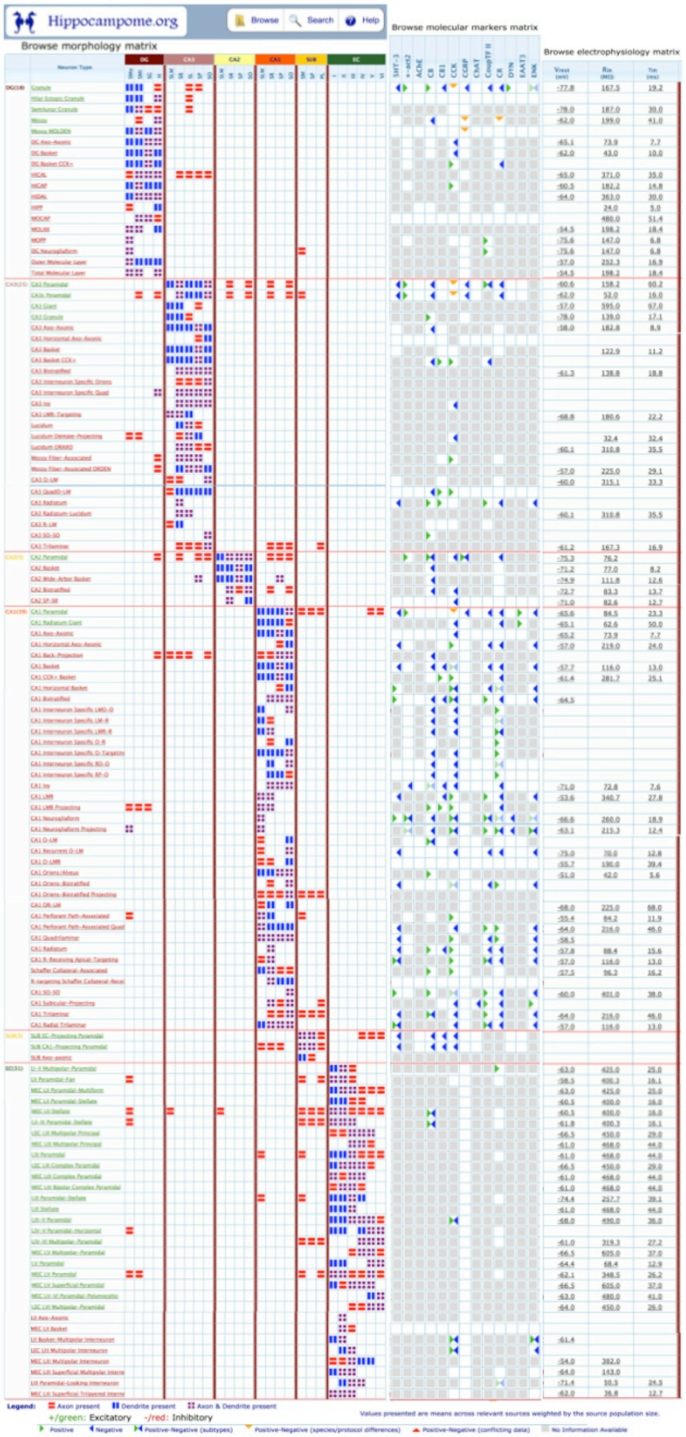
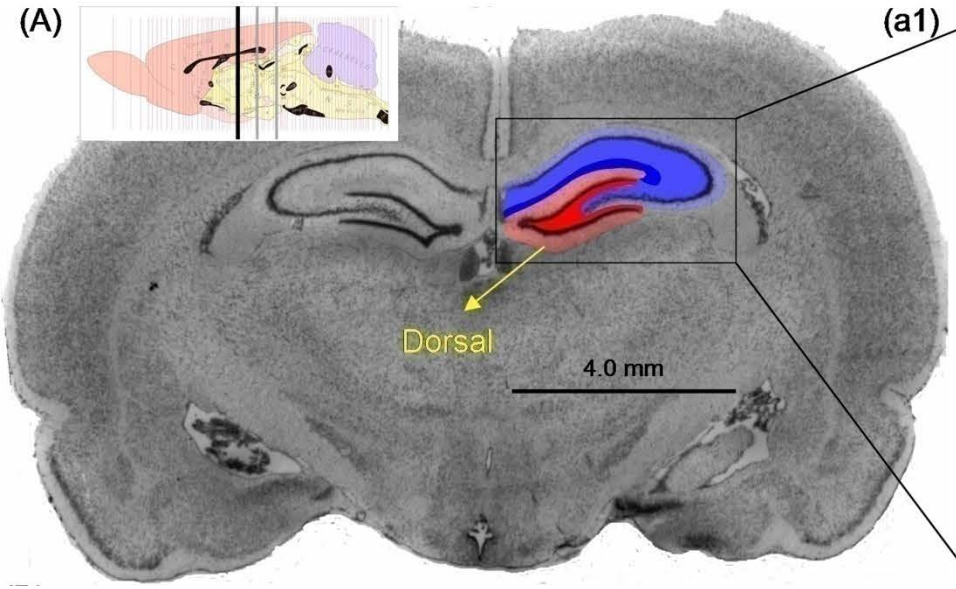
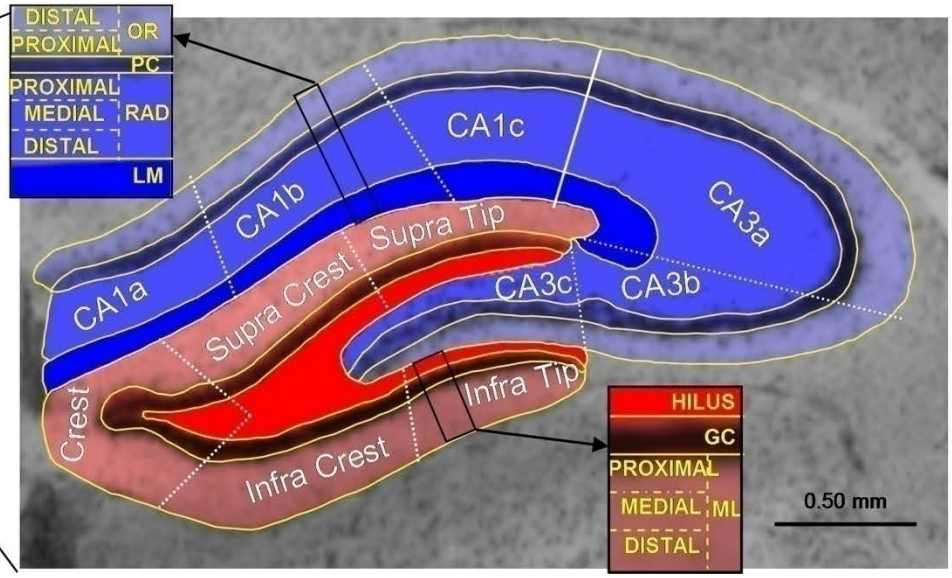
- Organization
  - George Mason University
- Lead Investigator
  - Giorgio A. Ascoli
- Current Team Members
  - David J. Hamilton
  - Alexander O. Komendantov
  - Christopher L. Rees
  - Diek W. Wheeler
  - Charise White

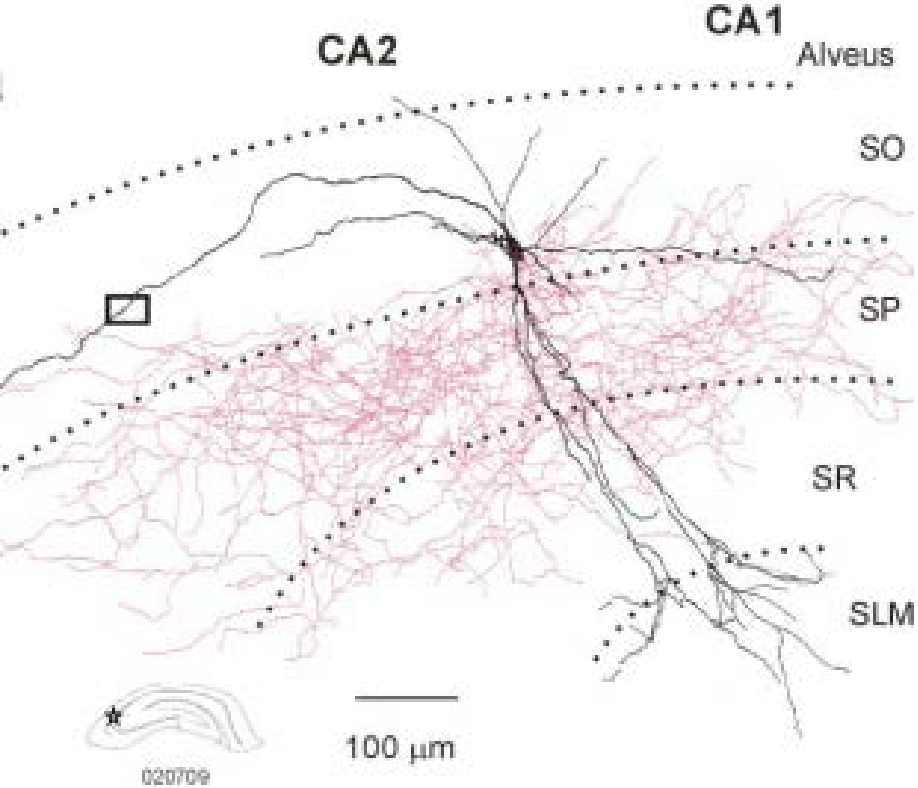


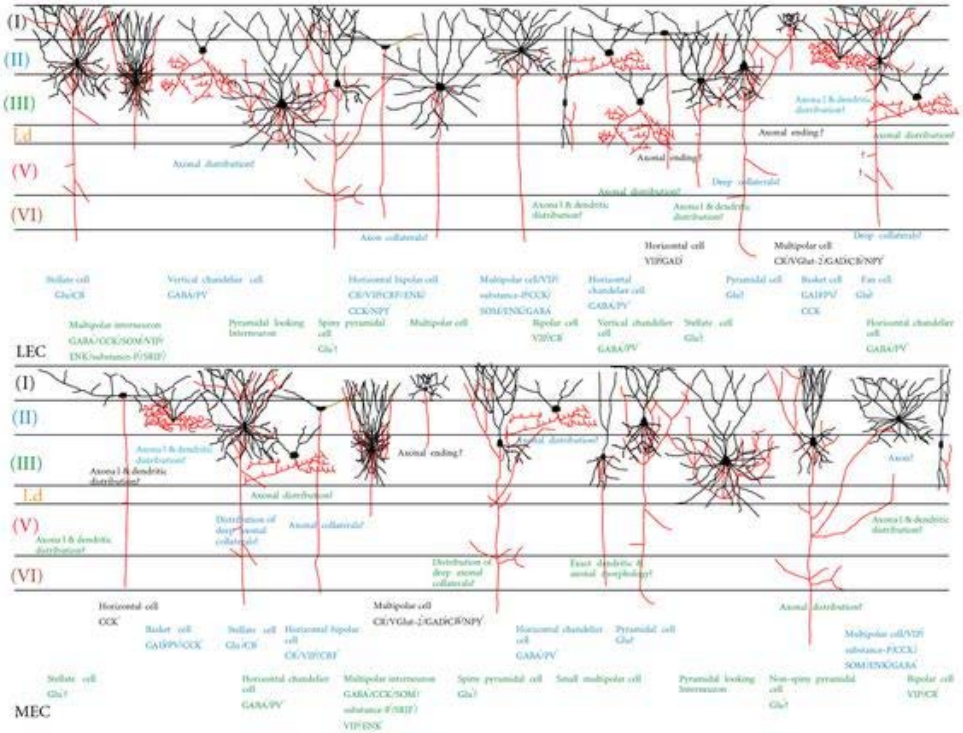
# Hippocampome.org

- Dense coverage of machine-readable information
- Neuron properties in the rodent hippocampal formation
- Mined from & linked to massive peer-reviewed literature
- Includes morphological, electrophysiological, and molecular-marker expression characteristics
- Axon-dendrite morphology defines circuit connectivity
- Correlation of molecular markers with plasticity
- Neuronal modeling with Izhikevich dynamics
- Computational simulation of real-scale networks
- Includes entorhinal cortex for seamless integration


(A)
Dorsal
4.0 mm


(a1)
DISTAL
PROXIMAL
OR
PC
PROXIMAL
MEDIAL
RAD
DISTAL
LM
CA1c
CA1b
CA3a
Supra Tip
CA1a
Supra Crest
CA3c
CA3b
Crest
Infra Tip
Infra Crest
HILUS
GC
PROXIMAL
MEDIAL
ML
DISTAL
0.50 mm

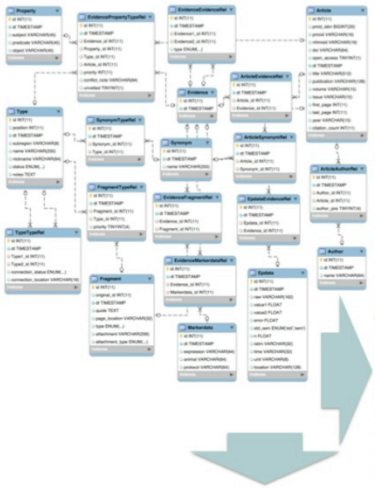

CA2
CA1
Alveus
SO
SP
SR
SLM
100 µm
020709

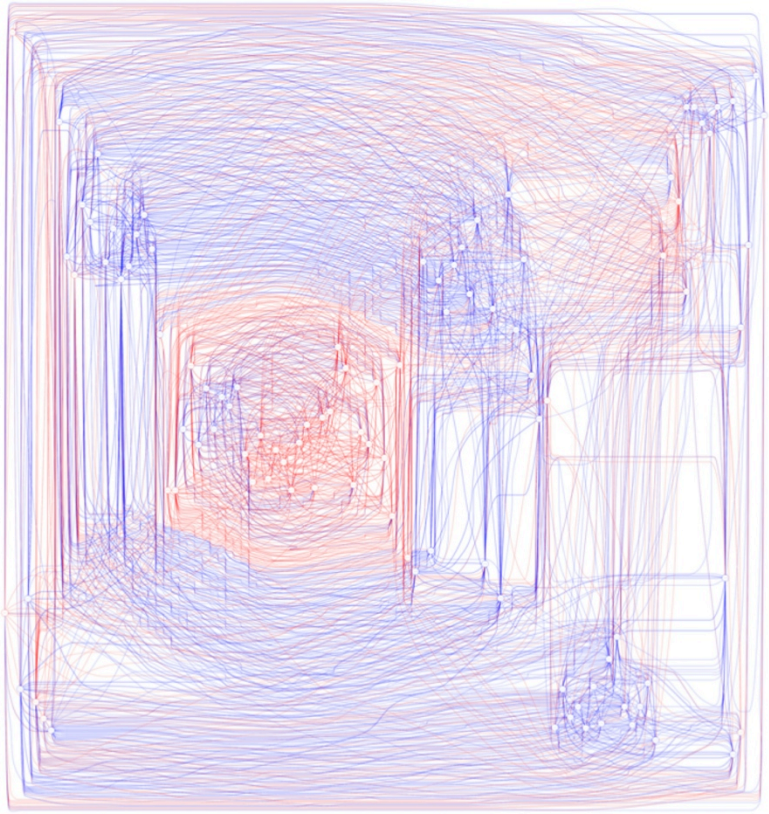

(I)
(II)
(III)
(V)
(VI)
LEC
MEC

# Example of investigative analytics: potential circuitry

Machine-readable representations facilitate investigative analytics like potential connectivity.

Database Design





26 Parcels, 6 Subregions
121 Neuronal types (37+, 85-)
62 Tracked markers
10 Electrophys. properties
14 Firing patterns
9 model parameters
~1000 Authors, 500 lit sources
~5000 Citations quotes/figures

# Contact Information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