

## Aaron A. Jutila

### Summary of Qualifications

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| <ul style="list-style-type: none"> <li>▪ 2D and 3D SolidWorks, Freeform, AutoCAD, CATIA, Matlab, Maple, LabView, HyperTerminal, SurgiCase, Mimics, Magics, Mac and Windows operating systems, and Microsoft Office.</li> </ul> | <ul style="list-style-type: none"> <li>▪ GD&amp;T, CNC and Manual Machining, Light Welding, Rapid Prototyping, FDM and SLA 3D Printing, and Sheet Metal Fabrication.</li> <li>▪ Computational Fluid Dynamics, Heat Transfer, Fluid Mechanics, Sterile Technique, Tissue Culture, Flow Cytometry Analysis, Metabolomics and Statistical Analysis.</li> </ul> |
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### Experience

2017 to Present	SAFE Inc.	Monument, CO
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#### Junior Engineer

- Structural Analysis including loads and stress for military and commercial aircraft.
- Structural Substantiations in support of FAA repair certification for Clod-Spray parts.
- Damage Tolerance Analysis in support of FAA repair certifications.
- Design of test fixtures to maintain compliance with ASTM standards.
- Lead Engineer in charge of review, release and configuration management of all drawings.

2015 to 2017	3D Systems	Littleton, CO
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#### Healthcare Biomedical Engineer

- Focused on reconstructive surgery to the head and neck region of the human body.
- Use 3D CAD programs to simulate and plan out various types of craniomaxillofacial reconstructive surgeries.
- As part of the Virtual Surgical Planning - Reconstruction Team, responsibilities included:
  - Case preparation and case planning, part design overview, quality control, final inspection of delivered parts and final case signoff. Heavy exposure to Class I and II medical devices.

2013 to 2015	Aero-Flite Aerospace Group	Boulder, CO
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#### Aircraft Structures Engineer

- Worked with Structural FAA Designated Engineering Representative (DER).
- Tasked to develop repairs that maintain the strength/integrity of aircraft structures by analyzing and interpreting various types of engineering data.
- Evaluated and wrote Engineering Orders that provided step-by-step instructions on how to execute Major Repairs and Major Alterations on a variety of different aircraft and ensure compliance to FAA regulation.
- Aided in FAA certification projects, which include Supplemental Type Certificate and design changes.
- Work took place predominately on Part 23 aircraft with some exposure to Part 25 airframe.
  - Work included: Stress analysis and damage tolerance analysis, prototype design, and sheet metal design. In many cases forced to use creative problem solving skills within the confines of standard engineering practices.

2011 to 2013	Montana State University	Bozeman, MT
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#### Graduate Research Assistant

- Research took place in Cellular Mechanotransduction and Osteoarthritis Laboratory, with topics focused on cartilage mechanics, mechanotransduction, and viscoelastic materials.
- Designed and built a PID controlled Bio Reactor (dynamic press) to apply well-defined (within 0.3 microns) mechanical loads to soft tissue samples in a sterile environment.
- Work has led to a greater understanding of physiological stiff hydrogel mechanics.

2011 to 2012	Montana State University	Bozeman, MT
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#### Graduate Teaching Assistant

- Machine Shop Supervisor.
  - Responsibilities included: machine maintenance, student safety and shop cleanup.

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<ul style="list-style-type: none"> <li>Aided senior capstone students in workpiece setup and CNC programing/ machining.</li> </ul>		
2011	Belcan Engineering Group	
<b>Internship</b>		
<ul style="list-style-type: none"> <li>Responsibilities included: converting and updating mechanical drawings from Unigraphics (NX) format to a standard CATIA format.</li> </ul>		
2006 to 2011	Main Street Gym	Bozeman, MT
<b>Boxing Coach</b>		
<ul style="list-style-type: none"> <li>Responsible for training men and women of all ages in the art of USA Amateur boxing including the physical and mental preparation of each boxer.</li> <li>Two years assistant to the owner, with two additional years as head trainer running the boxing club.</li> </ul>		
2007 to 2008	Advanced Electronic Designs	Bozeman, MT
<b>Engineering Intern</b>		
<ul style="list-style-type: none"> <li>Worked with a team of electrical design engineers.</li> <li>Responsible for lab maintenance, product fabrication, and inventory.</li> <li>Set up and operated the firm's 3-axis CNC mill.</li> </ul>		
<b>Education</b>		
2013	Montana State University	Bozeman, MT
<b>MS – Mechanical Engineering</b>		
2011	Montana State University	Bozeman, MT
<b>BS – Mechanical Engineering Technology</b>		
<b>Professional Affiliations</b>		
<p>EIT (Engineer in Training)  2003-2011 Bridger Clinic Peer Educators  USA Boxing Coach Certificate, 2007  Provisional Patent filed with United States Patent and Trademark Office</p>		
<b>Publications</b>		
<p>Jutila, A. A., Zignego, D. L., Schell, W. J., June, R. K., 2014, Encapsulation of Chondrocytes in High-Stiffness Agarose Microenvironments for In Vitro Modeling of Osteoarthritis Mechanotransduction, Ann Biomed Eng.</p> <p>Jutila, A. A., Zignego, D. L., Hwang, B. K., Hilmer, J. K., Hamerly, T., Minor, C. A., Walk, S. T., and June, R. K., 2014, Candidate mediators of chondrocyte mechanotransduction via targeted and untargeted metabolomic measurements: Arch Biochem Biophys, v. 545, p. 116-23.</p> <p>Zignego, D. L., Jutila, A. A., Gelbke, M. K., Gannon, D. M., and June, R. K., 2014, The mechanical microenvironment of high concentration agarose for applying deformation to primary chondrocytes: J Biomech, v. 47, p. 2143-8.</p>		