



# Research Week 2021

## OHSU Department of Neurological Surgery residency education training program; innovative growth and development over the last decade

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### Abstract

#### Objective

Neurosurgical cadaveric and simulation training offers a useful opportunity to appreciate neuroanatomy and develop technical expertise. The authors outline and describe the growth and development of the Oregon Health & Science University (OHSU), Department of Neurological Surgery (NSG) resident education training program (over almost a decade).

#### Methods

Residents, who participated in the NSG courses (between 2015 and 2021), completed seven courses and anonymous course survey evaluations, which included free text reviews. Course surveys were evaluated by Likert scale analysis within Python and free text reviews were quantified using Valence Aware Dictionary for sEntiment Reasoning (VADER). Descriptive statistics were calculated and plotted using Python's Seaborn and Matplotlib library modules.

#### Results

Seven courses were analyzed; skull base (anterior, lateral, and endonasal-based) and spine (cadaver-based, and 3D spine model-based). Spine courses were further subcategorized as occipital-cervical, and thoracic-lumbar. For skull base and spine courses, we found primarily positive responses from residents. Likert responses (n = 291) demonstrated high average

responses for each question as the lowest average presented was  $4.62 \pm 0.56$ . A positive attitude is supported with an average compound sentiment value of  $0.57 \pm 0.28$ .

## Conclusion

We report how one institution's neurosurgical residency program curriculum has grown and developed over time, as measured by trainee evaluations. This is the first time Likert responses and sentiment analysis have been used to analyze free response text to demonstrate how residents viewed the courses. While we demonstrate a subjective evaluation, we recommend evaluations using objective measures to show the value of the impact of course changes on resident skills.