

JESSICA H. LINDSEY

21341 S. FERGUSON RD., BEAVERCREEK, OR 97004
JESSICA.H.LINDSEY@GMAIL.COM (503) 632-5568

EDUCATION	B.S. Mechanical Engineering	June 2015
	<i>Portland State University, Portland, OR</i> GPA: 3.74	
	A.A. Oregon Transfer and General Studies	June 2012
	<i>Clackamas Community College, Oregon City, OR</i> GPA: 3.80	
ENGINEERING PROJECTS (See attached descriptions)	Cascade Steel Flat Bar Stacking Machine	Summer 2015
	CAPSTONE: Carbon Fiber Bike Frame Process	2014-2015
	LabVIEW Controlled Light and Fan Temperature Box	Spring 2015
	Belt-and-Pulley Speed Jack	Fall 2014
	Horse-powered PTO Shaft	Summer 2014
	Helicopter Design Optimization	Fall 2014
SOFTWARE EXPERIENCE	Abaqus (Finite Element Analysis) – Extensive experience modeling and analyzing.	
	Solidworks – Extensive experience modeling parts, assemblies, and drawings.	
	AutoCAD – Moderate experience with 3D and 2D models, drawings.	
	R – Extensive experience. Collect and import data, regression, experiment optimization.	
	MATLAB – Extensive experience with script and function programming.	
	LabVIEW – Extensive experience with programming and system control.	
	Arduino – Some experience with programming and system control.	
	QGIS – Some experience with analysis of satellite data (LANDSAT 8).	
VOCATIONAL EXPERIENCE	Word, Excel, Powerpoint – Extensive experience with each.	
	Business Systems Analyst, Daimler Trucks	2015-2016
	Industrial Engineering Internship, Cascade Steel	2015
	Job Shadow, Allied Systems, Mechanical Engineer Joel Dillie	2015
	Job Shadow, City of Portland, Structural Engineer Lisa Buellesbach	2014
	Academic Note Taker, Portland State University, Disability Resource Center	2014
	Math Lab Tutor, Clackamas Community College, Algebra, calculus, statistics	2011-2012
	Farm Employee (Summer), Ruby & Amber's Organic Oasis	2013, 2014
	Rebuilt farm implements, taught workshops, managed sales, cared for crops and livestock.	
	Freelance Author, Small Farmer's Journal	2014
	Farm Intern (Summer), Sweetwell Farm	2012
	Volunteer Demonstrator and Teacher, Phillip Foster (Living History) Farm	2011
ACADEMIC ACTIVITIES	Tau Beta Pi (Mechanical Engineering Honor Society), <i>Portland State Univ.</i>	Joined 2015
	Phi Kappa Phi (All Major Honor Society), <i>Portland State University</i>	Joined 2015
	Golden Key Honor Society, Portland State University	Joined 2013
	American Society of Mechanical Engineering, PSU Chapter	Joined 2013
	CSO Club, PSU, Secretary, implemented public lecture, information booth.	2012-2014
	Phi Theta Kappa (International Honor Society of the Two Year College)	Joined 2008

ACADEMIC AWARDS	PSU Mechanical Engineering (Reiersgaard), \$2000 annually	2012-2015
	Clackamas County Soil and Water Conservation District , \$2000 annually	2013-2015
	Beavercreek Telephone Cooperative , \$1500	2014-2015
	Clackamas County Farm Bureau , \$1000	2014-2015
	4-H , \$500	2010
OTHER ACTIVITIES AND AWARDS	Girl Scouts , Gold, Silver, Bronze Awards	Finished 2011
	Oregon City High School Equestrian Team , Varsity, District Gold, State	2006-2010
	4-H Club , Historian 2003-05, Vice President 2008-09	2003-2012
	<i>Awards</i> –State Speech 6 th , 2010; County Speech Champion, 2010 and 4 th , 2009; Champion Driving, 2011; County Achievement Award, 2005, '06, '08, '10; Triple Crown Award, 2009	
	Oregon First Lego League (Intel) Team	2002-2004
	State 2 nd , Innovative Solns, 2004; Regional Director 1 st , 2003; Reg. 1 st Programming, 2002	
	Church , Sunday School musician, Leadership conferences (2008, 2009)	2008-2012
	Willamette Living History Lantern Light Tour (play)	2008-2014
	Violinist , ensembles	2006-2008

ENGINEERING PROJECTS

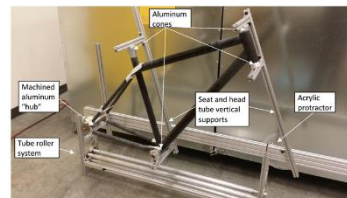
Cascade Steel Flat Bar Stacking Machine – To solve break-downs and inefficient operation, I created an engineering solutions report for the new stacking machine that stacks up to 20' flat bars. I developed solutions through talking to crew, foremen, maintenance, the design engineers, etc. as well as watching its operation involving the conveyor chains and tables, hydraulics, gears, levers and electronic control systems, and studying the SolidWorks design of the machine. My solutions included SolidWorks and diagrams. Summer 2015.



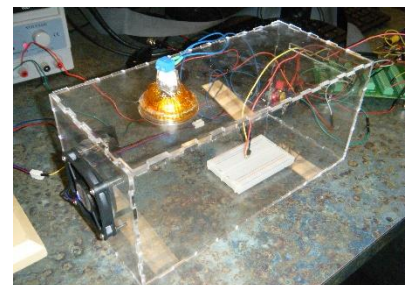
Cascade Steel Foreman Training Manual -- I created a new foreman training manual 100 pages long. It was tailored specifically for new hires who had managerial experience but did not have steel mill experience. The manual covered processes in the transportation department including truck and rail car loading procedures and operation of the cranes, thermal treatment oven (TTO) and stacking machine; it detailed instructions for use of software programs such as incident reports, truck and rail car bill of sales, and inventory management; it covered crew management including shift start huddle meetings; and it also covered truck and rail car types and uses, maps, common definitions, safety documentation, and bundle scanner gun use instructions. This information I learned through talking and interviewing managers/foremen and crew members. Summer 2015.

Cascade Steel Safe Job Procedures (SJPs) -- After observing equipment operation and interviewing relevant parties, I made safe job procedures for a 3-story tall crane, a 10-ton forklift, overseas container trucks and flatbed trucks and dozens of other product and shipment transportation equipment. These procedures were submitted to the work flow to be approved by various departments and then the relevant crew members were trained on them to ensure everyone is safe and to prevent company liability. Summer 2015.

CAPSTONE: Carbon Fiber Bike Frame Process – My five ME teammates and I designed, manufactured, and tested a jig, mold, vacuum, and oven process to manufacture carbon fiber bike frames in a range of sizes and styles. As the team secretary I wrote the weekly meeting minutes including making the ideas coherent, and I kept the team up-to-date and helped to keep it on track. The tools we designed could be sold to a start-up bike company. Fall to Spring 2014-2015.



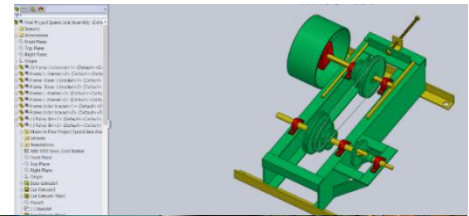
LabVIEW Controlled Light and Fan Temperature Box – My partner and I developed and implemented a feedback control project using LabVIEW and a DAQ data acquisition system to control the temperature within a box. The user entered a desired temperature and our program used PID (proportional, integral, derivative) controllers to calculate the error between the actual temperature measured with a thermistor and the desired temperature and adjust the voltage to either the DC fan or halogen light bulb. Spring 2015.



Arduino Controlled Pendulum – I programmed an Arduino to control a car on a track using position sensors to swing a pendulum upright and keep it balanced while staying within the bounds of the track. Spring 2015.

ASME Human Powered Vehicle – I worked with the ASME team on Portland State University's HPV bicycle including fiberglass work. Winter Term 2013-2014.

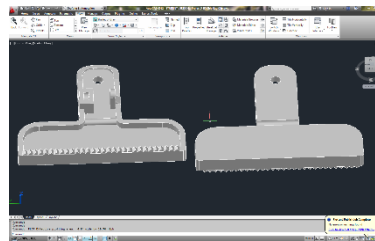
Belt-and-Pulley Speed Jack –Using *SolidWorks* I designed and drafted a speed jack to solve a real-world power and speed capability problem between a PTO shaft and various equipment. The speed jack includes a clutch and belt tensioner. Fall 2014.



Horse-powered PTO Shaft – Walt Bernard and I rebuilt, with some designing, a horse-powered PTO shaft. We fitted in tongues and tie rods, balanced the ring gear, and designed the attachment of the equalizer cables. Re-building involved me welding, planning, grinding, drilling, sawing, etc. After being re-built we used the horse-power to thresh grain. Summer 2014.



3-D Printed Chip Bag Clip – Using *AutoCad* I designed this bag clip inspired by an existing one. I reinforced the rocking pin and other spots which broke in the original design. My professor printed it out using his 3D printer. My design has lasted through three years of service so far. Spring 2012.

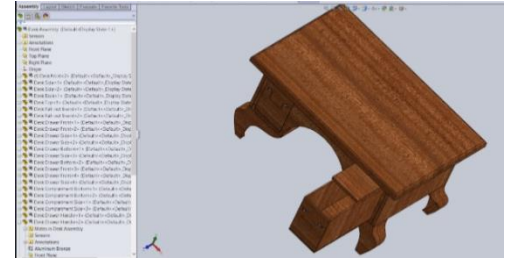


Helicopter Design Optimization – Using models, helicopter design factors such as weight, blade length, blade tip angle, etc. were tested to determine their interactive effect on the accuracy of the helicopter flight. This background research allowed factors to be aliased so the experiment could be optimized and the number of test flights minimized to determine the factors' effect on flight accuracy while keeping the cost of the experiment low. My group was 3rd out of 17 in Design of Experiments class. Fall 2014.

Hydraulic Bolt Puller – A bolt puller was designed, documented, and drafted to meet specified requirements (including load, weight, cost, and size requirements). The bolt puller used principles of hydraulics in order to reach the large force requirements. My group completed this project for my mechanical design class. Fall 2014.

Water Propelled Car – In a design competition a device was made to propel a car using the energy of one liter of water at one meter of height. The device had size restrictions and the car had weight restrictions besides other rules. My group made a container with a flotation ball into which the water was poured. As the flotation ball rose, the string with pulleys pulled the car up a ramp. At a certain height, the string was released from the car. I took a special leadership role in designing and creating our project as well as resolving group conflict. Fall 2014.

Desk – I designed and drafted this desk using SolidWorks. Due to the manufacturability of my multi-part design, my professor gave me full and extra credit. Fall 2014.



Bowie Knife – I drafted this Bowie Knife using SolidWorks based on pictures. Fall 2014.



Exercise-Bicycle-Powered Generator – My bicycle generator supplies electric power to appliances through a cigarette lighter plug. Les McConnell helped me design the friction contact between the generator and the wheel. In class, I demonstrated running a car vacuum cleaner and a large search light. Spring 2012.



Wooden Carvings for Presents – I used shop tools – band saw, grinder, drill press – to create a kitchen vegetable chopper (2012) and horse carving (2015).



Plow Refurbishment – This plow I fully restored with help from my dad including putting in new wood and oiling the metal. Using **Photoshop** I designed a stencil that shaped the words so that I could paint them onto the plow beam. Approximately 2011.

