

**Sunday November 14<sup>th</sup>**

3:00 pm Check-in

6:00 pm Reception (Lobby)

7:00 pm Dinner

**8:00 pm Session 1: Computer Vision at JFRC I**  
**Chair: Eugene Myers**

8:00 pm **Eugene Myers**, Janelia Farm Research Campus/HHMI  
*Introductory remarks*

8:10 pm **Dmitri Chklovskii**, Janelia Farm Research Campus/HHMI  
*Super-resolution reconstruction of brain structure using sparse redundant representations*

8:40 pm **Hanchuan Peng**, Janelia Farm Research Campus/HHMI  
*Seeing more is knowing more*

9:10 pm Refreshments available at Bob's Pub

## Monday November 15<sup>th</sup>

- 7:30 am Breakfast
- 9:00 am Session 2: Feature Learning**  
**Chair: Dmitri Chklovskii**
- 9:00 am **Jean Ponce**, Ecole Normale Supérieure  
*Sparse coding and dictionary learning for image analysis*
- 9:30 am **Yann LeCun**, New York University  
*Should artificial vision use the same building blocks as natural vision?*
- 10:00 am Break
- 10:30 am **Session 3: Brain Image Segmentation and Analysis**  
**Chair: Hanchuan Peng**
- 10:30 am **Demetri Terzopoulos**, University of California, Los Angeles  
*Linear and multilinear PCA for automatic brain image segmentation*
- 11:00 am **Sebastian Seung**, HHMI/Massachusetts Institute of Technology  
*Learning to segment images by optimizing error metrics that are sensitive to topological disagreements*
- 11:30 am **Tolga Tasdizen**, University of Utah  
*Cell membrane detection in electron microscopy*
- 12:00 pm **Rene Vidal**, Johns Hopkins University  
*Processing high angular resolution diffusion images of the brain*
- 12:30 pm Lunch
- 1:10 pm Tour (optional – meet at reception)
- 2:15 pm Session 4: Articulated Pose Recognition**  
**Chair: Jens Rittscher**
- 2:15 pm **Jianbo Shi**, University of Pennsylvania  
*Shape packing*
- 2:45 pm **Jitendra Malik**, University of California, Berkeley  
*Detecting and segmenting objects in images*

## What Can Computer Vision Do for Neuroscience and Vice Versa?

- 3:15 pm     **Deva Ramanan**, University of California, Irvine  
*Discriminative models for finding people and objects (and their interactions)*
- 3:45 pm     Break
- 4:15 pm**     **Session 5: Computer Vision at JFRC II**  
**Chair: Christos Davatzikos**
- 4:15 pm     **Kristin Branson**, Janelia Farm Research Campus  
*Tracking and behavior analysis for genetic model organisms*
- 4:45 pm     **Eugene Myers**, Janelia Farm Research Campus/HHMI  
*Tracking the vibrissae of head-fixed mice*
- 5:15 pm     Poster Reception
- 7:00 pm     Dinner
- 9:00 pm     Refreshments available at Bob's Pub

## Tuesday November 16<sup>th</sup>

7:30 am Breakfast

**9:00 am Session 6: Tracking and Behavior Analysis I**  
**Chair: Kristin Branson**

9:00 am **Pietro Perona**, California Institute of Technology  
*Collision avoidance in walking flies*

9:30 am **Dimitris Metaxas**, Rutgers University  
*Coupling deformable models and learning methods for nonverbal behavior analysis: Applications to deception, cultural studies, rodent and worm behavior*

10:00 am **Piotr Dollár**, California Institute of Technology  
*Towards a trainable animal tracking system*

10:30 am Break

**11:00 am Session 7: Segmentation and Recognition**  
**Chair: Jitendra Malik**

11:00 am **Alexei Efros**, Carnegie Mellon University  
*Are categories necessary?*

11:30 am **Charless Fowlkes**, University of California, Irvine  
*Adaptive biological image analysis*

12:00 pm **Ross Whitaker**, University of Utah  
*On the manifold structure of the space of brain images*

12:30 pm Lunch

**1:30 pm Session 8: Biomedical Imaging Applications**  
**Chair: Dimitris Metaxas**

1:30 pm **Christos Davatzikos**, University of Pennsylvania  
*Using imaging patterns along with machine learning methods to build diagnostic and prognostic tools*

2:00 pm **James Duncan**, Yale University  
*Extraction of functional subnetworks in Autism using multimodal MRI*

## What Can Computer Vision Do for Neuroscience and Vice Versa?

- 2:30 pm **James Gee**, University of Pennsylvania  
*Integrative analysis of cortico-connective patterns of network degeneration*
- 3:00 pm **Terry Yoo**, National Institutes of Health  
*Toolsmithing software for neuroscience discovery*
- 3:30 pm Break
- 4:00 pm** **Session 9: Category Discovery**  
**Chair: Fuhui Long**
- 4:00 pm **Kristen Grauman**, University of Texas at Austin  
*Context-aware visual discovery and collective segmentation*
- 4:30 pm **Antonio Torralba**, Massachusetts Institute of Technology  
*A data-driven approach for event prediction*
- 5:00 pm Poster Reception
- 6:30 pm Dinner
- 7:30 pm Refreshments available at Bob's Pub

## Wednesday November 17<sup>th</sup>

- 7:30 am Breakfast
- 9:00 am Session 10: Tracking and Behavior Analysis II**  
**Chair: Pietro Perona**
- 9:00 am **Xiaolei Huang**, Lehigh University  
*Analysis of actin cytoskeleton structures using active contour and active surface models*
- 9:30 am **Badri Roysam**, University of Houston  
*Computational sensing of biological events and patterns from image sequences*
- 10:00 am **Jens Rittscher**, GE Global Research  
*Robust algorithms for high-content imaging*
- 10:30 am Break
- 11:00 am Session 11: Neuron Image and Pattern Analysis**  
**Chair: Gene Myers**
- 11:00 am **Hanspeter Pfister**, Harvard University  
*Analyzing the connectome with human vision*
- 11:30 am **Fuhui Long**, Janelia Farm Research Campus/HHMI  
*Morphological comparison of 3D neuron trees extracted from microscopy images*
- 12:00 pm **Stephen Wong**, The Methodist Hospital, Weill Cornell Medical College  
*Automated labeling and tracking of synaptic activities in population of neurons for understanding dynamic synaptopathology and treatment response*
- 12:30 pm Closing Remarks and Discussion**
- 1:00 pm First shuttle to Dulles  
1:45 pm Second shuttle to Dulles  
2:30 pm Last shuttle to Dulles