Monday, January 27th

9:30am  **Opening Remarks - SCGP 102**

Title: Opening Remarks

9:45am  **Anitha Pasupathy - SCGP 102**

Speaker: Anitha Pasupathy
Title: TBA

10:30am  **Coffee Break - SCGP cafe**

11:00am  **Dmitri Chklovskii - SCGP 102**

Speaker: Dmitri Chklovskii
Title: TBA

11:45am  **Nicolas Brunel - SCGP 102**

Speaker: Nicolas Brunel
Title: TBA

12:30pm  **Lunch - SCGP cafe**

2:00pm  **Micha Tsodyks - SCGP 102**

Speaker: Misha Tsodyks
Title: TBA

2:45pm  **Vijay Balasubramanian - SCGP 102**
Speaker: Vijay Balasubramanian
Title: TBA

4:00pm  Giancarlo La Camera - SCGP 102
 Speaker: Giancarlo La Camera
 Title: TBA

4:45pm  Braden Brinkman - SCGP 102
 Speaker: Braden Brinkman
 Title: A non-perturbative renormalization group analysis of strongly-coupled spiking networks
 Abstract: TBA

Tuesday, January 28th

9:45am  Arianna Maffei - SCGP 102
 Speaker: Arianna Maffei
 Title: Circuit mechanisms for learning in sensory cortex

10:30am  Coffee Break - SCGP cafe
11:00am  Carina Curto - SCGP 102
 Speaker: Carina Curto
 Title: TBA

11:45am  Jim DiCarlo - SCGP 102
 Speaker: Jum DiCarlo
 Title: TBA

2:00pm  Stefano Fusi - SCGP 102
Speaker: Stefano Fusi

Title: TBA

2:45pm  
Ken Miller - SCGP 102

Speaker: Ken Miller

Title: TBA

4:45pm  
Memming Park - SCGP 102

Speaker: Memming Park

Title: Stimulus-choice population code (mis)alignment in the middle temporal cortex during perceptual decision-making

Abstract: For stimuli near perceptual threshold, the trial-by-trial activity of single neurons in many sensory areas is correlated with the animal’s perceptual report. This phenomenon has often been attributed to feedforward readout of the neural activity by the downstream decision-making circuits. The interpretation of choice-correlated activity can be better understood in the light of population-wide correlations among sensory neurons. Using a statistical nonlinear dimensionality reduction technique on single-trial ensemble recordings from the middle temporal area during perceptual-decision-making, we extracted low-dimensional neural trajectories that captured the population-wide fluctuations. We dissected the particular contributions of sensory-driven versus choice-correlated activity in the low-dimensional population code. We found that the neural trajectories strongly encoded the direction of the stimulus in single dimension with a temporal signature similar to that of single MT neurons. If the downstream circuit were optimally utilizing this information, choice-correlated signals should be aligned with this stimulus encoding dimension. Surprisingly, we found that a large component of the choice information resides in the subspace orthogonal to the stimulus representation inconsistent with the optimal readout view. This misaligned information allows the feedforward sensory information to coexist with the decision-making process. The time course of these signals suggest that this misaligned contribution likely is feedback from the downstream areas. We hypothesize that this non-corrupting choice-correlated feedback might be related to learning or reinforcing sensory-motor relations in the sensory population.

Wednesday, January 29th

10:30am  
Coffee Break - SCGP cafe

11:00am  
Chuck Stevens - SCGP 102
**Speaker:** Chuck Stevens  
**Title:** A maximum entropy combinatorial code for two quite different neural systems

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:30pm</td>
<td>Lunch - SCGP cafe</td>
</tr>
<tr>
<td>2:00pm</td>
<td>Surya Ganguli - SCGP 102</td>
</tr>
<tr>
<td></td>
<td><strong>Speaker:</strong> Surya Ganguli</td>
</tr>
<tr>
<td></td>
<td><strong>Title:</strong> TBA</td>
</tr>
<tr>
<td>2:45pm</td>
<td>Luca Mazzucato - SCGP 102</td>
</tr>
<tr>
<td></td>
<td><strong>Speaker:</strong> Luca Mazzucato</td>
</tr>
<tr>
<td></td>
<td><strong>Title:</strong> TBA</td>
</tr>
<tr>
<td>4:00pm</td>
<td>Jin Wang - SCGP 102</td>
</tr>
<tr>
<td></td>
<td><strong>Speaker:</strong> Jin Wang</td>
</tr>
<tr>
<td></td>
<td><strong>Title:</strong> TBA</td>
</tr>
<tr>
<td><strong>Thursday, January 30th</strong></td>
<td></td>
</tr>
<tr>
<td>9:45am</td>
<td>Barry Richmond - SCGP 102</td>
</tr>
<tr>
<td></td>
<td><strong>Speaker:</strong> Barry Richmond</td>
</tr>
<tr>
<td></td>
<td><strong>Title:</strong> TBA</td>
</tr>
<tr>
<td>10:30am</td>
<td>Coffee Break - SCGP cafe</td>
</tr>
<tr>
<td>11:45am</td>
<td>William Marshall - SCGP 102</td>
</tr>
<tr>
<td></td>
<td><strong>Speaker:</strong> William Marshall</td>
</tr>
<tr>
<td></td>
<td><strong>Title:</strong> Causal Emergence: Can Macro Beat Micro?</td>
</tr>
<tr>
<td>12:30pm</td>
<td>Lunch - SCGP cafe</td>
</tr>
<tr>
<td>2:00pm</td>
<td>David Schwab - SCGP 102</td>
</tr>
</tbody>
</table>
Speaker: David Schwab
Title: TBA

2:45pm Remi Monasson - SCGP 102

Speaker: Remi Monasson
Title: TBA

4:00pm Paul Miller - SCGP 102

Speaker: Paul Miller
Title: Multistable, metastable, and quasi-stable attractor states in cognitive processing

4:45pm Mike Douglas - SCGP 102

Speaker: Mike Douglas
Title: TBA

Friday, January 31st

9:45am Bruno Averbeck - SCGP 102

Speaker: Bruno Averbeck
Title: Dimensionality, Information and Learning in Prefrontal Cortex

10:30am Coffee Break - SCGP cafe

11:00am Kanaka Rajan - SCGP 102

Speaker: Kanaka Rajan
Title: TBA

11:45am Tilo Schwalger - SCGP 102
Speaker: Tilo Schwalger

Title: Mesoscopic mean-field models for spiking neural networks

12:30pm Lunch - SCGP cafe
2:00pm Cengiz Pehlevan - SCGP 102

Speaker: Cengiz Pehlevan

Title: Theory of orientation selectivity in rodent primary visual cortex

2:45pm Final Remarks and Farewell - SCGP 102

Title: Final Remarks and Farewell