

ANDY COLBORN

PROFESSIONAL EXPERIENCE

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KATERRA – R&D Design Engineer
Sacramento, CA July 2019 – June 2021

Led the design of multiple targeted time saving manufactured assemblies and modular MEP products calculated at labor savings of \$4.3mil/year

- Managed multiple products through concept, costing, requirements, FMEAs, design, prototyping, factory and field pilots, and new product integration
- Listed as an inventor on patent filings for several different products including a novel snap together MEP system and several modular electrical assemblies
- Conceived and designed a PLC controlled cable harnessing machine to automate a 45-minute assembly process to <5min to remove a significant bottleneck and greatly reduce cycle time
- Designed for the constraints of a variety of materials and processes (plastic extrusions, injection molds, sheet metal, cold formed steel, CNC machining, etc.) and employed various rapid prototyping tools
- Worked with a wildly varied, cross-functional team, interfacing with architecture, building sciences, industrial design, manufacturing, software automation, BIM content, sourcing, quality, field trade experts, logistics and building product engineering (structural, mechanical, electrical, plumbing, fire/low voltage)
- Created a drawing standard used across multiple teams as a model to create manufacturable shop drawings from architectural models

SKILLS

Design for Manufacture

Embedded Systems

Rapid Prototyping

Lean Manufacturing

Modular Design

SolidWorks

★★★★★

Inventor

★★★★★

Fusion 360

★★★★★

Revit

★★★★★

Clearwater Lights – Mechanical Design
Rancho Cordova, CA August 2013 – June 2019

Designed and manufactured ferociously bright LED lights for motorcycles, racetracks, and helicopters

- Guided several products through their entire lifecycle including a speed-sensitive brake light and the brightest motorcycle light in the world
- Drove improvements in testing and quality control including the introduction of vibration, ultraviolet and IP67 water testing
- Worked to develop new products by designing and improving PCBs, aluminum casts, CNC machined parts, injection molds, sheet metal brackets, harnesses, and watertight enclosures
- Employed rapid prototyping techniques including 3D scanning, laser cutting and SLA 3D printing to design products and create fixtures/jigs to ease friction in the manufacturing process
- Examined and repaired defective items to determine the root cause of failure; pushed design and material improvements which reduced failures from vibration and moisture by >90%
- Worked hands-on in the manufacturing process to ensure quality and find ways to eliminate

EDUCATION

George Washington University
Mechanical Engineering
Aerospace Option
Washington, DC
2007 -2010

Theta Tau Professional
Engineering Fraternity
Regent (President)

Engineer-In-Training
California Board for Professional
Engineers, Land Surveyors, and
Geologists

PE Mechanical - Passed
Machine Design and Materials

ACTIVITIES

Rocket Dept. – Co-founder
Sacramento, CA April 2013 – April 2020

After unintentionally winning a hackathon with an app-controlled cereal dispensing machine, some friends and I were awarded a lawyer and incorporated a company. Together we built a variety of custom installations, worked with Uber, PBS and the Sacramento Kings and spun out our own line of educational soldering/electronics kits - learntosolderkits.com which are nearing \$100K in sales per year