MOLECULAR PHYLOGENETICS AND TAXONOMY

MB160P21 (HAMPL AND NOVOTNÝ) 2025

Lectures will be held in the Parasitology lecture room on Mondays 9:00-10:30 am

29. 9. - Introduction to taxonomy, molecular characters, sequencing of DNA (Hampl)

6. 10. – Other methods of obtaining molecular data – multilocus methods (RAPD, RFPL etc.), microsatelites, minisatelites, SINE elements, protein mass fingerprint (Hampl)

13.10. – Alignment of sequences, Sequence databases and searches in them (Novotný)

20. 10. – Calculation of genetic distances (Hampl)

27. 10. - Vacations

3. 11. – Phylogenetic trees I. – introduction to trees, reconstruction of phylogenetic trees from the distance matrix (Hampl)

10. 11. - Phylogenetic trees II. Rate heterogeneity, search through the tree space, maximum parsimony (Hampl)

17. 11. - Phylogenetic trees III. - Maximum likelihood, Bayesian methods (Hampl)

24. 11. - Phylogenetic trees IV. - Multigene analyses, robustness of branching, rooting of trees, topology tests (Hampl)

1. 12. – Model tests, molecular clock (Hampl)

8. 12. – Barcoding and forensic science (Hampl)

15. 12. – Intraspecific relationships (Hampl)

5. 1. – Presentation of student essays

PRACTICALS OF MOLECULAR PHYLOGENETICS

MB160C21 (HAMPL AND NOVÁK) 2025

Practicals will be held in room 311 (V7) on Thursdays at 14:00-17:15.

27. 11. – Database searches, sequence formats, alignment

4. 12. – Trees from the DNA sequences

11. 12. – Trees from amino acid sequences

18. 12. – Bayesian methods, molecular dating

8. 1. – Metabarcoding