Joe SHIELDS

PERSONAL DATA

PLACE AND DATE OF BIRTH:	United States — 1990 April 15
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EDUCATION

- Portland State University **Sep. 2013 – Jun. 2016**

  B.S. Mechanical Engineering, Maseeh College of Engineering and Computer Science

  B.S. Physics, College of Liberal Arts and Sciences

  3.65 GPA

- Portland Community College **Sep. 2008 – Jun. 2010, Sep. 2011 – Sep. 2013**

  General education and prerequisites for PSU and MCECS

  3.0 GPA

COMPUTER SKILLS

- R, MATLAB, C++, Bash, Vim, Git, SolidWorks, Abaqus, AutoCAD, GIMP, Inkscape, Finale
- LaTeX, Microsoft Office, Libre Office, Google Docs, etc.
- Ubuntu, Windows

PUBLICATIONS

[1] J. P. Shields and L. Elwood. "Design and Manufacture of an Open-Hardware University Rocket Airframe using Carbon Fiber". In: *AIAA SPACE 2016*. 2016, p. 5365.

PROJECTS AND AWARDS

- Director of Airframe Design and Manufacture **Dec. 2015 – present**

  Working with the Portland State Aerospace Society, I designed and manufactured an open-hardware carbon fiber airframe for the group's 3rd generation sounding rocket. To this end, I also managed all the airframe sub-projects being developed by our student and professional members. I presented a poster on this topic at AIAA SPACE 2016, with the corresponding paper available in the proceedings.

- PCC Art Beat competition **May 2012**

  I composed an original piece for the PCC chamber ensemble, a group of roughly 30 musicians. I conducted the ensemble in the practices and final performance of this piece. The piece also earned 1st place in PCC's Art Beat composition competition.

SKILLS AND INTERESTS

- Classical field theory
- Mathematical physics
- Statistics and reliability
- Thermal and fluid analysis
- Interdisciplinary research and engineering
- Music theory
- Leading small groups
- Composites manufacturing methods

Relevant Courses

Below is a list of courses I've taken which I consider important or relevant to my study of physics. Please note that Advanced E&M is only offered as pass/no-pass.

Course Title	Grade	Credit Hours
Classical Mechanics I	A	4
Classical Mechanics II	ongoing	4
Electricity & Magnetism I	A	4
Electricity & Magnetism II	A	4
Advanced Electricity & Magnetism	pass	1
Intro to Quantum Mechanics	A	4
Mathematical Methods for Physics	A	4
Vibrations and System Dynamics	A	4
Fluid Mechanics	A	4
Advanced Fluid Mechanics	A	4
Viscoelasticity	A	4
Heat Transfer	A	4
Advanced Heat Transfer	A	4
Finite Element Modelling	A	4
Reliability Engineering	A	4
Applied Statistics	A	4
Technical Report Writing	A-	4
Programming and Numerical Methods	B+	2
Computer Science I	A	4
Scientific Glassblowing	B+	1
Experimental Physics	A	4
Design of Experiments	A	4