Introduction of functional imaging (fMRI) and high fields for brain imaging coincides in time. Since their introduction approximately two decades ago, there has been a revolution in the ability to image brain function going from early experiments demonstrating relatively coarse images of activity in the visual cortex to mapping cortical columns and to “brain reading” that constructs mental experiences of an individual. These functional studies have been complemented with imaging of morphology, providing increasingly exquisite depictions of cerebral blood vessels, axonal fibers, myelin distribution etc. These developments have been marked by incessant improvements in instrumentation, image acquisition and reconstruction methods, and, in case of fMRI, a significant expansion in our knowledge of neurovascular coupling. Collectively, this body of work has brought us recently to the point of depicting functional activity and anatomy in three dimensions in the entire human brain with submillimeter resolution. The pace of development and discovery continues unabated after two decades, with increasing use of ultrahigh magnetic fields (7 Tesla and higher) that exploit new engineering solutions to ultrahigh field challenges, accelerations in image acquisition speeds that enable high resolution whole brain imaging in the subsecond domain, incorporation of motion correction approaches that allow us to exploit the high resolution acquisition capability, and the use of novel image analysis methods that in turn impact how we acquire images. Aspects of these developments will be reviewed and their implications for future developments will be discussed.

Accreditation
The Stanford University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Credit Designation
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Cultural and Linguistic Competency
California Assembly Bill 1195 requires continuing medical education activities with patient care components to include curriculum in the subjects of cultural and linguistic competency. The planners and speakers of this CME activity have been encouraged to address cultural issues relevant to their topic area. The Stanford University School of Medicine Multicultural Health Portal also contains many useful cultural and linguistic competency tools including culture guides, language access information and pertinent state and federal laws. You are encouraged to visit the portal: http://llane.stanford.edu/portals/cultural.html