

Preface

This fourth edition of *Brain Maps* is innovative mainly because it is designed to be available strictly in digital format, with beta versions of the various components posted online before the whole is presented as version 4.0. The third edition was published in 2004, and the revised arrangement of the annotated nomenclature tables there followed the 4 systems functional network organization model of neural circuitry presented in *Brain architecture: understanding the basic plan*, published a year earlier. Here, the revised arrangement of the annotated nomenclatures follows the strictly topographic arrangement presented in *Neuroanatomical terminology: classical origins and historical foundations*, published in 2014. Both nomenclature systems have essentially the same parts, arranged differently for different purposes, and so both are useful—especially for connectomics research where systematic nomenclatures are required for database tables of parts (whether gray matter regions, neuron types, or individual neurons) and connections between the parts.

Flatmaps of the rat and human central nervous system were also important components of earlier *Brain maps* editions, and they have been significantly upgraded in this edition—driven primarily by neuroinformatics needs, especially online visualization tools. Major enhancements of the rat flatmap include finer-grained parceling of gray matter regions, tiling of all gray matter regions so they can be selected (clicked) individually, finer grained parceling of white matter tracts in the central nervous system (consistent with the nomenclature in *Neuroanatomical terminology*), and the addition of all recognized branches of the nerves (again consistent with the nomenclature in *Neuroanatomical terminology*). The main enhancement of the human flatmap is the rendering of cerebral cortical features in line with the standard terminology of *Neuroanatomical terminology*.

Because the third edition of *Brain maps* had gone out of print, and was not being promoted, Elsevier in 2013 gave me all legal rights to book. I am currently making all parts of *Brain maps* freely available as an online resource, subject only to a Creative Commons Attribution-NonCommercial 4.0 International License. Consistent with this license, using this material please cite the source: “Swanson, L.W. (2015) *Brain maps: structure of the rat brain*, Version 4.0 Beta”, and do not use for commercial purposes without first making arrangements with me.