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PROFESSIONAL EXPERIENCE

Assistant Professor (2022 – now)

Institute of Molecular Medicine, Department of Life Science, National Tsing Hua University, Hsinchu, Taiwan

Associate Research Scientist (2021 – 2022)

Department of Pathology and Cell Biology, Columbia University, NY, USA

Postdoc Researcher (2016 – 2021)

Department of Pathology and Cell Biology, Columbia University, NY, USA

Research Assistant (2009 – 2011)

Institute of Molecular Medicine, National Tsing Hua University, Hsinchu, Taiwan

EDUCATION

Ph.D. in Biological Sciences (2011 – 2016)

Interdisciplinary Life Science Program, Department of Biological Sciences, Purdue University, IN, USA

M.S. in Life Science (2006 – 2008)

Institute of Biotechnology, National Tsing Hua University (NTHU), Hsinchu, Taiwan

B.S. in Life Science (2002 – 2006)

Department of Life Science, National Tsing Hua University (NTHU), Hsinchu, Taiwan

AWARDS and HONORS

2022 Yushan Young Fellow 玉山青年學者

2015 Purdue Research Foundation (PRF) Research Grants, Purdue

2015 Fall Purdue University Interdisciplinary Life Science (PULSe) Travel Awards, Purdue

2013 Fall Purdue University Interdisciplinary Life Science (PULSe) Travel Awards, Purdue

2008 Best Poster Competition of College of Life Science, National Tsing Hua University, Taiwan

2008 Honor member of the Phi Tau Phi Scholastic Honor Society of the Republic of China, Taiwan

2005 Research Grant Proposal for College-Level Students, National Science Council, Taiwan

PUBLICATIONS

Pin-Chao Liao *, Tzu-Ying Lin, Catherine A Tsang, Chen-Jing Huang, Katherine Filpo, Istvan Boldogh, Liza A Pon* (2025, July) Tom40 functions as a channel for protein retrotranslocation in the mitochondria-associated degradation (MAD) pathway. *Communications Biology*, 8:1122 (*Co-corresponding author)

Pin-Chao Liao and Liza A Pon (2024, Sep). Analysis of the mitochondria-associated degradation pathway (MAD) in yeast cells. *Methods in Enzymology*, 707, 585-610.

Tzu-Ying Lin, Shih-Hung Chien, Liza A Pon and **Pin-Chao Liao** (2024, Aug). Isolation of yeast mitochondria by affinity purification using magnetic beads. *Methods in Enzymology*, 706, 19-36.

Emily J. Yang*, **Pin-Chao Liao*** and Liza A. Pon (2024, Feb) Mitochondrial protein and organelle quality control—Lessons from budding yeast. *IUBMB Life* 76(2):72 (*Co-first author)

Pin-Chao Liao & Liza A. Pon (2022, May) Lipid droplets in stress protection: distinct mechanisms of lipid droplet microautophagy. *Autophagy Reports* 1(1):197, DOI: 10.1080/27694127.2022.2067643

Pin-Chao Liao*, Emily J. Yang*, Taylor Borgman*, Istvan R. Boldogh*, Cierra N. Sing, Theresa C. Swayne and Liza A. Pon (2022, Feb). Touch and Go: Membrane Contact Sites Between Lipid Droplets and Other Organelles. *Frontiers in Cell and Developmental Biology* 10:852021. doi: 10.3389/fcell.2022.852021 (*Co-first author)

Pin-Chao Liao*, Enrique J. Garcia*, Gary Tan, Catherine A. Tsang, and Liza A. Pon (2021, Dec). Roles for L_o microdomains and ESCRT in ER stress-induced lipid droplet microautophagy in budding yeast. *Molecular Biology of the Cell* 32(22):br12 (*Co-first author)

Enrique J. Garcia*, **Pin-Chao Liao***, Gary Tan, Jason D. Vevea, Cierra N. Sing, Catherine A. Tsang, J. Michael McCaffery, Istvan R. Boldogh and Liza A. Pon (2021, Sep). Membrane dynamics and protein targets of lipid droplet microautophagy during ER stress-induced proteostasis in the budding yeast, *Saccharomyces cerevisiae*. *Autophagy* 17(9):2363-2383 (*Co-first author)

Bo-Yu Lin, Gui-Teng Zheng, Kai-Wen Teng, Juan-Yu Chang, Chao-Chang Lee, **Pin-Chao Liao**, Mou-Chieh Kao (2021, Jun). TAT-Conjugated NDUF8 Can Be Transduced into Mitochondria in a Membrane-Potential-Independent Manner and Rescue Complex I Deficiency. *International Journal of Molecular Sciences* 22(12):6524

Pin-Chao Liao, Emily J. Yang and Liza A. Pon (2020, Nov). Live-cell imaging of mitochondrial redox state in yeast cells. *STAR Protocols* 1(3):100160

Pin-Chao Liao, Dana M Alessi Wolken, Edith Serrano, Pallavi Srivastava and Liza A Pon (2020, Jul). Mitochondria-Associated Degradation Pathway (MAD) Function Beyond the Outer Membrane. *Cell Reports* 32(2):107902

Pin-Chao Liao, Sandra Franco-Iborra, Yi Yang, and Liza A. Pon (2020, Mar). Live cell imaging of mitochondrial redox state in mammalian cells and yeast. *Methods in Cell Biology* 155:295-319

Pin-Chao Liao, Ryo Higuchi-Sanabria, Theresa C. Swayne, Cierra N Sing, and Liza A. Pon (2020, Mar). Live-cell imaging of mitochondrial motility and interactions in Drosophila neurons and yeast. *Methods in Cell Biology* 155:519-544

Pin-Chao Liao, Christian Bergamini, Romana Fato, Liza A. Pon and Francesco Pallotti (2020, Mar). Isolation of mitochondria from cells and tissues. *Methods in Cell Biology* 155:3-31

Enrique J Garcia, Janeska J de Jonge, **Pin-Chao Liao**, Elizabeth Stivison, Cierra Sing, Ryo Higuchi-Sanabria, Istvan R Boldogh and Liza A Pon (2019, Nov). Reciprocal interactions between mtDNA and lifespan control in budding yeast. *Molecular Biology of the Cell* 30 (24), 2943-2952

Pin-Chao Liao, Istvan R Boldogh, Stephanie E Siegmund, Zachary Freyberg, Liza A Pon (2018, Apr). Isolation of mitochondria from *Saccharomyces cerevisiae* using magnetic bead affinity purification. *PLOS ONE* 13 (4), e0196632

Pin-Chao Liao, Lauren C Tandarich, Peter J Hollenbeck (2017, May). ROS regulation of axonal mitochondrial transport is mediated by Ca²⁺ and JNK in Drosophila. *PLOS ONE* 12 (5), e0178105

Swathi Devireddy, Hyun Sung, **Pin-Chao Liao**, Elisabeth Garland-Kuntz, Peter J Hollenbeck (2014, Jan.) Analysis of mitochondrial traffic in Drosophila. *Methods in enzymology* 547, 131-150

Liyun Zhang, Leelyn Chong, Jin Cho, **Pin-Chao Liao**, Feichen Shen, Yuk Fai Leung (2012, Feb). Drug Screening to Treat Early-Onset Eye Diseases: Can Zebrafish Expedite the Discovery? *The Asia-Pacific Journal of Ophthalmology* 1 (6), 374-383

Hsin-Yu Liu, **Pin-Chao Liao**, Kai-Tun Chuang, Mou-Chieh Kao (2011, Dec). Mitochondrial targeting of human NADH dehydrogenase (ubiquinone) flavoprotein 2 (NDUFV2) and its association with early-onset hypertrophic cardiomyopathy and encephalopathy. *Journal of biomedical science* 18 (1), 29

Ya-Lin Liu, Wan-Chih Lu, Theodore J Brummel, Chiou-Hwa Yuh, Pei-Ting Lin, Tzu-Yu Kao, Fang-Yi Li, **Pin-Chao Liao**, Seymour Benzer, Horng-Dar Wang (2009, Aug). Reduced expression of alpha-1,2-mannosidase I extends lifespan in *Drosophila melanogaster* and *Caenorhabditis elegans*. *Aging Cell* 8 (4), 370-379

Pin-Chao Liao, Hung-Yu Lin, Chiou-Hwa Yuh, Lin-Kwei Yu, Horng-Dar Wang (2008, Nov) The effect of neuronal expression of heat shock proteins 26 and 27 on lifespan, neurodegeneration, and apoptosis in *Drosophila*. *Biochemical and biophysical research communications* 376 (4), 637-641

PRESENTATIONS

Pin-Chao Liao. (2025, Aug) Mitochondria-associated degradation (MAD): Lessons from yeast to *Drosophila*. Taiwan Fly Meeting (Invited talk)

Pin-Chao Liao and Liza A. Pon. (2025, Aug) Tom40 Functions as a Channel for Protein Retrotranslocation in the Mitochondria-Associated Degradation (MAD) Pathway. Taiwan Yeast Meeting (Invited talk)

Pin-Chao Liao. (2025, April) Mitochondrial dysfunction and proteostasis. National Chung Hsing University (Invited talk)

Pin-Chao Liao (2025, Jan) Keystone Symposia Career Roundtable. 2024 Keystone Symposia Mitochondrial Biology in Health and Disease (Panelist)

Pin-Chao Liao and Liza A. Pon. (2025, Jan) Tom40 Functions as a Channel for Protein Retrotranslocation in the Mitochondria-Associated Degradation (MAD) Pathway. 2024 Keystone Symposia Mitochondrial Biology in Health and Disease (poster)

Pin-Chao Liao and Liza A. Pon. (2024, Dec) Tom40 Functions as a Channel for Protein Retrotranslocation in the Mitochondria-Associated Degradation (MAD) Pathway. CELL BIO24 An ASCB/EMBO Meeting (poster)

Pin-Chao Liao. (2024, Oct) Mitochondrial Quality Control. National University of Kaohsiung (Invited talk)

Pin-Chao Liao. (2024, Oct) Mitochondria-Associated Degradation (MAD) in aging. National Tsing Hua University and Kumamoto University
2024 Bilateral Symposium (Invited talk)

Pin-Chao Liao. (2024, Sep) Mitochondrial Quality Control by the Ubiquitin-Proteasome System: Mitochondria-Associated Degradation (MAD). 2024 OU-NTHU Symposium (Invited talk)

Pin-Chao Liao. (2024, Jan) Mitochondrial Quality Control by the Ubiquitin-Proteasome System: Mitochondria-Associated Degradation (MAD). National Institute of Cancer Research/Institute of Molecular and Genomic Medicine, NHRI Seminar (Invited talk)

Pin-Chao Liao. (2023, Oct) Mitochondrial Quality Control by the Ubiquitin-Proteasome System: Mitochondria-Associated Degradation (MAD). 2023 The Joint Conference of Yeasts, Fungi and Medical Mycology in Taiwan (Invited talk)

Pin-Chao Liao. (2023, Sep) Becoming a PI in Taiwan and US. 2023 Midwest Taiwanese Biotechnology Association Annual Symposium (Panelist)

Pin-Chao Liao. (2023, May) Mitochondrial Quality Control by the Ubiquitin-Proteasome System: Mitochondria-Associated Degradation (MAD). 2023 Mini-symposium on Mitochondria and Developmental Biology (Invited talk)

Pin-Chao Liao. (2023, Feb) Mitochondrial Quality Control by the Ubiquitin-Proteasome System: Mitochondria-Associated Degradation (MAD). National Chung Hsing University (Invited talk)

Pin-Chao Liao. (2022, Nov) Protein Retrotranslocation in the Mitochondria-Associated Degradation Pathway. NHRI-NTHU Joint Research Conference (Invited talk)

Pin-Chao Liao. (2022, Aug) A Novel Mitochondrial Quality Control Pathway: Mitochondria Associated Degradation Pathway (MAD) Function Beyond the Outer Membrane. International Conference of Taiwanese Society of Developmental Biology (Invited talk)

Pin-Chao Liao. (2022, Jan) A Novel Mitochondrial Quality Control Pathway: Mitochondria Associated Degradation Pathway (MAD) Function Beyond the Outer Membrane. Taiwan Yeast Meeting (Invited talk)

Pin-Chao Liao and Liza A. Pon. (2021, Nov) Mitochondria Associated Degradation Pathway (MAD) Function Beyond the Outer Membrane. 2021 Annual Meeting of Taiwan Society for Mitochondrial Research and Medicine (Invited talk)

Pin-Chao Liao and Liza A. Pon. (2021, July) Mitochondria Associated Degradation Pathway (MAD) Function Beyond the Outer Membrane. International Conference on Cell and Experimental Biology (Invited talk)

Pin-Chao Liao and Liza A. Pon. (2021, June) Mitochondria Associated Degradation Pathway (MAD) Function Beyond the Outer Membrane. Keystone Symposia on Molecular and Cellular Biology (poster)

Pin-Chao Liao and Liza A. Pon. (2020, Dec) Mitochondria Associated Degradation Pathway (MAD) Function Beyond the Outer Membrane. American Society for Cell Biology (ASCB, poster)

Pin-Chao Liao and Liza A. Pon. (2019, Sep) Mitochondria Associated Degradation Pathway (MAD) Function Beyond the Outer Membrane. NHLBI Mitochondrial Biology Symposium, NIH

Pin-Chao Liao and Peter J Hollenbeck. (2015) The impact of reactive oxygen species on mitochondrial transport in axons. Society for Neuroscience (SfN, poster)

Pin-Chao Liao and Peter J Hollenbeck. (2013) The impact of reactive oxygen species on mitochondrial transport in axons. American Society for Cell Biology (ASCB, poster)

Pin-Chao Liao and Horng-Dar Wang. (2008) The Multi-facets of Heat Shock Protein 27 in *Drosophila melanogaster*. Poster Competition of College of Life Science, National Tsing Hua University (poster)

Pin-Chao Liao and Horng-Dar Wang. (2008) The Multi-facets of Heat Shock Protein 27 in *Drosophila melanogaster*. Symposium on Frontiers of Biomedical Sciences (poster)