

Alexandra Golby, MD

Associate Surgeon and Director of Image Guided Neurosurgery, Brigham and Women's Hospital;  
Assistant Professor of Surgery, Harvard Medical School

Dr Golby's research involves the application of brain mapping techniques to neurosurgical patients as well as neuroscientific investigations into the brain basis of cognition. The Golby Lab and the Surgical Brain Mapping Laboratory use multiple functional brain mapping techniques (functional MRI, diffusion tensor imaging, and intracranial EEG) to better understand the functional anatomy of language, memory and other higher cognitive functions. These techniques are developed to define individual functional anatomy in patients with neurosurgical diseases for surgical planning. She also works with collaborators in multiple fields to develop approaches for image-guided neurosurgery, cross-validate information acquired through different techniques and to gain a better understanding of the relationship between these different brain signals, and to demonstrate the anatomical and physiological functional arrangement of specific cognitive functions and the ways in which functional anatomy is altered by disease and recovery.

Dr. Golby has supervised, advised, mentored and collaborated with many students, residents, postdoctoral fellows and faculty. She has authored and co-authored over 50 peer-reviewed journal articles and has been an invited speaker at national and international conferences. She has served as an ad hoc reviewer for the federal government (NIH) and numerous scientific journals in the fields of imaging, neurosurgery, neuro-oncology, and neuroscience and serves as well on the editorial board of a brain imaging journal and as associate editor at Neurosurgery. She serves as the leader for the Neurosurgery core of the National Center for Image Guided Therapy.