

<b>CELLULAR AND MOLECULAR NEUROBIOLOGY (NBIO 722A)</b>			
SCHEDULE 2007-2008			
MWF 10-11:50 Neurosci Res Bldg 3rd Floor Conf Room (3118 NRB)			
<b>Aug</b>	<b>11</b>	<b>W</b>	<b>DEADLINE FOR SUBMISSION OF BLOCK 1 READING MATERIAL</b>
<b>BLOCK 1: INTRODUCTORY MATERIAL &amp; DEVELOPMENTAL NEUROBIOLOGY</b>			
<b>*POLLEUX, CHENEY, CREWS, NICHOLAS, RUSTIONI</b>			
<b>Aug.</b>	<b>22</b>	<b>W</b>	RC Neuronal cell biology
	<b>24</b>	<b>F</b>	staff Molecular biology applied to neurons I
	<b>27</b>	<b>M</b>	staff Molecular biology applied to neurons II
	<b>29</b>	<b>W</b>	staff Molecular biology applied to neurons III
	<b>31</b>	<b>F</b>	AR Human brain dissection
<b>Sept</b>	<b>3</b>	<b>M</b>	<b>LABOR DAY - NO CLASSES HELD</b>
	<b>5</b>	<b>W</b>	SC Induction and patterning of the developing nervous system
	<b>7</b>	<b>F</b>	SC Neuronal and glial cell fate specification
	<b>10</b>	<b>M</b>	FP Neuronal migration, axon growth and guidance
	<b>12</b>	<b>W</b>	Philpot Dendrite, spine and synaptic development
	<b>14</b>	<b>F</b>	Deshmukh Cell death and neurotrophin function during CNS development
	<b>14</b>	<b>F</b>	<b>*TAKE HOME EXAM BLOCK 1 HANDED OUT</b>
	<b>14</b>	<b>F</b>	<b>*Noon meeting of faculty Blocks 1 and 2</b>
	<b>17</b>	<b>M</b>	<b>No class. Exam day.</b>
	<b>17</b>	<b>M</b>	<b>TAKE HOME EXAM BLOCK 1 DUE TO LORI BLALOCK AT 4PM</b>
<b>BLOCK 2: ELECTRICAL SIGNALING</b>			
<b>*ROSENBERG, STUART, CHENEY</b>			
	<b>19</b>	<b>W</b>	RR Membrane potentials, Nernst, GHK, I/V relations; prob set #1
	<b>21</b>	<b>F</b>	AS/RR Capacitance, equivalent circuits, passive membrane; prob set #2
	<b>24</b>	<b>M</b>	AS/RR Hodgkin-Huxley experiments and voltage clamp
	<b>26</b>	<b>W</b>	AS/RR Propagation of action potentials
	<b>26</b>	<b>W</b>	<b>BLOCK 1 EXAM HANDED BACK TO STUDENTS</b>
	<b>28</b>	<b>F</b>	AS/RR Clamp limitations, patch clamping
<b>Oct</b>	<b>1</b>	<b>M</b>	RR/AS Single channels
	<b>3</b>	<b>W</b>	RR/AS Discussion of problem set #3
	<b>5</b>	<b>F</b>	RR/AS Ion channel selectivity
	<b>8</b>	<b>M</b>	RR/AS Voltage-dependent activation; inactivation
	<b>10</b>	<b>W</b>	RR/AS Discussion of problem set #4
	<b>12</b>	<b>F</b>	<b>UNIVERSITY DAY - NO CLASS</b>
	<b>15</b>	<b>M</b>	RR/AS Calcium channels; channel diversity
	<b>17</b>	<b>W</b>	RR/AS Regulation of action potential frequency: Ih, IA, BK & SK channels
	<b>19</b>	<b>F</b>	<b>FALL BREAK</b>
	<b>22</b>	<b>M</b>	RR/AS Discussion of problem set #5
	<b>24</b>	<b>W</b>	AS/RC Mechanosensory channels: transduction
	<b>26</b>	<b>F</b>	AS/RC Mechanosensory channels: adaptation; freq tuning
	<b>26</b>	<b>F</b>	<b>*TAKE HOME EXAM BLOCK 2 HANDED OUT</b>
	<b>26</b>	<b>F</b>	<b>*Noon meeting, faculty of Blocks 2 and 3</b>
	<b>29</b>	<b>M</b>	<b>No class. Exam day.</b>
	<b>29</b>	<b>M</b>	<b>TAKE HOME EXAM BLOCK 2 DUE TO LORI BLALOCK AT 4PM</b>

<b>BLOCK 3: NEUROTRANSMITTER RECEPTORS</b>				
			<b>*HODGE, MAILMAN, NICHOLAS, WEISS</b>	
	31	W	RN/EW	G-protein coupled receptors: overview of superfamily
Nov	2	F	EW/RN	G Protein Signaling
	5	M		<b>NEUROSCIENCE MEETINGS</b>
	7	W		<b>NEUROSCIENCE MEETINGS</b>
	9	F		<b>BLOCK 2 EXAM HANDED BACK TO STUDENTS</b>
	9	F	EW/RN	Regulation of effectors by G proteins
	12	M	RM	Receptor theory
	14	W	RM	Ligand binding analysis
	16	F	RM	Demo and discussion: critical evaluation of binding data
	19	M	RM	DA receptors - neurobiology, pharmacology, and regulation
	21	W		<b>THANKSGIVING BREAK</b>
	23	F		<b>THANKSGIVING BREAK</b>
	26	M	RM	Diseases of dopamine receptors: Parkinson's Disease and Schizophrenia
	28	W	CH	Metabotropic glutamate receptors
	30	F	RR	Acetylcholine receptors
Dec	3	M	CH	GABA-gated ion channels: pharmacology and molecular biology
	5	W	CH	Ionotropic glutamate receptors
	5	W		<b>TAKE HOME EXAM BLOCK 3 HANDED OUT</b>
	5	W		<b>Last day of classes.</b>
	7	F		<b>*Noon meeting, faculty of Blocks 3 and 4</b>
	10	M		<b>TAKE HOME EXAM BLOCK 3 DUE TO LORI BLALOCK 4 PM</b>
	21	F		<b>EXAM 3 MAILED TO STUDENTS IN ENVELOPE THEY PROVIDE</b>
				<b>CHRISTMAS BREAK</b>
<b>BLOCK 4: PRESYNAPTIC MECHANISMS.</b>				
			<b>*MANIS, MAILMAN, PHILPOT, WIGHTMAN</b>	
Jan	9	W	PBM	Introduction to synaptic transmission
	11	F	PBM	Electrophysiological analysis of neurotransmitter release
	14	M	PBM	Molecular mechanisms of neurotransmitter release I
	16	W	PBM	Molecular mechanisms of neurotransmitter release II
	18	F	PBM	Modulation of release: presynaptic receptors
	21	M		<b>MARTIN LUTHER KING HOLIDAY</b>
	23	W	RM/MW	Approaches to assessing transmitter release
	25	F	MW/RM	Current controversies in release: drug abuse and schizophrenia
	28	M	PBM	Uniquantal and multiquantal release in the CNS
	30	W	PBM	Short term synaptic plasticity: paired pulse and tetanic potentiation
Feb	1	F	BP/PBM	Synaptic plasticity: introduction to LTP and LTD
	4	M	BP/PBM	Synaptic plasticity: expression and maintenance of LTP
	6	W	BP/PBM	Synaptic plasticity: long term depression
	8	F	BP/PBM	Synaptic plasticity: spike timing dependent plasticity
	8	F		<b>*noon meeting, faculty of Blocks 4 and 5</b>
	8	F		<b>TAKE HOME EXAM BLOCK 4 HANDED OUT</b>
	11	M		No class: exam day
	11	M		<b>TAKE HOME EXAM BLOCK 4 DUE TO LORI BLALOCK 4 PM</b>

<b>BLOCK 5: POSTSYNAPTIC MECHANISMS. INTRACELLULAR SIGNALING.</b>			
			<b>*MANESS, MCCARTHY, BRENNAN, STUART, WEISS</b>
	13	W	PFM Receptor tyrosine kinases control neural development
	15	F	PFM The RAS-MAPK pathway links receptor tyrosine kinases to gene expression
	18	M	PFM Regulation of neuronal gene expression; learning and memory
	20	W	PFM The PI3 Kinase/Akt pathway regulates neuronal survival
	20		<b>EXAM 4 HANDED BACK TO STUDENTS</b>
	22	F	JB Neurotransmitter receptor trafficking and localization
	25	M	PFM Molecular control of neuronal polarity
	25	M	KM Ca signaling #1
	27	W	KM Ca signaling #2
	29	F	KM Ca signaling #3
Mar	3	M	PFM Regulation of actin dynamics by Rho family GTPases
	5	W	EW Phototransduction: detection of single quanta
	7	F	EW Phototransduction: cGMP channels, adaptation, rhodopsin shutoff
	7	F	<b>TAKE HOME EXAM BLOCK 5 HANDED OUT</b>
	7	F	<b>*noon meeting, faculty of Blocks 5 and 6</b>
	10	M	<b>SPRING BREAK</b>
	12	W	<b>SPRING BREAK</b>
	14	F	<b>SPRING BREAK</b>
	17	M	<b>No class. Exam day.</b>
	19	W	<b>TAKE HOME EXAM BLOCK 5 DUE TO LORI BLALOCK 10 AM</b>
<b>BLOCK 6: CNS: ANATOMY AND FUNCTION OF SENSORY SYSTEMS</b>			
			<b>*RUSTONI, BELGER, FITZPATRICK, MANIS, PHILPOT, STUART, YI, ZYLKA</b>
	19	W	AR Nuclei and pathways in the brain
	21	F	<b>GOOD FRIDAY/EASTER HOLIDAY</b>
	24	M	AS Vertebrate retina
	26	W	BP Organization and basic function of primary visual cortex
	28	F	Ye Li/BP Visual cortex function and processing: lessons from modern methods
	31	M	BP Beyond primary visual cortex
Apr	2	W	PM Hearing: The cochlea and eighth nerve
	2	W	<b>EXAM 5 HANDED BACK TO STUDENTS</b>
	4	F	PM/DF The auditory brainstem and coincidence detection
	7	M	PM/DF Mapping auditory space: the barn owl
	9	W	PM Auditory cortex
	11	F	AB fMRI technique applied to visual and auditory processing
	14	M	MZ Somatosensation: periphery/DRG
	16	W	MZ Somatosensory pathways - pain and touch
	18	F	MZ Somatosensory cortex
	21	M	AR Sensory organs: Olfactory receptors
	23	W	AR Sensory pathways: Olfactory Bulb and CNS
	25	F	AR Brain pathology
	25	F	<b>TAKE HOME EXAM BLOCK 6 HANDED OUT</b>
	30	W	<b>TAKE HOME EXAM BLOCK 6 DUE TO LORI BLALOCK 4 PM</b>
May	8	W	<b>EXAM 6 AVAILABLE FOR PICKUP FROM LORI BLALOCK AFTER 1:00PM</b>