

Stanford



Richard Roth

Instructor, Neurosurgery

Bio

ACADEMIC APPOINTMENTS

- Instructor, Neurosurgery

Publications

PUBLICATIONS

- **Achieving optical transparency in live animals with absorbing molecules.** *Science (New York, N.Y.)*
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- **Oligodendrocytes and myelin limit neuronal plasticity in visual cortex.** *Nature*
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2024
- **Cortico-basal ganglia plasticity in motor learning.** *Neuron*
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2024
- **Stimulus-dependent synaptic plasticity underlies neuronal circuitry refinement in the mouse primary visual cortex.** *Cell reports*
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- **Adolescent oligodendrogenesis and myelination restrict experience-dependent neuronal plasticity in adult visual cortex.** *bioRxiv : the preprint server for biology*
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- **A positively tuned voltage indicator for extended electrical recordings in the brain.** *Nature methods*
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- **Motor learning selectively strengthens cortical and striatal synapses of motor engram neurons.** *Neuron*
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2021; 10
- **AMPA Receptors Exist in Tunable Mobile and Immobile Synaptic Fractions In Vivo.** *eNeuro*

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2021

- **An optimized CRISPR/Cas9 approach for precise genome editing in neurons.** *eLife*
Fang, H., Bygrave, A. M., Roth, R. H., Johnson, R. C., Hugarir, R. L.
2021; 10
- **From Neurons to Cognition: Technologies for Precise Recording of Neural Activity Underlying Behavior.** *BME frontiers*
Roth, R. H., Ding, J. B.
2020; 2020: 7190517
- **Cortical Synaptic AMPA Receptor Plasticity during Motor Learning** *NEURON*
Roth, R. H., Cudmore, R. H., Tan, H. L., Hong, I., Zhang, Y., Hugarir, R. L.
2020; 105 (5): 895-+
- **Lamina-specific AMPA receptor dynamics following visual deprivation in vivo** *ELIFE*
Tan, H. L., Roth, R. H., Graves, A. R., Cudmore, R. H., Hugarir, R. L.
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- **An ultrasensitive biosensor for high-resolution kinase activity imaging in awake mice.** *Nature chemical biology*
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- **Dynamic imaging of AMPA receptor trafficking in vitro and in vivo** *CURRENT OPINION IN NEUROBIOLOGY*
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- **Homer1a drives homeostatic scaling-down of excitatory synapses during sleep** *SCIENCE*
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Kim, J., Matney, C. J., Roth, R. H., Brown, S. P.
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