Study program: PAEDIATRICS

ANNOTATION

The study programme of Paediatrics focuses on the pathogenesis, diagnosis, clinical course and treatment of childhood and adolescent diseases in all sub-disciplines including experimental medicine, with emphasis on the development of scientific thinking of postgraduate students for the purpose of deepening their theoretical knowledge and practical skills.

ADMISSION PROCEDURE 2019/20

Dissertation topics of the training department:

Department of Pediatrics, Faculty of Medicine and Dentistry and University Hospital Olomouc, Palacký University Olomouc, I. P. Pavlova 6, Olomouc, tel.: +420 588 444 403

Laboratory of Experimental Medicine, Faculty of Medicine and Dentistry and University Hospital Olomouc, Palacký University Olomouc, Hněvotínská 5, Olomouc, tel.: +420 585 632 111

Institute of Molecular and Translational Medicine, Faculty of Medicine and Dentistry and University Hospital Olomouc, Palacký University Olomouc, Hněvotínská 5, Olomouc, tel.: +420 585 632 082

1. **Cytogenetic alterations in solid tumours**
   1 position in the full-time form of study
   Supervisor: RNDr. Radek Trojanec, Ph.D., Mgr. Vladimíra Koudeláková, PhD.

2. **Small animal imaging of selected bioactive molecules**
   1 position in the full-time form of study
   Supervisor: PharmDr. Miloš Petřík, Ph.D.

3. **Genetic and epigenetic biomarkers in cancer**
   2 positions in the full-time form of study
   Supervisors: prof. Mgr. Jiří Drábek, Ph.D., doc. MUDr. Marián Hajdúch, Ph.D.

4. **Identification of molecular targets of anticancer therapy applying cell biology and proteomics tools**
   2 positions in the full-time form of study
   Supervisors: MUDr. Petr Džubák, Ph.D., doc. MUDr. Marián Hajdúch, Ph.D.

5. **Exhaled breath condensate as a source of lung disease biomarkers**
   2 positions in the full-time form of study
   Supervisors: MUDr. Petr Džubák, Ph.D., doc. MUDr. Marián Hajdúch, Ph.D.

6. **Drug resistance mechanisms in cancer**
   2 positions in the full-time form of study

Supervisors: doc. MUDr. Marián Hajdúch, Ph.D., MUDr. Petr Džubák, Ph.D.

7. **Identification of pro-longevity pathways and mechanisms of model organisms**
   1 position in the full-time form of study
   Supervisor: Mgr. Jiří Voller, Ph.D.

8. **Bio- and cheminformatics in biology of aging**
   1 position in the full-time form of study
   Supervisor: Mgr. Jiří Voller, Ph.D.

9. **Screening and characterization of compounds for therapy of diseases caused by aberrant pre-mRNA splicing**
   1 position in the full-time form of study
   Supervisor: Mgr. Jiří Voller, Ph.D.

10. **Screening and characterization of compounds for therapy of mitochondrial and metabolic disorders**
    1 position in the full-time form of study
    Supervisor: Mgr. Jiří Voller, Ph.D.

11. **In silico design of compounds with desired properties**
    2 positions in the full-time form of study
    Supervisor: Pavlo Polishchuk, MSc., Ph.D.

12. **Development of 3D pharmacophore signatures and their applications to drug design**
    1 position in the full-time form of study
    Supervisor: Pavlo Polishchuk, MSc., Ph.D.

13. **Genetic biomarkers in cancer**
    1 position in the full-time form of study
    Supervisors: prof. Mgr. Jiří Drábek, Ph.D., Ing. Rastislav Slavkovský, Ph.D.

14. **Human papillomavirus infection in humans**
    1 position in the full-time form of study
    Supervisor: Mgr. Vladimira Koudeláková, Ph.D.

15. **A combination of 2D and 3D cell cultures for a smart and effective identification and characterization of anti-hypoxic candidates**
    2 positions in the full-time form of study
    Supervisors: Viswanath Das, MSc., Ph.D., doc. MUDr. Marián Hajdúch, Ph.D.

16. **An extensive structural and biochemical characterization of tau oligomeric species in Alzheimer's disease and other tauopathies**
    1 position in the full-time form of study
    Supervisor: Viswanath Das, MSc., Ph.D.

17. **The role of tumour hypoxia in acquisition of resistance to microtubule-targeting drugs**
    1 position in the full-time form of study

Supervisor: Viswanath Das, MSc., Ph.D.

18. **Identification of novel proteomic cancer biomarkers**
    2 positions in the full-time form of study
    Supervisors: Lakshman Varanasi, MSc., Ph.D., doc. MUDr. Marián Hajdúch, Ph.D.

19. **Biology of aging and DNA damage**
    1 position in the full-time form of study
    Supervisor: doc. MUDr. Marián Hajdúch, Ph.D.

20. **In vitro screening methods for the assessment of factors influencing bioavailability of new drug candidates in pre-clinical development**
    1 position in the full-time form of study
    Supervisors: doc. MUDr. Marián Hajdúch, Ph.D., Mgr. Barbora Lišková, Ph.D.

Note:
Applicants choose from the offered topics and in the application form, besides the chosen study programme, also confirm the selected dissertation topic.

Application deadline:	**13 May 2019**
Date and location of the entrance examination:	**19 June 2019** at the Institute of Molecular and Translational Medicine, Faculty of Medicine and Dentistry and University Hospital Olomouc, Palacký University Olomouc, Hněvotínská 5, Olomouc

Anticipated maximum number of admitted students:

Full-time form:	**27** students
Distance form:	**-**

Examination format: oral

Contents of entrance examination:

- Medical faculty graduates (M.D. or equivalent degrees): basic knowledge of general paediatrics with emphasis on paediatric oncology, haematology, and autoimmune diseases in children, basic knowledge of medical genetics and molecular biology.
- Non-medical faculty graduates (MSc or equivalent degrees): basic knowledge of molecular and cellular biology, basics of laboratory medicine, and principles of heredity with particular respect to medical genetics.

Evaluation criteria:

- results of the entrance examination, laboratory and/or clinical skills, previous experience in science (publications, bachelor/master thesis, conference presentations, etc.), motivation of the applicant, extracurricular activities and language skills

The annual tuition fee for the post-graduate study program conducted in English is set at EUR 3,000.