



**Image libraries in the cloud: an interactive multi dimensional neuroanatomical atlas  
of the mouse, rat and macaque**

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We present an interactive neuroanatomical atlas of the mouse, rat, and macaque. Multidimensional MR images of postmortem specimens have been acquired at microscopic resolution using GRE and DTI protocols. Six scalar images derived from the DTI (spin density, mean diffusivity, axial diffusivity, radial diffusivity, fractional anisotropy and the color fractional anisotropy) highlight different neuroanatomical landmarks. For each species there is a single specimen and an average atlas. Each atlas includes complete neuroanatomical delineation. The aggregate data set is ~35 GB. Downloading is tedious and there is no suitable software to provide easy exploration. We provide in this *interactive atlas* a new approach using an NVIDIA GRID server in the cloud. The GRID, designed initially for gamers, provides many users simultaneous access without the need of downloading. A tightly coupled application based on 3DSlicer (NAC, P41EB015902 Kikinis ) guides the user with predefined protocols optimized for multimodal viewing. The user can input their image data (histology, MR, PET, etc) for easy comparison. The resulting multidimensional atlas supports simultaneous, interactive, 3D rendering with multiple contrasts, with multiple species.