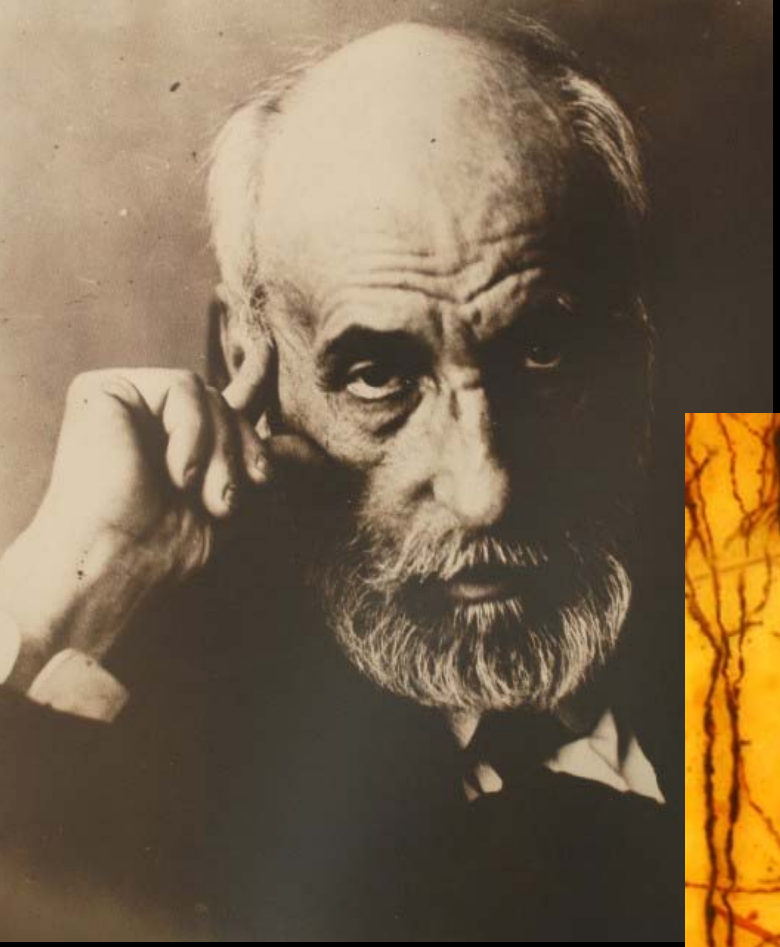
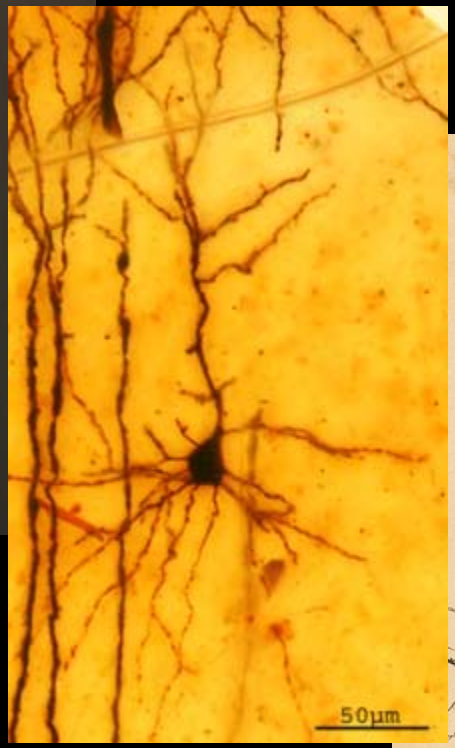
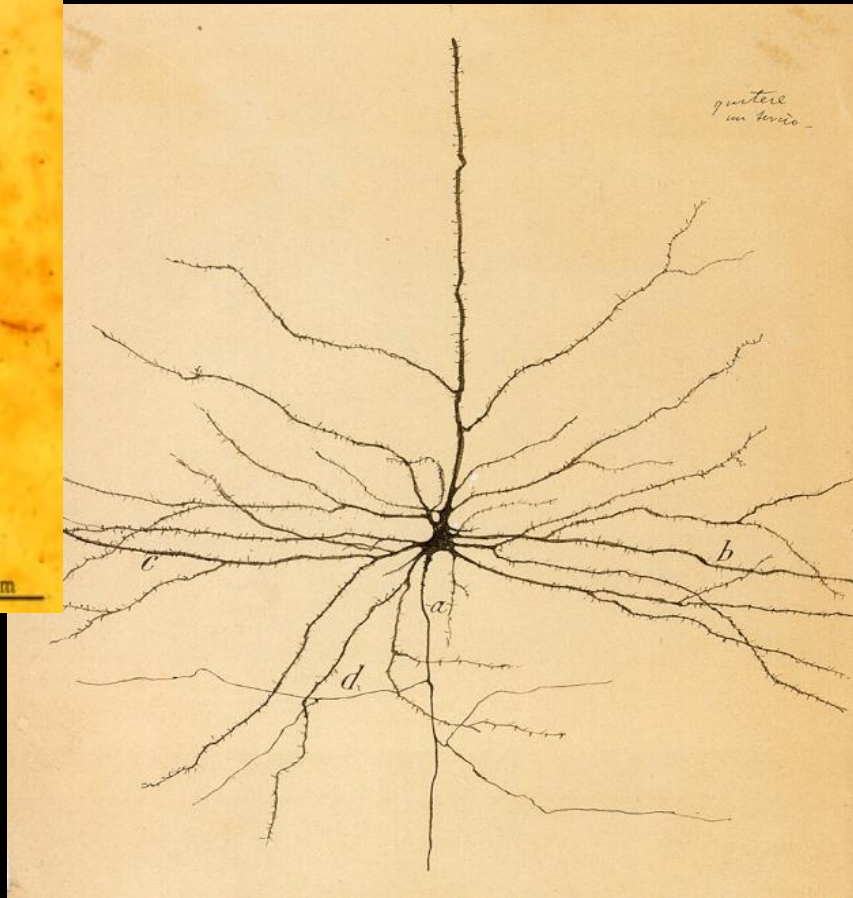
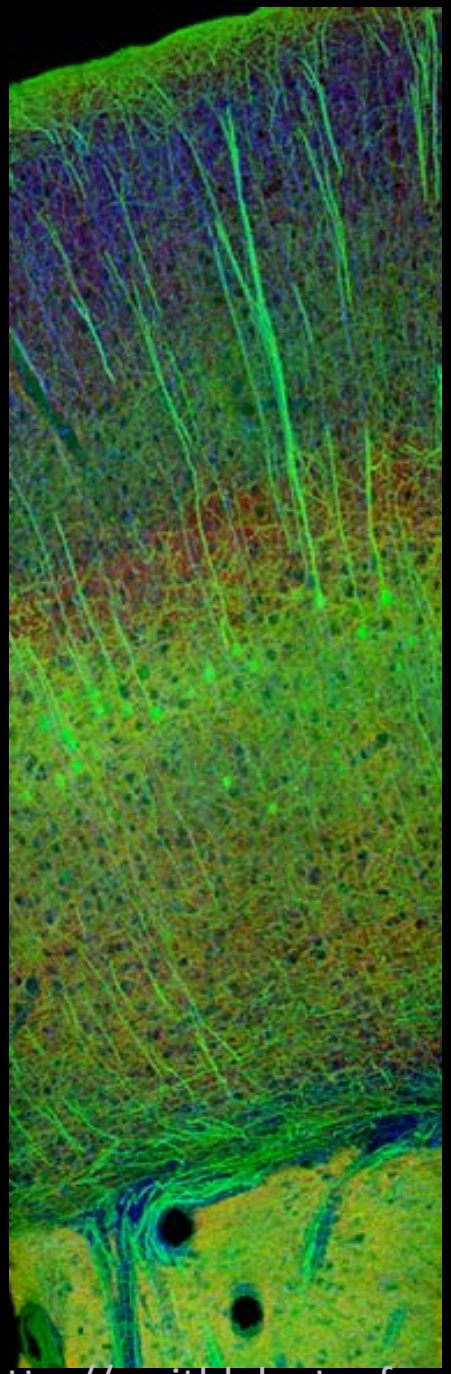
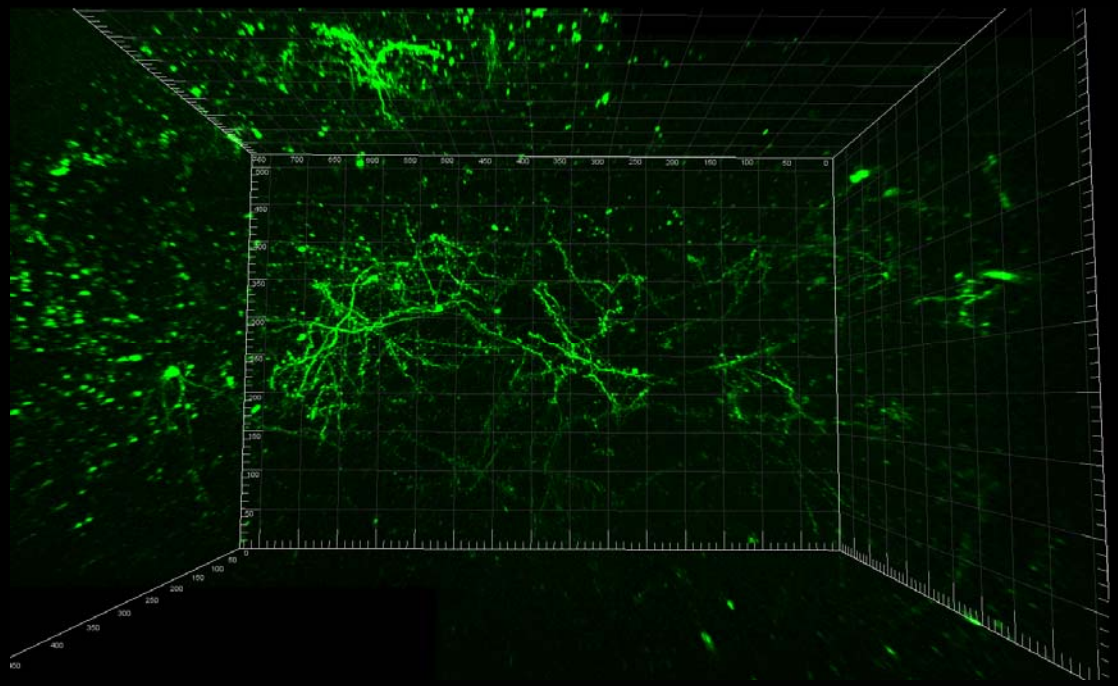



50µm


a
b
c
d



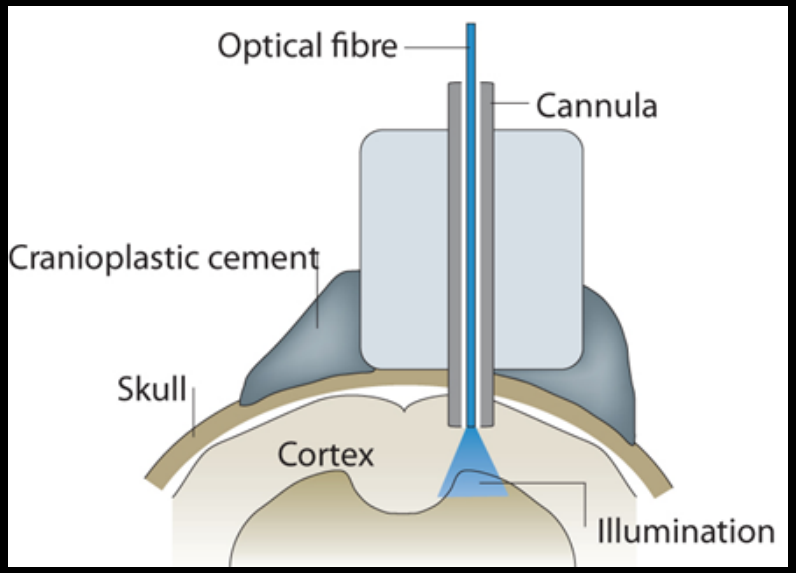
Advances in imaging



http://smithlab.stanford.edu/Smithlab/Home.html

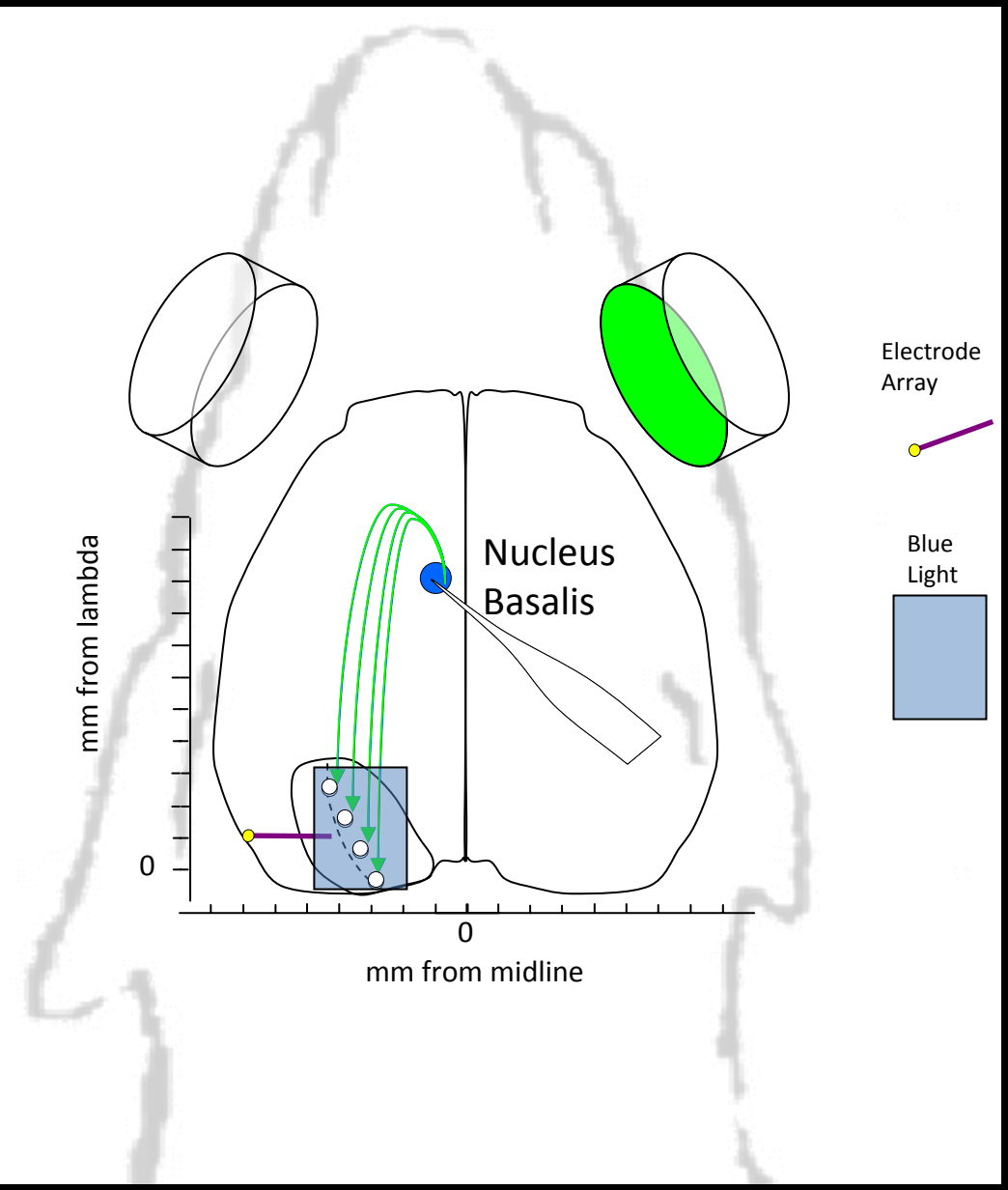
Courtesy of Kurt Sailor/Song Lab JHU

Optogenetics

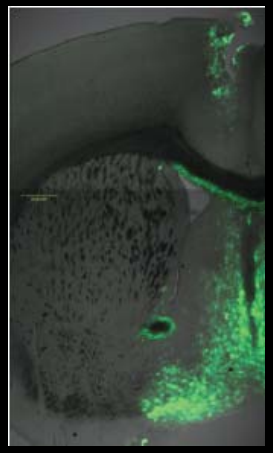


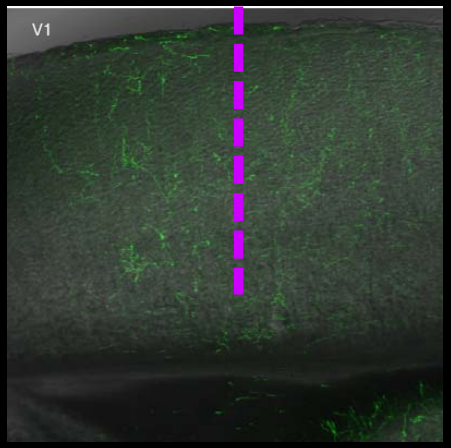
http://www.stanford.edu/group/dlab/optogenetics/

Commandeer intrinsic reward system



- Infect putative reward nuclei with channelrhodopsin
- Control release of reward signal with blue LED in V1





Understanding learning and memory
=
addressing cognitive malfunction

- Addiction
- Alzheimer's 172B in 2010 1%GDP
- Schizophrenia

Diseases of cognition are impairments in synaptic plasticity

Budget and Costs

- Discretionary Budget 1.4 Trillion
- HHS 81 B, 6%
- NIH 32 B, 2%

Source: The budget graph
http://www.wallstats.com/deathandtaxes/

Hussain Shuler Laboratory

- Post-doctoral Fellows
  - Cheng-Hang Liu
  - Camila Zold
- Graduate Students
  - Emma Roach (NRSF)
  - Vijay Namboodiri
  - Mitch Datlow (NSF)
- Undergraduates
  - Derek Sundermann
  - Sahdia Kahn
  - Jessie Koljonen
  - Matthew Szaro
  - Sara Tankard
  - Shelby Hecht

Funding

NIH
R01 – MH084911

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