Neuroimaging and Informatics (MS) Program Objectives

A graduate of the Neuroimaging and Informatics program will be able to:

1. Understand the elemental basics of neuroanatomy and brain systems from a neuroimaging perspective
2. Differentiate anatomical and functional neuroimaging approaches and their use to explore the healthy as well as diseased human brain
3. Learn how to design of neuroimaging experiments in the realm of structural and functional MRI
4. Be aware of the variety of neuroimaging scanning technologies, MRI pulse sequence design, image reconstruction methods, and sources of image artifact
5. Examine and develop data processing methods, software strategies, and workflow design and execution methodologies
6. Explore current neuroinformatics approaches to large-scale data representations, mining, and visualization in brain imaging
7. Have knowledge of cellular-level and connectomic imaging using microscopy to visualize individual cells, cell networks, and white matter fiber pathways in the mouse brain
8. Appreciate the genomic approaches for identifying genes and their allelic variants in the context of demographic, neuropsychological, and clinical variables and their neurological correlates
9. Apply what is learned – for example, conducting neuroimaging research, completing an internship, designing and/or completing a neuroimaging project, giving a lecture or presenting a poster, and/or participating public service where knowledge of the brain and brain imaging is specifically applied and informs further practice in the field