



INSTITUTO DE HIGIENE E  
MEDICINA TROPICAL  
DESDE 1902

## GLOBAL PERSPECTIVE OF PARASITIC DISEASES

### *CU characterization:*

#### *CU name:*

Global Perspective of Parasitic Diseases

#### *Scientific area acronym:*

CB-P

#### *Duration:*

Semiannual

#### *Working hours:*

112

#### *Contact hours:*

38

#### *ECTS:*

4

#### *Observations:*

CU exclusive of Parasitology specialty

### *Teacher in charge and respective teaching load in the CU:*

Prof. António Paulo Gouveia de Almeida (Paulo Almeida) - 6 hours

### *Other teachers and respective teaching load in the CU:*

Inv<sup>a</sup> Ana Paula Arez - 6 hours

Prof<sup>a</sup> Carla Sousa - 6 hours

Prof<sup>a</sup> Filomena Pereira - 6 hours

Prof<sup>a</sup> Isabel Maurício - 6 hours

Prof. João Inácio Silva - 6 hours

Prof. João Pinto - 6 hours

Prof<sup>a</sup> Olga Matos - 6 hours

Prof<sup>a</sup> Silvana Belo - 6 hours

Inv<sup>a</sup> Sofia Cortes - 6 hours



## GLOBAL PERSPECTIVE OF PARASITIC DISEASES

*Intended learning outcomes (knowledge, skills and competences to be developed by the students):*

At the end of this course, the students should be able to:

1. Describe the importance of Parasitic and vector-borne diseases, with a focus on Neglected Tropical Diseases (NTDs) in Global Health, to know the main groups of parasites, vectors and intermediate hosts, as well as their eco-geographic and social setting.
2. Know the latest developments in the field of medical parasitology, in line with the most current trends in the area, tailored to the needs of the student, as well as the general and specific objectives of their doctoral project.
3. In particular, students should know and be able to analyse and discuss issues such as:
  - 3.1 – the main challenges and topical issues in the investigation, diagnosis and treatment of parasitic diseases;
  - 3.2 – the parasite-host interaction and susceptibility / resistance factors;
  - 3.3 – the importance of genomics for both infectious agents and populations of vectors and intermediate hosts;
  - 3.4 – the problem of insecticide resistance in the control of vector-borne diseases;
4. Consult the main sources of information in Medical Parasitology, acquiring competence and autonomy in the selection of relevant information, its critical analysis, discussion and exposition.

### *Syllabus:*

- I. Parasitic and vector-borne diseases, with an emphasis on NTDs in Global Health, the main groups of parasites, vectors and intermediate hosts.
- II. Most recent developments in the field of medical parasitology, In particular:
  - a. The main challenges and current topics in the investigation, diagnosis and therapy of parasitic diseases;
  - b. Parasite-host interaction and susceptibility / resistance factors;
  - c. Genomics in parasitology, vectors and intermediate hosts populations;
  - d. Problem of resistance to insecticides in the fight against vector-borne diseases;
- III. Main sources of information in Medical Parasitology, acquisition of competences in the selection of relevant information, its critical analysis, discussion and exposition.



## GLOBAL PERSPECTIVE OF PARASITIC DISEASES

### *Teaching methodologies (including assessment):*

**Teaching:** Lectures T (7h) keynote lectures, and TP (6h) with exercises in class, stimulating the discussion, and serving as guide for autonomous student's work in the subject addressed or their specialization; OT (21h) for the monitoring of bibliographical research, scientific articles or other sources, intended for an essay or practical work of analysing the data provided.

**Assessment:** Presentation of a work by the student on a seminar, followed by a written essay focusing on the current lines of research (2000 ± 200 words), at his / her choice according to his / hers research interests, referring to the subjects presented by the teachers in the respective lectures.

**Final classification** between 0 and 20 points (minimum mark of 10 for approval), corresponding to the weighted average of the two assignments (oral presentation and essay).

### *References for consultation / mandatory existence:*

- Alum A, Rubino JR, Ijaz MK. 2010. The global war against intestinal parasites--should we use a holistic approach? *Int J Infect Dis.* 14(9):e732-8.
- Basu M K, Ray M. 2005. Macrophage and Leishmania: An Unacceptable Coexistence. *Critical Reviews in Microbiology*, 31:145–154, Beaty B.J. & Marquardt W.C. 1996. The biology of disease vectors. University Press of Colorado, 632 pp.
- Beaty, B.J. & Marquardt WC (Ed.). 2005. *Biology of disease vectors*. Elsevier Academic Press, Burlington MA, USA. 632 pp.
- Bueno-Marí R, Almeida APG and Navarro JC (2015) Editorial: Emerging zoonoses: eco-epidemiology, involved mechanisms, and public health implications. *Front. Public Health* 3:157. doi: 10.3389/fpubh.2015.00157).
- Cook G. C., Zumla, A. I. 2003. *Manson's Tropical Diseases*, 21ª edição. London, Elsevier Science, WB Saunders, London, UK, 1864 pp.
- Eziefula AC, Brown M. 2008. Intestinal nematodes: disease burden, deworming and the potential importance of co-infection. *Curr Opin Infect Dis.* 21(5):516-22.
- Fiddock, D A, Richard T Eastman, Stephen Ward and Steven R Meshnick 2008. Resistance highlights in antimalarial drug resistance and chemotherapy research. A Review, *Trends in Parasitology* Vol 24 n. 12
- Garcia CR, de Azevedo MF, Wunderlich G, Budu A, Young JA, Bannister L. 2008. Plasmodium in the postgenomic era: new insights into the molecular cell biology of malaria parasites. *Int Rev Cell Mol Biol.*; 266:85-156.
- Garcia L. S. 2007. *Diagnostic Medical Parasitology*, 5ª edição. ASM Press. Washington, DC, USA.
- Gryseels B., Polman, K., Clerinx J. and Kestens L. 2006. Human schistosomiasis. *The Lancet*, 368: 1106-1118.



## GLOBAL PERSPECTIVE OF PARASITIC DISEASES

### *References for consultation / mandatory existence: (continuation)*

- Petters, W and Pasvol, G. 2007. Atlas of Tropical Medicine and Parasitology. 6th Edition (Elsevier).
- Stepek G, Buttle DJ, Duce IR, Behnke JM. 2006. Human gastrointestinal nematode infections: are new control methods required? Int J Exp Pathol. 87(5):325-41.
- Taylor M.J. Hoerauf A, Bockarie M. 2010. Lymphatic filariasis and onchocerciasis. Lancet. 376:1175-85.
- Torina A, Sole M, Reale S, Vitale F, Caracappa S. 2008. Use of Phlebotomine sand flies as indicator of Leishmania prevalence in an endemic area. Animal Biodiversity and Emerging Diseases Ann. N.Y. Acad. Sci., 1149: 355-357.
- Wongsrichanalai C, Barcus MJ, Muth S, Sutamihardja A, Wernsdorfer WH. 2007. A review of malaria diagnostic tools: microscopy and rapid diagnostic test (RDT). Am J Trop Med Hyg.;77(6 Suppl):119-27. Review. PubMed PMID: 18165483.

In addition, teachers will indicate free access scientific articles or provide the paper pdf.