

What is the HS³ Conference?

Recent years have seen increased interest in measuring the subfields of the human hippocampal formation using MRI. However, progress in this area has been impeded somewhat by the significant amount of disagreement that exists between groups in the anatomical definition of the subfields, the strategies used to group smaller subfields into aggregate anatomical labels, and the rules used to delineate subfield boundaries in MRI data.

We believe that moving forward, it is critically important to quantitatively characterize the differences that exist between leading hippocampal subfield segmentation protocols, and where those differences are reconcilable, to move towards reducing them. With that goal in mind, HS³ is an informal meeting to discuss this effort. We hope it will become a catalyst for launching a more formal multi-year effort for protocol comparison and unification. The major goals of the meeting are

- To bring together imaging researchers involved in designing subfield segmentation protocols, as well as neuroanatomists and computational algorithm developers;
- To examine differences in existing subfield segmentation protocols by comparing the segmentations of the same single-subject MRI dataset among participating groups;
- To establish whether a unified protocol (or protocols) is feasible and if so, to jointly develop an initial roadmap for making it happen;
- To begin work towards a joint publication exploring the current state of the art, the major reasons for why protocols differ, and the strategies towards unification.

Organizing Committee:

Valerie Carr, Stanford University
Arne Ekstrom, University of California, Davis
Susanne Mueller, University of California, San Francisco
Craig Stark, University of California, Irvine
Lei Wang, Northwestern University
Michael Yassa, Johns Hopkins University
Paul Yushkevich, University of Pennsylvania

Thanks to:

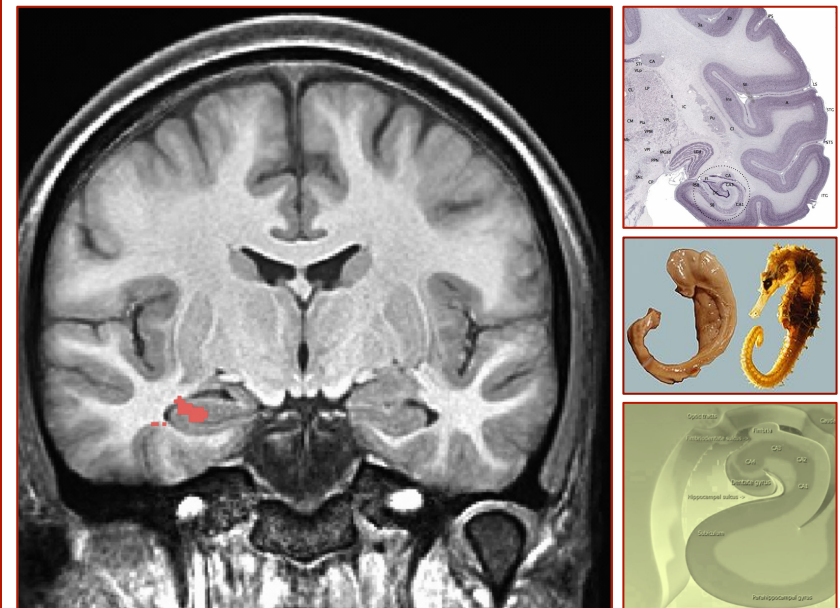
Arne Ekstrom and the Center for Neuroscience for hosting the meeting at UC Davis and Dana Smuda for help with logistical details. We further thank Anthony Wagner, Charan Ranganath, Giovanni Frisoni, and Michael Weiner for helpful suggestions.

<http://hippos3.wordpress.com>

Hippocampal Subfield Segmentation Summit



CONFERENCE PROGRAM



June 21 – 22, 2013
University of California, Davis

Sponsored by the Center for Neuroscience, UC Davis

Friday, June 21, 2013

Session 1

Moderator: Valerie Carr

- 1:00 PM – 1:20 PM **Michael Yassa** (Johns Hopkins University)
Opening remarks
- 1:20 PM – 1:40 PM **Paul Yushkevich** (University of Pennsylvania)
Quantitative component summary; Atlases and automation
- 1:40 PM – 2:00 PM **Susanne Mueller** (UCSF)
Manual subfield volumetry on high res T2
- 2:00 PM – 2:20 PM **Julie Winterburn** (Center for Addiction and Mental Health, Toronto)
Manual and automatic segmentation on 3T
- 2:20 PM – 2:40 PM **Lei Wang** (Northwestern University)
Hippocampal subfield surface zone map on T1
- 2:40 PM – 3:00 PM **Craig Stark** (UC Irvine)
Hippocampal subfield segmentation for high-resolution fMRI
- 3:00 PM – 3:45 PM Open Discussion

Session 2

Moderator: Susanne Mueller

- 4:00 PM – 4:20 PM **Michael Zeineh** (Stanford University)
Isotropic high res T2 (FIESTA) hippocampal scans at 7T and quantification of SRLM.
- 4:20 PM – 4:40 PM **Geoff Kerchner** (Stanford University)
Quantification of apical neuropil using 7T
- 4:40 PM – 5:00 PM **Laura Wisse** (UMC Utrecht)
Full-length hippocampal segmentation at 7T
- 5:00 PM – 5:20 PM **John Pluta** (University of Pennsylvania)
Histology-guided MRI segmentation
- 5:20 PM – 5:40 PM **Jean Augustinack** (Harvard/MGH)
Ex vivo hippocampal subfield segmentation
- 5:40 PM – 6:20 PM Open Discussion

Saturday, June 22, 2013

Session 2 (continued)

- 6:20 PM – 7:00 PM **Keynote address:**
Ricardo Insausti (Universidad de Castilla – La Mancha, Albacete, Spain)
Anatomical boundaries in the human hippocampal and parahippocampal region applied to Neuroimaging
- 7:00 PM Dinner and discussion

Session 3

Moderator: Lei Wang

- 8:30 AM – 9:00 AM Morning Coffee
- 9:00 AM – 9:20 AM **Valerie Carr** (Stanford University)
Variability in collateral sulcus anatomy
- 9:20 AM – 9:40 AM **Dana Smuda** (UC Davis)
Role of hippocampal subregions in disambiguating temporal vs. spatial context
- 9:40 AM – 10:00 AM **Abdul Hassan** (UC Davis)
Hippocampal subregion volume in post-injury Traumatic Brain Injury patients
- 10:00 AM – 10:20 AM **Nanthia Suthana** (UCLA)
High-resolution cortical unfolding at 7T
- 10:20 AM – 11:00 AM* **Marina Boccardi** (Centro Alzheimer, Brescia)
EADC-ADNI harmonization of protocols for hippocampal segmentation
** via remote connection*
- 11:00 AM – 12:00 PM Open Discussion
- 12:00 PM – 1:00 PM Lunch

Session 4

Moderators: Arne Ekstrom, Craig Stark, Michael Yassa, and Paul Yushkevich

- 1:00 PM – 3:00 PM **General Discussion and Future Goals**