

# ERIC MINWEI LIU

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## RESEARCH EXPERIENCE

**Weill Cornell Medicine, Department of Physiology, Biophysics and System Biology**, New York, NY  
2015-present

*Graduate Research Assistant*

Advisor: Professor Ekta Khurana

Developed a new algorithm named CNCDriver to discovery non-coding cancer drivers.

**Memorial Sloan Kettering Cancer Center, Computational Biology Center**, New York, NY  
2013-2015

*Graduate Research Assistant*

Advisor: Professor Chris Sander and Professor William Lee

Developed a new algorithm named NetBoxr to integrate somatic mutations, copy number alterations, gene fusions and differential methylation to pinpoint pathway modules that altered significantly. This algorithm has been applied to the pathway analysis in TCGA (The Cancer Genome Atlas) sarcoma.

**Columbia University, Department of Biomedical Informatics**, New York, NY 2011-2012

*Graduate Research Assistant*

Advisor: Professor Raul Rabadan

Used exome-sequencing data from TCGA (The Cancer Genome Atlas) Project to discover novel gene fusion events in several different kinds of cancers. We developed a new algorithm named Exome-Fuse which we integrated into the Rabadan Lab's genomic analysis pipeline.

**Academia Sinica, Research Center for Applied Sciences**, Taipei, Taiwan 2008-2009

*Research Assistant*

Advisor: Professor Jung-Hsin Lin

Constructed protein-ligand crystal structure database and manually inputted experimental information such as temperature, pH, and so on to facilitate calibrating scoring function in AUTODOCK and produce better parameters for each energy term to improve performance in virtual drug screening.

**National Taiwan University, School of Pharmacy**, Taipei, Taiwan 2005-2007

*Graduate Research Assistant*

Advisor: Professor Jung-Hsin Lin

Collected agonist and antagonist ligands targeting Adenosine A<sub>2A</sub> receptor in the literatures to build pharmacophore models and predict possible ligand binding modes. Constructed Adenosine A<sub>2A</sub> receptor structure model of resting state and activated state and refined structure model through molecular dynamics simulations to fit published mutagenesis experiment results.

## EDUCATION

**Weill Cornell Medical College**, New York, USA 2013-Present

Fourth year Ph.D. student in Physiology, Biophysics and System Biology

- TOEFL: 110 (R:29, L:30, S:24, W:27)
- GRE: V:150, Q:163, AWA:3.0
- Advisor: Professor Ekta Khurana

**Columbia University**, New York, USA 2010-2012

Master of Arts, Biomedical Informatics

- Master essay: "ExomeFuse: Gene Fusion Discovery through Whole-Exome DNA Sequencing"
- Overall GPA: 3.68/4.0

**National Taiwan University**, Taipei, Taiwan

Master of Science, Pharmaceutical Science 2005-2007

- Thesis: "Structural prediction of the adenosine A<sub>2A</sub> receptor and comparison of its resting state and active state conformation"
- Overall GPA: 3.45/4.0

**National Taiwan University**, Taipei, Taiwan

Dual Bachelor of Science, Chemistry, Information Management 1999-2005

- Overall GPA: 3.76/4.0

## PUBLICATIONS

1. Priyanka Dhingra, Alexander Martinez-Fundichely, Adeline Berger, Franklin W Huang, Andre Neil Forbes, **Eric Minwei Liu**, Deli Liu, Andrea Sboner, Pablo Tamayo, David S Rickman, Mark A Rubin, Ekta Khurana "Identification of novel prostate cancer drivers using RegNetDriver: a framework for integration of genetic and epigenetic alterations with tissue-specific regulatory network", *Genome Biology* 2017, 18 (1), 141
2. A Ari Hakimi, Ed Reznik, Chung-Han Lee, Chad J Creighton, A Rose Brannon, Augustin Luna, B. Arman Aksoy, **Eric Minwei Liu**, Ronglai Shen, William Lee, Yang Chen, Steve M Stirdivant, Paul Russo, Ying Bei Chen, Satish K Tickoo, Victor E Reuter, Emily H. Cheng, Chris Sander, and James J. Hsieh "An Integrated Metabolic Atlas of Clear Cell Renal Cell Carcinoma"; *Cancer Cell* 2016, 29 (1), 104-116.
3. Devendra Singh, Joseph Chan, Pietro Zoppoli, Francesco Niola, Ryan Sullivan, Angelica Castano, **Eric Minwei Liu**, Jonathan Reichel, Paola Porrati, Serena Pellegatta, Kunlong Qin, Zhibo Gao, Michele Ceccarelli, Riccardo Riccardi, Daniel J. Brat, Abhijit Guha, Ken Aldape, John G. Golfinos, David Zagzag, Tom Mikkelsen, Gaetano Finocchiaro, Anna Lasorella, Raul Rabadan, Antonio Iavarone "Transforming and recurrent fusions of FGFR and TACC genes in glioblastoma"; *Science* 2012: 337 (6099), 1231-1235
4. Jhih-Bin Chen\*, **Eric Minwei Liu**\*, Ting-Rong Chern, Chieh-Wen Yang, Chia-I Lin, Nai-Kuei Huang, Yun-Lian Lin, Yijuang Chern, Jung-Hsin Lin, and Jim-Min Fang "Design and Synthesis of Novel Dual-Action Compounds Targeting Adenosine A<sub>2A</sub> Receptor and Adenosine Transporter for Neuroprotection"; *ChemMedChem* 2011, 6, 1390-1400  
\* *These authors have contributed equally to this work.*
5. Nai-Kuei Huang, Jung-Hsin Lin, Jiun-Tsai Lin, Chia-I Lin, **Eric Minwei Liu**, Chun-Jung Lin, Wan-Ping Chen, Yuh-Chiang Shen, Hui-Mei Chen, Jhih-Bin Chen, Hsing-Lin Lai, Chieh-Wen Yang, Ming-Chang Chiang, Yu-Shuo Wu, Jiang-Fan Chen, Jim-Min Fang, Yun-Lian Lin, and Yijuang

Chern "A new drug design targeting the adenosinergic system for Huntington's disease"; ***PLoS ONE*** 2011, 6(6), e20934

6. Po-Hsien Lee, Kuei-Ling Kuo, Pei-Ying Chu, **Eric Minwei Liu**, and Jung-Hsin Lin

"SLITHER: a web server for generating contiguous conformations of substrate molecules entering into deep active sites of proteins or migrating through channels in membrane transporters"; ***Nucleic Acids Res.*** 2009 37: W559–W564

### **HONORS/AWARDS**

#### ***Studying Abroad Scholarship (2013-2014)***

- ***\$32000 USD scholarship in 2 years from Ministry of Education, Taiwan.***

Excellent Research Poster in Symposium on Multi-scale Dynamics of Biomolecules (2007)

National Taiwan University Presidential Award (2003)

-*Top 5% of students in their classes, selected by each department*

Taiwan Petroleum Company Scholarship (2003)