From Data Science to Workforce Diversity:

Revolutionize Environmental Recruitment Strategies

Shirley Yao*, *Program on the Environment & Information School*

*Supervisors: **Dan Tonnes**, National Oceanic and Atmospheric Administration*

*Faculty Advisor: **Ott Toomet**, Information School, University of Washington*

Context

- Diversity in the environmental workforce is historically low, with women and minorities comprising only 30% on average (Taylor 2018)
- Data science, a rapidly advancing technology, can revolutionize recruitment strategies to increase environmental workforce diversity
- Environmental field lacks thorough investigations on leveraging data science for identifying talent pipelines and enhancing diversity
- A critical need exists for developing data-centric approaches to enhance diversity and inclusion in the environmental sector

Research Question

What are the attributes of data science that can help establish recruitment approaches that aim at increasing environmental workforce diversity?

Internship & Methods

- Interned with NOAA in creating data-driven recruitment strategies
- Methods include web searches for data collection, R programming for data analysis, and R Shiny for data visualization and hotspot analysis
- Deliverables include Washington college major and demographic database and an interactive website that visualizes the data (see Figure 1 & 2)

Results

Three Attributes of Data Science Identified Helpful in Creating Recruitment Strategies

1. Data Collection & Analysis - Pattern Identification

Identify diversity disparity pattern in workforce and talent pipeline (See Figure 1)

2. Data Visualization - Effective Communication

Enhance communication of recruitment information to decision-makers and recruiters (See Figure 1)

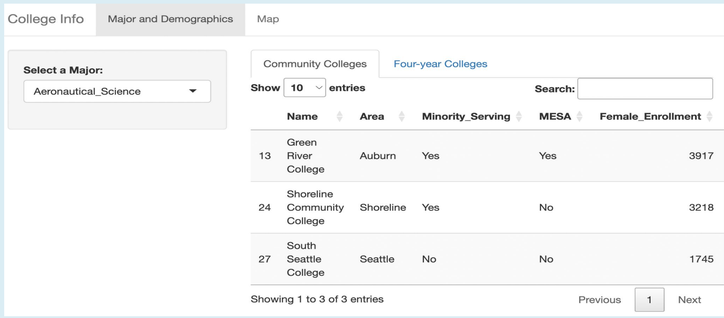

Figure 1. Recruiters can select a specific major they are looking for from the potential employees and see the demographic data of the colleges that offer the major. Allows recruiters to find candidates with a specific academic background from a diverse candidate pool.

3. Spatial Data - Pinpoint Recruitment Hotspots

Allow for targeted recruitment efforts based on proximity (See Figure 2)

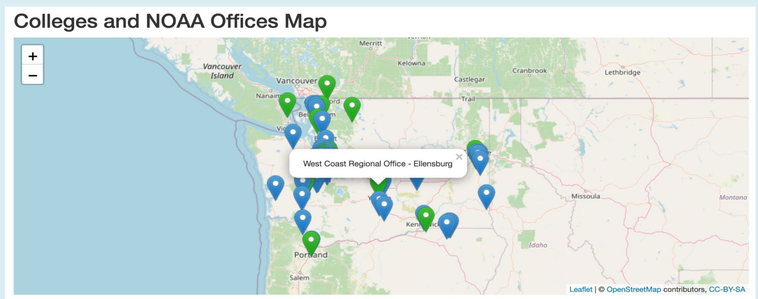

Figure 2. Displays a list of locations of all colleges in Washington State and major NOAA offices. Blue pins represent the locations of Washington colleges. Green pins represent locations of major NOAA offices in Washington State. This hotspot map helps the recruiters to conduct targeted recruitment efforts according to distances.

Broader Significance

Organizational Level

- Offer a framework for creating data-driven recruitment approaches applicable to NOAA and similar organizations
- Enable targeted recruitment strategies for a more diverse and qualified talent pipeline with the diversity pattern identified
- Allow recruitment efforts on talent hotspots for resource optimization

Environment Sector Level

- Bridge the knowledge gap on using data science to identify talent pipelines and enhance environmental workforce diversity
- Uncover systemic workforce diversity gaps with data analysis
- Foster transparent communication and accurate decision-makings with recruitment data visuals
- Target specific regions to cultivate a more geographically balanced and diverse workforce by incorporating spatial data

Acknowledgement

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