

Michelle Jeanette Bleau

3 Thomas Place, Leominster, MA 01453

mjbleau@wpi.edu, (978) 860-6015

Objective:

Obtain a fulltime Biomedical Engineering position focused on research & development.

Education:

Worcester Polytechnic Institute (WPI), Worcester, MA

Bachelor of Science in Biomedical Engineering, ABET-Accredited, December 2018

Related Courses:

- Cellular Engineering Lab, Cell & Molecular Bioengineering, Physiology and Engineering, Human Anatomy & Physiology: Transportation & Maintenance
- Drug Delivery, Biomedical Engineering Design, Physics – Electricity & Magnetism, Biomedical Signals, Instrumentation, & Measurements, Biomedical Data Analysis & Programming
- Biomechanics & Biotransport, Biomechanics Lab, Biomaterials & Tissue Engineering, Biomaterials Lab

Quinsigamond Community College (QCC), Worcester, MA

Associate of Science in Biomedical Engineering, May 2015

Associate of Art in Pre-Pharmacy, May 2015

Related Courses:

- Molecular Biology, Cell Biology, Chemistry I & II for Engineers, Organic Chemistry I & II
- Materials Science for Engineers, Strength of Materials, Stress Analysis of Materials, Static Systems, Thermodynamics, Physics I – III
- Probability & Statistics for Engineers, Calculus I – IV, Differential Equations, Linear Algebra
- Speech Communication Skills, Critical Thinking & Problem Solving

Skills:

Lab Techniques & Skills:

- Mammalian and non-mammalian cell culture, histology, aseptic technique, cell & tissue staining, ethical live animal surgical procedures (anesthetizing, proper handling & care, monitoring homeostasis), compound light microscopy & imaging, standard lab safety maintenance & protocols
- Biotechnology – (PCR, qPCR, gel electrophoresis)
- Microbiology – (bacterial cultures, experimentation, analysis & identification)
- Research, theory development, hypothesis testing, analytical data analysis and presentation
- International Organization for Standardization (ISO) process controls familiarity
- Organized & accurate lab protocol, industry lab notebook, IEEE format & technical writing
- Mathematical aptitude, exceptional with fine measurement instrumentation

Applications & Software:

- ImageJ, LabVIEW, MatLab, SciLab, Arduino, Raspberry Pi, Python
- Aptitude in MS Office (Word, PowerPoint, Excel – creating & analyzing charts, graphs, data, etc., Outlook, Publisher, OneNote, etc.)
- Google Drive & other Google apps, Dropbox, Adobe (Photoshop, Lightroom, Acrobat - Full)
- Windows, iOS, Linux (Ubuntu)
- AutoCAD & SolidWorks familiarity

Related Projects:

Tissue Engineered Vascular Cell Ring Fabrication: Human Aortic Smooth Muscle Cells, WPI - Rolle

Laboratory – Gateway Building, August – December 2016

- Utilized a scaffold-free system in which 3D cell cultures were achieved
- Goal: optimization of ring seeding and culture conditions for two specific cell lots to obtain uniform, cohesive TEVCRs developed for disease modeling systems for pathogenesis research, drug testing, novel therapeutic discovery, and precision medicine
- Resulted in self-assembled, cohesive tissue engineered vascular cell rings (TEVCRs) displaying semi-contiguous cell distribution
- Final product testing – Histological & immunoassay staining, mechanical tests via Instron, compound light microscopy & imaging, and data analysis

- Bloodborne pathogen trained, autoclave trained, laboratory safety trained – included hazardous and biohazardous waste training
- ISO Compliance, FDA Regulation & Environmental Health and Safety Compliance Experienced
- Excellent technical writing ability: research proposals, protocols, reports, & presentations

Major Qualifying Project, 3D Electrospun Meniscus Scaffold, WPI, August 2016 – May 2017

- ISO Compliance and FDA Regulation Experienced
- 3-Dimensional Electrospun Meniscus Scaffold Report (IEEE Format, Published through WPI)
- Four-person team consisted of WPI Seniors with various engineering focuses
- Designed methods & protocols and an apparatus to demonstrate the feasibility of producing 3D electrospun bioscaffolds with highly controlled fiber alignment
- Results showed fibers can be easily collected as radial sheets
- Data was inconclusive (due to time limitations) to whether circumferential bundles can be produced by the proposed methods reported.
- Troubleshooting was necessary to develop a proof-of-concept
- Leader (Rotating) & participant of weekly Executive Board Meetings with progress presentations
- Interviews with electrospinning, biomaterials, and cell & tissue experts, leaders & engineers

Interactive Qualifying Project: The CASA Project: An Assessment of Training Program Options, WPI – Worcester Community Project Center, October 2017 – April 2018

- The CASA (Court Appointed Special Advocate) Project, Inc. (team sponsor) is a non-profit organization who recruits volunteers to serve as unbiased promoters for children navigating the Juvenile Court system of Worcester County, MA
- Four-person student team goal: Assess current 40-hour training program; recommend e-Learning platforms based on needs, benefits, and limitations of the organization
- Goal was met through observing training sessions, surveying current trainees, conducting interviews with key stakeholders and field experts and engineers, & creating a similar solution comparative matrix that evaluated over 20 E-Learning platform options
- Institutional Review Board (IRB) Process Experienced
- NIH Web-based “Protecting Human Research Participants” training certified
- Leader (rotating, most frequent) & participant of Sponsor Company Executive Board Meetings, Advisory Board Meetings, and Interviews
- Team & project leader, motivator, and quality inspector of all deliverables the team produced; organized & scheduled all interviews, surveys, and meetings
- Deliverables: weekly presentations, final presentation to the sponsor and advisory boards, & final report presenting our research, methodology, findings, critical data analysis, and recommendation

Humanities Capstone Requirement, WPI – Little Theatre, January– March 2018

- Graphic Designer for New Voices 35 (Theatrical productions put on by students of WPI)
- Member of the Design Team (collaborative design, implementation, and troubleshooting)

Biomedical Engineering Design, WPI, August – October 2012

- Collaborated on a four-person team - redesigned current facemask air filtration device to optimize functionality, comfort & aesthetics while FDA compliance and ISO compatibility was met.
- Researched models & specifications, materials, manufacturing, & clientele demands and needs
- SolidWorks – created scaled models of conceptual designs to develop a product prototype
- Delivered presentation and final report with findings and data analysis

Dye Sensitized Solar Cells, QCC – Chemistry Lab, January 2014 – April 2015

- Student volunteer - researched & developed a novel, high functioning solar cell
- Developed conceptual design, and executed research proposal
- Worked independently 75% of the time, and with one other engineering student occasionally

Additional Experience:

QCC - Disability Services Office - Administrative Assistant - Work Study, September 2013 – August 2015

Responsibilities: Clerical tasks, MS Office (Excel, Word, PowerPoint, Publisher), efficiently kept accurate logs via data entry, developed and analyzed surveys

Skills Utilized: Time management, organization, team building, leadership, research, communication, presentations, design & American Sign Language

QCC - Massachusetts Education Career Opportunities, Inc., (Formerly - The Colleges of Worcester Consortium) - Administrative Assistant - Work Study, March - September 2013

Responsibilities: Presented clientele with excellent customer service, maintained knowledge on services offered, provided secretarial and administrative support

Skills Utilized: Excellent interpersonal skills, exceptional design and organization, MS Office.

Kmart - Fitchburg, MA - Customer Service Supervisor, August 2011 – March 2013

Responsibilities: Motivated, oversaw, and evaluated between 15-45 associates to achieve daily, weekly and monthly corporate quotas. Investigated customer complications and rapidly developed solutions. Assisted general management by training new front-end team members, opening and closing multiple departments, managed front-end cash supply by accurately by frequently maintaining logs, & quality analysis of merchandise placement.

Skills Utilized: Exemplary customer service (“Customer Service Star of the Month” with bonuses), critical thinking & innovative problem solving, organization, attention to detail, excellent communication, multi-tasking, & reliability.

Activities & Honors:

Engineering Student Distinction Award (Biomedical Engineering), QCC, May 2015

Double Honors Graduate – Biomedical Engineering (AS) & Pre-Pharmacy (AA), QCC 2015

Psi Beta National Honor Society Lifetime Member (2012 – Present)

Biomedical Engineering Society Member (BMES; 2014 - Present)

Biomedical Careers and Science Program by Harvard University Attendee (April 2012; 2013; 2016)