designing and machining a mechanism for electrospinning to run optimization tests

Center for Optical Materials Science and Engineering Technologies, Advanced Materials Researcher Clemson, SC
- Learned and performed chemical reactions to modify ePTFE and other polymer materials May 2019- July 2019
- Utilized FT-IR and Scanning Electron Microscopy to analyze samples modified by plasma activation
- Presented poster at the Clemson Undergraduate Researcher Symposium

Institute for Micromanufacturing, NeuroNEM Researcher Ruston, LA
- Designed and followed a research plan May 2018-July 2018
- Worked with a graduate student to learn electrochemical testing techniques
- Attended and presented the results at the annual BMES and NeuroNEM conferences
- Publishing a scientific article summarizing my results and data analysis

Therapies for Cardiovascular Diseases Lab, Undergraduate Researcher Clemson, SC
- Worked with a graduate student to develop an arterial calcification model with organ cultures August 2018-May 2019
- Learned and applied histology and sample analysis techniques, such as IHC, VVG, and h&e staining
- Grew and passaged mouse macrophages in cell culture

Jump Trading Simulation and Education Center, Biomedical Engineering Intern Peoria, IL
- Prepared and presented information with a team to relevant engineers and clinicians May 2017-July 2017
- Practiced 3D Printing simulation molds and constructing medical training devices

SKILLS

Statistical Analysis SolidWorks Research Plan Development MATLAB Microsoft Office Mimics 3-Matic

HONORS, AWARDS, AND MEMBERSHIPS

- Honorable Mention for NeuroNEM REU Poster Presentation July 2018
- BMES Member Fall 2017–Present
  Attend Student Club meetings at Clemson University, Presented poster at the Fall 2018 Conference
- President's List Spring 2018, 2019
- Dean's List Spring 2017, Fall 2017, 2018
- Selected for South Carolina Palmetto Fellows Scholarship Fall 2016–Present
- Selected for Clemson University President Scholarship Fall 2016–Present
- Sigma Alpha Omega Christian Sorority Fall 2016–Present
  Judicial Board Committee Member, Elected Sisterhood Social Chair, Attend service events in Clemson, SC

Colleen Martin

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111 Cochran Rd. Apt 1023 Clemson, SC 29631

EDUCATION

Clemson University *Clemson, South Carolina* — Expected Graduation: May 2020
Bachelor of Science in Bioengineering — Concentration: Biomaterials
Minor: Management — GPA: **3.50**/4.00

WORK EXPERIENCE

Absorbable Business Unit Process Engineering Co-Op — Summer 2018-Spring 2019
Ethicon Inc. — Cornelia, GA

- Led installation and validation of Nissei Injection Molding Machine and Spare cavities for SecureStrap anchoring units
- Designed new test method validation protocol for the introduction of Mocon Oxygen Analyzers
- Authored and executed developmental and verification protocols to improve process flow in Braiding and Hacoba areas of the plant
- Assisted in development of pilot Herzog High Speed Braiders to reduce overall cycle time
- Trained 100+ operators on various protocols and improved work instructions

Pharmaceuticals Process Engineering Co-Op — Fall 2017
Janssen Pharmaceuticals — Athens, GA

- Processed and analyzed data trends for 4 pharmaceutical products and 1 monomer process
- Generated and presented Quarterly Management Review reports for each process using Minitab
- Applied Root Cause Problem Solving techniques to identify potential solutions for plant issues
- Generated and executed a solvent reduction plan reducing cost of each cycle cleaning by $8k
- Daily work surrounding factory production and FDA regulation

Cell Culture Technician/Intern — Summer 2017
Tissue Testing Technologies LLC — Charleston, SC

- Experimented with various testing protocols and cryoprotectants to optimize cell viability
- Specialized in the cell culture of hnp-1 and A-2 neural cell lines
- Organized and maintained lab instruments and equipment

RESEARCH EXPERIENCE

Department of Bioengineering, Clemson University — Clemson, SC

Senior Design – Sports Medicine — Fall 2019- Present

- Collaborated with clinicians to identify and filter potential needs within the sports medicine field
- Future work will include MAUDE database searching and performing DFMEA in device development

Global Health Design Creative Inquiry — Fall 2018-Present

- Collaborative NIH funded project with the Medical University of South Carolina and Arusha Technical College of Tanzania aimed to develop medical device technology in low resource environments
- Designed novel breast pump filtration system that inactivates HIV in breast milk to prevent transmission from mother to child
- Traveled to Tanzania for 3-week outreach and needs assessment program — Summer 2019
- Presented at the 2nd annual Collaborative Biomedical Engineering Project Symposium at Arusha Technical College and the 2019 Biomedical Engineering Society Annual Meeting

Image-Guided Drug Delivery Creative Inquiry — Spring 2018

- Research specializing in the synthesis of polymersomes to analyze their performance in CT guided drug loading and delivery to the brain
- Developed protocol for cell culture of human glioma cells and subsequent imaging

EXTRACURRICULAR

Women In Science and Engineering (WISE), *Student Mentor* — Fall 2019-Present
Cooperative Education Program, *Student Ambassador* — Fall 2019-Present
Clemson Lofts, *Student Administrative Intern* — Fall 2019-Present
Clemson Bioengineering Department, *Student Administrative Assistant* — Spring 2018-Present
Sigma Kappa Kappa Pi Sorority, *Member* — Fall 2015-Spring 2019
Publix Supermarket, *Cashier* — 2013-2017

SKILLS

Microsoft Office ▪ Matlab ▪ SolidWorks (CSWA Certified) ▪ Minitab ▪ Visio ▪ Pharma Validation ▪ Medical Device Validation

NICOLE MEILINGER

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OBJECTIVE

Bring my passion for medical device technology and tailored bioengineering skillset to the medical device industry.

EDUCATION

Bachelor of Science in Bioengineering, Clemson University — Clemson, SC
Concentration: Biomaterials — May 2015 - Present
Anticipated Graduation: May 2020 — GPA: 3.20

EXPERIENCE

CUBEINC — Greenville, SC
Co-Op Student/Liason — Summer 2017, Spring 2018, Fall 2019

- Merging Clemson's Bioengineering Program with the fields of biotechnology, medicine, and entrepreneurship.
- Providing tours to potential investors and collaborators to advance the Bioengineering Department.
- Participating in various departmental research involving orthopedics, regenerative medicine, and CNS injury.
- Observing various cadaver surgeries in the Steadman Hawkins Surgical Training and Innovation Center.

CLEMSON UNIVERSITY — Clemson, SC
Undergraduate Research Assistant — Fall 2017-Present

- Developing a dual-drug loaded electrospun nanofiber suture for vascular applications.
- Acquiring data for a PgP/pβ-Gal Polyplex effect in traumatic brain injuries.
- Analyzing data to determine key strengths in weaknesses in total knee replacements

CLEMSON BIOENGINEERING DEPARTMENT — Clemson, SC
Website Developer — Fall 2017

UPSTATE POOL MANAGEMENT — Greenville, SC
Pool Manager — Summers of June 2012 – September 2016

MEILINGER CONSULTING — Greenville, SC
Office Manager Assistant — September 2013 – August 2015

SKILLS

Public Speaking	Interpersonal	Leadership
Solidworks	Research	Biomaterials
Matlab	Microsoft Office	Electrospinning
Spanish	Histology	Cryosectioning

AWARDS/PUBLICATIONS

Arthrex Scholar — August 2019
Palmetto Fellows Scholarship Recipient — 2015-Present
"Heparin-eluting Electrospun Nanofiber Yarns…" manuscript Published in ACS — February 2018

INVOLVEMENT

Clemson Sales Club — April 2018 - Present
Delta Zeta Sorority — October 2015 – May 2019
Undergraduate Clemson Bioengineering Society — January 2017 - Present
Spanish Club — January 2017 - May 2019
The Haiti Fund — January 2013 - Present

Elliot Mercado

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Current Address: 240 Elm St. Unit 14, Clemson, SC 29631
Permanent Address: 519 Great Falls St., Falls Church, VA 22046

EDUCATION

Clemson University College of Engineering — Clemson, SC
Bachelor of Science in Bioengineering — May 2020
Concentration: **Biomaterials**
Minor: **Chemistry** — *GPA: 3.67/4.00*
Additional Languages: **Spanish**

Study Abroad – Bioengineering Program — Pamplona, Spain
Spanish Language and Bioethics (6 academic credits) — Summer 2018

RELEVANT EXPERIENCE

Biopharma Research: *Genomic Instability in Chinese Hamster Ovarian Cells* — Summer 2019-Present
Undergraduate Researcher — *Clemson, SC*

- Formulated new method to estimate the oxygen transfer mass coefficient (k_La) in order to calculate oxygen uptake rate (OUR)
- Established procedures to correctly program and run bioreactors for Escherichia coli and CHO cell cultivation
- Validated alternating k_La method by alternating gas flow rate in the bioreactor and measuring dissolved oxygen (DO) time profile

Senior Design: *Pediatric Trauma Research* — Fall 2019 – Present
Team Member — *Clemson, SC*

- Conceptualizing a CT-scan compatible backboard based on the materials utilized
- Working with two clinicians at Prisma Health to develop a pediatric specific EMT backboard
- Gained skills about regulatory, market analysis, and intellectual property processes in order to turn a medical device from a prototype to a market ready commodity

Retrieval of Explants Program and Registry in Orthopedics: *Creative Inquiry* — Spring 2018 – Present
Lead Undergraduate Researcher — *Clemson, SC*

- Work with orthopedic surgical teams to collect and process explanted medical devices
- Trained new students how to properly clean and document the explants
- Created and implemented a database through REDCAP for the 800 explants collected

PRESENTATIONS

"***Air Flow Rate Modulation towards an Oxygen Mass Transfer Coefficient Estimator for Biomanufacturing****"*

- Poster Presentation at **Biomedical Engineering Society**, October 2019, Philadelphia, PA
- Poster Presentation at **CHOg2p Symposium**, July 2019, Newark, DE

SKILLS

Laboratory: Biosafety Lab Techniques, Cell culture, Nuclear Magnetic Resonance, Bioreactor protocol creation and run over watch
Computer: SolidWorks, MATLAB, REDCAP database

RELEVANT COURSEWORK

Biopharmaceutical Engineering, Organic Chemistry, Biochemistry, Biomaterials, Thermodynamics, Biomechanics, Biofluid Mechanics, Transport Processes, Statistics, Cell Biology, Bioinstrumentation, Polymer Science

HONORS AND ACTIVITIES

Dean's List — Spring 2017, Spring 2018, Fall 2018, Spring 2019
Participate in intramural teams (Soccer/Basketball team captain in high school) — Fall 2016 – Present
Society of Professional Hispanic Engineers, *Member* — Fall 2016 – Present
Undergraduate Clemson Bioengineering Society, *Member* — Fall 2018 – Present

LEADERSHIP EXPERIENCE

Clemson Athletic Ticket Internship — August 2018 – Present

- Worked as a team to assist alumni and students with ticket issues

ClemsonLIFE — Spring 2017 – Present

- Volunteered and played sports with students who have intellectual disabilities

Sigma Nu Fraternity, *Treasurer* — Spring 2018 – Spring 2019

- Managed a budget of $40,000 for member recruitment, philanthropy, and social events

Organic Chemistry Tutor — Fall 2017 – Spring 2018

- Offered tutoring sessions to classmates, proficient in Organic Chemistry

Hayden Pagendarm

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Current Address
708 Old Central Road, Unit 6
Central, SC 29630

Permanent Address
3342 Knolls Parkway
Ijamsville, MD 21754

Education

Clemson University, Clemson, SC, Anticipated Graduation May 2020
Bachelor of Science in Bioengineering (Biomaterials Concentration), Minor in Economics

- Member of the Calhoun Honors College pursuing departmental honors research thesis.
- 3.95/4.0 cumulative earned GPA.

Experience

Drug Design, Development, and Delivery: 4D Laboratory, Mentored Research, January 2019-Present
Clemson University, Clemson, SC

- Developing a target-specific micelle nanotherapeutic for combinational drug and gene therapy.
- Prepared microexplant neural cultures from rat cerebella to use the micelle to promote neural regeneration following traumatic spinal cord injury.
- Cultured insect cells for the recombinant synthesis and purification of L1 protein.
- Preparing lab animals for in vivo studies through the cleaning of incision sites and administration of anesthetics.

Capstone Senior Design, Applied Biomedical Design Project, August 2019-Present
Clemson University, Clemson, SC

- Developing a surgical x-ray vest to reduce pain and discomfort to the wearer during lengthy surgeries.
- Working alongside a team of Clemson University seniors and clinicians from Prisma Health.

AstraZeneca, Research Intern, May 2019-August 2019
AstraZeneca US Core Global R&D Center, Gaithersburg, MD

- Conducted a mechanistic characterization of particle formation in containers relevant to Drug Product development using a wide array of analytical techniques.

Designing Medical Technologies for the Developing World, Creative Inquiry, August 2018-May 2019
Clemson University, Clemson, SC

- Beginning early stage development of a rapid result TB diagnosis device using biomarkers present in urine.

International Research Topics in Bioengineering, Mentored Research, May 2018-July 2018
Kansai Univeristy, Osaka, Japan

- Synthesized a DNA-PEG-DNA triblock copolymer and crosslinked to form hydrogel nanoparticles using DNA quadruplexes as crosslinking points.
- Diffused the anti-cancer drug TMPyP4 as an intermediate within the DNA quadruplex structure.
- Observed cellular uptake of drug infused nanoparticles by cultured HeLa cells using confocal laser microscopy.

Buch Construction, Project Intern, May 2017-July 2017
AstraZeneca US Core Global R&D Center, Gaithersburg, MD

- Oversaw and coordinated project development from start to finish by gathering initial subcontractor bids and creating a final project proposal.

Posters & Publications

AstraZeneca Dosage Form, Design, & Development Group Presentation, August 15, 2019

- Presented results of summer research work to all of DFDD via PowerPoint.

AstraZeneca Summer Internship Poster Forum, August 6, 2019

- Presented results of summer research work to the entirety of the Gaithersburg site via a poster.

Kansai University Dept. of Bioengineering Summer Research Presentation, July 18, 2018

- Presented results of research to the entirety of the Dept. of Bioengineering site via a PowerPoint.

Kansai University Summer Research Thesis, July 18, 2018

- Drafted written thesis summarizing research methods and results while at Kansai University.

Campus Involvement & Leadership

- Scholarship Chair for the Zeta Alpha Chapter of the Pi Kappa Phi Fraternity.
- Professional Development Chair for the Undergraduate Clemson Bioengineering Society (UCBS).
- Phi Kappa Phi International Honor Society, Tau Beta Pi Engineering Honor Society, Order of Omega Greek Leadership Honor Society.

Certifications and Other Skills

- SolidWorks Certified (CSWA); Familiar with Spanish, MATLAB, Python, Java, and R

Amanda Sall

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EDUCATION

Clemson University Calhoun Honors College | Clemson, SC — Spring 2020
Bachelor of Science in Bioengineering | Concentration: Biomaterials — GPA 3.94/4.00
Clemson University President's List — Spring 2017 – Fall 2018

ENGINEERING EXPERIENCE

Research and Development Intern — Summer 2019
Surgical Structural Heart, Edwards Lifesciences | Irvine, CA

- Designed a new mitral valve component inspection fixture in SolidWorks and programmed a Keyence routine to calculate component dimensions, resulting in an inspection time reduction of three minutes to 20 seconds per component
- Investigated potential root causes of Design Verification failure and performed testing to evaluate potential design solutions
- Completed benchtop testing and statistical equivalence analysis to justify rework of Design Verification samples, which led to a 44% reduction in the number of new samples to build, allowing the team to maintain product launch timeline

Undergraduate Student Researcher — Fall 2018 – Spring 2019
Creative Inquiry, Clemson University | Clemson, SC

- Collaborated with students and professors in the Packaging Science department to analyze the effects of football impacts on facemasks and determined that a season of high school football exposure causes a significant reduction in facemask stiffness
- Collected facemask impact data from game film to quantify the number of sustained hits and conducted quasi-static and dynamic compression tests with an Instron machine to evaluate material stiffness pre-season and post-season for 30 facemasks
- Presented results at the Clemson University Focus on Creative Inquiry poster forum and made recommendations on injury prevention and optimal facemask use to members of the football and administrative staff at D.W. Daniel High School

Research and Development Intern — Summer 2018
Heart Valve Therapy, Edwards Lifesciences | Irvine, CA

- Brainstormed design solutions and created prototype components in SolidWorks that were implemented in a next generation mitral valve holder system
- Developed fixtures and procedure documents for three new design verification tests of mitral valve holder components and performed mechanical feasibility testing to validate test methods
- Summarized feedback from valve holder VOC studies and collaborated with a team to solve usability problems and determine direction for subsequent studies

LEADERSHIP EXPERIENCE

Math Tutor — Fall 2016 – Present
Academic Success Center, Clemson University | Clemson, SC

- Led drop-in calculus tutoring sessions 4-6 hours a week to help students prepare for assignments and tests
- Reviewed course concepts, answered questions, and created practice exams for students to utilize

Outreach Chair — Fall 2018 – Spring 2019
Tau Beta Pi, Clemson University | Clemson, SC

- Organized outreach and mentoring events for engineering underclassmen
- Facilitated discussion to provide students with guidance as they explored different STEM disciplines and career paths

AWARDS AND ACTIVITIES

Clemson University Out-of-State Academic Scholarship — Fall 2016 – Present
Student Leader for 6^{th} – 12^{th} graders at NewSpring Church — Fall 2016 – Present
Clemson University Running and Swimming Club Teams — Fall 2016 – Present

TECHNICAL SKILLS AND RELEVANT COURSEWORK

- SolidWorks, MATLAB, AutoCAD, Microsoft Suite, Minitab
- Biomaterials, Biomechanics, Bioinstrumentation, Biofluid Mechanics, Engineering Analysis of Physiological Processes, Transport Processes, Materials Processing, Cardiovascular Engineering, Orthopedic Engineering and Pathology, Senior Design

Taylor Sanders
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EDUCATION

Bachelor of Science in Bioengineering — May 2020
Clemson University, Calhoun Honors College — Clemson, SC
Sales Engineering Certificate — GPA: 3.68/4.00
Bioengineering Departmental Honors

EMPLOYMENT

Manufacturing Engineering Co-Op — Spring 2018, Fall 2018, Summer 2019
Ethicon, Johnson & Johnson — Cornelia, GA

- Collaborated multi-functionally to increase manufacturing capabilities of a monofilament polypropylene pigmented suture by 50% which correlated to saving the company $100,000 annually
- Analyzed production data for Nylon 6 and Nylon 6,6 non-absorbable suture and utilized Six Sigma's methodology of Design of Experiments to discover the root cause of production yields dropping to 42%
- Created and presented Product Spotlights to bridge the connection between the Product, Process, and People by demonstrating Ethicon's competitive advantage and displaying Ethicon's life changing products

Undergraduate Teaching Assistant — Fall 2016 - Spring 2017
General Engineering Program, Clemson University — Clemson, SC

- Facilitated a general engineering course of 49 students throughout a semester
- Organized arrangements implemented by an instructor and held instructive learning sessions for three hours a week that closely followed the curriculum

RESEARCH EXPERIENCE

Researcher for the ReMED Laboratory — May 2017 - Winter 2017
Biomedical Engineering Innovation Campus, Patewood Medical Center — Greenville, SC

- Cooperated with graduate students to research fibroblast behavior under biaxial strain for hernia mesh repair by programing and utilizing a MechanoCulture B1 device for cells to undergo biaxial stimulation
- An overview of the research conducted was presented at the 2017 Biomaterials Day Conference held at Vanderbilt University

Creative Inquiry Undergraduate Research — Fall 2016 - Winter 2016
Accessible Recreational Creations to Highlight Educational Reach — Clemson, SC

- Collaborated with 3 other Clemson students to design and develop structural assistant archery equipment for a disabled elementary student to allow the student to participate in archery activities independently

HONORS

Recipient of the Clemson, Arthrex Inc. Launch Pilot Program Scholarship — Fall 2019
Acceptance into Order of Omega — Spring 2019
Johnson & Johnson's Encore Awards — Spring 2018
Clemson University Dean's List — Fall 2015, Spring 2017
Clemson University President's List — Fall 2016

LEADERSHIP

Make-A-Wish® Volunteer and Fundraising Event Planner — Fall 2019 – Present
Sales Innovation Program — Fall 2019 – Spring 2020
Clemson Certified Student Leader — Fall 2019 – Spring 2020
President of Chi Omega — Spring 2019 – Fall 2019
Recruitment Counselor — Spring 2017 – Fall 2018

Kyle Schindler

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OBJECTIVE

To obtain an entry level, full time design engineering role related to biomedical device development.

EDUCATION

Clemson University | Clemson, South Carolina | May 2020

Bachelor of Science, Bioengineering with a concentration in biomaterials.

SKILLS AND RELATED COURSEWORK SUMMARY OF QUALIFICATIONS

- MATLAB.
- Expertise in 3D design (SOLIDWORKS).
- Training and advanced coursework completed in biomaterials and mechanics, bio fluid mechanics, and transport principles.
- Advanced competency in mechanical design, prototype manufacturing, structural design, and AutoCAD/CADD.
- Biomaterials laboratory, Statics

COMPUTER PROFICIENCIES

SOLIDWORKS, AutoCAD/CAD, MATLAB, Microsoft Office.

AWARDS AND HONORS

CSWA Certified: Certified Mechanical Design Associate in SOLIDWORKS.

LEADERSHIP/MEMBERSHIPS

Clemson Club Baseball (Fall 2016 – Spring 2020)
National Society of Leadership and Success: Sigma Alpha Pi Clemson Chapter

WORK EXPERIENCE

- Pottery Barn | Huntington, NY | Spring 2018 – Present
  Stock Associate
  -Assembled furniture, organized stockroom, processed shipments to store into inventory, administered checkout and restock operations.
- Bioengineering Senior Design | Clemson, SC | Fall 2019-Spring 2020
  Design Team Member
  -Took part in the design and product development process typically utilized by entrepreneurs and corporations within the medical device industry. As a team, we identified and assessed a clinical need and ultimately develop, present and defend a design proposal related to the identified needs.
- Sports Injuries Creative Inquiry | Clemson, SC | Spring 2019-Fall 2019
  Researcher
  -Was part of a group of undergraduates researching about the mechanisms of tendons. Specifically, we looked at how tendons experience micro-tears in their tissue ultimately leading to injury.

Molly Servine

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EDUCATION

Clemson University — Clemson, SC
Bachelor of Science — May 2020
Major: Bioengineering (Materials Concentration) — **GPA: 3.58**
Clemson Bioengineering Study Abroad in Pamplona, Spain — Summer 2018
Bioengineering Undergraduate Research, Clemson University — 2018-Present

- Undergraduate research in cardiac tissue engineering using technical knowledge of cell cultures, histology, bioreactors, and zymography to study heart pathology.

EXPERIENCE

Pharma Tech Industries — Royston, GA
Engineering Intern — Summer 2019

- Worked as part of a cross-functional project team with members of project management, supply chain, quality assurance, and company directors to ensure quality pharmaceutical product for the customers.
- Confirmed the validity of cleaning methods for Prescription drug filling equipment through drafting and successfully executing a Cleaning Verification.
- Created a universal database with Excel to log equipment and associated qualification documents in order to increase efficiency during FDA audits.
- Drafted and executed the IQOQ (installation and operational qualification) of a new Programmable Logic controller in the Swabs Department as part of a continuous improvement project, allowing for the department to operate more safely and efficiently.
- Increased cleaning efficiency in the Aveeno Department by 50% through creation of a Change Control Request and subsequent document edits to eliminate the requirement of a major cleaning between blend transitions.
- Ensured the serialization process for a prescription drug product was in compliance with FDA regulations by updating Standard Operating Procedures and related forms.

University of Virginia, Center for Diabetes Technology — Charlottesville, VA
Engineering Intern — Summer 2017

- Worked as part of a cross-functional project team with engineers, researchers, medical doctors (particularly endocrinologists), and company directors to further research for an artificial pancreas system.
- Wrote computer code using Matlab for the UVA/Padova diabetic patient simulator using Markov chains to predict human meal pattern behavior, allowing for longer and more accurate run times.
- Submitted a published abstract to the 2018 Advanced Technologies and Treatments for Diabetes conference.
- Tested the life of rechargeable batteries in insulin pumps to determine their viability for clinical trials.
- Completed software testing for the Artificial Pancreas System.

Palette Paint — Charlottesville, VA
Sales Associate — Summer 2018

- Efficiently managed inventory and used customer service skills to help increase paint sales

HONORS & AWARDS

Clemson University's Out of State Academic Scholarship — 2016-Present
Clemson University Dean's List — 2016-2018
Clemson University Calhoun Honors College — 2016-2018
Mortar Board — 2019-Present
Order of Omega — 2017-Present
Alpha Lambda Delta Honors Fraternity — 2017-Present
Olivet Presbyterian Church's Commitment to Service Award and Scholarship — 2016

INVOLVEMENT & LEADERSHIP

Undergraduate Clemson Bioengineering Society — 2017-Present
Kappa Delta Sorority — 2016-Present

- Head of Alumni Relations — 2019
  - Developing network events to connect current members with alumni.
- Assistant Vice President of Membership — 2018
  - Directed and delegated recruitment events to promote membership and values to prospective members.
- SET Leader — 2017
  - Served as a resource and role model to aid in the education of new members.

Clemson Challenger Volunteer — 2017-Present

- Act as a coach and buddy during weekly soccer and baseball practice for children in the local Clemson area with developmental and physical disabilities.

SKILLS & CERTIFICATIONS

Matlab	Knowledge of FDA Regulations	Microsoft Office
Solidworks (CSWA certified)	Laboratory Research	Motivated self-starter
Good Manufacturing Practice Standards	Data Cleaning	Communication skills

KARENNA SMITH

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EDUCATION

Clemson University, Calhoun Honors College — Clemson, SC
Bachelors of Science in Bioengineering, Biomaterials Concentration — May 2020
Minor: *Sustainability*
First Semester Senior — GPA: 4.0 / 4.0
President's List — Fall 2016 – Spring 2019

RELEVANT EXPERIENCE AND SKILLS

Clemson University, Bioengineering Department — Clemson, SC
Tissue Engineering Undergraduate Researcher — August 2017 – Present

- Developing an micro-scale intervertebral disc culture model, incorporating organoid culture techniques and cell-embedded hydrogel cultures.
- Perform decellularization protocols including solution formulation, sonication and orbital shaking techniques to create acellular tissue scaffolds from intervertebral bovine discs.
- Utilize sterile technique to grow and passage intervertebral disc cell culture for both pellet cultures and monolayer culture to investigate the differential response of these cultures to change in hydrostatic pressure.
- Presented research conducted at poster presentations, including the 2019 ORS Annual Meeting (received the Honors College Conference Travel Grant).

Regeneron Pharmaceuticals Inc., Pre-clinical Manufacturing and Process Development — Tarrytown, NY
Cell Culture Medium Development Co-Op — June 2018 – December 2018

- Executed shake flask and benchtop fed-batch bioreactor experiments to develop cell culture medium formulations that improved cell growth, cell productivity, and product quality.
- Completed high-throughput scale-down models to improve productivity by 4-fold in continuous processing tech development efforts.
- Designed experiments, analyzed results using DOE statistical modeling analysis, and communicated findings effectively.
- Performed routine maintenance and troubleshooting of Nova Biomedical sampling equipment.

BMES Coulter College Program — Minneapolis, MN
Student Design Team Member — June 2019 – August 2019

- Attended Coulter College program hosted by Medtronic from August 1-4th; developed a non-invasive, continuous fluid monitoring product for pediatric patients.
- Pitched a novel product to clinicians, industry partners, and venture capitalists highlighting technical design, a favorable IP landscape, and overall timeline to market.

Technical Skills: aseptic technique for both suspension and adherent tissue culture, benchtop bioreactor operation, biosensor and circuit development, decellularization protocols, tissue processing and histology staining protocols, exposure to ambr 250 operation, medium and solution preparation, enzyme-linked immunosorbent assay (ELISA)

Computer Skills: Microsoft Office, JMP (Design of Experiments), MATLAB, Solidworks Certified, Arduino

ADDITIONAL WORK EXPERIENCE

Clemson University, General Engineering Department — Clemson, SC
Undergraduate Teaching Assistant, Student Assistant — August 2017 – August 2018

- Tutor peers in various fundamental engineering principles, kinematics, Excel formatting, and MATLAB programming.
- Adapted teaching styles to communicate information compatibly with the unique needs of students during tutoring hours to ensure the success of the student in the given engineering class.
- Assist the General Engineering department with office responsibilities, including class preparation and phone reception.

MEMBERSHIP

Undergraduate Clemson Bioengineering Society, Active Member — January 2018 – Present

Clemson Running Club, Leader for Townville Elementary Running Club Service Project — August 2016 – Present

FCA (Fellowship of Christian Athletes), Athletic Outreach Team Member — August 2016 – May 2018

Madison Lee Stiglich

EXPERIENCE

Cardiovascular Systems Inc.
Design Assurance Engineering Intern
May 2019 – August 2019 (New Brighton, MN)
- Worked on Risk Management process updates including dFMEA and Hazard Analysis for variety of products
- Assisted in the design of a physiological heart simulation pump for design verification (DV) testing
- Developed and documented a standard test procedure (STP) including the creation of data collection and analysis software

Clemson Engineers for Developing Countries
Haiti Healthcare Project Management Intern
May 2018 – December 2018 (Cange, Haiti)
- Observed gaps in the existing healthcare system and coordinated efforts to upstart and manage projects which address community needs:
    - Hypertension diagnosis and treatment program for rural communities
    - Operating room redesign
- Implemented processes for the biomedical department of a local hospital to improve medical device lifespan

National Biomedical Engineering Society
Coulter Design Scholar
May 2019 – August 2019 (Minneapolis, MN)
- Team of Clemson undergraduates selected to participate in biodesign program focusing on the clinical problem of congenital heart disease
- Applied knowledge of design process including needs assessment, stakeholder consideration, market analysis and entrepreneurship

Mentoring for Innovative Design Solutions Scholar
October 2018 – March 2019
- Collaborated with students from various universities to conceptualize a biomedical product while addressing FDA regulatory strategy, and intellectual property protection

Sensors, Materials and Analytics for Regenerating Tissues Laboratory
Undergraduate Researcher
January 2019 – Present (Clemson, SC)
- Working under PhD student on project to develop and test biosensors for chronic wound monitoring and potable water applications
- Created models of test materials in SolidWorks to be incorporated in dynamic system modeling

Chulalongkorn University Chemical Engineering
Undergraduate Researcher
Summer 2017 (Bangkok, Thailand)
- Designed experimental protocol to determine efficiency of extractants in hollow-fiber liquid membrane separation

CONTACT

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Shoreview MN 55126

EDUCATION

Clemson University
September 2016 - Graduation: May 2020
B.S. Bioengineering
Biomaterials Concentration
GPA: 3.85/4.0

Senior Capstone: Neurosurgery
- Clinical needs finding and collaboration
- Product development, creation of design history file (DHF)

SKILLS + COURSEWORK

SolidWorks Certified
AutoCAD
MatLab
Excel Spreadsheets
Risk Management:
ISO 14971 Certified

Bioinstrumentation
Biomechanics
Thermodynamics
Materials Science

INVOLVEMENT

Clemson University Equestrian
September 2016 – May 2018

Calhoun Honors College
September 2016 – Present

ACHEIVEMENT

President's List Clemson University
Fall 2016, Spring 2019

Dean's List Clemson University
Spring 2017, Fall 2017, Spring 2018

39 McRae Place
Simpsonville SC 29681

VINEETH SAMA

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EDUCATION

Clemson University — **B.S. Bioengineering**, Biomaterials Concentration — **2016 – 2020**
Calhoun Honors College — Minor: Biochemistry — GPA: 3.88

WORK EXPERIENCE

Biomedical Engineer - Medical Device Design with Physicians – MUSC/Clemson **August 2018 – Present**
- Worked closely with a physician to develop a novel urinary guidewire capable of creating openings on demand
- Designed CAD drawings, 3D printed, and machined several iterations of prototyping for a guidewire
- Currently working on verification testing of final prototype in an animal model and filing a patent

Biomedical Innovation Design Scholar – Biomedical Engineering Society **October 2018 – April 2019**
- Worked with a multi-institutional team around the US to design, evaluate, and market a chest tube alternative
- Designed a pain-reducing, drug-eluting chest tube in order to combat the opioid epidemic
- Attended the 2018 BMES Conference, received a NIH-funded grant; plans to enter design competitions

Biomedical Innovation Engineer – Medical University of South Carolina **June 2018 – August 2018**
- Worked with physicians to identify, evaluate, and rank clinical needs through observation of surgical procedures
- Developed ideas & conducted physician interviews to evaluate innovation opportunities in medical device industry
- Presented on market potential, intellectual property, and target population of needs for future design development

Researcher – Cardiovascular Implant Research Lab – Clemson University **August 2017 - Present**
- Developed a tissue engineering approach to vascular grafts and analyzed histological results
- Designed and executed in vitro study to determine feasibility of cellular revascularization of scaffolds
- Managed and currently working on a project to develop a scaffold-free tissue TE approach to vascular grafts

Research Intern – Center for Cardiovascular Regeneration – Houston Methodist Hospital **May – August 2019**
- Integrated and programmed a biosensing microvasculature perfusion system for organ-on-a-chip work
- Performed animal studies to study the mechanism of hTERT treatment on endothelial cells of HGPS patients
- Investigated the epigenetic role of histone modifications in the process of cell aging

Research Intern – Center for Biomimetic Sensor Science – NTU Singapore **June – August 2017**
- Developed polymer based biosensors to detect advanced glycation end products for low-resource settings
- Determined intermolecular interactions and optimized fluorescence by varying concentration and buffers
- Developed and prototyped conceptual sensor with intent to translate to clinical trials

ADDITIONAL SKILLS

- Programming and Software: Java, MATLAB, R, Excel, Perl, VBA, Solidworks, Microsoft Office
- Laboratory Techniques: Mechanical Testing, 3D Design and Printing, Spectroscopy, Tissue Engineering, Cell Culture, Histology, Molecular Biology (PCR, Western Blot, IF, Gel Extraction, DNA Transformation)
- Languages: Telugu (Fluent), French (Functional)

LEADERSHIP AND EXTRACURRICULARS

Teaching Assistant – Clemson Medical Education Development **August 2017 - Present**
- Coordinated and ran a medical education program between the university and the local hospital system
- Learned from physicians in fields of orthopedics, pediatrics, emergency medicine, and family medicine

Clinical Researcher – Greenville Health System **November 2017 – May 2018**
- Worked on clinical research with trauma patient data; gained exposure to the EPIC medical record system
- Shadowed residents and medical students handling the cases of patients brought into the trauma bay

Executive Board Member – Honors Community Service Group **August 2016 - Present**
- Planned and volunteered at nearby events – Helping Hands, beach cleanup, Habitat for Humanity, blood drives
- Developed new leadership system to maximize quality of events and student involvement

Clemson University Student Government Council on Diversity Affairs **April 2017 – May 2018**
- Worked to increase diversity awareness on campus by planning events and cultural awareness activities
- Planned Tunnel of Oppression event – logistics, social media presence, and volunteered as tour guide

AWARDS AND HONORS

- Clemson University Bioengineering Outstanding Junior Award
- Texas A&M BMEN Medical Device Hackathon – 2nd Place
- Presented at: Society for Biomaterials 2018, BMES 2018, Houston Methodist MAPTA 2019, GCVRC 2019

Julie Wagner

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EDUCATION

Bachelor of Science in Bioengineering, Biomaterials Concentration — Graduation May 2020
Clemson University, Clemson, SC — GPA: 3.17/4.00

WORK EXPERIENCE

Stryker Spine, formally K2M– Leesburg, VA

R&D Engineering Intern | Summer 2019

- Utilized surgeon feedback and collaboration with product management to design spinal instruments
- Applied DFM and GD&T to create and revise drawings
- Performed mechanical testing and dimensional analysis to investigate pedicle screw functionality
- Led project to determine cross-compatibility between legacy K2M and Stryker pedicle screw systems
  - Presented findings and recommendations to product management and engineering teams
- Participated in cadaver lab validations of new spinal implants and surgical instruments

Sterile Packaging Engineering Co-Op | Fall 2018

- Wrote over 20 test protocols and reports for sterilization and packaging validations
- Created and revised drawings and assemblies in SolidWorks for packaging design changes
- Conducted adoptions of new products, packaging, and suppliers into sterilization families
- Created biocompatibility assessments for products and materials per ISO 10993, analyzing data from cytotoxicity, intracutaneous, and sensitization tests

Milliken Healthcare Products – Spartanburg, SC

Product Development / Supply Chain Intern | Summer 2018

- Created incoming inspection procedure to prevent manufacturing errors of laminated goods
- Implemented process improvement measures through root cause analysis and corrective actions
- Supported quality control of current products by performing lab testing on newly manufactured goods, enabling quick turnaround for product release and distribution
- Developed a new chemical composition of moisture-wicking fabric coating, for use in an innovative rash care product
  - Increased product's horizontal wicking rates by 80%, improving product efficacy and performance

ACADEMIC EXPERIENCE

Human Factors Medical Device Design

Research Project Manager | Spring 2019-Present

- Lead a team of students using human factors to redesign surgical instruments
- Engage with corporate partners to identify issues in the medical device field
- Create and conduct presentations on goals, budget and project timelines

Senior Design

Team Member | Fall 2019-Present

- …
- …

ENGAGE Dominica: Medical Partnerships

Undergraduate Researcher | Spring 2019

- Work in a team of students to identify healthcare issues in Dominica in order to create sustainable solutions
- Collect and deliver low-cost medical supplies to Dominican clinic as well as create instructions for use

UNDERGRADUATE INVOLVEMENT

- Theta Tau Engineering Fraternity – Professional Development Chair, Fundraising Chair
- Undergraduate Clemson Bioengineering Society – Member
- United Way – Member

SKILLS

SolidWorks, Matlab, Microsoft Office, Technical Writing, Mechanical Testing, Design for Manufacturing