

CAROLINE ELIZABETH BALES

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SUMMARY

Recent M.S. graduate with 3 years of experience in biomaterials research, leadership, and education seeking a full-time position. Basic knowledge of device design, FDA regulations, ISO 13485, and compliance pathways. Skilled in Solidworks, MATLAB, and technical writing.

SKILLS

SolidWorks (Certified SolidWorks Associate No. C-ZAAF35SUGB), MATLAB, Microsoft Office, Six Sigma Yellow Belt Trained, Basic Laboratory Skills, Device Design, Statistics, Data Analysis, Literature Reviews, Technical Writing

EDUCATION

Master of Science in Bioengineering | Clemson University August 2019
GPA: 3.83/4.00

Bachelor of Science in Bioengineering | Clemson University May 2018
GPA: 3.76/4.00
*Calhoun Honors College | Departmental and General Honors
Graduated Cum Laude*

RELEVANT EXPERIENCE

Graduate Researcher | Clemson University Laboratory of Orthopaedic Design and Engineering
May 2018 – August 2019 | 10 hours/week

- Investigated the elution of vancomycin from titanium fracture fixation devices
- Collaborated with and led a diverse group of seven researchers from varied disciplines
- Mentored one undergraduate student
- Assisted in the execution of a 14-day *in vivo* study with seven rabbits
- Conducted Kirby-Bauer tests, histological analysis, surface profilometry, and SEM image analysis
- Performed literature searches and reviews to support my work
- Analyzed and evaluated data to draw conclusions
- Wrote and defended a thesis on my work

Applied Biomedical Design Team Member | Clemson University Department of Bioengineering
August 2017 – May 2018 | 10 hours/week

- Evaluated clinical needs through collaborations with physicians at Greenville Health System
- Worked with a team of four other bioengineering students
- Performed literature searches and analyses to investigate the clinical need and current solutions
- Designed, tested, and marketed novel positioning device for use in gynecological surgery
- Produced a complete Design History File along with DFMEA analysis and a mock 510(k) proposal
- Presented device to students, faculty, physicians, and industry professionals at design symposium

Bioengineering DeFINE Program Intern | Clemson University Department of Bioengineering
June 2016 – July 2016 | 37.5 hours/week

- Determined and evaluated clinical needs through collaborations with bioengineering students and physicians at Greenville Health System
- Shadowed in clinics and operating rooms in the OB-GYN and sports medicine departments
- Presented findings to students, faculty, and hospital professionals

Undergraduate Researcher | Clemson University Laboratory of Orthopaedic Design and Engineering
January 2016 – May 2018 | 10 hours/week

- Led my own project on the wettability of metallic implant surfaces
- Tested various samples using a profilometer, goniometer, and Instron
- Analyzed and evaluated data to draw relevant conclusions
- Performed literature searches and reviews to investigate prior relevant work
- Presented posters on my research at BMES 2017, BMES 2018, and SFB 2019
- Wrote and defended a thesis to earn departmental honors through the Calhoun Honors College
- Co-authored a paper published in the *Journal of Engineering in Medicine*

OTHER EXPERIENCE

ESL Teacher | Independent Contractor at VIPKid
September 2019 – present | 10 hours/week

- Teach one-on-one full-immersion English classes to students aged 6 to 12, focusing on vocabulary, grammar, phonics, reading, and writing
- Engage students in the online classroom and evaluate student progress through assessments
- Provide detailed written feedback to students after each lesson

Graduate Administrative Assistant | Clemson University Department of General Engineering
May 2018 – August 2019 | 20 hours/week

- Oversaw a group of 60 undergraduate teaching assistants (UTAs)
- Disseminated written information about policies and procedures to UTAs and faculty
- Streamlined departmental processes to more efficiently schedule UTAs and prepare for exams
- Assisted General Engineering professors with clerical tasks as needed

Math, Chemistry, and Engineering Tutor | Clemson University Athletic Academic Services
August 2016 – May 2019 | 8 hours/week

- Collaborated with a team of academic advisors and other tutors to create a supportive learning environment for a diverse group of student-athletes
- Guided discussions to improve a student-athlete's problem-solving skills
- Analyzed students' understanding of the material and adapted my teaching to their learning styles

Undergraduate Teaching Assistant | Clemson University Department of General Engineering
August 2016 – May 2018 | 10 hours/week

- Established and maintained relationships with 100+ students in freshman-level engineering classes
- Clarified lecture material for students in class and weekly open tutoring sessions

Waitress / Cashier | Aramark Chili's Too
October 2015 – May 2016 | 20 hours/week

- Recorded and tallied customers' orders and counted change
- Collaborated with a team of other waiters and cooks to ensure complete customer satisfaction

LEADERSHIP AND HONORS

Alpha Eta Mu Beta, National Society of Collegiate Scholars, Omicron Delta Kappa, Tau Beta Pi (*Vice President, 2017 – 2018, and Alumni Outreach Chair, 2018 – 2019*)

President's List (*4 semesters*) and Dean's List (*3 semesters*)

PUBLICATIONS

Stokes, M.D., Greene, B.C., Pietrykowski, L.W., Gambon, T.M., Bales, C.E., DesJardins, J.D. "The Use of Synthetic Ligaments in the Design of an Enhanced Stability Total Knee Joint Replacement." *Proc. Inst. Mech. Eng. Part H J. Eng. Med* (2018): 232(3), 282–288.

Two additional publications in progress.