Po-Chen Hsu (許博琛)

Personal information

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Education / Professional appointments

2025-now	Assistant Professor Institute of Microbiology and Immunology, National Yang Ming Chiao Tung University, Taiwan
2020-2025	Senior Scientist. **Jun-Yi Leu (呂俊毅老師)'s Lab**.
2016–2020	Post-doctoral Fellow. **Jun-Yi Leu's Lab**.
2013–2016	R&D Substitute Services（研發替代役）. Institute of Molecular Biology, Academia Sinica, Taiwan. **Jun-Yi Leu's Lab**.
2007–2013	Ph.D. Institute of Molecular and Cellular Biology, National Tsing-Hua University, Taiwan. **Chung-Yu Lan (藍忠昱老師)'s Lab**.
2006–2007	M.S. program, then transferred into the Direct-Ph.D program. Institute of Molecular and Cellular Biology, National Tsing-Hua University, Taiwan. **Chung-Yu Lan's Lab**.
2004–2006	Undergraduate researcher/bachelor's thesis. Institute of Molecular Medicine, National Tsing-Hua University, Taiwan. **Kuan Rong Lee (李寬容老師)'s Lab**.
Jul–Aug 2004	Summer intern. Institute of Molecular and Cellular Biology, National Tsing-Hua University, Taiwan. **Hua-Wen Fu (傅化文老師)'s Lab**.
2002–2006	B.S. Department of Life Science, National Tsing-Hua University, Taiwan.

Research interests

- Yeast Pathogenesis (酵母菌病源體的致病機制)
- Mitochondrial genome quality control & disease (粒線體基因體品管機制與疾病的關聯)
- Transcriptional rewiring (轉錄因子調控網路重組的分子機制)
- Experimental evolution (實驗室內的酵母菌人工演化)
- Molecular basis of complex traits (受多重因子影響性狀之分子機制)
- Pleiotropy (酵母菌基因多效性)
- Cell density-dependent phenotypes (細胞濃度依賴性之酵母菌表現型)

Awards and Scholarships

2026	**2025 Yushan Young Fellow, Ministry of Education 教育部 114 年度 玉山青年學者 (Funding 2026-2030)**
2025	**2025 H&J Youth Chair Professor (2025 年 華仁青年講座教授)**
2022	**NSTC Academic Research Award for Postdoc Researchers (國科會 111 年度博士後研究人員學術研究獎)**
2020-2025	NSTC (Taiwan) Frontier Science Research Program (國科會尖端科學研究計畫) Postdoctoral Fellowship
2018-2020	Academia Sinica Thematic Research Program (中研院跨领域主題計畫) Postdoctoral Fellowship
2017-2018	Postdoctoral Fellowship supported by Institutional Funding of Institute of molecular Biology, Academia Sinica
2015-2017	Academia Sinica Regular Postdoctoral Scholar Program (中研院一般博士後研究學者) Fellowship
2014-2015	NSTC (Taiwan) Frontier Science Research Program (國科會尖端科學研究計畫) Postdoctoral Fellowship
2012	Best Poster Award of "The Best Paper & Poster Competition of College of Life Science", National Tsing-Hua University 國立清華大學生命科學院 2012 年海報比賽 生寶優勝獎
2006	National Tsing-Hua University President's Fellowship 國立清華大學 96 學年度博士班新生入學校長獎學金
2005	The Third Prize of "The Third National Innovation Award-Student Research Contest" 第三屆國家新創獎 學生研究獎第三名
2005	National Tsing-Hua University Scholarship 國立清華大學 月涵三育獎學金

Publications

- **Hsu, P.-C.***, Lu, T.-C., Hung, P.-H., and Leu, J.-Y.* (2024) Protein moonlighting by a target gene dominates phenotypic divergence of the Sef1 transcriptional regulatory network in yeasts. Nucleic Acids Res. 52(22):13914-13930. **(* co-corresponding author) (6/313 in Biochemistry & Molecular Biology)**
- **Hsu, P.-C.***, Cheng, Y.-H., Liao, C.-W., Litan, R.R.R., Jhou, Y.-T., Opoc, F.J.G., Amine, A.A.A., and Leu, J.-Y. (2023) Rapid evolutionary repair by secondary perturbation of a primary disrupted transcriptional network. EMBO Reports 24(6):e56019 **(* corresponding author)(60/313 in Biochemistry & Molecular Biology)**
- Chou, J.-Y.*, **Hsu, P.-C.**, and Leu, J.-Y.* (2022) Enforcement of postzygotic species boundaries in the fungal kingdom. Microbiology and molecular biology reviews 86(4), e0009822 **(Review article)**
- **Hsu, P.-C.***, Lu, T.-C., Hung, P.-H., Jhou, Y.-T., Amine, A.A.A., Liao, C.-W., Leu, J.-Y.* (2021) Plastic Rewiring of Sef1 Transcriptional Networks and the Potential of Nonfunctional Transcription Factor Binding in Facilitating Adaptive Evolution. Molecular Biology and Evolution 38(11): 4732-4747 **(* co-corresponding author) (4/54 in Evolutionary Biology)**
- Amine, A.A.A., Liao, C.-W., **Hsu, P.-C.**, Opoc, F.J.G., Leu, J.-Y. (2021) Experimental evolution improves mitochondrial genome quality control in *Saccharomyces cerevisiae* and extends its replicative lifespan. Current Biology 31(16):3663-3670e4 **(3/109 in Biology)**
- Chen, Y.-Y., Chao, C.-C., Liu, F.-C., **Hsu, P.-C.**, Chen, H.-F., Peng, S.-C., Chuang, Y.-J., Lan, C.-Y., Hsieh, W.-P., and Wong, D.S.-H.* (2013) Dynamic transcript profiling of *Candida albicans* infection in zebrafish: a pathogen-host interaction study. PLoS One 8(9):e72483
- **Hsu, P.-C.**, Chao, C.-C., Yang, C.-Y., Ye, Y.-L., Liu, F.-C., Chuang, Y.-J., and Lan, C.-Y.* (2013) Diverse Hap43-independent functions of *Candida albicans* CCAAT-binding complex. Eukaryot Cell 12(6):804-15

- Tsai, P.-W., Chen, Y.-T., **Hsu, P.-C.**, and Lan, C.-Y.* (2013) Study of *Candida albicans* and its interactions with the host: A mini-review. BioMedicine 3:51-64
- **Hsu, P.-C.**, Yang, C.-Y., and Lan, C.-Y.* (2011) *Candida albicans* Hap43 is a repressor induced under low-iron conditions and is essential for iron-responsive transcriptional regulation and virulence. Eukaryot Cell 10(2):207-225
- Chao, C.-C., **Hsu, P.-C.**, Jen, C.-F., Chen, I.-H., Wang, C.-H., Cham, H.-C., Tsai, P.-W., Tung, K.-C., Wang, C.-H., Lan, C.-Y.*, and Chuang, Y.-J.* (2010) Zebrafish as a model host for *Candida albicans* infection. Infect Immun 78(6): 2512-2521

Specialty/ Expertise

- Model and pathogenic yeast biology (模式與致病酵母菌生物學)
- Evolutionary genetics & genomics (演化遺傳與基因體學)
- Molecular evolution (分子演化)
- Medical microbiology (醫用微生物學)

Reviewer Experience

Invited reviewer

- PLoS One
- Preparative Biochemistry and Biotechnology
- Journal of Biomedical Science
- Food Research International
- Frontiers in Microbiology
- Protein J
- Journal of Evolutionary Biology
- Journal of Microbiology, Immunology and Infection

Presentations

Oral presentations

- 2025: NYCU-GRC Retreat 陽明交大生科院✕中研院基因體中心 合作學術交流研討會: Targeted Attenuation of an ER-Associated Degradation Pathway Enhances Mitochondrial Genome Quality Control in Yeast. (Invited speaker)
- 2025: Taiwan Yeast Meeting: Targeted Attenuation of an ER-Associated Degradation Pathway Enhances Mitochondrial Genome Quality Control in Yeast. (Invited speaker)
- 2025: 40th Biology Retreat 第 40 屆生物夏令營 Flash Talk for junior faculties: “Transcriptional rewiring and mitochondrial evolution in yeasts”.
- 2025: 生命科學院週三中午有約 新進教師研究交流: “Emerging Evolution of Molecular Systems in the Laboratory: Utilizing Yeasts as Models”.
- 2023: The Join Conference of Yeasts, Fungi and Medical Mycology in Taiwan: “Rapid evolutionary repair by secondary perturbation of a primary disrupted transcriptional network.”
- 2022: Taiwan Yeast Meeting: “The new pleiotropic effect of a conserved target gene dominates the phenotypic outcome of the Sef1 transcriptional regulatory network in *Saccharomyces cerevisiae*.”
- 2017: Taiwan Yeast Meeting: “A novel transcriptional rewiring on Sef1 in the protoploid yeast *Lachancea kluyveri*”.
- 2016: IMB Retreat, Academia Sinica, Taiwan: “Phenotypic analyses suggest a novel transcriptional rewiring on Sef1 in non-typical yeast *Lachancea kluyveri*”.

- 2011: Institute of Molecular and Cellular Biology Retreat, NTHU, Taiwan: “Introduction to *Candida albicans* lab: the recent research project and findings”.

Poster presentations

- 2025: 40th Biology Retreat, Taiwan: “Transcriptional rewiring and mitochondrial evolution in yeasts”.
- 2018: IMB Retreat, Academia Sinica, Taiwan: “Spurious binding of a transcription factor on target promoters might be an intermediate evolutionary stage of transcriptional rewiring.”
- 2014: IMB Retreat, Academia Sinica, Taiwan: “Evolution of iron regulatory systems in fungi: Hints from conserved sequences and epistasis.”
- 2013: Best Paper and Poster Competition, College of Life Science, NTHU, Taiwan: “Diverse Hap43-independent functions of *Candida albicans* CCAAT-binding complex.”
- 2012: Best Paper and Poster Competition, College of Life Science, NTHU, Taiwan: “Hap43-independent functions of CCAAT-binding complex contribute to the regulation of virulence traits in pathogenic yeast, *Candida albicans*.”
- 2011: Best Paper and Poster Competition, College of Life Science, NTHU, Taiwan: “*Candida albicans* Hap43 is a repressor induced under low-iron conditions and is essential for iron-responsive transcriptional regulation and virulence.”
- 2009: The 17th Congress of The International Society for Human and Animal Mycology (ISHAM2009), Tokyo, Japan: “CaHap43 acts as a potential regulator of iron homeostasis in *Candida albicans*”.
- 2006: The 21st Joint Annual Conference of Biomedical Sciences, Taipei, Taiwan: “Studies of antibiotic resistance of *Acinetobacter baumannii* by proton nuclear magnetic resonance and liquid-chromatographic mass spectroscopy.”