

Abstracts of papers presented
at the 2024 Cold Spring Harbor Asia Conference

ALZHEIMER'S DISEASE: FUNDAMENTALS AND TREATMENTS

April 8–April 12, 2024

Arranged by:

David Holtzman, *Washington University in St. Louis*

Takeshi Iwatsubo, *University of Tokyo*

Yueming Li, *Memorial Sloan Kettering Cancer Center*

Yong Shen, *University of Science and Technology of China*



Cold Spring Harbor Conferences Asia
Cold Spring Harbor Laboratory



ALZHEIMER'S DISEASE: FUNDAMENTALS AND TREATMENTS

Monday, April 8 – Friday, April 12, 2024

Monday	7:00 pm	1 Keynote Session
Tuesday	9:00 am	2 Adaptive and Innate Immunity: Roles in Amyloidosis and Tauopathy
Tuesday	2:00 pm	Poster Session
Tuesday	3:00 pm	<i>Chinese Tea and Beer Tasting</i>
Tuesday	7:00 pm	3 Cell Signaling and Network Changes with AD Pathology
Wednesday	9:00 am	4 ApoE and Glial Biology
Wednesday	2:00 pm	<i>Visit to Old Suzhou*</i>
Wednesday	7:00 pm	5 Regulation of Secretases
Thursday	9:00 am	6 Therapeutic Development
Thursday	2:00 pm	7 The Gut-Brain Axis and Biomarkers
Thursday	6:00 pm	Cocktails and Banquet
Friday		<i>Departure</i>

Oral presentation sessions are located in the CSHA Auditorium
Poster session and Chinese Tea & Beer Tasting are in the Lake Front Hall.

Cocktail social hour is held outside in the Suz Garden.

Old Suzhou visits depart from the CSHA lobby

**optional tour requires additional fee.*

Meal locations and times are as follows:

Lunch: Main Cafeteria 12:00pm - 1:30pm

Dinner: Main Cafeteria 6:00pm - 7:30pm

Banquet: Suz Garden 7:00pm

More information will be available at CSHA office.

(Map at the end of this abstract book)

PROGRAM

MONDAY, April 8—7:00 PM

SESSION 1 KEYNOTE SESSION

Chairperson: **David Holtzman**, Washington University School of Medicine, St. Louis, Missouri, USA

Alzheimer's disease susceptibility alleles implicate efferocytosis in microglia

Anna Podlesny-Drabiniok, Carmen Romero-Molina, Francesca Garretti, Alan Renton, Brian Fulton-Howard, Alex Munch, Grace Pepler, Hyo Lee, Tulsı Patel, Edoardo Marcora, Alison Goate [35'+10']

Presenter affiliation: Icahn School of Medicine at Mount Sinai, New York, New York.

1

Transmission of misfolded proteins in neurodegenerative disorders—A common mechanism of disease progression

Virginia M. Lee [35'+10']

Presenter affiliation: University of Pennsylvania, Philadelphia, Pennsylvania.

2

TUESDAY, April 9—9:00 AM

SESSION 2 ADAPTIVE AND INNATE IMMUNITY: ROLES IN AMYLOIDOSIS AND TAUOPATHY

Chairpersons: **Bart De Strooper**, University College London, London, United Kingdom; University of Leuven, Leuven, Belgium
Li Gan, Weill Cornell Medicine, New York, New York, USA

Evidence for a role of adaptive immunity in tau-mediated neurodegeneration

David M. Holtzman, Hao Hu, Jason Ulrich, Xiaoying Chen [20'+5']

Presenter affiliation: Washington University in St. Louis, St. Louis, Missouri.

3

The crucial role of microglia in the initiation of Alzheimer's disease

Bart De Strooper [20'+5']

Presenter affiliation: University College London, London, United Kingdom; University of Leuven, Leuven, Belgium.

4

Microglial modulation of CD8+ T cells in Alzheimer's disease progression—Insights from immune-functionalized cerebral organoids

Yilin Feng, Honghui Zheng, Jiyuan Tang, Zitian Wang, Peter E. Lobie, Shaohua Ma [10'+5']

Presenter affiliation: Tsinghua University, Shenzhen, China.

5

A neuron-immune circuit regulates neurodegeneration in the hindbrain and spinal cord of Arf1-ablated mice

Shuhan Jin [10'+5']

Presenter affiliation: Fudan, Shanghai, China.

6

Break

Human iPSC 4R tauopathy model uncovers modifiers of tau propagation

Li Gan, Celeste Parra-Bravo, Alice M. Giani, Jesus Madero-Perez, Yuan-song Wan, Shiaoqing Gong [20'+5']

Presenter affiliation: Weill Cornell Medicine, New York, New York.

7

Data vs knowledge—Quantifying proteins in human tauopathies

Judith A. Steen, Tian Wang, Maaïke Beuvink, Mukesh Kumar, Christoph Schaffner, Hanno Steen [20'+5']

Presenter affiliation: Harvard University, Boston, Massachusetts; Boston Children's Hospital, Boston, Massachusetts.

8

Neuronal AMPK regulates microglial lipid droplet accumulation in tauopathy brain

Yajuan Li, Daniel Munoz-Mayorga, Yuhang Nie, Ningxin Kang, Yuren Tao, Jessica Lagerwall, Carla Pernaci, Genevieve Curtin, Nicole G. Coufal, Jerome Mertens, Lingyan Shi, Xu Chen [10'+5']

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

9

Axonal microtubule disruption is involved in Alzheimer's disease-related tau pathogenesis

Zhuohao He [10'+5']

Presenter affiliation: Shanghai Institute of Organic Chemistry, Shanghai, China; University of the Chinese Academy of Sciences, Beijing, China.

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POSTER SESSION

- TRPM7 kinase induces amyloid- β degradation to reverse synaptic and cognitive deficits in mouse models of Alzheimer's disease**
Nashat Abumaria
Presenter affiliation: Fudan University, Shanghai, China. 11
- Characterisation of tau in the interstitial fluid of Tau58 dementia mouse models**
Leila Akbari, Magdalena Przybyla, Lars Ittner, Janet Van Eersel
Presenter affiliation: Faculty of Medicine, Health and Human Sciences, Macquarie University,, Sydney, Australia. 12
- The potential neuroprotective properties of unique lipidized analogs of anorexigenic neuropeptide cart—Hypothermia models**
Vilém Charvát, Anna Strnadová, Aneta Myšková, David Sýkora, Blanka Železná, Jaroslav Kuneš, Lenka Maletínská, Andrea Pacesová
Presenter affiliation: Institute of Organic Chemistry and Biochemistry, Prague, Czech Republic. 13
- ApoE inhibits APP gamma-cleavage with substrate specificity**
Yelin Chen
Presenter affiliation: Chinese Academy of Sciences, Shanghai, China; Synphatec Biopharmaceutical Company, Shanghai, China. 14
- Ameliorating amyloid-beta toxicity from a microbiomic perspective**
Ximing Chen, Bing Han
Presenter affiliation: Fudan University, Shanghai, China. 15
- Identification of potential mitophagy enhancers from traditional Chinese medicine for Alzheimer's disease treatment**
Xiaoming Cui, Aston Jiaxi Wu, Benjamin Chun-Kit Tong, Maggie Ming-Ki Leung, King-Ho Cheung
Presenter affiliation: Hong Kong Baptist University and Mr. & Mrs. Ko Chi Ming Centre for Parkinson's Disease Research, Hong Kong SAR, China. 16

- CSF biomarkers of reactive glial cells are associated with blood–brain barrier leakage and white matter lesions**
Linbin Dai, Qiong Wang, Feng Gao, Yong Shen
 Presenter affiliation: University of Science and Technology of China, Hefei, China. 17
- The clinical potential of hippocampal-prefrontal circuit manipulation in Alzheimer's disease treatment**
Liulv Fang, Ning Li, Guanglin Wang, Jing Zhang, Xiaochun Chen, Chun Xu
 Presenter affiliation: Fujian Medical University, Fuzhou, China. 18
- Molecular mechanism of substrate recognition and cleavage by human γ -secretase**
Xuefei Guo, Rui Zhou, Yigong Shi
 Presenter affiliation: Tsinghua University, Beijing, China. 19
- Choroid plexus volume as a novel candidate neuroimaging marker of the Alzheimer's continuum—A prospective cohort study**
Jiwei Jiang, Wenyi Li, Yaou Liu, Jun Xu
 Presenter affiliation: Beijing Tiantan Hospital, Capital Medical University, Beijing, China. 20
- Novel Nbs targetting the putative APOE4 receptor Lilrb3 inhibit the activation of human microglia**
Chen Jin, Yufan Du
 Presenter affiliation: Tsinghua University, Beijing, China. 21
- The SNT-AD and the mini-SKQ—Two tools to evaluate the lexical-semantic impairment screening in Alzheimer's disease and mild neurocognitive disorder**
Laurent Lefebvre, Sandra Invernizzi, Sandrine Basaglia-Pappas, Isabelle Simoes Loureiro
 Presenter affiliation: University of Mons, Mons, Belgium. 22
- Targeting TRPM7 by carvacrol for alleviating Alzheimer's disease-associated neuroinflammation—Insights from in vivo and in vitro studies**
Maggie Ming-Ki Leung, Benjamin Chun-Kit Tong, Aston Jiayi Wu, Olivia Ka-Yi Ho, Xiaoming Cui, Flora Xuejing Lu, Min Li, King-ho Cheung
 Presenter affiliation: Hong Kong Baptist University, Hong Kong SAR, China. 23

Inhibition of the dopamine transporter promotes lysosome biogenesis and ameliorates Alzheimer’s disease–like symptoms in mice <u>Yang Li</u> Presenter affiliation: Fudan University, Shanghai, China.	24
Causal longitudinal image synthesis(CLIS) and its application to brain MRI generation and Alzheimer's disease characterization <u>Yujia Li</u> , Han Li, Shaohua K. Zhou Presenter affiliation: Chinese Academy of Sciences, Peking, China.	25
A novel genetic tool for tracking specific microglial states in Alzheimer’s disease <u>Qingyun Li</u> , Nicole Hamagami-Samson, Dvita Kapadia, Kia Barclay, Zuolin Cheng, Guoqiang Yu, Jonathan Kipnis, Harrison Gabel Presenter affiliation: Washington University in St. Louis, St. Louis, Missouri.	26
TTC3 gene as a target to improve cognitive dysfunction in mice <u>Letong Li</u> , Jieyu He, fei Dou Presenter affiliation: Beijing Normal University, Beijing, China.	27
Decreased the stability of ACLY mediating aberrant lysosomal acidification promotes the progression of β-amyloid plaques in 5xFAD mice <u>Anlan Lin</u> , Tianqing Han, Xiaoman Dai, Jianmin Chen, Xiaochun Chen, Jing Zhang Presenter affiliation: Fujian Medical University, Fuzhou, China.	28
Histone deacetylase Sirt1 regulates the molecular mechanism of astrocyte activation and its function in Alzheimer's disease <u>Yi Liu</u> Presenter affiliation: Tongji University, Shanghai, China.	29
Cellular resilience to Alzheimer's pathology Wei-ting Chen, Maria Dalby, <u>Ashley Lu</u> , Katleen Craessaerts, Luuk de Vries, Marisa Vanheusden, Diego Sainz, Araks Martirosyan, Benjamin Pavie, Nikky Corthout, Veerle van Lieshout, Anke Misbaer, Henne Holstege, Inge Huitinga, Mark Fiers, Rita Balice-Gordon, Niels Plath, Bart De Strooper Presenter affiliation: Muna Therapeutics, Heverlee, Belgium.	30

<p>Microglia derived TGF-β1 ligand maintains microglia homeostasis via autocrine mechanism and is critical for normal cognitive function in adult mouse brain</p> <p><u>Alicia Bedolla</u>, <u>Agnes Luo</u> Presenter affiliation: University of Cincinnati, Cincinnati, Ohio.</p>	31
<p>Rescue of cognitive deficits in APP/PS1 mice by accelerating the aggregation of β-amyloid peptide</p> <p><u>Jiwei Mai</u>, Jianxiang Zhang, Fei Dou Presenter affiliation: Beijing Normal University, Beijing, China.</p>	32
<p>Functional molecular network reveals RCAN2 as a genetic risk factor for Alzheimer's disease</p> <p><u>Chen Ming</u>, Jinglong Zhang, Edoardo Marcora, Minghui Wang, Alan Renton, Erming Wang, Alison Goate, Aiqun Li, Bin Zhang Presenter affiliation: Icahn School of Medicine at Mount Sinai, New York, New York; Faculty of Health Sciences, University of Macau, China.</p>	33
<p>Novel Tau11i caused by intron retention is enriched in AD tissues and exhibits pathological biochemical properties</p> <p>Zhen-Kai Ngian, Yow-Yong Tan, Ching-Thong Choo, Chao-Yang Leow, Mitchell Lai, Christopher Chen, <u>Chin-Tong Ong</u> Presenter affiliation: Temasek Life Sciences Lab, Singapore, Singapore.</p>	34
<p>TRPC6 in Alzheimer's disease—Associations with Aβ-PET, neurodegeneration, and cognition</p> <p><u>Mei Pu</u>, Yutong Wen, Qianhua Zhao, Yizheng Wang Presenter affiliation: Huashan Hospital, Shanghai, China.</p>	35
<p>Discovery of half-curcumin-based chemiluminescence probes and their applications in detecting quasi-stable oxidized proteins</p> <p><u>Chongzhao Ran</u>, Jun Yang Presenter affiliation: MGH/Harvard Medical School, Boston, Massachusetts.</p>	36
<p>A pictogram test to detect cognitive decline and dementia</p> <p><u>Don Roosan</u> Presenter affiliation: Western University of Health Sciences, Pomona, California.</p>	37

<p>Digital Therapeutics (DTx) ameliorates Alzheimer’s-associated pathology by modulation of B cells in the CNS <u>Mariem Salhi</u>, Guo Xun, Kiryl D. Piatkevich Presenter affiliation: Westlake Laboratory of Life Sciences and Biomedicine, Hangzhou, China; Westlake University, Hangzhou, China.</p>	38
<p>Functional characterization of human neurons in a xenograft model for Alzheimer’s disease <u>Di Sun</u>, Disha Shah, Bart De Strooper Presenter affiliation: VIB Center for Brain & Disease Research, VIB, Leuven, Belgium; KU Leuven, Leuven, Belgium.</p>	39
<p>Rates of intracerebral hemorrhage and subarachnoid hemorrhage events increased with Alzheimer’s disease severity in United States Veterans Ying Wang, Byron J. Aguilar, Peter J. Morin, Dan Berlowitz, Joel Reisman, Raymond Zhang, <u>Amir Abbas Tahami Monfared</u>, Weiming Xia Presenter affiliation: Eisai, Inc., Nutley, New Jersey; McGill University, Montreal, Canada.</p>	40
<p>Alcohol, liver health, BMI, and race/gender influence Alzheimer’s disease development Rex Liu, Blyth Durbin-Johnson, Brian Paciotti, Albert T. Liu, Alyssa Weakley, Xin Liu, <u>Yu-Jui Y. Wan</u> Presenter affiliation: University of California-Davis, Davis, California.</p>	41
<p>LilrB3 is a putative cell surface receptor of APOE4 <u>Yumeng Wang</u>, Chen Jin Presenter affiliation: Tsinghua University, Beijing, China.</p>	42
<p>Microglia containment of amyloid β plaques requires coordination of autophagy and unfolded protein response <u>Shoutang Wang</u>, Zhangying Cai, Siyan Cao, Silvia Penati, Wandy Betty, Marco Colonna Presenter affiliation: The University of Hong Kong, Hong Kong, China.</p>	43
<p>Modulating brain lipid balance—A potential therapeutic strategy for alleviating the progression of Alzheimer’s disease Li Yang, Shaohua Qi, Zheng Yin, Joey Liu, Dharti Shantaram, Roberto Collu, Hong Zhao, Matthew Vasquez, Shan Xu, Xiaohui Yu, Dongbing Gao, Xianlin Han, Weiming Xia, Willa A. Hsueh, <u>Stephen T. Wong</u> Presenter affiliation: Houston Methodist, Houston, Texas.</p>	44

<i>In situ</i> labeling of neurofibrillary tangles in neurodegenerative diseases using photo-affinity probes	
<u>You Wu</u> , Pengju Nie, Yueming Li	
Presenter affiliation: Memorial Sloan Kettering Cancer Center, New York, New York; Weill Graduate School of Medical Sciences of Cornell University, New York, New York.	45
Elevated vascular BACE1 causes vascular dysfunction and white matter lesions	
<u>Zujun Wu</u> , Lang Wen, Danlei Bi, Yong Shen	
Presenter affiliation: University of Science and Technology of China, Hefei, China.	46
Mitochondrial calcium overload impairs PINK1-mediated mitophagy in Alzheimer's disease models	
<u>Aston Jiayi Wu</u> , Benjamin Chun-Kit Tong, Maggie Ming-Ki Leung, Xiaoming Cui, Min Li, King-ho Cheung	
Presenter affiliation: Hong Kong Baptist University, Hong Kong SAR, China.	47
The eta cleavage pathway of amyloid precursor protein—A link between traumatic brain injury and Alzheimer's disease	
<u>Yuhuan Xie</u> , Yue Ma, Yingming Li, Na Lei, Gang Li, Ruinan Shen, Phuong Nguyen, Shanshan Wang, Brian P. Head, Kevin D. Rynearson, Steven L. Wagner, Xiong Lei, Peixin Guo, Chengbiao Wu	
Presenter affiliation: Yunnan University of Chinese Medicine, Kunming, China.	48
Microwave-enhanced gamma oscillations improve cognitive abilities in Alzheimer's disease mice	
<u>Zhenqi Yang</u> , Weiming Yuan, Yong Zou, Xiangjun Hu, Lifeng Wang	
Presenter affiliation: Institute of Radiation Medicine, Beijing, China.	49
Roles of blood monocytes carrying TREM2R47H mutation in pathogenesis of Alzheimer's disease and its therapeutic potential in APP/PS1 mice	
<u>Zhong-Yuan Yu</u> , Jie Liu, Zhi-Hao Liu, Yan-Jiang Wang	
Presenter affiliation: Daping Hospital, Chongqing, China.	50
Associations of CSF angiogenic factors with cerebrovascular lesion and neurodegeneration in Alzheimer's disease	
Feng Gao, <u>Yaxi Zhan</u> , Qiong Wang, Linbin Dai, Jiong Shi, Yong Shen, Menguo Zhang	
Presenter affiliation: The First Affiliated Hospital of USTC, Division of Life Sciences and Medicine, University of Science and Technology of China, Hefei, China.	51

Variability in access to anti-amyloid therapy over social determinants among patients in the United States Veterans Affairs Healthcare System

Byron J. Aguilar, Ying Wang, Peter J. Morin, Dan Berlowitz, Joel I. Reisman, Raymond Zhang, Amir Abbas Tahami Monfared, Quanwu Zhang, Weiming Xia
Presenter affiliation: Eisai, Inc., Nutley, New Jersey. 52

A novel chimeric model investigating human neurological features in Alzheimer's disease

Xu Zhang, Suresh Poovathingal, Bart De Strooper
Presenter affiliation: VIB Center for Brain & Disease Research, Leuven, Belgium; VIB-KU Leuven, Leuven, Belgium. 53

Changes in CSF sPDGFR β level and their association with blood-brain barrier breakdown in Alzheimer's disease with or without small cerebrovascular lesions

Xinyi Lv, Mengguo Zhang, Zhaozhao Cheng, Qiqiang Tang, Feng Gao
Presenter affiliation: Division of Life Sciences and Medicine, University of Science and Technology of China, Hefei, China. 54

Transmission of Alzheimer's disease-associated microbiota dysbiosis and its impact on cognitive function—Evidence from mice and patients

Yiyang Zhang, Yuan Shen, Zengliang Jiang, Yujiang Shi, Zhongcong Xie
Presenter affiliation: Massachusetts General Hospital and Harvard Medical School, Boston, Massachusetts. 55

Deciphering the protective interplay between cancer and Alzheimer's—Advancing drug repositioning strategies for Alzheimer's disease treatment

Hong Zhao, Matthew Vasquez, Juyoung Ahn, Stephen Wong
Presenter affiliation: The T. T. and W. F. Chao Center for BRAIN and Houston Methodist Neal Cancer Center, Houston, Texas; Weill Cornell Medicine, New York, New York. 56

Unveiling Alzheimer's disease pathogenesis—A novel mouse model tracks tau-related biological events across key developmental stages

Xinyi Zhao, Zhuohao He
Presenter affiliation: Interdisciplinary Research Center on Biology and Chemistry, Shanghai, China; University of the Chinese Academy of Sciences, Beijing, China. 57

TBI induce AD-related protein pathogenesis and neurodegeneration via microtubule disruption

Xinyi Zhao, Wen Zeng, Hong Xu, Zihan Sun, Jennifer D. McBride, Bin Zhang, Soo-Jung Kim, Bryan Zoll, Takashi Saito, Hiroki Sasaguri, Takaomi C. Saido, Carlo Ballatore, Haishan Yao, Zhaoyin Wang, Kurt R. Brunden, Virginia M.-Y Lee, Zhuohao He

Presenter affiliation: Interdisciplinary Research Center on Biology and Chemistry, Shanghai, China; University of the Chinese Academy of Sciences, Beijing, China.

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Targeting p-tau217 with immunotherapy ameliorates murine tauopathy

Denghong Zhang, Wei Zhang, Chen Ming, Xuheng Gao, Yingjun Zhao

Presenter affiliation: Xiamen University, Xiamen, China.

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Molecular mechanism of γ -secretase cleavage and regulation

Rui Zhou

Presenter affiliation: Tsinghua University, Beijing, China.

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Amyloid- β deposition of in murine models of traumatic brain injury—A systematic review and meta-analysis

Yingming Li, Lianna Zhao, Youyang Zhu, Yuhuan Xie

Presenter affiliation: Yunnan University of Chinese Medicine, Kunming, China.

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Zanubrutinib (BGB3111) inhibits neuroinflammation in a preclinical model of Alzheimer's disease

Zhibao Zhu

Presenter affiliation: the First Affiliated Hospital, Fujian Medical University, FuZhou, China.

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Association of intracranial atherosclerosis with incident dementia in middle-aged general population

Ding-Ding Zhang, Fei Han, Jing Yuan, Jun Ni, Yi-Cheng Zhu

Presenter affiliation: State Key Laboratory of Complex Severe and Rare Diseases, Peking Union Medical College Hospital, Chinese Academy of Medi, Beijing, China.

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TUESDAY, April 9—3:00 PM

Chinese Tea and Beer Tasting

SESSION 3 CELL SIGNALING AND NETWORK CHANGES WITH AD PATHOLOGY

Chairpersons: **Junying Yuan**, Shanghai Institute of Organic Chemistry, CAS, Shanghai, China
Bin Zhang, Icahn School of Medicine at Mount Sinai, New York, New York, USA

Receptor-interacting protein kinase 1 (RIPK1), cell death and neurodegenerative diseases

Junying Yuan [20'+5']

Presenter affiliation: Shanghai Institute of Organic Chemistry, the Chinese Academy of Sciences, Shanghai, China.

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The choice of a healthy brain—Degrading damaged cellular components *versus* eliminating the entire faulty neuron

Xuejun Jiang [20'+5']

Presenter affiliation: Memorial Sloan Kettering Cancer Center, New York, New York.

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Cholesterol 25-hydroxylase regulates tau-induced neuroinflammation and cholesterol homeostasis in female tauopathy mice

Hao Chen, Li Fan, Yohannes Ambaw, Man Ying Wong, Kendra Norman, Tobias Walther, Robert Farese, Laura Beth J. McIntire, Li Gan, Wenjie Luo [10'+5']

Presenter affiliation: Weill Cornell Medicine, New York, New York.

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Network modeling of large-scale multiomics data identifies novel pathways and regulators in Alzheimer's disease

Bin Zhang [20'+5']

Presenter affiliation: Icahn School of Medicine at Mount Sinai, New York.

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Single-cell multi-omics analysis of Alzheimer's disease reveals disrupted gene regulatory networks in glial subpopulations

Shuwen Zhang, Hongru Hu, Na Zhao, Yan W. Asmann, Yingxue Ren [10'+5']

Presenter affiliation: Mayo Clinic, Jacksonville, Florida

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SESSION 4 ApoE AND GLIAL BIOLOGY

Chairpersons: **Hui Zheng**, Baylor College of Medicine, Houston, Texas, USA

Yigong Shi, Westlake University/Tsinghua University, Beijing, China

ApoE and lipid metabolism—Impact on brain aging and Alzheimer's disease

Guojun Bu [20'+5']

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

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ApoE4 and its cell surface receptor LirB3—Potential therapeutic opportunity for Alzheimer's disease

Yigong Shi [20'+5']

Presenter affiliation: Westlake University, Hangzhou, China.

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Astrocytic ApoE reprograms neuronal cholesterol metabolism and histone acetylation-mediated memory

Qiang Liu, Juan Zhang, Dingfeng Li [20'+5']

Presenter affiliation: University of Science and Technology of China, Hefei, China.

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APOE and immune response in Alzheimer's disease

Xiaoying Chen, David Holtzman [10'+5']

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

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Rejuvenation of peripheral immune cells attenuates Alzheimer's disease-like pathologies and behavioural deficits in an AD mouse model

Pu-Yang Sun, Jie Liu, Jian-Ni Hu, Yun-Feng Tu, Qiu Jiang, Yu-Juan Jia, Hao-Lun Sun, Si-Han Chen, Jia-Yan Xin, Zhong-Yuan Yu, Zhi-Hao Liu, Cheng-Rong Tan, Gui-Hua Zeng, An-Yu Shi, Yu-Hui Liu, Xian-Le Bu, Jun Wang, Yan-Jiang Wang [10'+5']

Presenter affiliation: Third Military Medical University, Chongqing, China.

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Break

Bidirectional regulation of amyloid and tau pathologies regulated by APOE

Yang Shi, Zihan Liang, Meixia Pan, Haiyan Tan, Emily Franke, Xin Bao, Javier Remolina, Yingxue Ren, Junmin Peng, Xianlin Han, David M. Holtzman [20'+5']

Presenter affiliation: Chinese Institute for Brain Research, Beijing, China.

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Decipher astrocytic cell surface proteome in Alzheimer's disease

Omar Pena-Ramos, Tzu-Hsuan Huang, Xue Zhang, Jinmin Peng, Hui Zheng [20'+5']

Presenter affiliation: Baylor College of Medicine, Houston, Texas.

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Inhibition of astrocytic unfolded protein response improves glymphatic function in mouse models of Alzheimer's disease

Kai Chen, Yosuke Morizawa, Guang Yang [10'+5']

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

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Dysregulation of astrocyte activity and metabolism mediates glymphatic dysfunction and cognitive impairment in a mouse model of Alzheimer's disease

Zhan Zhang, Chuan Xiao, Yubai Zhao, Yuting Xia, Min Zhang, Yuan Luo, Xiaoru Xie, Xiaojing Ye, Yamei Tang, Wei-Jye Lin [10'+5']

Presenter affiliation: Zhongshan School of Medicine, Sun Yat-sen University, Guangzhou, China; Sun Yat-sen Memorial Hospital, Sun Yat-sen University, Guangzhou, China.

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WEDNESDAY, April 10—2:00 PM

Visit to Old Suzhou

SESSION 5 REGULATION OF SECRETASES

Chairpersons: **Yong Shen**, University of Science and Technology of China, Hefei, China
Yi-Cheng Zhu, Peking Union Medical College Hospital, Beijing, China

Targeting Glia BACE1 for Alzheimer's treatment

Riqiang Yan [20'+5']

Presenter affiliation: University of Connecticut School of Medicine, Farmington, Connecticut.

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Cerebral small vessel disease in Alzheimer's disease

Tingting Lin, Jianyu Li, Shuxin Zheng, Qiong Wang, Feng Gao, Yong Shen [20'+5']

Presenter affiliation: Division of Life Sciences and Medicine, University of Science and Technology of China, Hefei, China.

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Inhibition of BACE1 exacerbates cognitive dysfunction via ferroptosis mediated by ferritinophagy

Peng Lei [10'+5']

Presenter affiliation: Sichuan University, Chengdu, China.

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Association of cerebrospinal fluid BACE1 with amyloid pathology and neurodegeneration in Alzheimer disease

Feng Gao, Yong Shen [10'+5']

Presenter affiliation: University of Science and Technology of China, Hefei, China.

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Function and adaptation of γ -secretase

Yueming Li [20'+5']

Presenter affiliation: Memorial Sloan Kettering Cancer Center, New York, New York.

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γ -secretase-targeting small molecules developed for Alzheimer's disease—Potential cautions raised in a pilot animal experiment

Pengfei Hou, Lutgarde Serneels, Bart De Strooper [10'+5']

Presenter affiliation: VIB Center for Brain & Disease Research, VIB, Leuven, Belgium; KU Leuven, Leuven, Belgium.

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SPONSOR TALK

Building a proteome-wide resource for protein sciences

Tao Chen [20'+5']

Presenter affiliation: Absea Biotechnology, Ltd., Beijing, China.

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SESSION 6 THERAPEUTIC DEVELOPMENT

Chairpersons: **Takeshi Iwatsubo**, The University of Tokyo, Tokyo, Japan
Taisuke Tomita, The University of Tokyo, Tokyo, Japan

Alzheimer's disease—From molecular pathology to disease-modifying therapies

Takeshi Iwatsubo [20'+5']

Presenter affiliation: The University of Tokyo, Tokyo, Japan. 85

Catalytic photo-oxygenation of pathological amyloids *in vivo*

Taisuke Tomita [20'+5']

Presenter affiliation: The University of Tokyo, Tokyo, Japan. 86

Modulating gene transcription to mitigate cognitive decline in Alzheimer's disease

Ming-Ming Zhou [10'+5']

Presenter affiliation: Icahn School of Medicine at Mount Sinai, New York, New York. 87

Understanding the pathogenesis and developing therapies for Alzheimer's disease from a systemic approach

Yan-Jiang Wang [10'+5']

Presenter affiliation: Daping Hospital, Third Military Medical University, Chongqing, China. 88

Break

Targeting transferrin receptor to transport antisense oligonucleotides across the blood-brain barrier

Scarlett Barker [20'+5']

Presenter affiliation: Denali Therapeutics, South San Francisco, California. 89

Novel strategies for the treatment of neurodegenerative diseases

Hang Liu, Fan Mei, Rongrong Ye, Shudan Wang, Yan Ding, Xinyu Han, Yun Zhi, Keliang Pang, Wei Guo, Bai Lu [10'+5']

Presenter affiliation: Tsinghua University, Beijing, China; Beijing Academy of Artificial Intelligence, Beijing, China. 90

**Deciphering cell-to-cell communication in Alzheimer's disease—
Unveiling new pathways for drug discovery with S2C2**

Jianting Sheng, Ju Young Ahn, Zhihao Wan, Xiaohui Yu, Shaohua Qi,
Stephen T. Wong [10'+5']

Presenter affiliation: Houston Methodist Hospital, Houston, Texas;
Weill Cornell Medicine, New York, New York; Texas A&M University,
College Station, Texas.

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**Glycosylation-based network and target discovery for
Alzheimer's disease**

Qi Zhang, Cheng Ma, Sheng Pan, Lih-Shen Chin, Lian Li [10'+5']

Presenter affiliation: Emory University, Atlanta, Georgia.

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THURSDAY, April 11—2:00 PM

SESSION 7 THE GUT-BRAIN AXIS AND BIOMARKERS

Chairpersons: **Meiyu Geng**, Shanghai Institute of Materia Medica,
Chinese Academy of Sciences, Shanghai, China
Rong Wang, Nanjing Qlife Medical Technology Co., Ltd.,
Nanjing, China

**Sex-specific modulation of A β amyloidosis and
neuroinflammation mediated by alterations of the gut microbiome
in mouse models**

Sangram S. Sisodia, Piyali Saha, Dodiya B. Hemraj, Rudolph E. Tanzi,
Shabana Shaik, David M. Holtzman, Megan E. Bosch, Julia
Michalkiewicz, Ian Q. Weigle, Can Zhang, Nicholas Slimmon,
Xiaoqiong Zhang, Pedro B. Poli, Priyam Patel, Eugene Chang, Oleg
Butovsky [20'+5']

Presenter affiliation: University of Chicago, Chicago, Illinois.

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**The role of A β -induced membrane damage in tau pathology of
Alzheimer's disease**

Robert Vassar [20'+5']

Presenter affiliation: Northwestern University, Chicago, Illinois.

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**Sodium oligomannate disrupts the adherence of Rib^{high} bacteria
to gut epithelia to block SAA-triggered Th1 inflammation in
5XFAD transgenic mouse**

Meiyu Geng, Xinyi Wang, Zuoquan Xie, Guangqiang Sun, Jing Zhang,
Tao Wang [20'+5']

Presenter affiliation: Shanghai Institute of Materia Medica, Shanghai,
China.

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Sodium oligomannate affects the progression of Alzheimer's disease by modulating innate immune activation

Qiong Wang, Duntao Huang, Shufen Yuan, Feng Gao, Yong Shen [10'+5']

Presenter affiliation: The First Affiliated Hospital of USTC, Hefei, China.

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Break

Unbiased proteomics identifies robust molecular signatures, causal and druggable targets for Alzheimer's disease

Carlos Cruchaga [20'+5']

Presenter affiliation: Washington University, St. Louis, Missouri.

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Sporadic early-onset Alzheimer's disease—Clinical, imaging and biomarker profiles

Jiong Shi [20'+5']

Presenter affiliation: University of Science and Technology of China, Hefei, China.

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Detection of misfolded proteins in neurodegenerative disease models with a chemiluminescence probe

Chongzhao Ran, Biyue Zhu [10'+5']

Presenter affiliation: MGH/Harvard Medical School, Boston, Massachusetts.

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Macroscale structural covariance network reveals the biological mechanisms of neuropsychiatric symptoms in the Alzheimer's continuum

Jiwei Jiang, Kun Zhao, Yong Liu, Jun Xu [10'+5']

Presenter affiliation: Beijing Tiantan Hospital, Capital Medical University, Beijing, China.

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THURSDAY, April 11—6:00 PM

COCKTAILS and BANQUET

FRIDAY, April 12

Departure