

Workforce Analytics: Visualizing Trends by Department



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INTRODUCTION

- As the fiscal year here at LLNL comes to an end, departments are analyzing fund allocations and year recapitulations.
- While organizational health metrics are available for the entirety of the ES&H directorate, workforce data within ES&H is not broken down by department for analyses.
- Workforce data analyses are critical to employee retention, fund allocation, and the effective implementation of management strategies.
- To support ES&H managers' decision-making, we developed five organizational health reviews in a two-year lookback to understand each department's trends.

OBJECTIVES

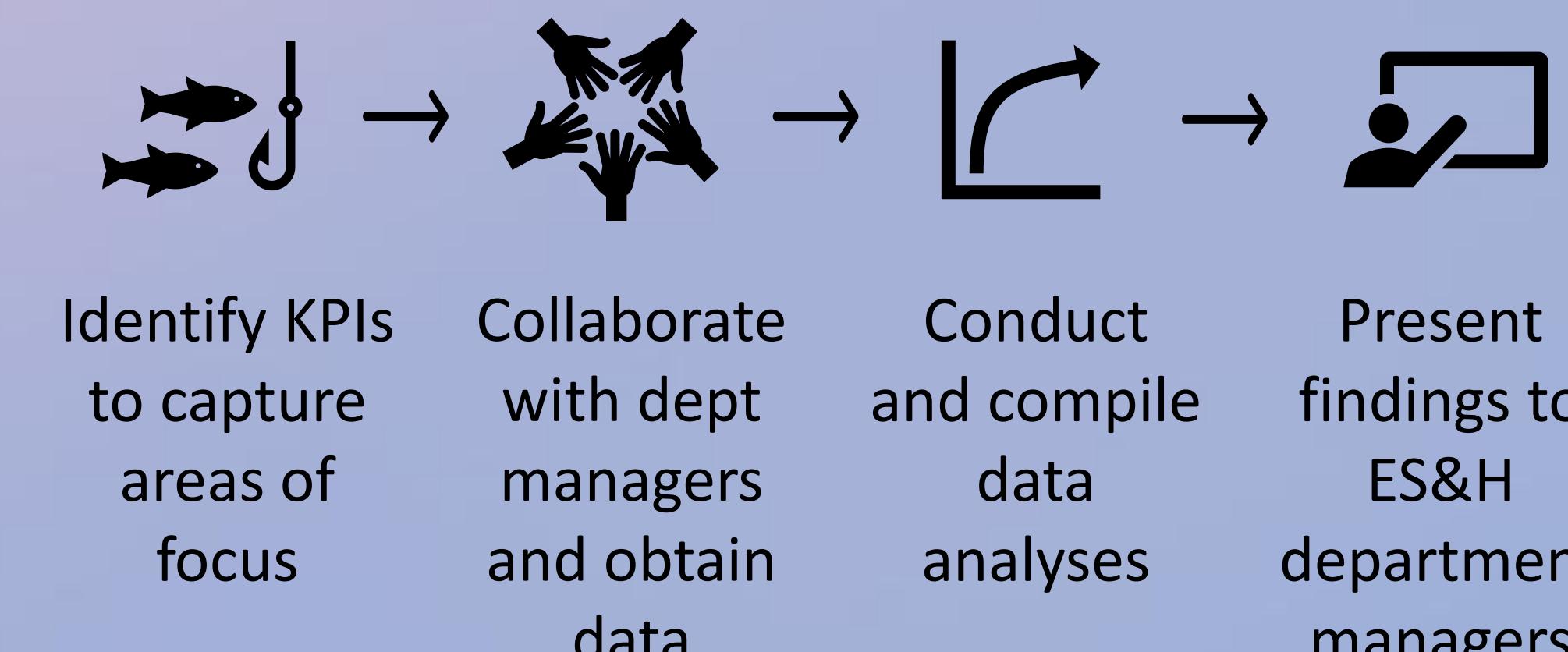
Our project outcome is to create five organizational health reviews for each of the departments within ES&H:

- Highlighting progress and successes
- Identifying areas of improvement
- Pulling organizational health metrics into comprehensive summaries for managers

Our overall goal is to provide a data-driven perspective of organizational health to help managers:

- Formulate forward-looking management strategies tailored to each department's specific needs
- Reassess needs for the next fiscal year's fund allocation
- Acknowledge teams' successes and enhance team dynamics

METHODS



The areas of focus for our analyses are divided into categories "Get", "Keep", and "Grow":

- Hiring metrics
- Onboarding
- Retention
- Transfer/exit feedback
- Culture survey
- Employee engagement
- Development
- Workforce availability
- Succession planning
- Rewards and recognition



Methods used:

- Quantitative data (R)
 - Graphing
- Text data (Python)
 - Sentiment Analysis
 - Key phrase extraction

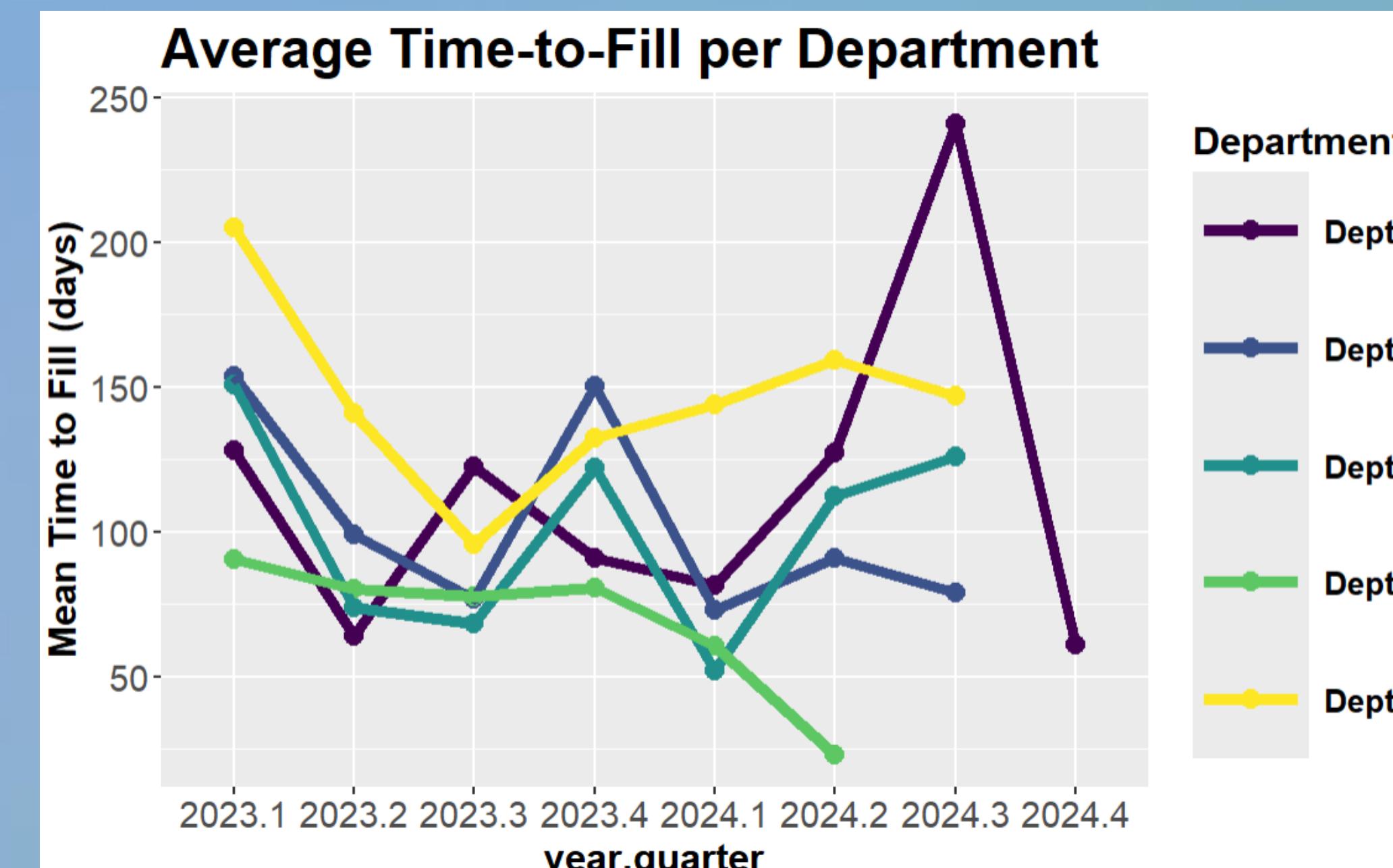


Figure: example visualization of time-to-fill (posting to offer acceptance) per department over FY23 and 24

OUTCOMES

We visualized statistics (e.g. time-to-fill) per department over time and compiled them into concise briefings.

Challenges:

- Data availability
 - Receiving data from various program managers takes time
 - Limited access due to personally identifiable information
 - Employees are tracked by their payroll but not by their matrix
- Variability in data formats
 - Multiple databases and customers
 - Every department formats their data differently
- Data manipulation
 - Insufficient tracking → fewer data points
 - Unique nature of certain data limits our ability apply certain natural language processing (NLP) methods
 - Small data sets → can't train own model
 - Lack of pretrained model available specifically for HR data
 - Changes in organizational structure → impacts applicability of analyses

Successes:

- Presented workforce metrics in a department-specific view to managers—those with direct influence
- Created meaningful visualizations that illustrate thematic successes and strengthen team dynamics
- Created a mechanism to foster proactive, data driven discussions to develop workforce strategies
- Fine tuned data tracking methods based on challenges identified throughout process
- Furthered knowledge on statistical methods

FUTURE DIRECTIONS

- Facilitate Organizational Health Reviews for ES&H managers annually
- Collaborate with area managers in strategic planning
- Develop a live dashboard viewable by ES&H payroll, functional area, and department managers
- Scale our analyses laboratory-wide



IMPACT

People are our number one asset: by objectively analyzing and identifying areas for improvements, we can support managers implementing improvement processes in workforce strategies. ES&H is connected to every part of LLNL, and it is imperative that we promote a sustainable, safe, and healthy workplace for our departments and for others.

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