

## Matthew Belden

Northfield, MA 01360 | (413)-545-9996 | mbelden@umass.edu

### Objective:

My objective is to utilize my skills and problem solving capabilities to impact the world in a positive, meaningful way and experience it while doing so.

### Core Competencies:

Simulation/Model Building | Empirical Modeling | Experimental Design | Data Collection  
Mechanical Design | Drafting/CAD | Controls Systems | Structural Analysis  
Rapid Prototyping | Manufacturing | Problem Solving | Public Speaking/Presentations  
Thermodynamics | Fluid Dynamics | Heat Transfer | Dynamics | Differential Equations  
Technical Writing | FEA Analysis | Class III/IV River Navigation | Swiftwater Rescue

### Work Experience:

February 2023 to Present - Research Lab/Operations Manager, *Biomedical Engineering Department, UMass Amherst*

- In this role my responsibility is to support faculty research projects in many different capacities. This includes data collection, statistical analysis, coding and numerical modeling, designing experimental apparatus, developing SOPs, machining and prototyping, being an expert on and maintaining all department equipment. I also am the safety officer in our labs, manage all department research lab spaces and am frequently consulted by our administrative officer/department head on departmental issues that arise.

May 2021 to February 2023 - Mechanical Engineer, *Flooid Power Systems*

- In this role my responsibilities included the technical aspects of all company projects. Primarily my tasks included collecting data, utilizing that data to create/confirm a working model/simulation of a given system and using that model to either inform company decisions on how to proceed or improve an existing design of our products.

June 2020 to Present - Raft Guide (Trip Leader), *Zoar Outdoor*

- In this role my responsibilities are to provide a safe, enjoyable trip for more than 60 guests at a time on class III/IV sections of whitewater. In a position like this it is necessary to predict and avoid hazards wherever possible, remain calm in stressful situations and be able to create an actionable plan and execute it in an emergency situation, especially given the lack of cellular reception in the backcountry environment.

December 2023 to Present - Ski Instructor, *Berkshire East Mountain Resort*

- In this role my responsibilities are to advance the skill level of my clients in the sport of downhill skiing. I often work with children between four and six years of age, which means that a mastery of communication, compassion and group management is necessary in addition to mastery of the sport itself. I've had much success bringing my clientele from a novice skill level, to proficiency in relatively short amounts of time.

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November 2018 to May 2021 - Technical Consultant/Drafter, *Flooid Power Systems*

- In this role my responsibilities included creating CAD models and mechanical drawings of parts that would be sent to various shops for fabrication. To do this I utilized my understanding of engineering concepts and standards to ensure that the models and drawings were simple, easy to build designs that would perform as intended.

December 2019 to April 2021 - Camera Person and Broadcaster, *Ludlow Community Television*

- In this role my responsibilities included recording and broadcasting of live events for a local community television station. It was my responsibility to control multiple cameras at once, switching between them and adding graphics to the broadcast as necessary to achieve the highest quality television possible.

December 2020 to March 2021 - Ski Race Coach, *Berkshire East Ski Resort*

- In this role my responsibilities included organizing and executing drills during practices that would last upwards of six hours every weekend day for several months with the exception of race days when I was responsible for organizing race orders. In both situations I was responsible for the safety and wellbeing of upwards of 20 twelve year old children while simultaneously encouraging their growth into the sport of alpine ski racing.

July 2016 to December 2019 - Produce Worker, *Randall's Farm and Greenhouse*

- In this role I was responsible for moving sensitive and fragile produce from the stock room onto the retail floor. I was also responsible for customer solutions when they needed assistance on the retail floor. In this position I often filled in for other departments as necessary, often cleaning or helping them with their tasks.

### Education:

September 2024 to Present - MS/PhD in Geosciences, *UMass Amherst* - Ongoing

- With a focus in geohydrology, I am undergoing a rigorous curriculum, learning new skills, and am applying those newfound skills in the real world by contributing to research in glacierized watersheds in the Gulf of Alaska.

September 2017 to May 2021 - B.S. in Mechanical Engineering, *UMass Amherst*

- Graduating with a 3.544 GPA, I excelled in the accredited curriculum that UMass offered, meeting the requirements for the Dean's list nearly every semester and winning the engineering department's design competition my senior year by designing and building a recycling sorting machine.

September 2014 to May 2017 - High School Diploma, *Ludlow High School*

- Graduating with a 4.2 GPA, I used my high school experience to gain valuable skills and knowledge that helped prepare me for my college education in mechanical engineering.

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### **Software:**

Ansys | Matlab | Python | SolidWorks | EES (engineering equation solver) | MathCAD | LabView  
MS Office Suite and MS Project | Creo Parametric | SpaceClaim | Final Cut Pro | JMP Pro

### **Other Leadership Positions and Certifications:**

- WFR, & CPR Certified, *Wilderness Medicine*
- Swiftwater Rescue Training, *Mike Mathers Course, Zoar Outdoor*
- Technology Chair and Backcountry Trip Leader, *UMass Outing Club*
- Alpine Ski Racer, *UMass Alpine Ski Team*