### Curriculum Vitae

**Hui-Chen Lu, Ph.D.**

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Work AddressGill Institute for Neuroscience, Indiana University  
702 N Walnut Grove Ave, Bloomington, IN  47405

Home Address 954 S. Sara Ct, Bloomington, IN47401

**Professional Experience**

2024-present Director of the Gill Institute for Neuroscience,

Indiana University Bloomington

2018-2024 Director for the Linda and Jack Gill Center for Biomolecular Science, Indiana University Bloomington

2015-present Linda and Jack Gill Chair of Neuroscience and Professor (Tenured) in the Department of Psychological and Brain Sciences

Affiliated with Neuroscience and Cognitive Science Program  
Indiana University Bloomington

2012-2014 Associate Professor (Tenured)

Department of Pediatrics

Baylor College of Medicine, Houston, Texas

2005-2012 Assistant Professor (Tenure Track)

Department of Pediatrics

Baylor College of Medicine, Houston, Texas

2003-2005 Assistant Professor (Non-Tenure Track)

Department of Neuroscience

Baylor College of Medicine, Houston, Texas

* 1. Research Assistant (Mentor: Dr. Henry Y. Sun)

Institute of Molecular Biology at Academia Sinica, Taipei, Taiwan

## Education

1998-2003 Post-doctoral fellow

Division of Neuroscience (Mentor: Dr. Michael C. Crair),

Baylor College of Medicine, Houston, Texas

* 1. Post-doctoral fellow

Developmental Biology (Mentor: Dr. Gregor Eichele),

Baylor College of Medicine, Houston, Texas

* 1. Ph.D., Developmental Biology (Dr. Gregor Eichele),

Baylor College of Medicine, Houston, Texas

* 1. B.S., Zoology,

National Taiwan University, Taipei, Taiwan

## Grants and Fellowships (>15 million)

**Active:**

Agency: NIH-NINDS

Title: Molecular and genetic studies of NMNAT2 in neuroprotection

Type: R01 NS086794

Role: Principal Investigator Period: 09/15/2014-05/31/26

Agency: NIH-NINDS

Title: Supplement for Molecular and genetic studies of NMNAT2 in neuroprotection

Type: 3R01NS086794-S1

Role: Principal Investigator/Mentor Period: 03/14/2022-05/31/26

Agency: NIH-NIDA

Title: Mechanisms and treatment of adolescent phytocannabinoid impairment of prefrontal cortex function

Type: R01 DA053746

Role: Principal Investigator (MPI with Dr. Mackie) Period: 05/01/2022-02/28/2027

Agency: NIH-NIDA

Title: Indiana University Bloomington (IUB) Center for Cannabis, Cannabinoids, and Addiction (C3A)

Type: P30 DA056410

Role: Principal Investigator (MPI with Dr. Mackie) Period: 2023-2028

Agency: NIH-NIAAA

Title: Impact of prenatal opioid exposure on corticostriatal circuits that modulate alcohol-related behaviors

Type: R01AA030955

Role: Co-Investigator (PI: Dr. Atwood) Period: 2023-2028

**Completed:**

Agency: Indiana University

Title: The Long-term Consequences of Opioid Neonatal Abstinence Syndrome

Type IU Addictions Grand Challenge Fund

Role: Co-PI Period 10/14/2018-06/30/2020

Agency: CTSI

Elucidate NMNAT2's roles in brain health with longitudinal PET-MRI

Type: Pilot funding for research use of core facilities

Role: Principal Investigator Period: 01/15/2020-01/14/23

Agency: CTSI

Multimodal analysis to elucidate mGluR5 signaling in establishing cortical circuits

Type: Pilot funding for research use of core facilities

Role: Principal Investigator Period: 08/01/2018-07/31/20

Agency: CTSI

Title: Mouse model for studying FGFR3 mutation in human thanatophoric dysplasia

Type: Pilot funding for research use of core facilities

Role: Principal Investigator Period: 02/01/2017-01/31/19

Agency: IURTC

Title: Novel RNA-based therapeutic agents to reduce neuroinflammation

Type: JCITR Translational Research Pilot Grant Program

Role: Principal Investigator Period: 06/01/2017-05/31/19

Agency: NIH-NINDS

Title: Signaling cascades in sensory map development

Type: R01 NS048884

Role: Principal Investigator Period: 04/01/05-07/31/17

Agency: Robert A. and Renee E. Belfer Family Foundation (NDC consortium)

Title: Development of phenotypic assays and characterization of animal models for neuro-degeneration and regeneration

Type: Gift

Role: Principal Investigator Period: 10/01/12-06/30/15

Agency: Texas Children’s Hospital

Title: Develop a drug screening platform to identify compounds enhancing NMNAT2 abundance and stability

Type: Pilot Award

Role: Principal Investigator Period: 7/01/13-12/31/14

Agency: NIH-NICHD

Title: Will therapeutic dosing of fatty acid amino hydrolase inhibitors disrupt neuronal development?

Type: R21 HD065561

Role: MPI with Dr. Mackie Period: 09/01/10-08/31/13

Agency: NIH-NIDA

Title: Do organophosphates impair neurodevelopment through inhibition of endocannabinoid?

Type: R21 DA029381

Role: MPI with Dr. Mackie Period: 04/01/10-03/31/13

Agency: Fidelity Foundation

Title: *nmnat*, a gene required for neuronal protection and repair

Type: Research Grant

Role: Principal Investigator Period: 04/01/06-12/31/11

Agency: NARSAD

Title: The role of GPR55, a new cannabinoid receptor, in the synaptic function and synaptic plasticity

Type: NARSAD Young Investigator Award

Role:Principal InvestigatorPeriod: 07/01/08-06/30/10

Agency: Fidelity Foundation

Title: Study the role of the Reelin pathway in neurodegeneration

Type: Research Grant

Role: Principal Investigator Period: 09/01/07-08/31/08

Agency: American Heart Association

Title:The role of Calcium/Calmodulin Stimulated Adenylyl Cyclase I in Synaptic Transmission.

Type: Texas Affiliate Beginning Grant-in-Aid (Starter Award)

Role:Principal InvestigatorPeriod: 07/01/04-06/30/06

Agency: NIH/NINDS

Type: NIH NRSA postdoctoral fellowship F32NS11034

Period: 04/01/2000-01/31/03

**Honors & Awards**

1. Travel Award for NIDA Workshop: Informatics for Data and Resource Discovery in Addiction (2010)
2. NARSAD Young Investigator Award (2008-2010)
3. NIH NRSA postdoctoral fellowship F32NS11034 (1999-2003)
4. Max-Planck postdoctoral fellowship (1997-1998)
5. Markey Charitable Trust Foundation Graduate Student Fellowship (1996-1997)
6. Deborah K. Martin Achievement Award in Biomedical Research (1997)

**Fellowships and Pilot Grants Awarded to lab members**

2024 T32 fellowship from NIDA T32DA024628 Integrative Predoctoral Training In Drug Abuse to Ms. Ashley Xu

2023 STARS Scholarship to Mr. Jeremy Wilson (Freshman undergraduate)

2022-2025 NIH-NINDS supplemental award to Ms. Andrea Enriquez

2023 Fleischer Scholarship to Mr. Jason Fu (Freshman undergraduate)

2022-2023 IU Graduate School Thesis Fellowship for Mr. Zhen-Xian Niou

2022 Senior Awards for Mr. Caliel Hines and Ms. Anoosha Sri

2021-2022 NIDA T32 training grant for Ms. Andrea Enriquez

2021-2022 Fleischer Scholarship to Mr. Caliel Hines (Senior undergraduate)

2021 T32 fellowship from NIDA T32DA024628 Integrative Predoctoral Training In Drug Abuse to Ms. Andrea Enriquez

2021 Summer Hutton Honors College Research Grant to Mr. Jason Wang (junior undergraduate)

2021 Olive Carruthers Clifft Scholarship to Mr. Jason Wang (junior undergraduate)

2020-2021 Fleischer Scholarship to Mr. Xuan Li (sophomore undergraduate)

2020 Sydney Brotheridge Neuroscience Scholarship to Mr. Xuan Li (sophomore undergraduate)

2020 President’s Diversity Recruitment Fellowship to Ms. Andrea Enriquez

2019 Advanced Summer Research Scholarship to Mr. Xuan Li (freshman undergraduate)

2018-2019 CTSI core grant to Dr. Jui-Yen Huang

2018 Apr Women in STEM Summer Research Fellowship to Ms. Jessica Felker (sophomore undergraduate)

2017-2018 CTSI core grant to Dr. Yousuf Ali

2016-2019 Alzheimer’s Association Research Fellowship to Dr. Salil Sharma

2015-2017 two CTSI core grants to Dr. Yousuf Ali

2015-2017 CTSI PDT grant to Dr. Yousuf Ali

2011-2015 NINDS Post-doctoral Fellowship to Carlos J. Ballester Rosado

2008-2010 NICHD Post-doctoral Fellowship to Dr. Michael Albright

2007-2008 NICHD Pre-doctoral Fellowship to Carlos J. Ballester Rosado

**Faculty Committee Services**

* Sole faculty representative of ECG steering committee. Served as thought partner for ECG Management Consultants as they performed a campus-wide assessment of IUB’s research growth needs for wet laboratories and animal facilities.
* Chair of the search committee for the 7th Gill Chair
* Member of the search committee for Associate Vice President and Vice Provost for Research, Indiana University-Bloomington (2023)
* Reviewer for IUB-Faculty 100 proposals (2022)
* Member of the Gill Center steering committee (2015-present)
* Member of the Gill Center Executive Committee (2018- present)
* Member of PBS Research Grants & External Support (2022-present)
* Ad Hoc member for Psychology Building Emergency Backup (2022-present)
* Review Committee member for department Faculty Research Support Program (FRSP) (2022-present)
* Chair of MSBII oversight committee (2021-present)
* Executive Member for Program in Neuroscience (PNS) graduate program (2021-2024)
* Chaired search committee for the sixth Gill Chair of Neuroscience (2019-2020)
* Member of Laboratory Animal Research Advisory Committee (2016-2023)
* Member of PNS awards committee (2021-present)
* Member of PNS colloquium committee (2016-present)
* Member of PBS colloquium committee (2016-2020)
* Member of PBS Animal Care and Use committee (2016-2020)
* Member of PBS Grant Support Faculty committee (2018-2020)
* Advisor for IUB Neuroscience Core (2019)
* Member of thesis committees for Melis Inan, Onkar S. Dhande, Zilai Wang, Jacob A. Berry, Carlos J. Ballester Rosado\*, Cheng-Chiu Huang, Mimi Huang, J.R. Casanova, Joanna Asprer, and. Qinxi Guo; Kat Marcelo, Kae-Jiun Chang, and Szu-Yu Ho, Alexia Thomas, Chris Jew\*, Aislyn Nelson, Wan-Hung Lee, Erika Perez, Reshma Raghava Kurup, Michael Green, Taylor Woodward, Sen Yang\*, Zhen-Xian Niou\*, Gabriel HD de Abreu\*, Andrea Enriquez\*, Diana Dimen, Sophie Warren, Clare Johnson, Jiayi Xu, Jung Hyun Park\*. (\*, chaired)
* Member of undergraduate Honor Thesis for Gabriella Smith
* Member of qualifying committees for I-Chia Huang, Molly Schroeder, Edward Miranda, Christopher S. Bland, Vafa Bayat, Jessica Leonardi, Mimi Huang, Bo Xiong, Steven Baker, Szu-Yu Ho, and Tiantian Cai.
* Member of Focus committee -building and imaging facilities for Feigin Center, TCH (2006-2010).
* Member of Small Animal Imaging Facilities for Texas Children’s Hospital (2010-2014).
* Seminar organizer for Cain Foundation Laboratories (2007-2010)
* Member of Admission Committee for Neuroscience Dept. (2012-2014)
* Member of the Executive Committee of the Gulf Coast Consortium for Translational Pain Research (2012-2013)

**Educational responsibilities**

* 2022-present Teach PSY- Y488/P657 Topics in Psychology (Topic: The science behind brain development and function) for undergraduates, Hutton Honor students, and graduate students
* 2016-2021 Taught PSY-P 457 Topics in Psychology (Topic: Development & Maintenance of Brain Circuits) for undergraduate and graduate students
* 2007-2014 Class coordinator for Neural Development Class for graduate students
* 2005-2008 Class coordinator for Classical Developmental Biology Class for graduate students

**Professional Societies**

* 2021-present American Association for the Advancement of Science
* 2014-present Society of Chinese Bioscientists in America (SCBA)
* 1998-present Society for Neuroscience

**Other Activities**

Manuscript Reviewer: Brain Research, Brain Research Bulletin; Brain Research, Cerebral Cortex, eLife, European Journal of Neuroscience; Journal of Neurophysiology, FASEB, Journal of Neuroscience, Mol. Psychology, Mol. Neurodegeneration, Nature Communications, Neuroscience Letter, Neuropsychopharmacology, Journal of Neurophysiology, Neurobiology of Disease, PLOS Biology, Proc Natl Acad Sci USA., Scientific Report. Editor for Scientific Report, Academic Editor for PLOS Biol (2019 Nov)

Grant review: NIH-NDPR, DBD, NMB (ad hoc), Alzheimer’s Association, Alzheimer’s research UK (ARUK), UK Medical Research Council, the Thematic Research Program in Taiwan Academia Sinica, CTSI core grant applications, Associate faculty for Faculty 1000, Health Research Council of New Zealand, Natural Science and Research Council of Canada, NYU NIEHS P30 Core Center “Center for the Investigation of Environmental Hazards” (NYU CIEH).

##### Publications

7/31/24 Google Scholar h index: 42, Citations: ~9,241

**Peer-Reviewed Journal Articles**

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| 1. Kangle Li, Hongwei Cai, **Hui-Chen Lu**, Ken Mackie, and Feng Guo (2024), “Brain Organoids for Understanding Substance Use Disorder” in press for **Drug Metabolism and Pharmacokinetics**. 2. Maurício dos Santos Pereira, Gabriel Henrique Dias de Abreu, Leonardo Calaça, Arruda Vanderlei, Rita Raisman-Vozari, Francisco Silveira Guimarães, **Hui-Chen Lu**, Patrick Pierre Michel and Elaine Del Bel (2024) “4’-fluorocannabidiol associated with capsazepine restrains L-DOPA-induced dyskinesia in hemiparkinsonian mice: contribution of anti-inflammatory and anti-glutamatergic mechanisms”. ***Neuropharmacology*** 251:109926. doi: 10.1016/j.neuropharm.2024.109926. PMID: 38554815. 3. Sen Yang, Zhen-Xian Niou, Andrea Enriquez, Jacob LaMar, Jui-Yen Huang, Karen Ling, Paymaan Jafar-Nejad, Jonathan Gilley, Michael P. Coleman, Jason M. Tennessen, Vidhya Rangaraju, **Hui-Chen Lu** (2024). NMNAT2 supports vesicular glycolysis via NAD homeostasis to fuel fast axonal transport. ***Mol Neurodegener.*** 19(1):13. doi: 10.1186/s13024-023-00690-9. PMID: 38282024 4. Sen Yang, Jung Hyun Park, **Hui-Chen Lu** (2023). Axonal energy metabolism, and the effects in aging and neurodegenerative diseases. ***Mol Neurodegeneration.***18(1):49. doi: 10.1186/s13024-023-00634-3. PMID: 37475056; PMCID: PMC10357692. 5. David L Haggerty, Gregory G. Grecco, Jui-Yen Huang, Emma H Doud, Amber L. Mosley, **Hui-Chen Lu**, Brady K. Atwood. Prenatal methadone exposure selectively alters protein expression in primary motor cortex: Implications for synaptic function. ***Front Pharmacol.*** (2023) Feb 1;14:1124108. 6. Jui-Yen Huang, Michael Hess, Abhinav Bajpai, Scott J Barton, Xuan Li, Liam N Hobson, **Hui-Chen Lu** (2022) “Sex- and GABAergic-modulated neuronal subnetwork assemblies in the developing somatosensory cortex” bioRxiv 2022.10.23.51337 7. Pedro Henrique Gobira, Jacob LaMar, Jade Marques, Ariandra Sartim, Kennia Silveira, Luana Santos, Gregers Wegener, Francisco S. Guimaraes, Ken Mackie, **Hui-Chen Lu**, Sâmia Joca (2023) “CB1 receptors attenuate ketamine-induced hyperlocomotion without compromising the antidepressant-like effects”, ***Cannabis Cannabinoid Res.*** doi: 10.1089/can.2022.0072. Epub ahead of print. PMID: 36067014. 8. ZhenXian Niou, Sen Yang, Anoosha Sri, Hugo Rodriquez, Jonathan Gilley, Michael P. Coleman, **Hui-Chen Lu** (2022) “NMNAT2 in cortical glutamatergic neurons exerts both cell and non-cell autonomous influences to shape cortical development and to maintain neuronal health” bioRxiv 2022.02.05.479195 9. Clare T Johnson, Gabriel H Dias de Abreu, Ken Mackie, **Hui-Chen Lu**, Heather B Bradshaw (2022) “Cannabinoids accumulate in mouse breast milk and differentially regulate lipid composition and lipid signaling molecules involved in infant development”. ***BBA Adv.*** *2022;2:100054. doi: 10.1016/j.bbadva.2022.100054.* |
| 1. Gregory G. Grecco, Jui-Yen Huang,Braulio Muñoz, Emma H. Doud, Caliel D. Hines,Yong Gao, Brooke Rodriguez, Amber L. Mosley, **Hui-Chen Lu**,Brady K. Atwood (2022) Sex-Dependent Synaptic Remodeling of the Somatosensory Cortex in Mice with Prenatal Methadone Exposure. ***Advances in Drug and Alcohol Research***. 2:10400. doi: 10.3389/adar.2022.10400. PMID: 37829495; PMCID: PMC10569410 |
| 1. Qiong Wei, Jong Han Lee, Chia-Shan Wu, Qun S Zang, Shaodong Guo, **Hui-Chen Lu,** Yuxiang Sun (2021) “Metabolic and inflammatory functions of cannabinoid receptor type 1 are differentially modulated by adiponectin”. ***World J Diabetes***. 2021 Oct 15;12(10):1750-1764. doi: 10.4239/wjd.v12.i10.1750. PMID: 34754376; PMCID: PMC8554371 |
| 1. Zheng Ao, Hongwei Cai, Zhuhao Wu, Sunghwa Song, Hande Karahan, Byungwook Kim, **Hui-Chen Lu**, Jungsu Kim, Ken Mackie and Feng Guo (2021). “Tubular human brain organoids to model microglia-mediated neuroinflammation”. ***Lab on a Chip***, 21, 2751-2762 PMCID: PMC8493632 |
| 1. Izaque S. Maciel, Gabriel HD de Abreu, Claire T. Johnson, Rida Bonday, Heather B. Bradshaw, Ken Mackie, **Hui-Chen Lu** (2021) “Perinatal CBD or THC Exposure Results in Lasting Resistance to Fluoxetine in the Forced Swim Test: Reversal by Fatty Acid Amide Hydrolase Inhibition. ***Cannabis Cannabinoid Res.*** 2021. PMID: 34182795. DOI: 10.1089/can.2021.0015 |
| 1. Gregory G. Grecco, Briana Mork, Jui Yen Huang, Corinne E. Metzger, David L. Haggerty, Kaitlin C. Reeves, Yong Gao, Hunter Hoffman, Simon N. Katner, Andrea R. Masters, Cameron W. Morris, Erin A. Newell, Eric A. Engleman, Anthony J. Baucum II, Jieun Kim, Bryan K. Yamamoto, Matthew R. Allen, Yu-Chien Wu, **Hui-Chen Lu**, Patrick L. Sheets, Brady K. Atwood (2021) “Prenatal methadone exposure disrupts behavioral development and alters motor neuron intrinsic properties and local circuitry”, ***Elife***. doi: 10.7554/eLife.66230. PMCID: PMC7993998. |
| 1. Jui-Yen Huang, Bruna Baumgarten Krebs, Marisha Lynn Miskus, May Lin Russell, Eamonn Patrick Duffy, Jason Michael Graf, **Hui-Chen Lu** (2020) “Enhanced FGFR3 activity in postmitotic principal neurons during brain development results in cortical dysplasia and axonal tract abnormality”, ***Sci Rep***. 2020 Oct 28;10(1):18508. doi:10.1038/s41598-020-75537-0. PMID: 33116259 |
| 1. Hongwei Cai, Zheng Ao, Liya Hu, Younghye Moon, Zhuhao Wu, **Hui-Chen Lu**, Jungsu Kim, and Feng Guo (2020) “Acoustofluidic assembly of 3D neurospheroids to model Alzheimer's disease”, ***Analyst.*** 10.1039/d0an01373k. doi:10.1039/d0an01373k. PMCID: PMC7530134 |
| 1. **Hui-Chen Lu**, Ken Mackie (2021) Review of the Endocannabinoid System. ***Biological Psychiatry****: Cognitive Neuroscience and Neuroimaging*. 6:607-615. doi: 10.1016/j.bpsc.2020.07.016. Epub 2020 Aug 1. PMID: 32980261; PMCID: PMC7855189. |
| 1. Chia-Shen Wu, Chris P. Jew, Hao Sun, Carlos Ballester-Rosado, **Hui-Chen Lu** (2020) “mGlu5 in GABAergic neurons modulates spontaneous and psychostimulant-induced locomotor activity”. Psychopharmacology (Berl), 237(2):345-361. doi:10.1007/s00213-019-05367-0 |
| 1. Salil Sharma, Ines Khadimallah, Adam Corya Williamson, Yousuf Omar Ali, Xi Rao, Yunlong Liu, **Hui-Chen Lu** (2018) “Presymptomatic change in microRNAs modulates Tau pathology”, ***Sci Rep.*** 8:9251. doi: 10.1038/s41598-018-27527-6. PMCID: PMC6006352 (Altmetric 103) |
| 1. Salil Sharma and **Hui-Chen Lu** (2018) “MicroRNAs in neurodegeneration: current findings and potential impacts”, **J. Alzheimers Dis Parkinsonism**. pii: 420. doi: 10.4172/2161-0460.1000420. PMID: 29862137 (Altmetric 10) |
| 1. Jui-Yen Huang, Marisha Lynn Miskus, and **Hui-Chen Lu** (2017) “FGF-FGFR mediates the activity-dependent dendritogenesis of layer IV neurons during barrel formation”, ***Journal of Neuroscience***, 37:12094-12105. PMID: 29097598 PMCID: PMC5729188 |
| 1. Jui-Yen Huang and **Hui-Chen Lu** (2017) “mGluR5 tunes NGF/TrkA signaling to orient spiny stellate neuron dendrites toward thalamocortical axons during whisker-barrel map formation”, ***Cerebral Cortex***  *DOI:https://doi.org/10.1093/cercor/bhx105* |
| 1. Yousuf O. Ali, Gillian Bradley, and **Hui-Chen Lu** (2017) “Screening with an NMNAT2-MSD platform identifies small molecules that modulate NMNAT2 levels in cortical neurons”, ***Scientific Report*** 7:43846. PMID: 28266613 (Altmetric 530; picked up by >54 news outlets; 99% of the same age). |
| 1. A. Meadows, JH Lee, CS Wu, Q Wei, G Pradhan, M Yafi, **HC Lu**, Y Sun (2016) “Deletion of G-protein-coupled receptor 55 promotes obesity by reducing physical activity”, International Journal of Obesity 40, 417-424 PMID: 26447738 |
| 1. Carlos J Ballester Rosado, Hao Sun, Jui-Yen Huang, and **Hui-Chen Lu** (2016) ” mGluR5 exerts cell-autonomous influences on the functional and anatomical development of layer IV cortical neurons in the mouse primary somatosensory cortex”, ***Journal of Neuroscience*** 36:8802-14. PMID: 27559164 (Editor’s choice). |
| 1. Chiaki Itami, Jui-Yen-Huang, Miwako Yamasaki, Masahiko Watanabe, **Hui-Chen Lu**, and Fumitaka Kimura (2016) “Developmental switch in spike timing-dependent plasticity and cannabinoid-dependent reorganization of the thalamocortical projection in the barrel cortex”, ***Journal of Neuroscience*** 36:7039-7054. PMID: 27358460 |
| 1. Yousuf O. Ali, Hunter M. Allen, Lei Yu, David Li-Kroger, Dena Bakhshizadehmahmoudi, Asante Hatcher, Christin, McCabe, Jishu Xu, Nicole Bjorklund, Giulio Taglialatela, David A. Bennett, Philip L. De Jager, Joshua M. Shulman, Hugo Bellen, **Hui-Chen Lu** (2016) “NMNAT2:HSP90 complex mediates proteostasis in proteinopathies”, ***PLOS Biol***. 14(6):e1002472. PMID:27254664. (Altmetric 289; cited by 67; picked up by >27 news outlets; 99% of the same age; in the top 50 most-downloaded among all 2016 PLOS Biol, papers.) |
| 1. Richard A. Slivicki, Yousuf O. Ali, **Hui-Chen Lu**, Andrea G. Hohmann (2016) “Impact of genetic reduction of NMNAT2 on chemotherapy-induced losses in cell viability in vitro and peripheral neuropathy in vivo”, Plos One, 11(1):e0147620. PMID: 26808812. |
| 1. Hui-Chen Lu and Ken Mackie (2016) “An introduction to the endogenous cannabinoid system”, ***Biol Psychiatry***, 79:516-25. PMID: 26698193. (Almetric 225) |
| 1. Adelina Meadows, Jong Han Lee, Chia-Shan Wu, Qiong Wei, Geetali Pradhan, Michael Yafi, **Hui-Chen Lu**, and Yuxiang Sun (2016) “Deletion of G-protein coupled receptor 55 promotes obesity by reducing physical activity", ***International Journal of Obesity.*** 40:417-24. PMID: 26447738. |
| 1. Sarah M. Ciupek, Jingheng Cheng, Yousuf O. Ali, **Hui-Chen Lu**, Daoyun Ji (2015) “ Progressive functional impairments of hippocampal neurons in a tauopathy mouse model”, ***Journal of Neuroscience*** 35:8118-31. PMID: 26019329. (Almetric 14) |
| 1. Kihoon Han, Hongmei Chen, Vincenzo Alessandro Gennarino, **Hui-Chen Lu**, Huda Y. Zoghbi (2014) “Fragile X-like behaviors and abnormal cortical dendritic spines in cytoplasmic FMR1 interacting protein 2 mutant mice”, ***Human Mol. Genetics*** 24:1813-23. PMCID: PMC4355018. |
| 1. Hong Lian, Li Yang, Allysa Cole, Lu Sun, Angie C.-A. Chiang, Stephanie W. Fowler, David J. Shim, Jennifer Rodriguez-Rivera, Giulio Taglialatela, Joanna L. Jankowsky, **Hui-Chen Lu**, Hui Zheng (2014) “NFκB-activated astroglial release of complement C3 compromises neuronal morphology and function associated with Alzheimer’s Disease”, ***Neuron*** 85:101-15. PMID: 25533482; PubMed Central PMCID: PMC4289109. |
| 1. Juan Diego Pita-Almenar, Dinghui Yu, **Hui-Chen Lu**, Michael Beierlein (2014) “Mechanisms Underlying Desynchronization of Cholinergic-Evoked Thalamic Network Activity”, ***Journal of Neuroscience*** 34(43):14463-14474. PMID: 25339757; PubMed Central PMCID: PMC4205562. |
| 1. Baiping Wang, Zilai Wang, Lu Sun, Li Yang, Hongmei li, Allysa Cole, Jennifer Rodriguez-Rivera, **Hui-Chen Lu**, Hui Zheng (2014) “The Amyloid Precursor Protein Controls Adult Hippocampal Neurogenesis through GABAergic Interneurons”, ***Journal of Neuroscience*** 34:13314-25. PMID: 25274811; PubMed Central PMCID: PMC4180470. |
| 1. Tabassum Majid, Yousuf O. Ali, Deepa V. Venkitararamani, Ming-Kuei Jang, **Hui-Chen Lu**, Robia G Pautler (2014) “In vivo axonal transport deficits in a mouse model of fronto-temporal dementia”, ***Neuroimage: Clinical*** 4:711-7. PMID: 24936422; PubMed Central PMCID: PMC4053640 |
| 1. Chia-Shan Wu, Daniel Morgan, Chris P. Jew, Chris Haskins, Mary-Jeanette Andrews, Corinne M. Spencer, Traci Czyzyk, Heather Bradshaw, Ken Mackie, **Hui-Chen Lu** (2014) “Long-term consequences of perinatal fatty acid amino hydrolase inhibition”, ***British J. Pharmacology*,** 171:1420-34. PMID: 24730060 |
| 1. Kihoon Han,J. Lloyd Holder Jr, Christian P. Schaaf, Hui Lu, Hongmei Chen, Hyojin Kang, Jianrong Tang, Zhenyu Wu, Shuang Hao, Sau Wai Cheung, Peng Yu, Hao Sun, Amy M Breman, Ankita Patel, **Hui-Chen Lu**, Huda Y Zoghbi (2013) “SHANK3 overexpression causes manic-like behaviour with unique pharmacogenetic properties”, ***Nature***. 503(7474):72-7. |
| 1. Chris P. Jew, Chia-Shan Wu, Hao Sun, Jie Zhu, Jui-Yen Huang, Dinghui Yu, Nicholas J. Justice, **Hui-Chen Lu** (2013) “mGluR5 ablation in cortical glutamatergic neurons increases novelty-induced locomotion”, ***PLOS ONE***, 8:e70415. |
| 1. Yousuf O. Ali, David Li-Kroeger, Hugo Bellen, R. Grace Zhai, **Hui-Chen Lu** (2013) NMNATs, evolutionary conserved neuronal maintenance factors, ***Trends in Neuroscience***, 36:632-640. |
| 1. Chia-Shan Wu, Hongmei Chen, Hao Sun, Jie Zhu, Chris P. Jew, Jim Wager-Miller, Alex Straiker, Corinne Spencer, Heather Bradshaw, Ken Mackie, **Hui-Chen Lu** (2013) “GPR55, a G protein coupled receptor for lysophosphatidylinositol, plays a role in motor coordination”, ***PLOS ONE****,* 8:e60314. |
| 1. YanGang Sun, Juan Pita-Almenar, Chia-Shan Wu, John J Renger, Victor N. Uebele, **Hui-Chen Lu,** Michael Beierlein (2013) “Biphasic cholinergic synaptic transmission controls action potential activity in thalamic reticular nucleus neurons”, ***Journal of Neuroscience*** 33: 2048-59. |
| 1. Javier Díaz, Tania Aguado, Chia-Shan Wu, Javier Palazuelos, Beat Lutz, **Hui-Chen Lu**, Manuel Guzmán, Ismael Galve-Roperh (2012) “The CB(1) cannabinoid receptor drives corticospinal motor neuron differentiation through the Ctip2/Satb2 transcriptional regulation axis”, ***Journal of Neuroscience*** 32: 16651-65. |
| 1. Chia-Chien Chen, **Hui-Chen Lu**, Joshua C. Brumberg (2012) “mGluR5 knockout mice display increased dendritic spine densities”, ***Neuroscience Letters*** 524:65-68. |
| 1. Harry Han, Carolyn A. Allen, Christie M. Buchovecky, Michael J. Yetman, Heather A. Born, Miguel A. Marin, Shaefali P. Rodgers, Bryan Song, **Hui-Chen Lu**, Monica Justice, Frank J. Probst, and Joanna L. Jankowsky (2012) “Strain background influences neurotoxicity and behavioral abnormalities in mice expressing the tetracycline transactivator”, ***Journal of Neuroscience*** 32:10574-10586. |
| 1. YanGang Sun, Chia-Shan Wu, John J Renger, Victor N. Uebele, **Hui-Chen Lu,** Michael Beierlein (2012) “GABAergic synaptic transmission triggers action potentials in thalamic reticular nucleus neurons”, ***Journal of Neuroscience***. 32:7782-90. |
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**Book Chapters**

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**Scientific Outreach:**

Media:

NIH grant funds research center to find new addiction therapies

<https://news.iu.edu/live/news/31882-nih-grant-funds-research-center-to-find-new>

Researchers find enzyme plays much larger role in preventing neurodegenerative diseases

<https://news.iu.edu/live/news/33919-researchers-find-enzyme-plays-much-larger-role-in>

<https://www.eurekalert.org/news-releases/1033021>

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NIH gran funds research center to find new addiction therapies

[https://news.iu.edu/live/news/31882-nih-grant-funds-research-center-to-find-new?\_gl=1\*997va0\*\_ga\*Nzg2MzUwMjEzLjE2OTEwOTU4MDQ.\*\_ga\_61CH0D2DQW\*MTY5NzIyOTczMi4zOS4xLjE2OTcyMjk3MzMuNTkuMC4w&\_ga=2.248934215.1366321202.1697216856-786350213.1691095804](https://news.iu.edu/live/news/31882-nih-grant-funds-research-center-to-find-new?_gl=1*997va0*_ga*Nzg2MzUwMjEzLjE2OTEwOTU4MDQ.*_ga_61CH0D2DQW*MTY5NzIyOTczMi4zOS4xLjE2OTcyMjk3MzMuNTkuMC4w&_ga=2.248934215.1366321202.1697216856-786350213.1691095804)

IU researchers study negative effects of high-THC cannabis

<https://www.idsnews.com/article/2022/07/iu-researchers-study-negative-effects-of-high-thc-cannabis?utm_source=dailyheadlines&utm_medium=email&utm_campaign=article-email-link>

IU neuroscientists to study effects of marijuana use during adolescence with $2M NIH grant

<https://news.iu.edu/stories/2022/07/iub/releases/05-gill-center-cannabis-research-nih-grant.html>

IU neuroscientists improve data analysis through new partnership

<https://research.impact.iu.edu/key-areas/neuroscience/stories/datajoint.html>

Prenatal exposure to THC, CBD affects offspring's responsiveness to fluoxetine

<https://news.iu.edu/stories/2021/06/iub/releases/30-prenatal-thc-cbd-exposure-affect-offspring-responsiveness-prozac-fluoxetine.html>

Methadone research could help babies exposed to opioids in utero

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Academic Minute by Hui-Chen Lu

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Interviews by:

1. The Herald-Times (Bloomington) Aug 3, 2022

Could smoking pot as a teen contribute to mental health problems in adulthood?

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2. Discover Magazine, Feb 1, 2022

Can Cannabinoids Unlock a Better Understanding of Our Bodies and Brains?

<https://www.discovermagazine.com/health/can-cannabinoids-unlock-a-better-understanding-of-our-bodies-and-brains>

3. CBS4-WWTV by Debby Knox

Indiana University researchers unlocking key to early diagnosis of Alzheimer’s

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5. Correio Braziliense

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6. CNHI Statehouse Bureau (http://www.heraldbulletin.com/news/state\_news/have-another-cup-coffee-may-help-ward-off-dementia/article\_52bb8a0a-36f2-5a35-9b81-12a4ec17269f.html

**Invited Seminars**

1. “Roles of 2AG-CB1R in Cortical Column Formation and the Lasting Impacts of Perinatal Cannabis Exposure”, 86th CPDD, Montreal, Canada, June 18, 2024
2. “Roles of the endocannabinoid system in brain development and the impacts of phytocannabinoid exposure”, Univ. of Cagliari, Italy, May 17, 2024
3. “GABA inhibition shapes neuronal subnetwork assembly in developing primary somatosensory cortex”, Univ. of Cagliari, Italy, May 21, 2024
4. “Glucose, ATP, and the brain--keys to maintain neuronal health and graceful aging”, Univ. of Cagliari, Italy, May 22, 2024
5. “GABA inhibition shapes neuronal subnetwork assembly in developing primary somatosensory cortex”, National Institute of Genetics, Mishima, Japan, Dec 1, 2023
6. “Roles of 2AG-CB1R in cortical column formation and the lasting impacts of perinatal cannabis exposure”, NIDA, (Zoom seminar to all program officers in NIDA), Sep 21, 2023
7. Organize and host Gill Retreat “Celebrating 20 years of Gill Center Scientific Achievements ~ with a special focus on Dr. Richard Di Marchi”, New Harmony, Aug 17-18, 2023.
8. “Roles of 2AG-CB1R in cortical column formation and the lasting impacts of perinatal cannabis exposure”, Gordon Research Conference on "Cannabinoid Function in the CNS", Castelldefels, Spain, July 18, 2023
9. “Critical roles of neuronal glucose metabolism in axonal health”, Univ. of Miami, School of Medicine, Mar 9, 2023.
10. “Critical roles of neuronal glucose metabolism in axonal health”, Temple Univ. School of Medicine, Nov 8, 2022.
11. Chair panel on “Perinatal to adolescent sensitive periods of vulnerability to cannabis” in 2022 Addiction conference, Villasimius, Italy, Sep 25-28, 2022
12. Organize and host 2022 Gill Symposium on Cannabis, Sep 14, 2022
13. “Critical roles of neuronal glucose metabolism in axonal health and maintenance”, Yale Medical School, June 30, 2022
14. “Roles of the endogenous cannabinoid system in developing brains”, lecture for CannaLatan- International Society for Neurochemistry School, Madrid, Spain, June 20, 2022
15. “Glucose, ATP, and the brain--keys to maintain neuronal health and graceful aging”, INMED INSERM, Marseille, France, June 13, 2022
16. “Critical roles of neuronal glucose metabolism in axonal health and maintenance”, Univ. of Cagliari, Italy, May 10, 2022
17. “Glucose, ATP, and the brain--keys to maintain neuronal health and graceful aging”, Butler Univ., Indiana, Apr 6, 2022
18. “Critical roles of neuronal glucose metabolism in axonal health and maintenance”, WCBR, Snowmass, Colorado, Feb 4, 2022
19. Chair panel on “Novel neurobiological mechanisms underlying neuronal maintenance and degeneration”, WCBR, Snowmass, Colorado, Feb 4, 2022
20. “Critical roles of neuronal glucose metabolism in axonal health and maintenance”, Univ. of Fribourg, Switzerland, 2021 Dec.
21. Organize and host 2021 Gill Symposium celebrating Gill Science, Sep 29, 2021
22. “Enduring molecular, physiological, and behavioral effects of perinatal cannabinoids:  Mechanisms and possible therapeutic strategies for their treatment’, Univ. of Washington, Jan 29, 2021
23. Panel discussion for Wylie Innovation Award Ceremony, IUB, 2020 Oct.
24. “The roles of NMNAT2, a NAD synthesizing enzyme and molecular chaperone, in maintaining brain health”, Univ. of Sao Paulo, Brazil, 2020 Oct.
25. “The roles of NMNAT2, a NAD synthesizing enzyme and molecular chaperone, in maintaining brain health”, Stark Neuroscience Institute, Indianapolis, Indiana, 2020 Oct.
26. Organizer for 2020 virtual Gill Symposium, Sep 16, 2020
27. “The roles of NMNAT2, a NAD synthesizing enzyme and molecular chaperone, in maintaining brain health”, Neurozoom, 2020 July
28. “NGF/TrkA and FGFs/FGFRs In Establishing/Maintaining Cortical Circuits”, Winter Conference on Brain Research, Big Sky, Montana, 2020 Jan.
29. “Deciphering the principles of neural circuit construction and active maintenance”, Gill Center, Bloomington, Indiana, 2020 Jan
30. “The roles of NMNAT2, a NAD synthesizing enzyme and a chaperone to reduce Tau aggregates in maintaining the health of neural circuits”, Institute of Experimental Medicine (KOKI), Budapest, Hungary, 2019 Dec.
31. “Receptor tyrosine kinases in establishing and maintaining whisker-related cortical circuits”, Barrels XXXII, Chicago, 2019.
32. “Mouse model for studying FGFR3 mutation in human thanatophoric dysplasia (TD)”, ITU-MBG-International Student Congress ’18, Istanbul, Turkey, 2018. Invited by undergraduate students in Istanbul Technology Univ.
33. Organizer for 2019 Gill Symposium on Sex Differences in the Brain, Sep 25, 2019
34. “Boosting neuronal maintenance to slow memory decline: levels of neuronal maintenance factor NMNAT2 correlate with cognition”, I-Shou University & Medical School, Kaoshiug, Taiwan, 2018.
35. “Using MSD-drug screening platform to identify small molecules to boost the levels of NMNAT2, a key factor to fight against neurodegeneration”, School of Pharmacy in Yantai Univ., China, 2018.
36. “Maintenance is key to survival: Levels of neuronal maintenance factor NMNAT2 correlate with cognition and neuropathology”, University of Sao Paulo, Brazil, 2017.
37. Organizer for 2018 Gill Symposium on Applying Cutting-Edge Technologies to Identifying Neuronal Circuits, Sep 26, 2018
38. “Maintenance is key to survival: Levels of neuronal maintenance factor NMNAT2 correlate with cognition and neuropathology”, Harvard Medical School, 2017.
39. “Enduring Neural Effects of Cannabinoids: Molecular Mechanisms”, Discussion leader, GRC on “Cannabinoid Function in the CNS”, Waterville Valley, NH, 2017
40. “A mouse model for studying a FGFR3 mutation in human thanatophoric dysplasia (TD)”, SCBA, China, 2017
41. “NMNAT2 in neural circuit formation and maintenance”, Institute of Molecular Biology, Academic Sinica, Taiwan, 2016.
42. “Maintenance is key to survival: Levels of neuronal maintenance factor NMNAT2 correlates with cognition and neuropathology”, Purdue Univ., IN, 2016.
43. “NMNAT2 in neural circuit formation and maintenance”, Cambridge Univ., Cambridge, UK, 2016.
44. “Maintenance is key to survival: Levels of neuronal maintenance factor NMNAT2 correlates with cognition and neuropathology”, Brain and Mind Research Institute, Univ. of Ottawa, Canada, 2016.
45. “A NMNAT2:HSP90 Complex Mediates Proteostasis in Proteinopathies”, Centre de Neurosciences Psychiatriques, Switzerland, 2015
46. “A NMNAT2:HSP90 Complex Mediates Proteostasis in Proteinopathies”, Univ. of Fribourg, Switzerland, 2015
47. “Levels of NMNAT2 Link to Cognition and Pathology in Proteinopathies”, SCBA, Taiwan, 2015
48. “Molecular Biology and Transport of Endocannabinoids and Their receptors”, Discussion leader, GRC on “Cannabinoid Function in the CNS”, Italy, 2015
49. “Targeting the Neuronal Maintenance Factor NMNAT2 for Therapy in neurodegenerations”, Univ. of Houston, 2015.
50. “Targeting the Neuronal Maintenance Factor NMNAT2 for Therapy in neurodegenerations”, Texas Children’s Hospital, 2014.
51. “Targeting the Neuronal Maintenance Factor NMNAT2 for Therapy in neurodegenerations”, Indiana University at Bloomington, 2014.
52. “mGluR5 and endocannabinoid signaling in the formation of cortical sensory circuits and behavior”, Max-Planck-Institute for Biophysical Chemistry, Göttingen, Germany, 2014.
53. “Genetic dissection of mGluR5 and endocannabinoid signaling in the formation of cortical sensory circuits and behavior”, Johns Hopkins Univ., Baltimore, Maryland, 2013.
54. “Targeting the Neuronal Maintenance Factor NMNAT2 for Therapy in neurodegenerations”, Mechanisms of Misfolded Protein Propagation in Neurodegenerative Diseases, San Diego, California, 2013.
55. “Uncovering the neuroprotective mechanism of nmnat2 in mice”, 46th annual Winter Conference on Brain Research, Breckenridge, Colorado, 2013 (organizer for the panel entitled “Maintenance matters: the roles of NMNATs in keeping neurons in shape”).
56. “NMNAT to the Rescue: Uncovering the neuroprotective mechanism of a multifunctional protein”, Baylor College of Medicine, Houston, Texas, 2013.
57. “NMNAT to the Rescue: Uncovering the neuroprotective mechanism of a multifunctional protein”, Stony Brook Univ., Stony Brook, NY, 2012.
58. “mGluR5 signaling in neural circuit formation and behavior”, Univ. of Texas, M.D. Anderson Cancer Center, Houston, Texas, 2012.
59. “Neural circuits: Tales of mice and men“, Neurological Research Institute at Texas Children’s Hospital, Houston, Texas, 2012.
60. “Genetic dissection of mGluR5 signaling in neural circuit formation and behavior”, Univ. of Illinois at Chicago, Chicago, Illinois, 2012.
61. “Genetic dissection of mGluR5 signaling in neural circuit formation and behavior”, Northwestern Univ., Chicago, Illinois, 2012.
62. “Endocannabinoids modulate ‘handshakes’ between thalamocortical and cortiothalamic axons”, Gordon Research Conference on "Cannabinoid Function in the CNS", Les Diablerets, Switzerland, 2011.
63. “Molecular organization of endocannabinoid signaling networks in the developing nervous system”, International Congress for Schizophrenia Research, Colorado Spring, Colorado, 2011.
64. “Cortex-specific mGluR5 deletion impairs cortical map formation”, 44th annual Winter Conference on Brain Research, Keystone, Colorado, 2011 (organizer for the panel entitled “The multitudinous roles of mGluR5 in brain development and plasticity”).
65. "Forming precise topographical maps as the brain develops: Cross talk between thalamocortical axons and cortical neurons", Inserm-U839, Paris, France, 2010.
66. "Forming precise topographical maps as the brain develops: Cross talk between thalamocortical axons and cortical neurons", Max-Planck-Institute for Biophysical Chemistry, Göttingen, Germany, 2010.
67. “Prenatal cannabis exposure leads to defective axonal outgrowth”, NIH-NIDA work shop entitled “Informatics for data and resource discovery in addiction research”, Rockville, Maryland, 2010.
68. “Are the Wallerian Slow and NMNAT proteins neuroprotective in a mouse model of Alzheimer's disease?”, Indiana University, Bloomington, Indiana, 2010.
69. “The roles of mGluR5 and CB1R in wiring up neural circuits”, National Cheng-Kung University, Tainan, Taiwan, 2009.
70. “The roles of mGluR5 and CB1R in wiring up neural circuits”, National Taiwan Univ. Medical School, Taipei, Taiwan, 2009.
71. “The role of endocannabinoid system in the thalamocortical pathway”, 22nd Barrels meeting, Chicago, Illinois, 2009.
72. “Exploring the mechanism underlying the development and maintenance of brain neural circuits.”, Texas Children’s hospital, Houston, Texas, 2009.
73. “mGluR5 signaling in sensory map development and plasticity; Wallerian Slow, can we slow down or prevent neurodegeneration? ”, University of Miami, Miami, FL, 2009.
74. “NMNAT and Wallerian Slow proteins in neuronal protection and repair”, 42th annual Winter Conference on Brain Research, Copper Mountain, Colorado, 2009 (organizer).
75. “Signaling cascades in sensory map development and plasticity”, Baylor College of Medicine, Houston, TX, 2009
76. “What can one get from a barrel?  How mGluR5 signaling contributes to the development and plasticity of cortical maps?”, BSI-RIKEN, Tokyo, Japan, 2008.
77. “Signaling cascades in sensory map development and plasticity; Wallerian Slow, can we slow down or prevent neurodegeneration?”, TBNS meeting, Academic Sinica, Taipei, Taiwan, 2008.
78. “What can one get from a barrel?  How mGluR5 signaling contributes to the development and plasticity of cortical maps?”, Univ. of Aberdeen, Scotland, 2008.
79. “The roles of mGluR5 in barrel map development and plasticity”, 20th Barrels meeting, San Diego, California, 2007.
80. “GPR55: a novel cannabinoid receptor”, 40th annual Winter Conference on Brain Research, Snowmass, Colorado, 2007.
81. “Tales from Barrels: mGluR5 signaling in cortical map development and plasticity”, Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan, 2006.
82. “Tales from Barrels: mGluR5 signaling in cortical map development and plasticity”, Univ. of Texas Health Science Center, Houston, Texas, 2006.
83. “The roles of cAMP and mGluR5 signaling in cortical map development and plasticity”, Baylor College of Medicine, Houston, Texas, 2006.
84. “High efficacy release is important for barrel map development”, Barrels XVIII symposium, Baltimore, DC, 2005.
85. “cAMP signaling in cortical map development”, National Yang-Ming University, Taipei, Taiwan, 2004.
86. “cAMP signaling in cortical map development”, University of Texas Medical Branch, Galveston, Texas, 2004.
87. “The mechanism of cAMP signaling in synaptic plasticity during cortical map development”, University of Lausanne, Switzerland, 2003.
88. “The mechanism of cAMP signaling in synaptic plasticity during cortical map development”, University of Fribourg, Switzerland, 2003.
89. “The role of calcium/calmodulin dependent adenylyl cyclase I in barrel map formation”, University of Massachusetts, Massachusetts, 2003.
90. “The role of calcium/calmodulin dependent adenylyl cyclase I in barrel map formation”, Barrels XV symposium, Orlando, Florida, 2002.
91. “cAMP/PKA signaling in cortical map formation”, Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan, 2002.
92. “AMPAR trafficking during cortical barrel map formation”, Medical school, National Taiwan University, Taiwan, 2001.
93. “Retinoids are critical for vertebrate limb development”, Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan, 1997.