American Society for Clinical Pathology's Workforce Data Visualization Through Online Interactive Maps

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PURPOSE OF STUDY

Historically, there has been a high demand for workforce data among laboratory professionals across the United States, especially state-level data. Peer-reviewed journals have been a staple for disseminating this information, but space constraints limit the data that can be published. Tableau maps provide an effective way to share a large amount of data, including geo-spatial visualizations, to a larger audience via the Internet. The aim of the presentation/poster is to:

- Demonstrate ways of sharing ASCP Institute of Science, Technology and Public Policy workforce (wage and vacancy) data
- Highlight effective practices for publishing workforce information for both the medical laboratory professionals and other audiences

METHODS

Data for this project were obtained from two recent surveys of laboratory professionals that collected information about job vacancies and wages in medical laboratories in the United States.

A map of laboratory training programs was also created using data from accrediting bodies.

Tableau version 10.4 was used for the data visualization because of its easy navigation, flexibility with data source files, and free online sharing features.

KEY FINDINGS

A. Eleven interactive maps were created and published on the Tableau online server, and the links were shared with the target audiences via internet.

2016–17 ASCP VACANCY SURVEY

1. Vacancy Rates by Region
2. Vacancy Rates by State
3. Retirement Rates by Region
4. Retirement Rates by State
5. Certification Rates by Region
6. Certification Rates by State
7. Vacancy and Retirement Rates by State

2017 ASCP WAGE SURVEY

8. Location of Respondents by State
9. Age of Respondents by State
10. Hourly Wage by State

ACCREDITED LABORATORY TRAINING PROGRAMS

11. Location of Accredited Laboratory Training Programs by State

B. Maps representing the work location of the survey respondents show that most respondents work in the central and eastern regions of the US, and far fewer work in mid-western regions or Alaska.

While this finding could be an artifact of the response rates for these regions, it could also imply a need for higher recruitment efforts to the laboratory profession in those regions.
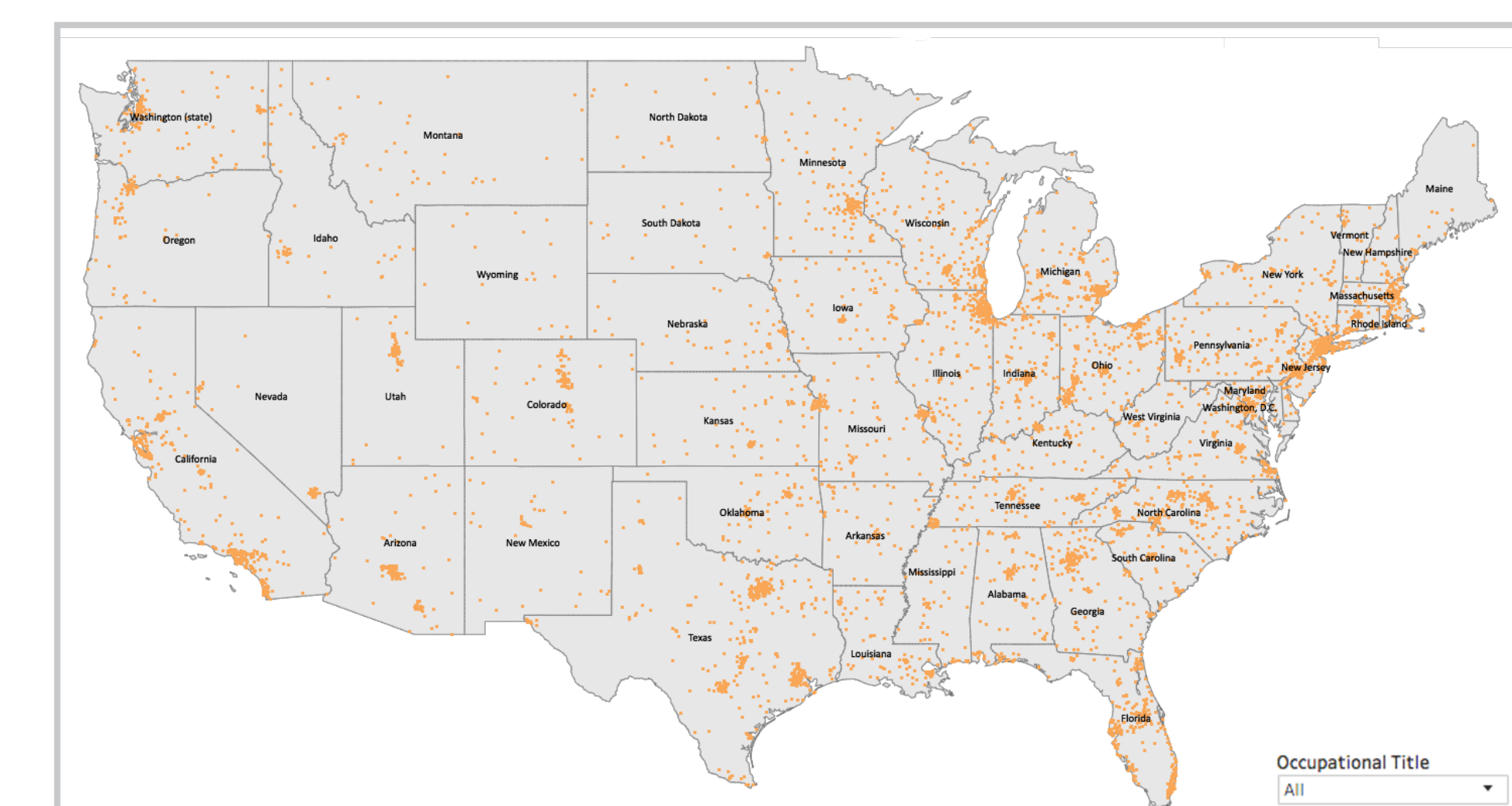

C. The Tableau application also allows for showing the distribution of workforce measures by categories.

Laboratory professionals can easily navigate the tool to view the geographic distribution of hourly wages by their occupational titles and levels. For example, they can find data showing that the hourly wages for staff-level medical technologists are highest in California ($46.77) and lowest in Arkansas ($22.67).
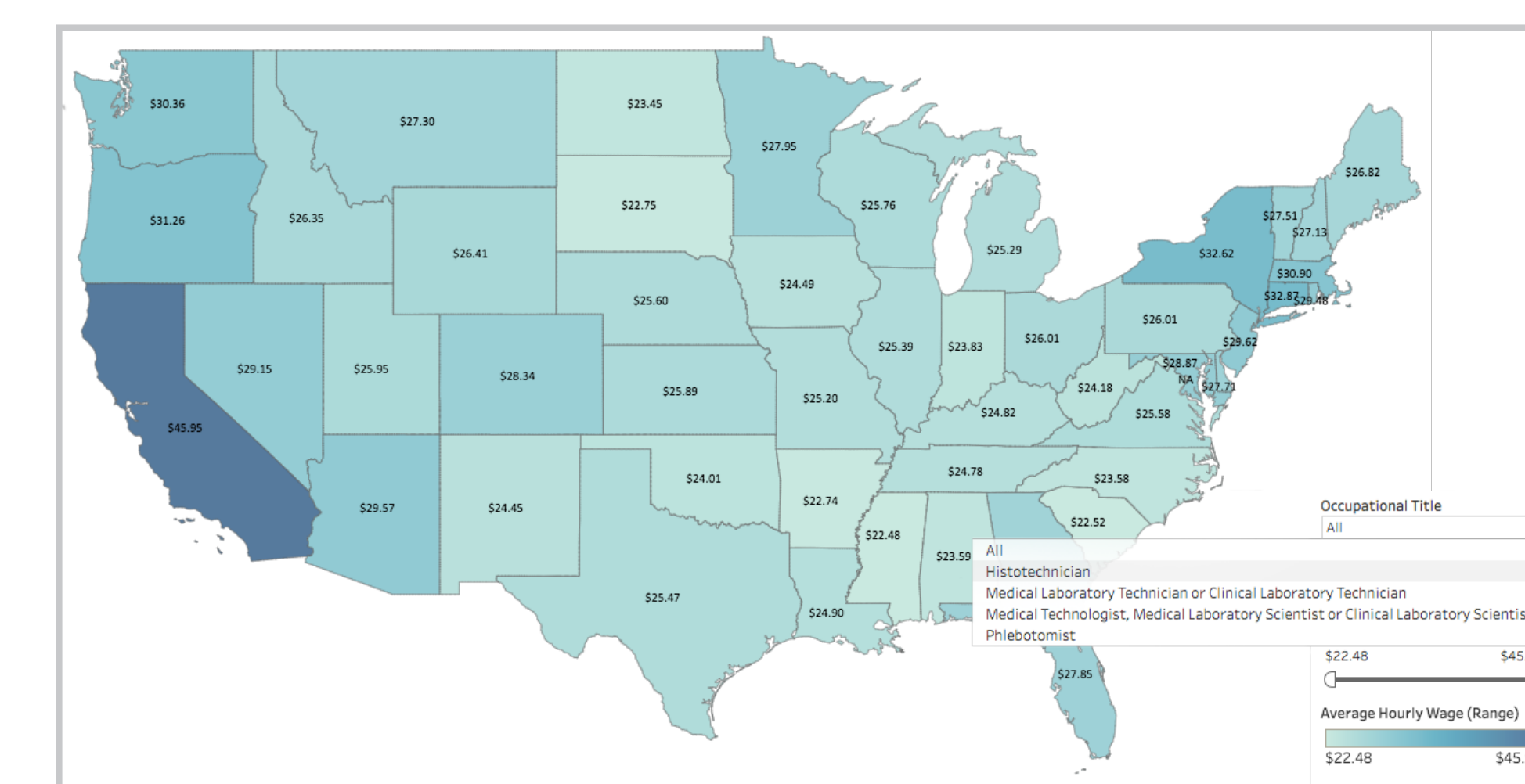
Using features such as the department filter, laboratory supervisor viewers can use vacancy, retirement, and certification rate maps to gauge the need for recruitment and retention efforts by their states and regions.
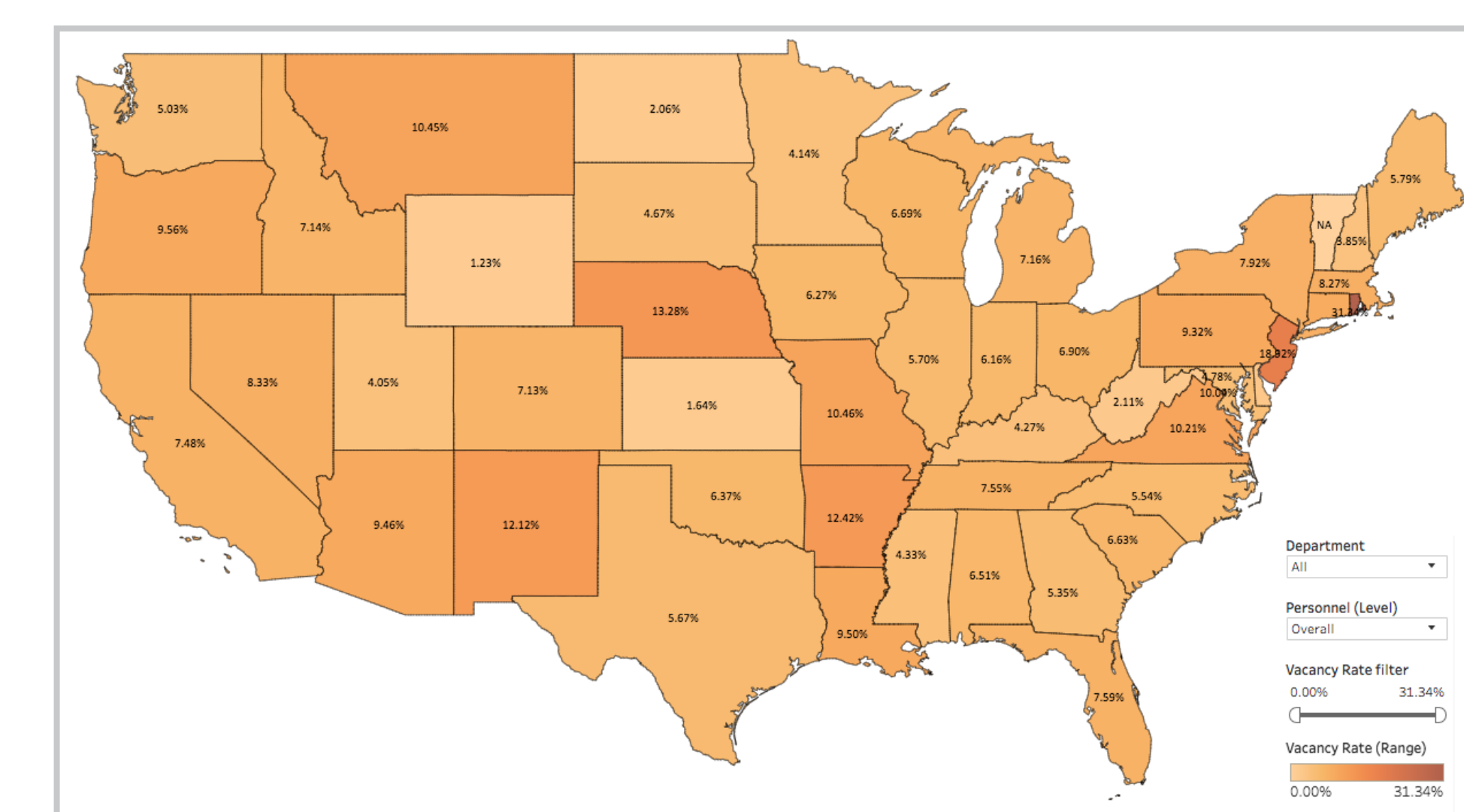
IMPLICATIONS

The overarching goal of this data visualization project was to provide both individuals and institutions with a tool to use workforce data to aid in addressing salary—and hiring—related questions. By expanding the breadth and depth of information available and extending reach of the information beyond what is published in a peer-reviewed journal, the application can help guide decision-making.

FUTURE DIRECTIONS

- Integrate past and ongoing workforce survey data into interactive maps
- Use trend analysis to identify regions that are likely to have workforce shortages in the foreseeable future

ASCP American Society for Clinical Pathology