

## Plan Overview

---

*A Data Management Plan created using DMPTool*

**Title:** A digital learning hub dedicated to learning molecular evolution, drawing insights from Ziheng Yang's seminal books Computational Molecular Evolution and Molecular Evolution: A Statistical Approach.

**Creator:** Sishuo Wang - ORCID: [0000-0002-7220-7305](https://orcid.org/0000-0002-7220-7305)

**Affiliation:** The Chinese University of Hong Kong

**Principal Investigator:** Sishuo Wang, Jianhao Lv

**Data Manager:** Sishuo Wang

**Project Administrator:** Sishuo Wang

**Template:** CUHK Data Management Plan Template

### Project abstract:

This project aims to provide detailed solutions to the around 100 exercises from the two prominent books (bibles in the field molecular evolution), Computational Molecular Evolution and Molecular Evolution: A Statistical Approach, authored by Professor Ziheng Yang, FRS.

The solutions will be made available online for researchers at no cost in the form of an online learning platform (<https://github.com/evolbeginner/Solutions-manual-for-CME2006-and-MESA2014>), allowing readers to comment and contribute their problem-solving approaches. Key objectives of the project include providing detailed answers from multiple perspectives for each exercise and establishing a global networked learning platform for scholars to study and provide feedback. The current study seeks to construct an **online educational platform** for biologists by offering detailed solutions to exercises from the field of molecular evolution.

**Start date:** 01-01-2024

**End date:** 12-31-2024

**Last modified:** 11-27-2023

### Copyright information:

The above plan creator(s) have agreed that others may use as much of the text of this plan as they would like in their own plans, and customize it as necessary. You do not need to credit the creator(s) as the source of the

language used, but using any of the plan's text does not imply that the creator(s) endorse, or have any relationship to, your project or proposal

---

**A digital learning hub dedicated to learning molecular evolution, drawing insights from Ziheng Yang's seminal books Computational Molecular Evolution and Molecular Evolution: A Statistical Approach.**

- Yes
- Data repository
- Code
- Image - .jpg
- Image - .png
- Tabular - .xlsx
- Text - .pdf
- Text - .docx

The data will be organized by content (substitution models, tree reconstruction, advanced phylogenetics) and by the types of the exercises (analytical derivation, coding, software operation, etc.).

- On desktop / laptop
- Cloud storage
- On external harddisk
- By secondary backup
- By value of data
- Permanently
- CUHK Research Data Repository
- Others

github, figshare, and other online data repositories. DOI will be assigned so that everyone can access the any versions of the data at any time.

- No
- Yes
- Upon project completion

The data and results will be available once they are generated.

- Public

The aim of the project is to inspire a community-effort to help people learn molecular evolution so anyone can easily and freely access the data.

- Via data repository

- Via search engine

The data will be available by github, figshare. A pdf-formatted will also be posted to preprint server such as arxiv or hal such that a doi will be generated and the results can be permanently maintained online.

- No
- readme.txt
- Dublin Core
- No
- Others

Not applicable.

- Others

Not applicable.

- Data creator
- CC BY-NC
- Yes

They need to follow CC BY-NC 4.0.

- Principal investigator
- Data manager
- No
- Yes

We'd like to buy math software like matlab and mathtype. We would also like to buy 2 hard drives to deposit the data for large-scale bioinformatics and statistical computation.

---

## Planned Research Outputs

### Data paper - "A Solutions Manual for The Exercises of Ziheng Yang's Computational Molecular Evolution, and Molecular Evolution: A Statistical Approach"

This project provides a solutions manual for all exercises in the Ziheng Yang's two seminal books on statistical molecular evolution: Computational Molecular Evolution (CME2006) [Yang 2006] and Molecular Evolution: A Statistical Approach (MESA2014) [Yang 2014]. We hope the solutions manual plays a tiny role in helping better understand Ziheng's books and appreciate molecular phylogenetics from a statistics perspective.

---

### Planned research output details

Title	Type	Anticipated release date	Initial access level	Intended repository(ies)	Anticipated file size	License	Metadata standard(s)	May contain sensitive data?	May contain PII?
A Solutions Manual for The Exercises of Ziheng Yan ...	Data paper	2024-11-30	Open	None specified	100 MB	Creative Commons Attribution Non Commercial 4.0 International	None specified	No	No