Editorial

Neuroimaging of Non-Human Primates

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Welcome to this special issue of the **Open Neuroimaging Journal** which focuses on neuroimaging studies of non-human primates (NHPs) as presented by leaders in the field. NHPs are important animal models because of their genetic, ontogenic, and physiological similarities to humans. Research using NHPs has significantly advanced our understanding of neuroscience, neurodegerative disorders, aging and development. NHP models have played a vital role in vaccine, AIDS and infectious disease research, among others.

Magnetic resonance imaging (MRI) has become a powerful research and clinical imaging tool because it can provide non-invasive anatomical, physiological and functional images at high spatial and temporal resolution with excellent soft tissue contrast. NHP studies benefit from the modern high-field MR scanners equipped with high performance gradients and multi-channel RF receivers and the innovative imaging and analysis tools. Because custom NHP scanners are not widely available, most NHP MRI studies are performed on human scanners. There are a few major changes for NHP studies and they include: *i)* cost and the availability of NHP resources, *ii)* expertise in handling NHPs and maintaining stable animal preparations, and *iii)* the need to achieve sufficient spatial resolution and signal-to-noise ratio for NHP brains which are much smaller than the human brains. Despite these challenges, there have been substantial progresses made and many of the knowledge gained have benefited human studies and vice versa.

This special issue describes some novel approaches and applications in the neuroimaging studies of NHPs. Darceuil and colleagues and Wey and colleagues describe the use of multimodal MRI to study ischemic stroke in the clinically relevant rhesus and baboon models. Chen and colleagues demonstrate how very high spatial resolution fMRI can be applied to study the topography of somatosensory cortex. Rane and Duong demonstrate that diffusion tensor imaging with long diffusion time improves fiber tracking in rhesus brains. Kochunov and Phillips describe development of corpus callosum during in-utero and postnatal maturation in baboons. Fedorov and colleagues show how atlas-guided segmentation can be used to calculate robust gray- and white-matter tissue maps in the velvet monkey brains. Dubowitz and colleagues develop a frameless stereotaxic localization strategy for NHP brains. And last but not least, Szabo and colleagues describe the MRI study of seizure-disorders in baboons.

I am grateful to all of the contributors to this special issue for their time and efforts.

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