Maps of the neural ‘wiring’ in our brains could unravel secrets of behavior

Last summer a group of Harvard University neuroscientists and Google engineers released the first wiring diagram of a piece of the human brain.

The tissue, about the size of a pinhead, had been preserved, stained with heavy metals, cut into 5,000 slices and imaged under an electron microscope. This cubic millimeter of tissue accounts for only one-millionth of the entire human brain.

Yet the vast trove of data depicting it comprises 1.4 petabytes’ worth of brightly colored microscopy images of nerve cells, blood vessels and more.

“It is like discovering a new continent,” said Jeff Lichtman of Harvard, the senior author of the paper that presented these results.

Don’t expect a complete wiring diagram for a human brain anytime soon, however, because it’s technically infeasible: Lichtman points out that the zettabyte of data involved would be equivalent to a significant chunk of the entire world’s stored content today.

In fact, the only species for which there is yet a comprehensive connectome is *Caenorhabditis elegans*, the humble roundworm.

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Recent work with *C. elegans* has demonstrated the power of large-scale connectomics. One experiment showed that it’s sometimes possible for scientists to predict the behavior of an animal from a knowledge of its connectome

This is an excerpt. Read the original post here.