Oregon Applied Sustainability Experience (OASE) Intern Position 2018

Boeing; Portland, OR

How this project supports the industry mission and goals: The student will assist in the development of a pilot program to divert waste materials to an energy waste stream across several product assemblies. She/he will develop standard work documents that will allow the diversion process to be shared with other assembly areas. The intern will be exposed to Boeing's production system and ISO14001 Environmental Management System and will get to work with an experienced environmental staff. The student will be presented with an eight step problem solving process, and will also receive shop level Hazardous Waste training and specific training applicable to the waste diversion process, as well as OSHA HazCom training.

Project Goals: Reduction of hazardous waste generated and sent to the landfill for macro-encapsulation, and a documented process that can be replicated throughout the other on-site assembly areas.

Potential Projects:

A) Assist with pilot implementation strategy to reduce hazardous waste debris (assembly debris) by diverting non-hazardous components from the blended hazardous waste stream to a non-hazardous waste to energy program. Working with assemblers, the intern would identify and document waste segregation opportunities, and develop work standards to be implemented across the site. This strategy could reduce the site's waste production by 15,000 pounds per year when fully implemented

B) Search and evaluate recycling or alternative use for 182,000 pounds of special waste currently landfilled. The intern would identify local or regional suppliers that could divert Portland's special waste from the landfill to an alternate use. It is possible that some of these suppliers could also divert similar waste from Boeing's other Fabrication plants at Auburn and Fredrickson, Washington.

Degree / Skills Identified by Host:

Physical Science, Engineering, Environmental Science/Sustainability

The student should have good interpersonal skills and be able to communicate effectively verbally and in writing, along with being task-oriented and self-directed. Knowledge of ISO14001 Environmental Management System, sustainability and waste management principles is a must.

Additional Considerations:

Ideally the candidate would be a US citizen. Boeing Portland is subject to International Traffic in Arms Regulations (ITAR) rules. Non-US citizens require extensive additional review and approval requirements.

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Craft Brew Alliance; Portland, OR

How this project supports the industry mission and goals: Our world-class craft initiative sustainability goals are to reduce carbon intensity by 10%, reach zero waste with a focus on waste prevention, and increase community involvement.

Project Goals: Internship projects will seek reduction of our utilities' Key Performance Indicators (KPIs) per barrel (BBL) of beer produced. Specific KPIs include: Recycling Diversion Rate, water usage per barrel of beer, wastewater discharge per barrel of beer, and greenhouse gas emissions (CO2e per barrel of beer produced).

Potential Projects:

A) Zero Waste certification under GPCI True certification, while identifying and vetting opportunities to prevent and reuse waste, including mylar hop bags, the brewery's remaining large source of landfill materials.

B) Life Cycle Analysis study – bring up to date our existing LCA tool to model different scenarios, including the LCA of a beer at our east coast brewery and new Kona Brewery in Hawaii. Identify and vet opportunities to reduce CO2 emissions within the supply chain.

C) Wastewater – study, research, and implement practices to reduce wastewater volume and extra strength (BOD and TSS).

Degree / Skills Identified by Host:

Engineering, Environmental Science/Sustainability

We seek a self-directed and independent worker with strong investigation skills and a keen interest in sustainability. Must have an understanding of life cycle analysis, interest in continuous improvement/LEAN concepts, and a math and science background.

Oregon Applied Sustainability Experience (OASE) Intern Position 2018

Columbia Sportswear Company; Portland, OR

How this project supports the industry mission and goals: For the proposed projects, the ultimate goal for Columbia is to reduce our carbon footprint impact while making our facilities more energy efficient and saving money in the daily operations of our facilities. Electric and gas use reduction targets will be determined after the facilities audit, but we aspire for a high impact in our facilities.

Project Goals and Outcomes:
Research opportunities and develop strategies to improve energy efficiency and associated costs at Columbia's local distribution center.

Potential Projects:
Opportunities and strategies to improve energy efficiency and associated costs at the local distribution center include:

- Retail store LED lighting retrofit, research state incentives and develop Return on Investment (ROI) model
- HQ energy management controls
- HQ desktop power savings: partner with IT to develop a program where PC updates also allow for shutting down machines nightly to save energy
- HQ parking lot lights retrofitted to solar; explore additional solar opportunities (Car ports?)
- Rivergate distribution center LED lighting retrofit
- Rivergate distribution center HVAC and DDC control improvements

Degree / Skills Identified by Host:

Environmental Science/Sustainability, Physical Science

The intern's role and responsibilities may include: research on energy efficiency fixtures and devices, tracking energy consumption of each facility, updating SEM (strategic energy management) energy model, research on new potential opportunities on campus, attending ETO trainings and seminars, developing reports that help to communicate energy savings and strategies to the executive team, and helping the facilities team evaluate and audit existing equipment for improved performance. Familiarity with data analysis, Return on Investment (ROI) and payback concepts are required, and the intern must be detail-oriented.

An interest in energy efficiency and conservation, and knowledge of energy management tools and resources is desired: http://www.oregon.gov/energy/energy-oregon/Pages/Energy-Management.aspx

Oregon Applied Sustainability Experience (OASE) Intern Position 2018

Daimler Trucks; Portland, OR

How this project supports the industry mission and goals: Daimler Trucks North America (DTNA) continues to strive to make a consistent, significant, positive impact on global trucking by maintaining its commitment to industry-wide leadership through quality and innovation. This dedication defines the core of the company's genetic makeup.

Project Goals: Reduce the plant's electric energy usage (kWh) resulting in utility bill cost savings ($) by researching the optimization of our compressed air system. Help our compressed air system save 500,000 kWh and $40,000 annually. Help the plant maintain zero waste to landfill status by investigating outlets for plastics. Work on pollution prevention by analyzing effectiveness of solvent distillation system.

Potential Projects:

Project A: Research Compressed Air Management System Benefits: 10-15 hours/week. Remotely access and review data from (4) North Carolina plants, create efficiency report templates using Key Performance Indicators (KPIs), create a leak loss assessment protocol, compare real data against promised results, estimate the Portland Truck Manufacturing Plant's potential benefit (saving KWhs and $) from a similar project; potential for short-term data logging.

Project B: Develop Compressed Air Paint Mixer Replacement: 5-10 hours/week. Count existing paint mixer inventory, research an explosion proof electric mixer alternative, and provide economic analysis of project cost, savings, incentives, and payback period.

Project C: Research Plastics Solution: 15-20 hours/week. With the new ban by China on plastics, industries like Daimler are looking for new, creative ways to recycle plastics. As a zero waste to landfill facility, this means either recycle or incinerate. With only one waste to energy incineration facility in Oregon (Covanta), this makes it a challenge to burn all of the plastic dunnage generated at the plant. The focus of this project will be to research viable options for re-use and recycling for this material.

Degree / Skills Identified by Host:

Physical Science, Engineering, Environmental Science/Sustainability, Economic/Business

Experience and knowledge of data analysis and using website software are the most critical skills for this position.

Additional skills needed:
• Good communication
• Project planning
• Technical writing
• Chemistry & Math

Oregon Applied Sustainability Experience (OASE) Intern Position 2018

Knife River Concrete; Portland, OR

How this project supports the industry mission and goals: Our company goal is "Through operational practices and by leading or participating in a number of programs, MDU Resources (Knife River is subsidiary) helps ensure a viable environment. These practices include minimizing waste and maximizing resources, supporting environmental laws and regulations that are based on sound science and cost-effective technology, and complying with or exceeding all applicable environmental laws, regulations, and permit requirements."

Project Goals and Outcomes:

Project A - Goals:

- Have our select group of mixes documented and entered into the Environmental Product Declarations (EPD) tool
- Submit the EPDs for verification
- Obtain verification and publish EPDs

Outcomes: This task will require a basic understanding of life cycle assessment principles and attention to details during the data collection and entry tasks. Students will gather energy, fuel, and water data from each plant and track the supply chain transportation impacts for all raw materials. At the completion of the project, students will have a solid understanding of EPDs and the process used to create EPDs. Student will also be knowledgeable about which materials and processes contribute most to the environmental impacts of concrete mixes.

Project B - Goals:

- Develop a Pollution Prevention (P2) checklist
- Conduct at least three P2 Assessments using the checklist and other tools (energy/fuel usage)
- Inventory toxic products used at sites, analyze alternatives
- Inform plant managers of results with opportunity to implement recommendations from assessments

Outcomes: Priority projects include: energy audits on identified processes, fuel efficiency assessment (on-site operations), and toxic reduction analysis of products. With each priority project, tools/resources will be developed and regional experts will be identified prior to implementation. Identify production process to improve environmental compliance and identify areas for energy savings.

Potential Projects:

Project A: This project will focus on developing Environmental Product Declarations (EPDs) at four Knife River concrete plants (Hillsboro, Linnton, Sherwood, Sundial) in the Portland, Oregon area. EPDs are environmental labels that are 3rd party verified and disclose a selection of the environmental impacts for each concrete mix; EPDs are mix and plant specific. The measurement and disclosure of the concrete mix impacts will help the concrete producer prioritize environmental improvement and help the consumers of concrete select lower impact mixes. EPDs are critical to providing quantitative measurements of improvements in both producing and consuming concrete.

The new LEEDv4 rating system, which is widely used in public and private construction projects, is now awarding points for EPDs in construction projects. This is a major market driver in larger towns and cities around Oregon. This project will allow Knife River to respond to the EPD requests made through LEEDv4 and also allow their clients to choose lower impact mixes with the help of EPDs.

Project B: Pollution Prevention Analysis

Develop and perform pollution prevention (P2) assessments at up to 3 identified sites. These assessments aim to identify process improvements that are not tied to a particular environmental regulation.

Degree / Skills Identified by Host:

Environmental Science/Sustainability

Requirements for this internship are as follows: self-direction, persistence (to obtain data in a short amount of time), capable and confident to approach people in a construction environment, and proven ability to enter data accurately. Experience with, and interest in, the construction industry is helpful but not required.

Additional Considerations:

Personal Protective Equipment (PPE) will be provided by our company except for steel-toe safety shoes, the purchase of these shoes will be the responsibility of the intern.

Oregon Applied Sustainability Experience (OASE) Intern Position 2018

New Seasons Market; Portland, OR

How this project supports the industry mission and goals: Our aim with this project is to connect the environmental impact of food waste with New Seasons' bottom line and update staff practices for truer accountability through data, stories, examples and best practices. Ultimately, we hope to set a food waste reduction goal based on the outcome of the review.

Project Goals and Outcomes:

1. Process: evaluate existing program to standardize practices company-wide for food-donation. This includes outreach to gleaning community, practices for picking up donated food at the store, and tracking and reporting appropriate data.
2. Internal policy: review Blue Slip employee food program to improve the program efficacy for the type and quantity of items allowed, where and how they are stored, authorization process, etc.
3. Environmental footprint of food waste: Analyze the available information and identify data needs to evaluate the scale of wasted food according to the food waste hierarchy to prioritize preventing the wasting of food. Develop an environmental footprint of the activities based on data and develop recommendations for further improving the existing programs, including those listed in #1 and #2.

Potential Projects:

The scope of the project includes three parts. First, would be to design standard, company-wide practices for our food-donation (gleaning program), from determining what food is gleaned, to initiating relationships with gleaners, to setting standards for picking up donated food at the store, and finally tracking and reporting the data. Secondly would be a review of our Blue Slip program with recommendations for refining the program, including the type and quantity of items allowed to be given to employees, where and how they are stored, who authorizes, etc.). Finally, a review of the entire scope of our wasted food by using the 'waste' data we do have, along with data gathered on our gleaning and Blue Slip programs, to determine the environmental impact of the waste.

Degree / Skills Identified by Host:

Environmental Science/Sustainability

A qualified intern will have a keen interest in, and basic understanding of, environmental impact measurement. This individual must be detailed-oriented and thorough with regards to data gathering, and be capable of organizing data for analysis. The intern will need to prepare a written report of the process and analysis that also develops recommendations (with guidance from advisors).

Strong abilities in data collection and analysis, keen investigation skills, attention to details, identification of activities that can be compiled into best practices, good writing skills, and the ability to convey information through written storytelling are required. Understanding food waste issues related to carbon emissions, B-Corp and sustainability principles are other desirable qualities.

Oregon Applied Sustainability Experience (OASE) Intern Position 2018

Nossa Coffee and Oregon Coffee Board; Portland, OR

How this project supports the industry mission and goals: The Oregon Coffee Board intern will produce a Sustainability Best-Practices Roastery and Café Guide particularly geared toward assisting businesses within the Portland-area coffee industry. The intern will develop a regional tool that can be utilized by roasteries and cafes interested in learning concrete action items for ways to reduce their energy, water, pollution, and waste per pounds of coffee roasted.
As part of the guide, the intern will conduct four P2 assessments at four different Portland-area roasteries & cafes who are in the Oregon Coffee Board. While coffee roasteries have similar types of operations, they may have different types of machinery, material inputs, waste streams, and other items that would impact their outcomes on this energy, water & waste assessment. As part of the P2 assessment at these various facilities, the intern will make general recommendations to regional roasteries and cafes based on what was gathered at these facilities.

Project Goals and Outcomes:
Project A: the goal is to develop a regional tool based on sustainability best-practices, measured as creation of this Guide.

Project B: the project goal is to conduct Pollution Prevention (P2) assessments for member roasters, measured as the number of assessments, number of recommendations, and number of implemented recommendations.

Potential Projects:
Project A: Produce a sustainability best practices roastery and cafe guide particularly applicable to businesses within the Portland-area coffee industry.

Project B: Conduct four P2 assessments for roasters (energy/water/waste assessments). The P2 assessments may be part of the Sustainability Best-Practices Guide. Project mentors and advisors will help review the Guide and develop the P2 assessments.

Degree / Skills Identified by Host:

Environmental Science/Sustainability

Skills needed for this internship are as follows:
• Good communication with others
• Project planning
• Plain language writing
• Data collection analysis

Additionally, the intern should have a technical understanding of how to conduct a Pollution Prevention assessment, be able to assimilate new information quickly, and understand materials management and sustainability principles. Experience assembling and verifying various types of data and information in a concise manner is also desired.