

Henkelman M., Bock N., Chen J., Hamarneh G., Kovacevic N., Foster S., Parallel MR Imaging for Mouse Phenotyping. XXth International Conference on Magnetic Resonance in Biological Systems, Aug 25-30, 2002. Toronto, Canada, 2002. page 90.

Biomedical research and functional genomics is poised to make a major contribution to our understanding of normal development and human diseases. This promise will, in part, rely on the development of new micro imaging technologies to provide anatomical surveys and longitudinal assessment of morphology and functional development. Since much of the genetics will involve targeted and random mouse mutations, high throughput imaging techniques need to be developed. We have established a Mouse Imaging Centre (MICE) in Toronto to apply magnetic resonance, ultrasound, CT and optical micro imaging technologies to mouse research. A brief overview of the center and current areas of interested will be presented. To achieve high throughput with magnetic resonance imaging, we have designed and built a 7 Tesla, 40-cm spectrometer with the capacity to image sixteen mice in parallel at a resolution of better than 100 microns isotropic. The methods of achieving isolation between the parallel receive system and the post processing methods for correcting images and removing residual overlapping ghosts will be described in detail.