

Curriculum Vitae

Chih-Ming Hung (洪志銘)

Associate Research Fellow

Biodiversity Research Center

Academia Sinica

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Education Background

2006-2012 Ph.D. Ecology, Evolution and Behavior, University of Minnesota, USA

2000-2003 M.S. Zoology, National Taiwan University, Taiwan

1996-2000 B.S. Zoology, National Taiwan University, Taiwan

Research Interest

Evolutionary Ecology, Phylogeography, Genomics, Population Genetics, Conservation Biology

Professional Experience

2020-Present Associate Research Fellow, Biodiversity Research Center, Academia Sinica

2016-2020 Assistant Research Fellow, Biodiversity Research Center, Academia Sinica

2017-Present Affiliate Assistant Professor, Depart. Life Science, National Taiwan University

2016-Present Adjunct Assistant Professor, Depart. Life Science, National Taiwan Normal University

2012-2015 Postdoctoral Associate, Depart. Life Science, National Taiwan Normal University

Teaching

2018 Vertebrate Zoology, National Taiwan University

2018 Molecular Evolution, Taiwan International Graduate Program, Academia Sinica

2017, 2019 Ornithology, National Taiwan Normal University

Professional Activities & Services

Journal Editor

Zoological Studies; *Waterbirds* (Associate Editor)

Frontiers in Genetics; *Frontiers in Ecology & Evolution* (Review Editor)

Journal Reviewer

Avian Research; *Biological Conservation*; *Biological Journal of the Linnean Society*; *Bird Study*; *Community Ecology*; *Current Genomics*; *Ecology & Evolution*; *Ecological letters*; *Global Ecology & Biogeography*; *IBIS*; *iScience*; *Molecular Biology & Evolution*; *Molecular Ecology*; *Molecular Phylogenetics & Evolution*; *Proceedings of the Royal Society B*; *Taiwania*; *Scientific Reports*; *Waterbirds*; *Zoological Studies*

Service in Biodiversity Research Center, Academia Sinica

Committee member: *Academia development & hiring committee; Budget committee; Facility committee; Biodiversity museum committee; Journal (Zoological Studies) committee; Summer Internship committee*

Service in TIGP (Taiwan International Graduate Program) Biodiversity Program, Academia Sinica
Committee member: *Graduate admission committee*

Workshop Instructor

- 2018 Training workshop on Ecology and Evolution, Sun Yet-sen University, Guangzhou, China. “Species concepts and speciation”, “Conservation Genomics”
- 2017 Future earth ecological summer program. National Tsing Hua University, Hsinchu, Taiwan. “Avian evolution & birds in Taiwan”
- 2017 Future earth ecological program. National Museum of Natural Science, Taichung, Taiwan. “Ornithology”
- 2016 Future earth ecological program. National Museum of Natural Science, Taichung, Taiwan. “Ornithology”
- 2015 Problem solving oriented evolutionary and ecological research workshop. National Taiwan Normal University, Endemic Species Research Institute, Nantou, Taiwan. “Simple and beautiful experiments”
- 2014 Life among the formulae of physics workshop. National Center for Theoretical Sciences, Tainan, Taiwan. “Bursts of bird diversity—perspectives from fossils, genetics and hopefully genomics”
- 2014 Genomic analysis workshop. National Museum of Natural Science, Taichung, Taiwan.

Professional Society

International Ornithologists’ Union

Research Grants

- 2020-2023 Ministry of Science and Technology research grant (MOST 109-2621-B-001-001-MY3), Taiwan
- 2019-2023 Career Development Award (AS-CDA-108-L05), Academia Sinica, Taiwan
- 2017-2020 Ministry of Science and Technology research grant (MOST 106-2311-B-001-036-MY3), Taiwan
- 2016 Ministry of Science and Technology research grant (MOST 105-2311-B-001-046), Taiwan

Awards

- 2019 College Student Research Creativity Award (my role: Advisor), MOST
- 2016-2018 Incentive for Special Young Talent, MOST (NTD 1,116,000)
- 2014 Best Postdoc Oral Presentation Award, International Symposium on Evolutionary Genomics and Bioinformatics, Taiwan (NTD 5,000)
- 2011 COGS Travel Award, University of Minnesota (\$555)

- 2011 GAPSA Travel Grant, University of Minnesota (\$165)
- 2011 EEB Graduate Program Travel Grant, University of Minnesota (\$570)
- 2010 EEB Graduate Program Travel Grant, University of Minnesota (\$500)
- 2009 Dayton-Wilkie Natural History Funds, Bell Museum, U of M (\$1,200)
- 2009 Sigma Xi Grants-in-Aid, Sigma Xi Society (\$1,000)
- 2008 Dayton-Wilkie Natural History Funds, Bell Museum, U of M (\$1,200)
- 2007 OIP Pre-dissertation Grants, Office of International Program, U of M (\$5,000)
- 2007 Dayton-Wilkie Natural History Funds, Bell Museum, U of M (\$1,000)
- 2005 The 9th International Mammalogical Congress Travel Award, Japan (\$420)
- 2002 Outstanding Poster Award, Conference on Animal Behavior & Ecology, Taiwan (NTD 3,000)

Fellowships

- 2008-2009 Scholarship of Studying Aboard, Ministry of Education, Taiwan (\$13,000)
- 2008 Li-Huey Lai Memorial Scholarship, TAAMH, Minnesota (\$1,500)
- 2007-2008 Scholarship of Studying Aboard, Ministry of Education, Taiwan (\$22,000)

Presentations at Scientific Meetings

- 2019 Chinese Ornithology Congress, Changchun, China. “The niches of nuthatches affect their lineage evolution differently across latitude”
- 2018 International Ornithology Congress, Vancouver, Canada, “The multifaceted evolution of avian nests”
- 2017 Congress of Animal Behavior & Ecology, Kaohsiung, Taiwan. “The roles of ecology, behavior and effective population size in the evolution of an avian community”
- 2016 The 11th Cross-strait Ornithological Conference, Taichung, Taiwan. “The roles of ecology and behavior in the evolution of a forest bird community”
- 2014 International Symposium on Evolutionary Genomics and Bioinformatics, Tainan, Taiwan. “Drastic population fluctuations explain the rapid extinction of the passenger pigeon”
- 2014 The 26th International Ornithological Congress, Tokyo, Japan. “Distinguishing the effects of selection from demographic history in the genetic variation of two Old World flycatchers”
- 2014 Congress of Animal Behavior & Ecology, Taichung, Taiwan. “Genomic analyses suggest dramatic population fluctuations in the Passenger pigeon”
- 2013 Chinese Ornithology Conference, Hangzhou, China. “Species delimitation in the Chinese bamboo partridge species complex based on genetic, morphological and behavioral evidence”
- 2012 International Symposium on Evolutionary Genomics and Bioinformatics, Kaohsiung, Taiwan. “Low genetic diversity of the extinct passenger pigeon implied by the *de novo* assembly of mitochondrial genomes with shotgun sequencing”
- 2011 The Evolution Meeting, Norman, OK, USA. “Bottleneck or selection on the mtDNA of two flycatchers”
- 2010 The COS/AOU/SCO Joint Meeting, San Diego, CA, USA. “How to sample multiple loci in phylogeographic studies? The Eurasian nuthatch as a case study”

- 2005 The 9th International Mammalogical Congress, Sapporo, Japan. “The spatial organization and social system of otters (*Lutra lutra*) in Kinmen revealed by fecal DNA typing”
- 2002 Congress on Animal Behavior & Ecology, Taichung, Taiwan. “Molecular ecology survey on Eurasian otters (*Lutra lutra*) in Kinmen: microsatellites and fecal DNA” (poster)

Invited Lectures

- 2022 National Museum of Natural Science, Taichung, Taiwan. “The role of nests in bird evolution”
- 2021 National Taiwan University, Taiwan. “Genomics in conservation biology and convergent evolution” (online talk)
- 2021 National Chiayi University, Chiayi, Taiwan. “The evolution of bird nests and birds”
- 2021 National Chung Hsing University, Taichung, Taiwan, “The evolution of bird nests and birds”
- 2020 Institute of Plant and Microbial Biology, Academia Sinica, Taipei, Taiwan. “Population genomics of endangered birds and ecological genomics of common birds”
- 2019 Adapting to new challenges: Evolution in humans, Animals and Plants. Taipei, Taiwan. “The niches of nuthatches affect their lineage evolution differently across latitude”
- 2018 The 1st Taiwan Ornithological Society Congress, Taichung, Taiwan. “The multifaceted evolution of bird nests”
- 2017 Keynote speech, Chinese Ornithology Congress, Xi’an, China. “Comparative phylogeography of Palearctic birds—the roles of biological traits in the evolution of a community”
- 2017 National Chiayi University, Chiayi, Taiwan. “Comparative phylogeography of birds in the Palearctic and East Asia”
- 2017 BRCAS-SLSCUHK Joint Symposium on Biodiversity & Genomics 2017, Hong Kong. “The roles of ecology, behavior and effective population size in the evolution of an avian community”
- 2016 2016 Winter symposium of Evolutionary Ecology, Taipei, Taiwan. “A genomic perspective on phenotypic convergence in birds”
- 2016 International Symposium on Evolutionary Genomics and Bioinformatics, Kaohsiung, Taiwan. “A genomic perspective on phenotypic convergence in birds”
- 2016 Proceeding of 2016 International Galliformes Symposium, Beijing, China. “Species delimitation in the Chinese bamboo partridge (*Bambusicola thoracicus*)”
- 2015 International Symposium on Inter-Disciplinary Experiences for Applications of Biological Sciences, Taichung, Taiwan. “Drastic population fluctuations explain the rapid extinction of the passenger pigeon”
- 2015 Biodiversity Research Center, Academia Sinica, Taipei, Taiwan. “From population genetics to ecological genomics in birds”
- 2015 National Cheng Kung University, Tainan, Taiwan. “Genomics approaches to understanding avian life history evolution”
- 2015 National Sun Yat-sen University, Kaohsiung, Taiwan. “From population genetics toward eco-genomics”

- 2014 Endemic Species Research Institute, Nantou, Taiwan. “Drastic population fluctuations explain the rapid extinction of the passenger pigeon”
- 2014 Beijing Normal University, Beijing, China. “Drastic population fluctuations explain the rapid extinction of the passenger pigeon”
- 2014 National Taiwan Normal University, Taipei, Taiwan. “From population genetics to population genomics of birds from everywhere”
- 2014 National Cheng Kung University, Tainan, Taiwan. “From population genetics to population genomics of birds”
- 2013 National Pingtung University, PingTung, Taiwan. “Solving the demographic mystery of the extinct passenger pigeon using next generation sequencing”
- 2012 Beijing Normal University, Beijing, China. “Population bottleneck or selection? – mitochondrial DNA of two Old World flycatchers”
- 2012 Chinese Academy of Sciences, Beijing, China. “A multi-locus test of mtDNA phylogeography of Eurasian nuthatch”
- 2012 National Taiwan University, Taipei, Taiwan. “Population bottleneck or selection? – mitochondrial DNA of two Old World flycatchers”
- 2012 National Museum of Natural Science, Taichung, Taiwan. “Bottleneck or selection on the mtDNA of two flycatchers”
- 2011 Endemic Species Research Institute, Nantou, Taiwan. “Bottleneck or selection on the mtDNA of two flycatchers”
- 2011 National Taiwan Normal University, Taipei, Taiwan. “A multi-locus test of mtDNA phylogeography of Eurasian nuthatch”
- 2011 National Museum of Natural Science, Taichung, Taiwan. “A multi-locus test of mtDNA phylogeography of Eurasian nuthatch”
- 2002 The 3rd Conference on Techniques for Wildlife Research and Survey, Taipei, Taiwan. “Methods and techniques for studying and censuring river otter populations”

Publications (* corresponding author)

1. **Hung, C.-M.** †, Tsao, S.-H. †, Chiang, P.-L., Wu, S.-P., Tuanmu M.-N.* & Juang, J.-Y.* (2022) Functional connections between bird eggshell stiffness and nest characteristics through risk of egg collision in nests. *Ecology Letters*, <https://doi.org/10.1111/ele.14001> (IF: 9.492; Rank: 8/166 in Ecology) († equal contributors)
2. Lu, C.-W., Yao, C.-T. & **Hung, C.-M.*** (2022). Domestication obscures genomic estimates of population history. *Molecular Ecology*, 31, 752-766 (IF: 6.185; Rank: 16/166 in Ecology)
3. Fang, Y.-T., Yao, C.-T., Hsu, Y.-C. & **Hung, C.-M.*** (2022) Elevational plumage divergence in the Rufous-capped Babbler on a mountainous island. *IBIS*, 164, 151-167 (IF: 2.517, Rank: 1/28 in Ornithology)
4. Wang, J.-S. †, Tuanmu, M.-N. † & **Hung, C.-M.*** (2021) Effects of artificial light at night on the nest-site selection, reproductive success and behavior of a synanthropic bird. *Environmental Pollution*, 288, 117805 (IF: 8.071, Rank: 23/274 in Environmental Science) († equal contributors)

5. Dong, F., Kuo, H.-C., Chen, G.-L., Wu, F., Shan, P.-F., Wang, J., Chen, D., Lei, F.-M., **Hung, C.-M.***, Liu, Y.* & Yang, X.-J.* (2021) Population genomic, climatic and anthropogenic evidence suggest the role of human forces in endangerment of green peafowl (*Pavo muticus*). *Proceedings of the Royal Society B*, 288, 20210073 (IF: 5.349, Rank: 13/93 in Biology)
6. Dong, F.*, **Hung, C.-M.**, Li, S.H.* & Yang X.-J.* (2021) Potential Himalayan community turnover through the Late Pleistocene. *Climatic Change*, 164, 6 (IF: 4.743, Rank: 60/305 in Environmental Science)
7. Chen, Y.-C., Kuo, H.-C., Lo, W.-S. & **Hung, C.-M.*** (2020) Avian phenotypic convergence is subject to low genetic constraints based on genomic evidence. *BMC Evolutionary Biology*, 20, 147 (IF: 3.260, Rank: 21/50 in Evolutionary Biology)
8. Chen, C.-Y., Chen, C.-K., Chen, Y.-Y., Fang, A., Shaw G.T.-W., **Hung, C.-M.*** & Wang, D.* (2020) Maternal gut microbes shape the early-life assembly of gut microbiota in passerine chicks via nests. *Microbiome*, 8, 129 (IF: 14.650, Rank: 8/137 in Microbiology)
9. Dong, F., **Hung, C.-M.*** & Yang, X.-J.* (2020) Secondary contact after allopatric divergence explains avian speciation and high species diversity in the Himalayan-Hengduan Mountains. *Molecular Phylogenetics and Evolution*, 143, 106671 (IF: 4.286, Rank: 13/50 in Evolutionary Biology)
10. Nguyen, H. N., **Hung, C.-M.**, Yang, M.-Y. & Lin, S.-M. (2020). Sympatric competitors have driven the evolution of temporal activity patterns in *Cnemaspis* geckos in Southeast Asia. *Scientific Reports*, 10:27 (IF: 4.379, Rank: 17/73 in Multidisciplinary Sciences)
11. Yang, S.-F., Lu, C.-W., Yao, C.-T. & **Hung, C.-M.*** (2019) To trim, or not to trim: effects of read-trimming on the *de novo* genome assembly of a widespread East Asian passerine, the rufous-capped babbler (*Cyanoderma ruficeps* Blyth). *Genes*, 10, 737 (IF: 4.096; Rank: 65/175 in Genetics & Heredity)
12. Huang, C.-C., Chen, Y.-Y., Fang, Y.-T., Chen Y.-C. & **Hung, C.-M.*** (2019) Generating brain matrices for zebra finch brain sectioning using three-dimensional printing technology. *Journal of Neuroscience Methods*, 327, 108399 (IF: 2.390; Rank: 51/77 in Biochemical Research Methods)
13. Chen, Y.-C., Nazarizadeh, M., Lei, F.-M., Yang, X.-J., Yao, C.-T., Dong, F., Dong, L., Zou, F.-S., Drovetski, S.V., Liu, Y., Huang, C.-C. & **Hung, C.-M.*** (2019) The niches of nuthatches affect their lineage evolution differently across latitude. *Molecular Ecology*, 28, 803-817 (IF: 6.185; Rank: 16/166 in Ecology)
14. Nguyen, H.N., Lu, C.-W., Chu, J.-H., Grismer, L.L., **Hung, C.-M.*** & Lin, S.-M.* (2019) Historical demography of four gecko species specializing in boulder cave habitat – its implications in the evolutionary dead end hypothesis and conservation. *Molecular Ecology*, 28, 772-784 (IF: 6.185; Rank: 16/166 in Ecology)
15. Lai, Y.-T., Yeung, C.-K., Omland, K.E., Pang, E.-L., Hao, Y., Liao, B.-Y., Cao, H.-F., Zhang B.-W. Yeh, C.-F., **Hung, C.-M.**, Hung H.-Y., Yang, M.-Y., Liang W., Hsu, Y.-C. Yao, C.-T., Dong, L., Lin, K. & Li, S.-H.* (2019) Standing genetic variation as the predominant source for adaptation of a songbird. *Proceedings of the National Academy of Sciences*, 116, 2152-2157 (IF: 11.205, Rank: 8/73 in Multidisciplinary Sciences).

16. Wang, J.-S. & **Hung, C.-M.*** (2019) Barn swallow nest predation by a recent urban invader, the Taiwan whistling thrush – implications for the evolution of urban avian communities. *Zoological Studies*, 58, 1 (IF: 2.058; Rank: 53/175 in Zoology)
17. **Hung, C.-M.***, Zink, R.M. & Li, S.-H. (2018) Can genomic variation explain the extinction of the passenger pigeon? *Journal of Avian Biology*, e01858 (IF: 2.327; Ranking: 2/28 in Ornithology)
18. Fang, Y.-T., Tuanmu, M.-N.* and **Hung, C.-M.*** (2018) Asynchronous evolution of interdependent nest characters across the avian phylogeny. *Nature Communications*, 9, 1863 (IF: 14.919; Ranking: 4/73 in Multidisciplinary Sciences)
19. Mays Jr, H.L.*, **Hung, C.-M.**, Shaner, P.-J.L., Denvir, J., Justice, M., Yang, S.-F., Roth, T.L., Oehler, D.A., Fan, J., Rekulapally, D. & Primerano, D.A. (2018) Genomic analysis of demographic history and ecological niche modeling in the endangered Sumatran Rhinoceros *Dicerorhinus sumatrensis*. *Current Biology*, 28, 70-76 (IF: 10.834, Rank: 3/93 in Biology)
20. Dong, F.†, **Hung, C.-M.†**, Li, X.-L., Gao, J.-Y., Zhang, Q., Wu, F., Lei, F.-M.* , Li, S.-H.* & Yang, X.-J.* (2017) Ice age unfrozen: severe effect of the last interglacial, not glacial, climate change on East Asian avifauna. *BMC Evolutionary Biology*, 17:244 (IF: 3.260, Rank: 21/50 in Evolutionary Biology) († equal contributors)
21. **Hung, C.-M.***, Drovetski, S.V. & Zink, R.M. (2017) The roles of ecology, behavior and effective population size in the evolution of a community. *Molecular Ecology*, 26: 3775-3784 (IF: 6.185; Rank: 16/166 in Ecology)
22. **Hung, C.-M.**, Yu, A.-Y., Lai, Y.-T. & Shaner, P.-J.L.* (2016) Developing informative microsatellite makers for non-model species using reference mapping against a model species' genome. *Scientific Reports*, 6, 23087; doi: 10.1038/srep23087. (IF: 4.379, Rank: 17/73 in Multidisciplinary Sciences)
23. **Hung, C.-M.***, Drovetski, S.V. & Zink, R.M. (2016) Matching loci surveyed to questions asked in phylogeography. *Proceedings of the Royal Society B*, 283: 20152340. (IF: 5.349, Rank: 13/93 in Biology)

Prior to Academia Sinica:

24. **Hung, C.-M.**, Hung, H.-Y., Yeh, C.-F., Fu, Y.-Q., Chen, D., Lei, F.-M., Yao, C.-T., Yao, C.-J., Yang, X.-J., Lai, Y.-T. & Li, S.-H.* (2014) Species delimitation in the Chinese bamboo partridge (*Bambusicola thoracicus*) species complex. *Zoologica Scripta*, 43, 562-575. (IF: 2.837, Rank: 9/162 in Zoology)
25. **Hung, C.-M.** †, Shaner, P.-J.L. †, Zink, R.M., Liu, W.-C., Chu, T.-C., Huang, W.-S.* & Li, S.-H. * (2014) Drastic population fluctuations explain the rapid extinction of the passenger pigeon. *Proc. Natl. Acad. Sci. U.S.A.*, 111, 10636-10641. (IF: 9.661, Rank: 4/64 in Multidisciplinary Sciences, *Top 10 stories of 2014 in *PNAS*) († equal contributors)
26. **Hung, C.-M.*** & Zink, R.M. (2014) Distinguishing the effects of selection from demographic history in the genetic variation of two sister passerines based on mitochondrial-nuclear comparison. *Heredity*, 113, 42-51. (IF: 3.961, Rank: 34/153 in Ecology)
27. **Hung, C.-M.***, Drovetski, S.V. & Zink, R.M. (2013) Multilocus test of the absence of mtDNA

- phylogeographic structure in a widespread wader, the common sandpiper (*Actitis hypoleucos*). *Journal of Ornithology*, 154, 1105-1113. (IF: 1.468, Rank: 6/24 in Ornithology)
28. **Hung, C.-M.**, Lin, R.-C., Chu, J.-H., Yeh, C.-F. & Li, S.-H.* (2013) The *de novo* assembly of mitochondrial genomes of the extinct passenger pigeon (*Ectopistes migratorius*) with shotgun sequencing. *PloS One*, e56301. (IF: 2.806, Rank: 15/64 in Multidisciplinary Science)
29. **Hung, C.-M.***, Drovetski, S.V. & Zink, R.M. (2013) Recent allopatric divergence and niche evolution in a widespread Palearctic bird, common rosefinch (*Carpodacus erythrinus*). *Molecular Phylogenetics and Evolution*, 66, 103-111. (IF: 4.419, Rank: 32/166 in Genetics & Heredity)
30. **Hung, C.-M.***, Drovetski, S.V. & Zink, R.M. (2012) Multilocus coalescence analyses support a mtDNA-based phylogeographic history for a widespread Palearctic passerine bird, *Sitta europaea*. *Evolution*, 9, 2850-2864. (IF: 4.201, Rank: 27/153 in Ecology)
31. **Hung, C.-M.**, Li, S.-H. & Lee, L.-L.* (2004) Fecal DNA typing to determine the abundance and spatial organization of otters (*Lutra lutra*) along two stream systems in Kinmen. *Animal Conservation*, 7, 301-311. (IF: 2.835, Rank: 10/53 in Biodiversity Conservation)

Outreach

- 2021 Biodiversity Conference. Society for Wildlife and Nature. Talk: “Bird nest diversity and bird evolution”. Taipei, Taiwan
- 2019 Academia Sinica Ecological Volunteer Society. Talk: “The evolution of bird nests”. Taipei Taiwan
- 2019 Wild Bird Society of Taipei. Talk: “The evolution of bird nests”. Taipei, Taiwan
- 2018 Academia Sinica Open House. Talk: “The multiple phases of bird nests”. Taipei, Taiwan
- 2018 Raptor Research Group of Taiwan. Talk: “The evolution of bird nests”. Taipei, Taiwan