

PROGRAM

MONDAY, April 12—7:30 PM

INTRODUCTION

David Stewart

Cold Spring Harbor Laboratory

Maoyen Chi

Cold Spring Harbor Asia

SESSION 1 KEYNOTE SPEAKERS

KEYNOTE I

Introduction by Mu-ming Poo

Linda Buck

Howard Hughes Medical Institute
Fred Hutchinson Cancer Research Center

“Deconstructing smell”

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KEYNOTE II

Introduction by Z. Josh Huang

Karl Deisseroth

Stanford University

“Optogenetics—Development and application”

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TUESDAY, April 13—9:00 AM

SESSION 2 **NEUROGENESIS**

Chairperson: **Z. Josh Huang**, Cold Spring Harbor Laboratory, USA

Looking into the developing zebrafish retina

William A. Harris.

Presenter affiliation: Cambridge University, Cambridge, United Kingdom.

3

Creating the cortex, assembling the amygdala

Shubha Tole.

Presenter affiliation: Tata Institute of Fundamental Research, Mumbai, India.

4

Temporal regulation of neural stem cell fate in the developing mouse neocortex

Yukiko Gotoh, Masafumi Tsuboi, Yusuke Kishi, Nao Suzki, Yusuke Hirabayashi.

Presenter affiliation: University of Tokyo, Tokyo, Japan.

5

Regulation of midline glial development by nuclear factor one genes in the cerebral cortex

Linda J. Richards.

Presenter affiliation: The University of Queensland, Brisbane, Australia.

6

Stimulation of latent, neurogenic precursor pools in the hippocampus by synaptic activity

Perry F. Bartlett, Dhanisha Jhaveri, Tara L. Walker.

Presenter affiliation: The University of Queensland, Brisbane, Australia.

7

Neurogenesis—Its implication in and application for mental diseases

Noriko Osumi.

Presenter affiliation: Tohoku University Graduate School of Medicine, Sendai, Japan.

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SESSION 3 POSTER SESSION I

Learning-induced brain DNA synthesis and amnestic effects of halogenated nucleotide analogues in mice

Konstantin V Anokhin, Olga I Ivashkina, Dmitri V Bezriadnov.
Presenter affiliation: PK Anokhin Institute of Normal Physiology ,
RAMS, Moscow, Russia,

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TGF- β induces TIAF1 self-aggregation via type II receptor-independent signaling that leads to generation of amyloid β plaques in Alzheimer's disease

Ming-Hui Lee, Sing-Ru Lin Lin, Jean-Yun Chang, Nan-Shan Chang.
Presenter affiliation: National Cheng Kung University, Tainan, Taiwan;
SUNY Upstate Medical University, Syracuse, New York.

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Ubiquitin E3 ligase Mid1 regulates axon development

Tingjia Lu, Renchao Chen, Zhiqi Xiong.
Presenter affiliation: Shanghai Institutes for Biological Sciences, CAS,
Shanghai, China.

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PSD-95 is a linchpin for the macromolecular organization of the postsynaptic density

Xiaobing Chen, Christopher Nelson, Xiang Li, Christine Winters,
Richard Leapman, Morgan Sheng, Thomas Reese.
Presenter affiliation: NINDS, NIH, Bethesda, Maryland.

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Developmental change of correlated binocular activities in mouse primary visual cortex across the critical period

Xiao-jing Chen, Xiao-hui Zhang.
Presenter affiliation: Institute of Neuroscience, State Key Laboratory of
Neuroscience, Shanghai Institutes for Biological Sciences, Chinese Ac,
Shanghai, China.

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The amiloride-sensitive epithelial Na⁺ channel PPK28 is essential for *Drosophila* gustatory water reception

Zijing Chen, Qingxiu Wang, Zuoren Wang.
Presenter affiliation: Institute of Neuroscience, State Key Laboratory of
Neuroscience, Shanghai Institutes for Biological Sciences, shanghai,
China.

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Hypoxic-ischemic down-regulated 1 (HID-1) protein encoded by a novel gene down-regulated in neonatal hypoxic-ischaemic encephalopathy protects against unconjugated bilirubin induced cell death in Neuro2A cells

Pik To Cheung, Hing Wai Tsang.

Presenter affiliation: The University of Hong Kong, Hong Kong SAR, China.

15

Sex pheromone perception—A hardwired molecular pathway modulated by paracrine factors

King L. Chow.

Presenter affiliation: Hong Kong University of Science & Technology, Kowloon, Hong Kong.

16

Serotonin signaling via striatal 5-HT₆ receptors—Impact on cognition

Daniel Eskenazi, Susan M. Ferguson, John F. Neumaier.

Presenter affiliation: University of Washington, School of Medicine, Seattle, Washington.

17

Aberrant CaMKII activity is associated with abnormal dendritic spine formation in *ATRX* metal retardation model mice

Kohji Fukunaga, Norifumi Shioda, Hideyuki Beppu, En Li, Isao Kitajima.

Presenter affiliation: Tohoku University Graduate School of Pharmaceutical Sciences, Sendai, Japan.

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Cdk5 controls the development and maintenance of the Axon Initial Segment—An unappreciated causative factor in neurodegenerative disease?

Edward Giniger, Svetlana Trunova.

Presenter affiliation: NINDS, National Institutes of Health, Bethesda, Maryland.

19

Regulation of acetylcholine receptor clustering at the neuromuscular junction by Cortactin/Nck1 signaling

Zhuolin Gong, Hsiao-ming Benjamin Peng, Raghavan Madhavan.

Presenter affiliation: The Hong Kong University of Science and Technology, Hong Kong, China.

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Serum-inducible-kinase is a positive regulator in dendritogenesis and is necessary for BDNF-promoted dendrite arborization

Shunling Guo, Zhiqi Xiong.

Presenter affiliation: Shanghai Institute for Biological Sciences, Chinese Academy of Sciences, Shanghai, China.

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The disruption of postnatal neurogenesis causes prepulse inhibition deficit at adulthood—A model for psychosis onset during adolescence in rodent <u>Guo Nannan</u> , Suto Fumikazu, Osumi Noriko. Presenter affiliation: Tohoku University Graduate School of Medicine, Sendai, Japan.	22
Investigating the role of the neuroendocrine-hypothalamic system in Rett syndrome <u>Jing Han</u> , Maria Chahrour, Huda Y. Zoghbi. Presenter affiliation: Baylor College of Medicine, Houston, Texas.	23
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Infrared laser-mediated local gene induction in single or groups of cells during neurogenesis and organogenesis in a simple vertebrate Mariko Itoh, Yohei Nakajima, <u>Kohei Hatta</u> . Presenter affiliation: University of Hyogo, Kamigori, Ako-gun, Hyogo, Japan.	25
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Growth cone drives soma translocation via forward F-actin flow during neuronal migration <u>Min He</u> , Zhenhong Zhang, Chenbing Guan, Di Xia, Xiaobing Yuan. Presenter affiliation: Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, Shanghai, China; Graduate School of the Chinese Academy of Sciences, Shanghai, China.	27
Gene regulation in mammalian circadian rhythm and sleep <u>Wenchao Hu</u> , Haifang Wang, Jun Yan. Presenter affiliation: CAS-MPG Partner Institute for Computational Biology, Shanghai, China.	28

Distinct endocytic pathways responding to different synaptic vesicle release modes <u>Zhaolin Hua</u> , Robert Edwards. Presenter affiliation: UCSF, San Francisco, California.	29
Neuroregenerative activity of aqueous extract of <i>Acalypha indica</i> Linn root on rat hippocampal neurons post-hypoxia cerebri <u>Nurhadi Ibrahim</u> , Ernie H. Purwaningsih, Achmad A. Jusuf, Lolo Suswati. Presenter affiliation: Universitas Indonesia, Jakarta Pusat, Indonesia.	30
Early-arriving olfactory axons secrete Sema3F in the olfactory bulb to repel late-arriving Nrp2+ axons <u>Kasumi Inokuchi</u> , Haruki Takeuchi, Mari Aoki, Hitoshi Sakano. Presenter affiliation: University of Tokyo, Tokyo, Japan.	31
Alarm substances in the zebrafish Ajay A. Mathuru, Guanghou Shui, Caroline Kibat, Weifun Cheong, Markus Wenk, <u>Suresh Jesuthasan</u> . Presenter affiliation: A*Star-Duke/NUS, Singapore, Singapore.	32
The potential role of cdr2 in progression of cell cycle and brain development <u>Heewon Kang</u> , Ih-Yeon Hwang, Hyun-Taek Kim, Cheol-Hee Kim, Je Kyung Seong, Young J. Oh. Presenter affiliation: Yonsei University, Seoul, South Korea.	33
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Global changes of the chromatin state during neuronal maturation <u>Yusuke Kishi</u> , Yuki Fujii, Hiroaki Oshiro, Yusuke Hirabayashi, Yukiko Gotoh. Presenter affiliation: Institute of Molecular and Cellular Biosciences, Bunkyo-ku, Japan.	35
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Glycine receptors and and signal integration by astrocytes <u>Dmitriy Labunskiy</u> , Tatyana Fedotova. Presenter affiliation: University of Northern California, Santa Rosa, California.	37
Translational regulation of Kv4.2 by Fragile X Mental Retardation Protein (FMRP) <u>Hye Young Lee</u> , Ashley Rowson-Baldwin, Yuh Nung Jan, Lily Yeh Jan. Presenter affiliation: Howard Hughes Medical Institute, University of California, San Francisco, San Francisco, California.	38
Integrin/ECM signaling promotes axon development via regulating microtubule assembly <u>Wen-Liang Lei</u> , Xing-Yu Jiang, Zhen-Ge Luo. Presenter affiliation: Institute of Neuroscience, Shanghai, China.	39
A genetic screen for genes involved in neuronal specification and connectivity in the <i>Drosophila</i> medulla <u>Xin Li</u> , Claire Bertet, Claude Desplan. Presenter affiliation: New York University, New York, New York.	40
Small RNA? Small memory? <u>Wanhe Li</u> , Josh Dubnau. Presenter affiliation: Cold Spring Harbor Laboratory, Cold Spring Harbor, New York.	41
A high-throughput quantitative proteomics approach to identify altered synaptic protein content in an animal model of depression <u>Kun Li</u> , Yong Zhang, Lujian Liao, Catherine Wong, Roberto Malinow, John R. Yates, Hailan Hu. Presenter affiliation: Institute of Neuroscience, Shanghai, China.	42
Netrins and Slits function in midbrain dopaminergic cell body placement, guidance of their axons and axonal targeting in the striatum <u>Jie Li</u> , Melissa Works, Susan K. McConnell, Mary A. Hynes. Presenter affiliation: Stanford University, Stanford, California.	43
Distinct roles of pheromone receptors in <i>Drosophila</i> aggression <u>Xinhua liang</u> , Weiwei Liu, Yi Rao. Presenter affiliation: National Institute of Biological Sciences, Beijing, China.	44

- Calpain activation promotes BACE1 expression, APP processing, and amyloid plaque formation in a transgenic mouse model of Alzheimer's disease**
Bin Liang, Xiuping Zhou, Jiaxin Gong, Baoyu Duan, Zhengge Luo.
 Presenter affiliation: Chinese Academy of Sciences, Shanghai, China. 45
- Sonic Hedgehog-Smoothed signaling repulsively guides the descending serotonergic axons of raphespinal tract to project posteriorly in developing spinal cord**
 Yuehui Liu, Yang Yu, Lijuan Song, Xi Huang, Chin Chiang, Yaobo Liu.
 Presenter affiliation: Institute of Biophysics, Chinese Academy of Sciences, Beijing, China. 46
- Identification of carbonic anhydrase I from nervous tissues recognized by an anti-SOD1 antibody upon biotinylation**
Jian Liu, Armin Akhavan, Mengde Lu, Arie Gruzman, Vishwanath R. Lingappa, Robert P. Bowser.
 Presenter affiliation: California Pacific Medical Center Research Institute, San Francisco, California. 47
- Influence of binocular motion on binocular interaction in cat area 18**
Kefei Liu, Haishan Yao.
 Presenter affiliation: Institute of Neuroscience, Shanghai, China. 48
- Identification of a novel proapoptotic member of Bcl-2 family, Blm-s, in the developing nervous system**
Wei-Wen Liu, Su-Ming Hsu, Pei-Hsin Huang.
 Presenter affiliation: National Taiwan University, Taipei, Taiwan. 49
- Peripheral nerve injury impairs working memory via up-regulation of TNF- α in rodents**
 Wen-Jie Ren, Xian-Guo Liu, Guosong Liu.
 Presenter affiliation: Zhongshan School of Medicine, Sun Yat-sen University, Guangzhou, China. 50
- Lgl1 acts as GDI displacement factor of Rab10 in promoting axonal membrane trafficking**
 Tong Wang, Yang Liu, Xiaohui Xu, Xiuqing Fu, Caiyun Deng, Zhengge Luo.
 Presenter affiliation: Institute of Neuroscience and State Key Laboratory of Neuroscience, Shanghai, China. 51

The nonsense-mediated decay pathway is critical for maintaining synapse architecture and synaptic vesicle cycle efficacy

Ashleigh Long, William Pak, Kendal Broadie.

Presenter affiliation: Vanderbilt University, Nashville, Tennessee. 52

Postnatal maturation of Parvalbumin interneuron-mediated inhibition in primary visual cortex

Jiangteng Lu, Josh Huang.

Presenter affiliation: Cold Spring Harbor Laboratory, Cold Spring Harbor, New York. 53

TUESDAY, April 13—4:30 PM

Chinese Tea Tasting

TUESDAY, April 13—7:30 PM

SESSION 4 NEURONAL DEVELOPMENT

Chairperson: **L. Richards**, University of Queensland, Brisbane, Australia

Neuronal polarity—From extracellular signals to intracellular mechanisms

Kozo Kaibuchi.

Presenter affiliation: Nagoya University Graduate School of Medicine, Nagoya, Japan. 54

Lg11 regulation of Rab10 promotes membrane trafficking underlying axon development

Tong Wang, Yang Liu, Xiao-Hui Xu, Cai-Yun Deng, Kong-Yan Wu,

Zhen-Ge Luo.

Presenter affiliation: Chinese Academy of Sciences, Shanghai, China. 55

Subcellular changes in proteome regulate axon steering and branching

Christine E. Holt.

Presenter affiliation: Cambridge University, Cambridge, United Kingdom. 56

Multidirectional tangential migration of cortical interneurons in living embryos
Fujio Murakami, Mitsutoshi Yanagida.
Presenter affiliation: Osaka University, Osaka, Japan. 57

A genetic dual reporter strategy for global transcriptome analysis of mouse neural progenitor cells
Qiang Lu.
Presenter affiliation: Beckman Research Institute of City of Hope, Duarte, California. 58

Neogenin—A molecular determinant of the pseudostratified neuroepithelium
Helen M. Cooper, Nigel Kee, Haley Cox, Melissa de Vries.
Presenter affiliation: Queensland Brain Institute, Brisbane, Australia. 59

Functional strategies shared by invertebrate and vertebrate nervous systems
Ralph J. Greenspan.
Presenter affiliation: UCSD, La Jolla, California. 60

WEDNESDAY, April 14—9:00 AM

SESSION 5 SYNAPTOGENESIS / NEURAL CIRCUIT FORMATION

Chairperson: **S. Tole**, Tata Institute of Fundamental Research, Mumbai, India

Generation of synaptic specificity by target repulsion—Roles and transcriptional regulation of local inhibitory cues
Mikiko Inaki, Makiko Shinza-Kameda, Manfred Frasch, Akinao Nose.
Presenter affiliation: University of Tokyo, Bunkyo-ku, Tokyo, Japan;
University of Tokyo, Kashiwa, Chiba, Japan. 61

Distinct pre- and postsynaptic dismantling processes of *Drosophila* neuromuscular junctions during metamorphosis
Zhiwei Liu, Yan Chen, Dan Wang, Songyan Wang, Yong Q. Zhang.
Presenter affiliation: Chinese Academy of Sciences, Beijing, China. 62

Sarm1 mediates the crosstalk between innate immunity and synaptic signaling in dendritic arborization

Chiung-Ya Chen, Chia-Wen Lin, Chiung-Ying Chang, Si-Tse Jiang, Yi-Ping Hsueh.

Presenter affiliation: Academia Sinica, Taipei, Taiwan.

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Synaptic plasticity and internal/sequence learning

Mu-ming Poo.

Presenter affiliation: University of California, Berkeley, California

Organization of olfactory bulb projection to the cortex revealed by retrograde mono-transsynaptic labeling

Kazunari Miyamichi, Fernando Amat, Farshid Moussavi, Chen Wang, Ian Wickersham, Nicholas Wall, Zhigang He, Edward M. Callaway, Mark A. Horowitz, Liqun Luo.

Presenter affiliation: Stanford University, Stanford, California.

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Molecular logic of neocortical projection neuron development and repair

Jeffrey D. Macklis.

Presenter affiliation: Harvard University, Cambridge, Massachusetts; Harvard Medical School, Boston, Massachusetts; Massachusetts General Hospital, Boston, Massachusetts.

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Mapping the functional inhibitory input to the new born neurons in the dentate gyrus

Yan Li, Fred H. Gage.

Presenter affiliation: The Salk Institute, La Jolla, California.

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WEDNESDAY, April 14—1:30 PM

Old Suzhou Garden Tour

SESSION 6 **CIRCUIT AND COGNITIVE FUNCTIONS I**

Chairperson: **G. Laurent**, MPI Brain Research, Frankfurt/Main, Germany

Epigenetic mechanisms regulating synaptic plasticity and memory formation

Li-Huei Tsai.

Presenter affiliation: Picower Institute for Learning & Memory, Howard Hughes Medical Institute, and Stanley Center for Psychiatric Research, Cambridge, Massachusetts.

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Towards a genetic dissection of neocortical circuits—Targeting GABAergic interneurons

Hiroki Taniguchi, Miao He, Priscilla Wu, Sangyong Kim, Z. Josh Huang.

Presenter affiliation: Cold Spring Harbor Laboratory, Cold Spring Harbor, New York.

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Persistent action potential firing generated in the axons of inhibitory interneurons

Mark Sheffield, Tyler Best, William Kath, Nelson Spruston.

Presenter affiliation: Northwestern University, Evanston, Illinois.

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Neural synchrony and selective attention

Robert Desimone.

Presenter affiliation: McGovern Institute, Cambridge, Massachusetts.

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Selective expression and functions of two membrane guanylyl cyclases in the nose and the brain

Minmin Luo.

Presenter affiliation: National Institute of Biological Sciences, Beijing, China.

71

Modification of spatial frequency tuning induced by stimulation of spectral motion

Cheng Chen, Haishan Yao.

Presenter affiliation: Institute of Neuroscience, Chinese Academy of Sciences, Shanghai, China.

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Optical recording of electrical activity of pyramidal neurons using a genetically-encoded voltage probe

Walther Akemann, Hiroki Mutoh, Amelie Perron, Sunita G. Gautam, Dimitar Dimitrov, Reiko Yoshida, Tomomi Shimogori, Thomas Launey, Thomas Knöpfel.

Presenter affiliation: RIKEN Brain Science Institute, Wako, Japan.

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THURSDAY, April 15—9:00 AM

SESSION 7 CELL BIOLOGY OF NEURONS

Chairperson: C. Holt, University of Cambridge, United Kingdom

Potassium channel regulation

Lily Jan.

Presenter affiliation: Howard Hughes Medical Institute, University of California, San Francisco, San Francisco, California.

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Intracellular transport in the axon and dendrites by KIF1A/1B β and KIF 17 and higher brain function

Nobutaka Hirokawa.

Presenter affiliation: University of Tokyo, Graduate School of Medicine, Tokyo, Japan.

75

Overexpression of Slc35d3 causes obesity by reducing the membrane trafficking of D1 receptor in striatonigral neurons

Chanjuan Hao, Wei Li.

Presenter affiliation: Chinese Academy of Sciences, Beijing, China.

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Control of dendritic morphogenesis

Yuh-Nung Jan.

Presenter affiliation: Howard Hughes Medical Institute, University of California, San Francisco, California.

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Glia cells and synaptic plasticity

Shumin Duan.

Presenter affiliation: Zhejiang University School of Medicine, Hangzhou, China.

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The Rett syndrome protein MeCP2 regulates synaptic homeostasis

Zilong Qiu, Emily Sylwestrak, Anirvan Ghosh.

Presenter affiliation: Institute of Neuroscience, Chinese Academy of Sciences, Shanghai, China.

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Implications for Akt signaling in dopamine function

Jamie Kim, Jason Truong, Kenneth C. Carr, Thomas F. Franke.

Presenter affiliation: NYU School of Medicine, New York, New York.

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THURSDAY, April 15—2:00 PM

SESSION 8 POSTER SESSION II

Selective homeostatic regulation of CB1 receptor-containing inhibitory synapses by miniature excitatory synaptic activities

Qing-long Miao, Si-yu Zhang, Mu-ming Poo, Xiao-hui Zhang.

Presenter affiliation: Institute of Neuroscience and State Key Laboratory of Neuroscience, Shanghai Institutes for Biological Sciences, Shanghai, China.

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Organization of olfactory bulb projection to the cortex revealed by retrograde mono-transsynaptic labeling

Kazunari Miyamichi, Fernando Amat, Farshid Moussavi, Chen Wang, Ian Wickersham, Nicholas Wall, Zhigang He, Edward M. Callaway, Mark A. Horowitz, Liqun Luo.

Presenter affiliation: Stanford University, Stanford, California.

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CLIPs regulate neuronal polarization through microtubule and growth cone dynamics

Dorothee Neukirchen, Frank Bradke.

Presenter affiliation: Max Planck Institute for Neurobiology, Martinsried, Germany.

83

Proneural genes from structure to function—Phosphorylation of the Atonal bHLH domain regulates its expression and function

Xiao-Jiang Quan, Natalie D. Geest, Jiekun Yan, Bassem A. Hassan.

Presenter affiliation: KU Leuven, Leuven, Belgium.

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Activity-dependent transcription of BDNF regulates the development of visual acuity <i>in vivo</i> <u>Neil Schwartz</u> , Anne Schohl, Edward S. Ruthazer. Presenter affiliation: McGill University, Montreal, Canada.	85
Control of liprin-alpha/SYD-2 binding to KIF1A/UNC-104 by the RIM/UNC-10 protein in <i>C. elegans</i> <u>Che-Piao Shen</u> , Chien-Yu Chang, Oliver Wagner. Presenter affiliation: National Tsing Hua University, Hsinchu, Taiwan.	86
Genetic dissection of the neural circuit for stress-induced social interaction in <i>Drosophila</i> larvae <u>Ping Shen</u> , Xie Xu Xu, Mo Li. Presenter affiliation: University of Georgia, Athens, Georgia.	87
Nociceptive synaptic responses of cingulate cortical neurons mediated by medial dorsal thalamic inputs <u>Bai Chuang Shyu</u> , I Chien Shih, Hsiang Chin Lu. Presenter affiliation: Academia Sinica, Taipei, Taiwan.	88
Developmental defect in astrocytes affects remodeling of the neural retina <u>Debasish Sinha</u> , Stacey L. Hose, Bonnie Patek, Cheng Zhang, Eric Wawrousek, J. Samuel Zigler, Jr.. Presenter affiliation: The Johns Hopkins University School of Medicine, Baltimore, Maryland.	89
Axon extension occurs independently of centrosomal microtubule nucleation <u>Michael Stiess</u> , Nicola Maghelli, Lukas C. Kapitein, Susana Gomis-Rüth, Michaela Wilsch-Bräuninger, Casper C. Hoogenraad, Frank Bradke. Presenter affiliation: Max Planck Institute of Neurobiology, Martinsried, Germany.	90
Whole genome mapping of a Enu-induced mutation in sexual behavior <u>Yun Sun</u> , Yang Gao, Yi Rao. Presenter affiliation: National Institute of Biological Sciences, Beijing, China.	91

<p>Suppression of dynamin GTPase activity by sertraline inhibits dynamin-dependent endocytosis <u>Kiyofumi Takahashi</u>, Hiroshi Miyoshi, Masahiro Otomo, Kenichi Osada, Hideki Nakashima, Noboru Yamaguchi. Presenter affiliation: St. Marianna University School of Medicine, Kawasaki, Japan.</p>	92
<p>Compensation in circuit properties in response to temperature perturbations—From ion channels and synapses to network output <u>Lamont S. Tang</u>, Marie Goeritz, Mehmet Fisek, Eve Marder. Presenter affiliation: Brandeis University, Waltham, Massachusetts.</p>	93
<p>The effect of tau protein on kinesin-3 UNC-104 motility in <i>C. elegans</i> <u>Nai-Wen Tien</u>, Oliver I. Wagner. Presenter affiliation: National Tsing Hua University, Hsinchu, Taiwan.</p>	94
<p>Glutamatergic neurons in the visual system of <i>Drosophila melanogaster</i> <u>Shamprasad Varija Raghu</u>, Dierk F. Reiff, Alexander Borst. Presenter affiliation: Max Planck Institute of Neurobiology, Munich, Germany.</p>	95
<p>Valosin-containing protein (VCP) interacts with neurofibromin and regulates dendritic spine formation <u>Hsiao-Fang Wang</u>, Hsu-Wen Chao, Chiung-Ya Chen, Ming-Jen Lee, Yi-Ping Hsueh. Presenter affiliation: Academia Sinica, Taipei, Taiwan.</p>	96
<p>Non-apoptotic role of caspase-3 in synapse refinement Fei Chen, <u>Jin-Yuan Wang</u>, Zhen-Ge Luo. Presenter affiliation: Institute of Neuroscience, CAS, Shanghai, China.</p>	97
<p>Lgl1 acts as GDI displacement factor of Rab10 in promoting axonal membrane trafficking <u>Tong Wang</u>, Yang Liu, Zheng Luo. Presenter affiliation: Institute of Neuroscience, Shanghai, China.</p>	98
<p>The Wnd/DLK MAPKKK regulates APP transport in <i>Drosophila</i> axons <u>Xin Wang</u>, Jill Haenfler, Ronny Ewanek, Xin Xiong, Pavan Bhat, Catherine Collins. Presenter affiliation: University of Michigan, Ann Arbor, Michigan.</p>	99

<p>Activity-induced long-term potentiation of excitatory synapses in developing zebrafish retina <i>in vivo</i> <u>Hongping Wei</u>, Yuanyuan Yao, Rongwei Zhang, Jiulin Du. Presenter affiliation: Institute of Neuroscience and State Key Laboratory of Neuroscience, Shanghai, China.</p>	100
<p>Resource allocation of working memory on line-attractor model <u>Ziqiang Wei</u>, Xiao-Jing Wang, Dahui Wang. Presenter affiliation: Beijing Normal University, Beijing, China; Chinese Academy of Sciences, Beijing, China.</p>	101
<p>The role of beta-catenin in late stages of cerebellar development <u>Jing Wen</u>, Bing Zhou, Shumin Duan. Presenter affiliation: Chinese Academy of Sciences, Shanghai, China; Zhejiang University, Hangzhou, China.</p>	102
<p>Analysis of the neocortical neuronal circuitry in Channelrhodopsin-2 transgenic animals <u>Christian Wozny</u>, Stephen R. Williams. Presenter affiliation: MRC Laboratory of Molecular Biology, Cambridge, United Kingdom.</p>	103
<p>Heterotypic gap junctions between two mushroom body extrinsic neurons are essential for <i>Drosophila</i> memory formation <u>Chia-Lin Wu</u>, Meng-Fu M Shih, Jason Sih-Yu Lai, Hsun-Ti Yang, Glenn C Turner, Ann-Shyn Chiang. Presenter affiliation: National Tsing Hua University, Hsinchu, Taiwan.</p>	104
<p>Regulation of kinesin-3 UNC-104 by MAGUK-protein LIN-2 <u>Gong-Her Wu</u>, Yu-Hsin Huang, Oliver Wagner. Presenter affiliation: National Tsing Hua University, Hsinchu, Taiwan.</p>	105
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<p>Distal dendritic activity of layer 5 pyramidal neurons in awake behaving animals signals active tactile object detection <u>Ning-long Xu</u>, Daniel H. O'Connor, Daniel Huber, Lin Tian, Nathan G. Clack, Eugene W. Myers, Loren L. Looger, Karel Svoboda, Jeffrey C. Magee. Presenter affiliation: Howard Hughes Medical Institute, Ashburn, Virginia.</p>	107
<p>Learning of motion sequence by neuronal ensemble in awake visual cortex <u>Sheng-jin Xu</u>, Wan-chen Jiang, Mu-ming Poo, Yang Dan. Presenter affiliation: Chinese Academy of Sciences, Shanghai, China.</p>	108
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<p>Activity-dependent development of olfactory bulb interneurons upon the neural circuit formation <u>Seiichi Yoshihara</u>, Hiroo Takahashi, Kensaku Mori, Akio Tsuboi. Presenter affiliation: Nara Medical University Kashihara-city, Japan.</p>	111
<p>Multiple neuron-restrictive silencer elements scattered in the protocadherin gene cluster regulate the neuronal expression of protocadherin genes Yuen-Peng Tan, Shaobing Li, Xiao-Juan Jiang, Jianlin Fu, Byrappa Venkatesh, <u>Wei-Ping Yu</u>. Presenter affiliation: National Neuroscience Institute, Singapore, Singapore.</p>	112
<p>Neuronal activity regulates endocytosis of acid-sensing ion channel <u>Wei-Zheng Zeng</u>. Presenter affiliation: Institute of Neuroscience, Shanghai, China.</p>	113

- Development of light response and GABAergic excitation-to-inhibition switch in zebrafish retinal ganglion cells**
Rong-wei Zhang, Hong-ping Wei, Yi-meng Xia, Jiu-lin Du.
 Presenter affiliation: Institute of Neuroscience and Key State Laboratory of Neuroscience, Shanghai, China. 114
- Involvement of serotonin in inhibition of male sexual behaviors in female mice**
Xian Zhang, Yi Rao.
 Presenter affiliation: National Institute of Biological Sciences, Beijing, Beijing, China. 115
- Environmental stress reprograms mouse sexual orientation**
Yi Zhang.
 Presenter affiliation: National Institute of Biological Sciences, Beijing, China; Peking University Beijing, China. 116
- Deficit in mitochondrial Ca uptake leads to increased calcium responses in skeletal muscle cells of a transgenic model of amyotrophic lateral sclerosis**
Jingsong Zhou, Jianxun Yi, Eduardo Rios, Hang-Xiang Deng.
 Presenter affiliation: Rush University, Chicago, Illinois. 117
- CDKL5, A protein associated with Rett syndrome, regulates neuronal morphogenesis**
Yong-Chuan Zhu, Qian Chen, Jiong Tao, Zhi-Qi Xiong.
 Presenter affiliation: Chinese Academy of Sciences, Shanghai, China. 118

THURSDAY, April 15—4:30 PM

CONCERT

THURSDAY, April 15—7:30 PM

KEYNOTE III

Introduction by Keiji Tanaka

Nikos K. Logothetis

Max Planck Institute for Biological Cybernetics

“Electrical microstimulation and fMRI”

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SESSION 9 NEURAL CIRCUIT FUNCTIONS

Chairperson: **L. Luo**, Stanford University, California, USA

Connectomics in the developing nervous system

Jeff W. Lichtman

Presenter affiliation: Harvard University, Cambridge, Massachusetts. 120

An interactive wiring diagram of the *Drosophila* brain at single cell resolution

Ann-Shyn Chiang.

Presenter affiliation: National Tsing Hua University, Hsinchu, Taiwan. 121

Neuronal domains for *Drosophila* flight requiring InsP₃R, STIM and Orai function

Gaiti Hasan, Sufia Sadaf.

Presenter affiliation: NCBS, TIFR, Bangalore, India. 122

Optical disruption identifies habenula inputs modulating conditioned fear responses in juvenile zebrafish

Aletheia Lee, Ajay Mathuru, Cathleen Teh, Vladimir Korzh, Trevor Penney, Suresh Jesuthasan.

Presenter affiliation: A*Star/Duke-NUS, Singapore, Singapore. 123

Increased excitability of cingulate cortex neurons in a mouse model of depression

Nobuo Kato, Peng Sun, Yu Zhang, Furong Wang, Li Wang, Ryo Yamamoto, Tokio Sugai, Zhengda Wang, Rui Chen.

Presenter affiliation: Kanazawa Medical University, Ishikawa, Japan. 124

SESSION 10 SYNAPTIC PLASTICITY

Chairperson: **M.-m. Poo**, University of California, Berkeley, USA

Receptor tyrosine kinase-mediated signaling in neural circuit assembly

Nancy Y. Ip.

Presenter affiliation: The Hong Kong University of Science and Technology, Kowloon, Hong Kong, China.

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Visualization and dynamics of protein synthesis in dendrites

Erin M. Schuman, Daniela C. Dieterich, Ivan Cajigas, Dave Tirrell, Tristan Will, Georgi Tushev, John C. Ngo, Flora Hinz, Jenn Hodas.

Presenter affiliation: Max Planck Institute for Brain Research, Frankfurt, Germany.

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Activity-dependent trans-synaptic signaling via GluR1 provides a candidate mechanism for coordination of presynaptic release probability and unitary EPSC size

Maria K. Lindskog, Rachel D. Groth, Tara Thiagarajan, Li Li, Damon Poburko, Xue Han, Richard Tsien.

Presenter affiliation: Karolinska Institute, Stockholm, Sweden.

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Synapses in normal and diseased brain function

Roberto Malinow.

Presenter affiliation: University of California at San Diego, La Jolla, California.

128

The impact of aging on temporal lobe circuits critical for memory

Carol A. Barnes.

Presenter affiliation: University of Arizona, Tucson, Arizona.

129

Forgetting is regulated through Rac activity in *Drosophila*

Yichun Shuai, Binyan Lu, Ying Hu, Lianzhang Wang, Kan Sun, Yi Zhong.

Presenter affiliation: Tsinghua University, Beijing, China; Cold Spring Harbor Laboratory, Cold Spring Harbor, New York.

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FRIDAY, April 16—2:00 PM

SESSION 11 **CIRCUIT AND COGNITIVE FUNCTIONS II**

Chairperson: **K. Tanaka**, RIKEN Brain Science Institute, Saitama, Japan

Probing the role of defined classes of excitatory neurons in the mammalian motor networks

Ole Kiehn.

Presenter affiliation: Karolinska Institutet, Stockholm, Sweden. 131

Cell assembly sequences in the service of cognition

Gyorgy Buzsaki.

Presenter affiliation: Rutgers University, Newark, New Jersey. 132

Circuits and connectivity for odor segmentation

Gilles Laurent.

Presenter affiliation: MPI Brain Research, Frankfurt/Main, Germany. 133

Neuronal circuitry of fear

Andreas Lüthi.

Presenter affiliation: Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland. 134

Neuromodulation of brain state and visual processing

Yang Dan.

Presenter affiliation: UC Berkeley, Berkeley, California. 135

A synfire chain for vocal sequence generation—Evidence from intracellular recording in the singing bird

Michale S. Fee, Michael A. Long.

Presenter affiliation: Massachusetts Institute of Technology, Cambridge, Massachusetts. 136

FRIDAY, April 16

BANQUET

Cocktails 6:00 PM

Dinner 6:45 PM

SATURDAY, April 17—9:00 AM

SESSION 12 **CIRCUIT AND COGNITIVE FUNCTIONS III**

Chairperson: **Y. Dan**, University of California, Berkeley

Neural map formation in the mouse olfactory system

Hitoshi Sakano.

Presenter affiliation: University of Tokyo, Tokyo, Japan.

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Neural mechanisms for mapping and remembering the spatial environment

Edvard I. Moser.

Presenter affiliation: Norwegian University of Science and Technology, Trondheim, Norway.

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Reward inference by primate prefrontal and striatal neurons

Masamichi Sakagami.

Presenter affiliation: Tamagawa University Tokyo, Japan.

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The global-first topological definition of perceptual objects, and its neural correlation in amygdala and anterior temporal lobe

Ke Zhou, Tiangang Zhou, Wenli Qian, Lin Chen.

Presenter affiliation: Chinese Academy of Sciences, Beijing, China.

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Auditory cortex—Hierarchical processing structures and functional plasticity

Josef P. Rauschecker.

Presenter affiliation: Georgetown University, Washington, DC.

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Representation of object categories in activity patterns of inferotemporal cell population

Keiji Tanaka.

Presenter affiliation: RIKEN Brain Science Institute, Wako, Japan.

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