

## 6265 Perception and Action

TIMETABLE, 2021

1. Jan 13 Intro, including basic perception/action pathways
2. Jan 20 Issues raised by perception during motion, eye movements,
3. Jan 27 Non-visual spatial senses: vestibular, hearing and somatosensory systems
4. Feb 3 Neural basis of cognition
5. Feb 10 Spatial cognition, visual movement ( $\leftarrow$  + discussion of chosen topics)  
Feb 17 (reading week, no class)
6. Feb 24 Spatial cognition, and navigation
7. Mar 3 Student presentations
8. Mar 10 Student presentations
9. Mar 17 Student presentations
10. Mar 24 Student presentations
11. Mar 31 Student presentations
12. Apr 7 Student presentations

POSSIBLE TOPICS (just suggestions, feel free to propose your own)

1. Navigation by landmarks and path integration
2. Perception and action in infants
3. Body representation (body schema vs body image)
4. Perception of the hand and/or face
5. Mirror neurones
6. Extra-personal spatial representation
7. Peri-personal space
8. Navigation mechanisms in different animal species
9. Spatial neglect
10. The control of reaching
11. Perceiving your heading of self-motion
12. Perceiving your orientation
13. Recovery from vestibular damage
14. Hippocampal place cells and grid cells
15. Saccadic suppression
16. Perception during self-movement
17. Role of attention in action and perception
18. How does the vestibular system distinguish gravity from acceleration?
19. The coding of eye position
20. Dissociation of perception and action using clinical cases
21. Space and time in perception and action
22. Spatial cognition: constructing a representation of the world
23. Peri-saccadic mis-localization
24. Multisensory processing in the brain: convergence in the action (parietal) system
25. Multisensory integration in speech
26. Multisensory integration in orientation
27. Multisensory integration in self-motion perception
28. Comparing the consequences of active vs passive movement
29. Allocentric vs egocentric reference frames: different frames for action and perception?
30. Updating after movement.
31. Spatial hearing (do head movements help localize sounds?)
32. What can optic flow tell us about?
33. Effects of zero gravity on perception.
34. The temporo-parietal junction (TPJ): the seat of consciousness?
35. Is Virtual Reality a useful tool?
36. Blindness and multisensory perception.
37. Deafness and multisensory perception.
38. Consequences of losing proprioceptive feedback.
39. The vestibular system and consciousness/self-awareness.
40. Neuroscience in space.