

PROGRAM

MONDAY, September 17—7:00 PM

KEYNOTE SPEAKER

Introduction by: Jonathan Sebat, University of California, San Diego

Lost in translation—Moving from de novo mutations to pathophysiology

Matthew W. State [45'+10']

Presenter affiliation: University of California, San Francisco, San Francisco, California.

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MONDAY, September 17—8:00 PM

SESSION 1 TRANSLATIONAL STUDIES I

Chairperson: Toru Takumi, RIKEN Brain Science Institute, Wako, Japan

In vivo biomarkers for autism spectrum disorder—Feature development and novel analytical frameworks

Christine Ecker [20+10']

Presenter affiliation: Goethe University, Frankfurt am Main, Germany; King's College London, London, United Kingdom.

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Copy number variation model of autism

Toru Takumi [20+10']

Presenter affiliation: RIKEN, Wako, Japan.

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Investigating gut and oral microbiome in patients with autism spectrum disorder

Jun Liu, Madelyn Koh, Xuejun Kong [12+5']

Presenter affiliation: Massachusetts General Hospital, Boston, Massachusetts.

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TUESDAY, September 18—9:00 AM

SESSION 2 MOLECULAR AND CIRCUIT MECHANISMS I

Chairperson: **Xiang Yu**, Institute of Neuroscience, CAS, Shanghai, China

NMDA receptor dysfunction and sexual dimorphism in mouse models of autism

Eunjoon Kim [20+10']

Presenter affiliation: Institute for Basic Science (IBS), Daejeon, South Korea; Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea.

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Whole-brain projectome of paraventricular hypothalamic nucleus oxytocin neurons

Xiang Yu, Humingzhu Li, Wenjie Bian, Anan Li, Qingming Luo, Hui Gong [20+10']

Presenter affiliation: Institute of Neuroscience, Shanghai, China.

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Triangulating nodes in the autism gene and behavioral circuit networks

Matthew P. Anderson [20+10']

Presenter affiliation: Beth Israel Deaconess Medical Center, Boston, Massachusetts; Simons Foundation, New York, New York; Boston Children's Hospital, Boston, Massachusetts; Harvard Medical School, Boston, Massachusetts.

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Autism-related signaling proteins drive homeostatic synaptic adaptation in unexpected ways

Simon D. Sun, Boxing Li, Nataniel J. Mandelberg, Richard W. Tsien [20+10']

Presenter affiliation: NYU Neuroscience Institute, New York, New York.

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Exploring the molecular consequences of disrupting genes CNTN4 and APP associated with autism

Rosemary A. Bamford, Madeline Eve, Amila Zuko, Asami Oguro-Ando [12+5']

Presenter affiliation: University of Exeter, Exeter, United Kingdom.

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Genetic variants in autism-related *CNTNAP2* impair axonal growth of cortical neurons

Giorgia Canali, Marta Garcia, Bruno Hivert, Delphine Pinatel, Aline Goullancourt, Ksenia Oguievetskaia, Margaux Saint-Martin, Jean-Antoine Girault, Catherine Faivre-Sarrailh, Laurence Goutebroze [12+5']

Presenter affiliation: INSERM UMR-S 839, Paris, France.

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Excitation-alternative splice coupling (E-AS coupling) supports homeostatic regulation of neuronal excitability

Boxing Li, Benjamin Sutari, Richard W. Tsien [12+5']

Presenter affiliation: Sun Yat-sen University, Guangzhou, China.

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The role of histone linker protein, *HIST1H1E*, in autism and intellectual disability

Martine W. Tremblay, Lara J. Duffney, Yong-hui Jiang [12+5']

Presenter affiliation: Duke University, Durham, North Carolina.

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TUESDAY, September 18—2:00 PM

SESSION 3 POSTER SESSION

***POGZ* rare inherited missense variants associate with autism risk and disrupt neuronal development**

Wenjing Zhao, Jieqiong Tan, Tengfei Zhu, Zhengmao Hu, Hui Guo, Kun Xia

Presenter affiliation: Central South University, Changsha, China.

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Metabolomic characteristics and oxytocin's efficacy on them in autism spectrum disorder

Yasuhiko Kato, Hitoshi Kuwabara, Takashi Okada, Toshio Munesue, Miho Kuroda, Masaki Kojima, Walid Yassin, Seico Benner, Yosuke Eriguchi, Yosuke Kamenno, Chihiro Murayama, Teruko Yuhi, Norio Ozaki, Hirotaka Kosaka, Hidenori Yamasue

Presenter affiliation: Hamamatsu University School of Medicine, Hamamatsu City, Japan.

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- Involvement of the kynurenine pathway in the effect of oxytocin on adult males with ASD—An exploratory study**
Chihiro Murayama, Hitoshi Kuwabara, Takashi Okada, Toshio Munesue, Miho Kuroda, Masaki Kojima, Walid Yassin, Seico Benner, Yosuke Eriguchi, Yosuke Kamenno, Yasuhiko Kato, Teruko Yuhi, Junichi Masuda, Norio Ozaki, Hirotaka Kosaka, Hidenori Yamasue
 Presenter affiliation: Hamamatsu University School of Medicine, Hamamatsu, Japan. 15
- Defect in chromatin modifications in autism spectrum disorder (ASD) and neurodevelopmental disorders—Report of 3 novel and de novo pathogenic mutations of chromatin-modifying enzyme MSL2 and review of the literature**
Kim Ng, James Collins, Filippo Vairo, Yong-Hui Jiang
 Presenter affiliation: Duke University, Durham, North Carolina. 16
- Alterations in plasma cytokine levels in Chinese children with autism spectrum disorder**
 Chun-Chun Hu, Xiu Xu, Guo-Liang Xiong, Qiong Xu, Bing-ruì Zhou, Chun-yang Li, Qi Qin, Chun-xue Liu, Hui-Ping Li, Yun-Jun Sun, Xiang Yu
 Presenter affiliation: CAS Center for Excellence in Brain Science and Intelligence Technology, Shanghai, China. 17
- Loss of CDKL5 in glutamatergic neurons disrupts hippocampal microcircuitry and leads to memory impairment in mice**
Sheng Tang, I-Ting Wang, Hajime Takano, Douglas Coulter, Zhaolan Zhou
 Presenter affiliation: University of Pennsylvania, Perelman School of Medicine, Philadelphia, Pennsylvania. 18
- Fmr1* cDNA reverse visual hypersensitivity in fragile X mice**
Chaojuan Yang, Yonglu Tian, Feng Su, Yangzhen Wang, Yaxuan Cui, Peijiang Yuan, Desheng Zhu, Shiming Tang, Donggen Luo, Peng Cao, Yunbo Liu, Xunli Wang, Minghua Luo, Wei Xiong, Chen Zhang
 Presenter affiliation: Peking University, State Key Laboratory of Membrane Biology, Beijing, China. 19

TUESDAY, September 18—4:00 PM

PANEL DISCUSSION

TUESDAY, September 18—4:30 PM

Chinese Tea and Beer Tasting

TUESDAY, September 18—7:00 PM

SESSION 4 AUTISM GENETICS

Chairperson: **Jonathan Sebat**, University of California-San Diego,
La Jolla, California, USA

Jonathan Sebat [20'+10']

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

**The structure of transmission risk in over 1000 multiplex families
highlights novel genetic links to autism**

Dennis Wall [20'+10']

Presenter affiliation: Stanford University, Stanford, California.

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Functional analysis of genetic variants

Joseph Dougherty [20'+10']

Presenter affiliation: Washington University School of Medicine, St.
Louis, Missouri.

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Alexej Abyzov [20'+10']

Presenter affiliation: Mayo Clinic, Rochester, Minnesota.

**Genetic diagnostic yield of chromosome microarray analysis and
trio-based whole exome sequencing among Chinese children with
autism spectrum disorder**

Xiujuan Du [12+5']

Presenter affiliation: Shanghai Jiao Tong University School of
Medicine affiliated Xinhua Hospital, Shanghai, China.

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**De novo variants in gene bodies and regulatory elements
aggregately contribute to autism spectrum disorder**

Il Bin Kim, Tae Yeop Lee, June Hawk Lee, Woo Kyung Kim, Jeong Ho
Lee, Eun Joon Kim, Young Seok Ju, Jung Kyoon Choi, Hi Jung Yoo
[12+5']

Presenter affiliation: KAIST, Daejeon, South Korea.

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SESSION 5 **INSIGHTS FROM NEURODEVELOPMENTAL DISORDERS**

Chairperson: **Yonghui Jiang**, Duke University School of Medicine, Durham, North Carolina, USA

The role of Homer-mGluR5 scaffolds in reward behavior in SHANK3 autism model

Yong-hui Jiang [20+10']

Presenter affiliation: Duke University School of Medicine, Durham, North Carolina.

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Angelman syndrome treatment opportunities and clinical biomarkers

Ben Philpot [20+10']

Presenter affiliation: University of North Carolina, Chapel Hill, North Carolina.

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Disease mechanisms and drug-screening-lessons from human iPSC/ESC Models of Rett syndrome

Qiping Dong, Anxin Wang, Qing Liu, Qian Bu, Ronghui Li, Kuan-Hong Wang, Qiang Chang [20+10']

Presenter affiliation: University of Wisconsin-Madison, Madison, Wisconsin.

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Use of functional brain organoids to model autism spectrum disorders

Alysson R. Muotri [20+10']

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

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Unreliable spiking due to elevated SK currents in *FMR1* KO mouse model

Deepanjali Dwivedi, Sumantra Chattarji, Upinder S. Bhalla [12+5']

Presenter affiliation: National Centre for Biological Sciences, Bengaluru, India.

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Liver X receptor β regulates the development of the dentate gyrus and autistic-like behavior in the mouse

Yulong Cai, Xiaotong Tang, Xi Chen, Margaret Warner, Jan-Ake Gustafsson, Xiaotang Fan [12+5']
Presenter affiliation: Third Military Medical University, Chongqing, China.

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Sex-specific behavioral and neuronal circuit disruptions in a 16p11.2 microdeletion model of autism

Jacqueline R. Giovannello, Sandra Ahrens, Bo Li [12+5']
Presenter affiliation: Watson School of Biological Sciences, Cold Spring Harbor, New York; Cold Spring Harbor Laboratory, Cold Spring Harbor, New York.

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Deficiency of tumor suppressor NDRG2 leads to attention deficit and hyperactive behavior

Yan Li, Anqi Yin, Xin Sun, Ming Zhang, Jianfang Zhang, Ping Wang, Rougang Xie, Wen Li, Ze Fan, Yuanyuan Zhu, Han Wang, Hailong Dong, Shengxi Wu, Lize Xiong [12+5']
Presenter affiliation: Fourth Military Medical University, Xi'an, China.

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WEDNESDAY, September 19—1:30 PM

Visit to Old Suzhou

WEDNESDAY, September 19—7:00 PM

SESSION 6 MOLECULAR AND CIRCUIT MECHANISMS II

Chairperson: **Craig Powell**, UAB School of Medicine, Birmingham, Alabama, USA

Circuit and synapse-specification defects in models of autism-spectrum disorders

Peter Scheiffele [20+10']
Presenter affiliation: University of Basel, Basel, Switzerland.

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Deletion of 16p11.2 gene, *Kctd13*, reduces synaptic transmission via increased RhoA

Craig M. Powell [20+10']
Presenter affiliation: UAB School of Medicine, Birmingham, Alabama.

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Remodeling of PSD composition during postnatal development
Takeshi Kaizuka, Toru Takumi [12+5']
Presenter affiliation: RIKEN Center for Brain Science, Saitama, Japan. 34

CNTN4 (Contactin4), a candidate gene for autism spectrum disorders, affects hippocampal synaptic plasticity and behaviour
Asami Oguro-Ando, Rosemary A. Bamford, Wiedjai Sital, Angela Sarabdjitsingh, Martien J. Kas, Peter H. Burbach [12+5']
Presenter affiliation: University of Exeter Medical School, Exeter, United Kingdom. 35

Autism associated COUP-TFI gene is essential for the development of parvalbumin interneuron in the cerebral cortex
Su Feng, Ran Wang, Li Yao, Beibei Cao, Jian Zhu, Jun Chen, Tingyu Shen, Zhuo Lu, Can Xing, Guangdun Peng, Jiada Li, Xiaohui Zhang, Naihe Jing, Ke Tang [12+5']
Presenter affiliation: Guangzhou University, Guangzhou, China. 36

THURSDAY, September 20—9:00 AM

SESSION 7 TRANSLATIONAL STUDIES II

Chairperson: **Toru Takumi**, RIKEN Brain Science Institute, Wako, Japan

Development of oxytocin as a novel therapeutic for autism spectrum core symptoms
Hidenori Yamasue [20+10']
Presenter affiliation: Hamamatsu University School of Medicine, Hamamatsu, Japan. 37

Gamma oscillation dysfunction in mPFC leads to social deficits in neuroligin 3 R451C knockin mice
Jianhong Luo, Wei Cao, Shen Lin, Qiangqiang Xia, Yonglan Du, Qian Yang, Mengying Zhang, Yiqing Lu, Jing Xu, Shumin Duan, Jun Xia, Guoping Feng, Junyu Xu [20+10']
Presenter affiliation: Zhejiang University, Hangzhou, China. 38

The ups and downs of autism spectrum disorder—Tracking the trajectories of autism in the Autism Phenome Project
David G. Amaral [20+10']
Presenter affiliation: UC Davis, Sacramento, California. 39

Increased expression of Th1, Th2 and Tc1 in the peripheral blood can jointly predict the incidence of ASD

Xia Cao, Chuanyuan Kang, Zuqing Nie, Dong Han, Kun Zhang, Xinwei Huang [12+5']

Presenter affiliation: The Second Affiliated Hospital of Kunming Medical University, Kunming, China.

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Impaired ubiquitin and retinoic acid signaling in human autism spectrum disorders

Xiaobo Gao, Xingxing Xu, Rong-Gui Hu [12+5']

Presenter affiliation: Shanghai Institutes for Biological Sciences, CAS, Shanghai, China.

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Dysregulation of glutamatergic/GABAergic neuron differentiation caused by a point mutation of *NR2F1* gene in autism spectrum disorder

Ke Zhang, Fang Yu, Ke Tang, Naihe Jing [12+5']

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

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Dissecting autism genetic risk using single-cell transcriptomics data

Siyang Chen, Yufeng Shen [12+5']

Presenter affiliation: Columbia University, New York, New York.

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THURSDAY, September 20—2:00 PM

SESSION 8 KEYNOTE SPEAKER

Chairperson: Introduction by **Yonghui Jiang**, Duke University

Progress and pitfalls on the road to translational treatments in autism spectrum disorder

Jeremy Veenstra-VanderWeele [45'+10']

Presenter affiliation: Columbia University, New York, New York; New York State Psychiatric Institute, New York, New York; NewYork-Presbyterian Hospital, White Plains, New York.

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THURSDAY, September 20—3:00 PM

SESSION 8 MOLECULAR AND CIRCUIT MECHANISMS III

Chairperson: **Yi-Ping Hsieh**, Academia Sinica, Taipei, Taiwan

Contralateral connectivity controlled by TBR1 regulates amygdala activity and autism-like behaviors

Yi-Ping Hsueh [20+10']

Presenter affiliation: Academia Sinica, Taipei, Taiwan.

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Cerebellostriatal circuit indicated in cognitive flexibility

Le Xiao, Caroline Bornmann, Laetitia Hatstatt-Burkle, Peter Scheiffele [12+5']

Presenter affiliation: University of Basel, Basel, Switzerland.

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The critical role of ASD-related gene *CNTNAP3* in regulating synaptic development and social behavior in mice

Dali Tong, Ruiguo Chen, Xiaoqun Wang, Zilong Qiu [12+5']

Presenter affiliation: Institute of Neuroscience State Key Laboratory of Neuroscience, Shanghai, China; The College of Life Science, Beijing, China.

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THURSDAY, September 20—6:00 PM

COCKTAILS and BANQUET

FRIDAY, September 21—9:00 AM

SESSION 9 NEW ANIMAL MODELS FOR NEURODEVELOPMENTAL DISORDERS

Chairperson: **Zilong Qiu**, Institute of Neuroscience, CAS, Shanghai, China

The neurobiology of social bonding, social loss and empathy—Implications for novel therapies for autism

Larry J. Young [20+10']

Presenter affiliation: Yerkes National Primate Research Center, Atlanta, Georgia; Emory University, Atlanta, Georgia.

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Modeling SHANK3-related autism in non-human primates

Yong Q. Zhang [20+10']

Presenter affiliation: Institute of Genetics and Developmental Biology,
Chinese Academy of Sciences, Beijing, China.

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The critical role of ASD-related gene CNTNAP3 in regulating synaptic development and social behavior in mice

Dali Tong, Zilong Qiu [20+10']

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

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Ube3a reinstatement mitigates epileptogenesis in Angelman syndrome model mice

Bin Gu, Kelly Carstens, Matthew Judson, Katherine Dalton, Marie Rougie, Ellen Clark, Serena Dudek, Benjamin Philpot [12+5']

Presenter affiliation: University of North Carolina, Chapel Hill, Chapel Hill, North Carolina.

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Reducing histone acetylation rescues cognitive deficits in a mouse model of Fragile X syndrome

Yue Li, Michael E. Stockton, Brian E. Eisinger, Yinghua Zhao, Jessica L. Miller, Yu Gao, Zhiping Wu, Junmin Peng, Xinyu Zhao [12+5']

Presenter affiliation: Tianjin University of Traditional Chinese Medicine, Tianjin, China; University of Wisconsin-Madison, Madison, Wisconsin.

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