Lab 1 goals
The goals of this lab include:
i) familiarizing students with a typical functional MRI scanning environment;
ii) acquiring and analysing phantom image data to assess issues like image intensity non-uniformities, spatial and temporal noise, signal-to-noise ratio at different spatial resolutions, head versus surface coil image comparisons;
iii) acquiring and analysing human data to assess temporal noise, signal-to-noise ratio at different spatial resolutions, functional maps for high/low contrast flashing checkerboards and retinotopic mapping.

Phantom Images
- Scout, head coil
- 3D Sagittal, head coil
- EPI high resolution, 2.5x2.5x2.5 mm³, TR=2000 ms, α=90°, 20 slices, 128 images per slice, head coil
- EPI medium resolution, 4x4x4 mm³, TR=2000 ms, α=90°, 20 slices, 128 images per slice, head coil
- EPI low resolution, 5x5x5 mm³, TR=2000 ms, α=90°, 10 slices, 128 images per slice, head coil
- Scout, surface coil
- EPI high resolution, 2.5x2.5x2.5 mm³, TR=2000 ms, α=90°, 20 slices, 128 images per slice, surface coil

Human Images (head coil)
- Scout
- 3D Sagittal
- EPI high resolution, 2.5x2.5x2.5 mm³, TR=2000 ms, α=90°, 20 slices, 128 images per slice, no stim.
- EPI medium resolution, 4x4x4 mm³, TR=2000 ms, α=90°, 20 slices, 128 images per slice, no stim.
- EPI low resolution, 5x5x5 mm³, TR=2000 ms, α=90°, 10 slices, 128 images per slice, no stim.
- EPI fast, 4x4x4 mm³, TR=500 ms, α=51°, 5 slices, 512 images per slice, no stim.
- Functional MRI: Low Contrast Flashing Checkerboard (EPI medium resolution)
- Functional MRI: High Contrast Flashing Checkerboard (EPI medium resolution)
- Functional MRI: Retinotopic Mapping (EPI medium resolution)