From Data Science to Workforce Diversity:  
Revolutionize Environmental Recruitment Strategies

**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)

3. **Spatial Data - Pinpoint Recruitment Hotspots**
   - Allow for targeted recruitment efforts based on proximity (See Figure 2)

**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

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