

The laboratory mouse and other small rodents have become a principal tool of biomedical researchers. The ability to manipulate the genetic component of the mouse by adding or deleting specific genes has proved quite valuable in virtually all areas of medical research, from neurodegenerative diseases to cancer. In many applications of mouse research, a better understanding of the phenotype of a specific mouse model is important. X-ray imaging including computed tomography (CT) of the mouse therefore is an important aspect of genetic research. In this presentation, novel high resolution technologies for x-ray imaging of the mouse will be discussed. Applications of new classes of contrast agents designed for animal use in concert with x-ray and CT imaging will also be presented. Radiation dosimetry methods pertinent to small animal imaging with x-rays will be described in detail. The role that x-ray and CT images have in conjunction with physiological imaging techniques (nuclear and PET imaging) will also be described.