Faulty wiring? Tracing damaged circuits linked to autism, schizophrenia

Neuroscientists today know a lot about how individual neurons operate but remarkably little about how large numbers of them work together to produce thoughts, feelings and behavior. What is needed is a wiring diagram for the brain—known as a connectome—to identify the circuits that underlie brain functions.

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[I]n a paper published March 28 in Nature, an innovative brain-mapping technique developed at Cold Spring Harbor Laboratory (CSHL) has been used to trace the connections emanating from hundreds of neurons in the main visual area of the mouse cortex, the brain's outer layer. The technique, which exploits the advancing speed and plummeting cost of genetic sequencing, is more efficient than current methods, allowing the team to produce a more detailed picture than previously possible at unprecedented speed.

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The method, called MAPseq (Multiplexed Analysis of Projections by Sequencing), works by tagging cells with genetic "bar codes."

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One possibility is that the huge diversity of autism-linked mutations may all point to common wiring defects. "If we could find that, we might have a handle to understand the condition and maybe do something about it genetically," [researcher Justus] Kebschull says. "We're starting to work on that in the lab now."

Read full, original post: "Bar Codes" Could Trace Errant Brain Wiring in Autism and Schizophrenia