

## Neuronal Circuits: From Structure To Function

### Session 1 OLFACTORY / GUSTATORY SYSTEM

THURSDAY 3/9/2006, 7:30 PM

C. Dulac / D. Anderson

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
1	Buck	Deconstructing smell	25
2	Linster	Neuronal circuits in the olfactory bulb can compute normalizations—Behavioral predictions and computational modeling	12
3	Dulac	Molecular logic of pheromone sensory processing in the mammalian brain	25
4	Perez	Identification of neuronal circuits relevant for feeding and Sjögren's syndrome using virus retrograde tracing	12
5	Marella	Functional imaging of taste responses in the fly brain	12
6	Potter	Mapping olfactory perception in the <i>Drosophila</i> brain	12
7	Anderson	Neural circuits activated by <i>Drosophila</i> stress odorant	25

### Session 2 VISUAL SYSTEM I

FRIDAY 3/10/2006, 9:00 AM

P. Sterling / T. Clandinin

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
8	Sterling	What microcircuitry can explain about the brain	25
9	Hosoya	Burst temporal coding by the retina	12
10	Koch	Information traffic on a neural cable	12
11	Smith	Filopodia as agents of neural circuit construction and plasticity	25
12	Cline	Stabilization of axon branch dynamics by synaptic maturation and visual stimulation	12
13	Clandinin	Examining the circuits that inform visual behavior	25
14	Kurtz	Adaptation in visual motion-sensitive neuronal circuits in the fly brain	12
15	Morante	The color vision circuit in <i>Drosophila</i>	12

### Session 3 POSTER SESSION

FRIDAY 3/10/2006, 2:00 PM

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
16	Anderson	Mismatched receptor complements at hippocampal synapses	
17	Apergis-Schoute	The perirhinal cortex contains long-range GABAergic neurons that inhibit superficial entorhinal cells	

18	Bader	Control of feeding behavior by the hugin cells in the <i>Drosophila</i> brain
19	Berg	Excitation and inhibition co-vary in motoneurons during scratch-like network activity in the isolated carapace-spinal cord from adult turtles
20	Borghuis	Optimal design of a neuronal array
21	Cai	Role of complexin in synaptic transmission
22	Ryu	Statistical foraging strategy of <i>C. elegans</i>
23	Chen	Understanding the spatial patterning of serotonergic synapses using <i>Drosophila</i> as a model system
24	Cinar	Cholinergic signaling in neuronal circuits of <i>C. elegans</i>
25	Cox	Thalamocorticothalamic circuits for universal learning
26	da Costa	Many to one—The relationship between afferents and their target neurons examined in the thalamocortical projection in cat area 17
27	Dimitrov	Stimulus transformations distort estimates of sensory neuron selectivity
28	Dombeck	Fast optical recording of membrane potential transients on soma, dendrites and dendritic spines in mammalian brain slices with second-harmonic generation
29	Drinjakovic	The role of ubiquitin-mediated protein degradation in retinal axon branching in vivo
30	Fouquet	Towards in vivo observation of synaptic plasticity in the <i>Drosophila</i> olfactory system
31	Garrigan	Chromatic scene statistics and primate cone mosaic structure
32	Gaufo	Segmental code for neural circuit assembly
33	Ghosh	Cellular and molecular basis of a novel ultradian rhythm in <i>C. elegans</i>
34	Hensbroek	Transformation of vestibular kinematic signals by the cerebellar granular layer
35	Hiesinger	Activity-independent respecification of synaptic partners in the visual map of
36	Wilbrecht	Experience-dependent and cell-type specific spine growth in the neocortex
37	Hua	BDNF is a substrate for activity-based axon competition
38	Imaizumi	Functional principle of thalamocortical projection in lemniscal auditory system
39	Joshi	Structure-function relations of neurons in macaque striate cortex (V1) characterized in vivo using loose-patch juxtacellular recording
40	Kaiser	Generation of multiple-cluster neural systems by developmental time windows
41	Katsov	Genetic dissection of motion-sensitive circuits in the fly that inform visual behavior
42	Kinkhabwala	A novel patterning of neurons by transmitter phenotype in hindbrain
43	Koper	Identification of <i>Drosophila</i> spines
44	Leo	Methylphenidate administration to adolescent rats determines plastic changes on reward-related behavior and striatal gene expression

45	Li	Segmental and cell type specific regulation by Hox genes expression in
46	Linster	Computational analysis of interneuron connectivity patterns in the honeybee
47	Little	Specific cortical targeting of misrouted and delayed Sema6a-deficient thalamocortical axons
48	Majumder	Imaging the response to stimulation in the zebrafish lateral line
49	Marsicano	The endocannabinoid system controls a key epileptogenic circuit in the hippocampus
50	Muir	The microstructure of patchy lateral connectivity
51	Orman	Unidirectional propagation of population discharges through the rat area CA1 in vitro
52	Pankratz	Neural circuits controlling feeding behavior in <i>Drosophila</i>
53	Perge	Why axons in mammalian optic nerve are mostly thin
54	Petreaunu	Distinct forms of experience-dependent circuit-plasticity in intrinsically bursting and regular spiking neocortical pyramidal cells
55	Ratliff	Natural scene statistics predict that larger ganglion cells should have relatively smaller surrounds
56	Rhodes	Simulation of a thalamocortical column with compartment model neurons and dynamic synapses
57	Klar	Determination of contra-lateral versus ipsilateral trajectory patterns of dl1 axons
58	Rünker	Complex interactions between semaphorin-6A and plexin-A2/-A4 in vivo
59	Sakurai	Bidirectional neuromodulation arising from opposing actions of synaptically-released serotonin
60	Sato	Using in vivo $[Ca^{2+}]$ imaging to detect single action potentials in multiple neurons in the mouse somatosensory cortex
61	Serguera	An increase in tyrosine hydroxylase in the olfactory bulbs may impair odor
62	Shao	The role of Vav family proteins in nervous system development
63	Thirumalai	Dopamine inhibits swim circuit output in zebrafish larvae via a D2 receptor-mediated pathway
64	Tran	Sensory dynamics of <i>Drosophila</i> courtship initiation
65	Koulakov	Wiring the brain—Sperry versus Hebb
66	Varija Raghu	Synapse distribution in <i>Drosophila</i> motion detection pathway
67	Wen	A cost benefit analysis of axon and dendrite morphology
68	Zhigulin	Stabilization of burst propagation in a model synfire chain circuit by inhibitory
69	Zlatic	Patterning of sensory arbors in the embryonic central nervous system of
70	Zubler	Simulation of corticogenesis as a self-organizing system

**Session 4 VISUAL SYSTEM II**

FRIDAY 3/10/2006, 7:30 PM

P. Sterling / T. Clandinin

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
71	Meinertzhagen	Synaptic circuits in the optic lobes of <i>Drosophila</i>	25
72	Hassan	Atonal orchestrates visual system development in <i>Drosophila</i>	12

**Session 5 METHODS**

FRIDAY 3/10/2006, 8:15 PM

W. Denk

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
73	Lein	Refining cellular neuroanatomy through a genome-wide analysis of gene	25
74	Lois	Genetic marking of neuronal populations by enhancer detection in transgenic mice	12
75	Luan	Development of a "split transcription factor" system for dissection of neural circuits in <i>Drosophila</i>	12
76	Wickersham	Transcomplemented transsynaptic tracing—A new tool for precision mapping of neural circuits	12
77	Denk	Serial block-face scanning electron microscopy (SBFSEM) to reconstruct three-dimensional tissue nanostructure	25
78	Mishchenko	Neuronal circuits reconstruction with full 3D segmentation of serial thin section electron micrographs	12
79	Emmons	Reconstruction of the <i>C. elegans</i> male nervous system	12

**Session 6 BEHAVIOR, LEARNING AND MEMORY I**

SATURDAY 3/11/2006, 9:00 AM

C. Bargmann / B. Dickson

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
80	Kristan	Blinking leech neurons—Using voltage-sensitive dyes to understand behavioral	25
	Bargmann	No Title	25
81	Schafer	What is it like to be a worm?—Sensory perception and Behavior in <i>C. elegans</i>	25
82	Dickson	The genetic and neural basis of sexual behaviour in <i>Drosophila</i>	25
83	Meissner	Targeted fruitless inhibition identifies neural components of <i>Drosophila</i> courtship behavior	12
84	Simpson	Mapping neural circuits that inhibit inappropriate courtship in <i>Drosophila</i>	12
85	Yang	Identification and characterization of neurons important for egg-laying behavior in <i>D. melanogaster</i>	12

**Session 7 BEHAVIOR, LEARNING AND MEMORY II**

SATURDAY 3/11/2006, 2:00 PM

C. Bargmann / B. Dickson

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
86	Dubnau	A novel neuronal circuit for maintenance of middle-term memory in <i>Drosophila</i>	12
87	Waddell	Dorsal paired medial neurons provide a general mechanism for stabilizing memory	12
88	DeBello	Micro-rewiring as a substrate for learning	12

**Session 8 MOTOR AND OSCILLATIONS**

SATURDAY 3/11/2006, 3:00 PM

M. Goulding

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
89	Goulding	Genetic approaches for unraveling the neural networks that control locomotion	25
90	Katz	Evolution of neural circuits underlying swimming behaviors in nudibranch molluscs	12
91	O'Malley	Total-system analysis of zebrafish locomotor control—New themes	12
92	Ryu	Dimensionality and dynamics in the motor behavior of <i>C. elegans</i>	12

**Session 9 HIPPOCAMPUS**

SATURDAY 3/11/2006, 4:30 PM

P. Somogyi

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
93	Somogyi	Cell types, space and time in hippocampal network oscillations	25

**Session 10 CORTEX**

SUNDAY 3/12/2006, 9:00 AM

K. Svoboda / K. Martin

<u>#</u>	<u>Iname</u>	<u>Title</u>	<u>Talk Length</u>
94	Svoboda	Geometric and functional organization of cortical circuits	25
95	Frick	Development and short-term plasticity of monosynaptic connections in the cortical L5A network	12
96	Wang	Heterogeneity in the pyramidal network of the medial prefrontal cortex	12
97	Stepanyants	Inter-laminar variation of local axon density and the potential for structural synaptic plasticity in the cat visual cortex	12
98	Xu	Laminar specificity of functional input to distinct types of inhibitory cortical neurons	12
99	Martin	Canonical circuits of neocortex	25
100	Baker	Multineuron response dynamics in the cat striate cortex during the presentation of time-varying natural scenes	12
101	De Paola	Cell-type specific structural plasticity of axonal branches and boutons in the adult neocortex	12