

CALL FOR THE AWARDING OF 4 (FOUR) RESEARCH FELLOWSHIPS (BI) FOR GRADUATES

A call is open for the awarding of 4 Research Fellowships for Graduates (BI), intended to finance the realization, by the grantee, of research activities in Animal Science and/or Veterinary Science and related areas. The research will take place within the scope of the Interdisciplinary Research Center in Animal Health, CIISA, through the Multiannual Financing of FCT R&D Units (reference UIDB/00276/2020), financial support from FCT/MCTES through national funds (PIDDAC).

WORK PLANS AND PREFERRED REQUIREMENTS

- **Fellowship n. 1**

Under this grant, predictive clinical models and support tools will be developed with the aim of contributing to improving clinical decision-making, optimizing therapeutic protocols and establishing prognoses with high predictive value. The fellowship holder will be involved in the following activities:

- a) Construction of predictive models based on the most frequent clinical presentations of infectious diseases in dogs and cats, using patient history stored in the hospital information system and in the Biological Isolation and Containment Unit (UICB) database;
- b) Integrate predictive models into medical decision-making in UICB routines;
- c) Determine the patient's prognosis upon admission according to their clinical signs;
- d) Standardize patient treatment, helping to reduce therapeutic decision errors, saving time and achieving high standards of quality control at UICB.

Preferred Requirements

- a) Hold a Master's degree in Veterinary Medicine;
- b) Have clinical experience in an Isolation and Biological Containment Unit;
- c) Have attended Internships in the area of Preventive Medicine;
- d) Have experience in using statistical analysis tools (R platform);
- e) Have the ability and experience to integrate the results of statistical analysis into the clinical reality of the UICB, as a model for a broader vision of infectious disease surveillance at national level;
- f) Have scientific production in the field of infectious diseases in companion animals.

- **Fellowship n. 2**

Within the scope of this grant, studies will be carried out to evaluate the potential of endocellular vesicles (EVs) produced by *Leishmania*, for the transport of mRNAs and/or first-line drugs intended for the treatment of canine leishmaniasis (CanCL). The fellowship holder will be involved in the following activities:

- a) Isolation and characterization of *Leishmania* spp;
- b) Comparison of the structure and biochemical properties of specific EVs;

- c) Biotechnological manipulation of EVs to transport specific compounds;
- d) In vitro and in vivo testing (murine model) of conventional therapies and new options against CanL.

Preferred Requirements

- a) Hold a Master's degree in Veterinary Medicine with a final average equal to or greater than 15 points;
- b) Possess independent work capacity and resilience;
- c) Have laboratory experience in parasitological techniques;
- d) Possess excellent interpersonal communication skills and integration in national and international work teams;
- e) Be competent in the use of statistical analysis tools;
- f) Experience in preparing manuscripts for publication in international peer-reviewed journals.

• **Fellowship n. 3**

Under this grant, 3D modeling studies applied to oral health will be developed from the OneHealth perspective. The fellowship holder will be involved in the following activities:

- a) Select the best 3D printing materials to apply in diagnosis and treatment;
- b) Establish a digital and clinical workflow using 3D printing in the preparation of oromaxillofacial surgery procedures on a daily basis in a hospital environment;
- c) Design and in-house production of surgical guides in oral surgery and for endo-exoprosthesis (implants);
- d) Production of 3D printed crowns and bridges and their application in immediate rehabilitation;
- e) Production of 3D printed components to restore oromaxillofacial defects both endoprosthesis and exoprosthesis.

Preferred Requirements

- a) Hold a Master's degree in Veterinary Medicine;
- b) Have clinical experience in companion animal surgery;
- c) Have training in 3D modeling software;
- d) Have laboratory experience in 3D printing.

• **Fellowship n. 4**

Under this grant, studies will be carried out on the interconnections between ruminal acidosis, ruminal lipid metabolism, histological and anatomo-morphological characteristics of the rumen reticulum and ruminal microbiome. The fellowship holder will be involved in the following activities:

- a) Participation in the sampling in slaughterhouse of ruminal content, samples of ruminal mucosa and reticulo-ruminal organ;
- b) Count of protozoa in the ruminal contents by optical microscopy;
- c) Evaluation of the morphometric characteristics of the reticulo-rumen organs collected in a slaughterhouse;

- d) Preparation of samples for histology and analysis;
- e) Extraction of ruminal DNA for analysis of the ruminal microbiome;
- f) Participation in the analysis of fatty acids in the ruminal content;
- g) Processing and analysis of generated data and writing articles.

Preferred Requirements

- a) Hold a Master's degree in Veterinary Medicine, Zootechnics or a related area of animal science;
- b) Have experience in experimentation in nutrition and digestive physiology of ruminants;
- c) Have experience in the laboratory techniques used in the work plan;
- d) Have experience in using statistical analysis tools;
- e) Have scientific production in the area of nutrition and digestive physiology of ruminants.

APPLICATION DEADLINE

The call is open between the 25th of May and the 24h00 (Lisbon time) of the 14th of June 2023. Applications and supporting documents for the application must be submitted, by email sent to ciisa.geral@fmv.ulisboa.pt, and expediente@fmv.ulisboa.pt, indicating "CIISA Bolsas de Investigação para Mestres 2023" in the "Subject" field of the message. Each candidate may submit only one application, under penalty of cancellation of all submitted applications.

Lisbon, May 10, 2023

The President of Faculty of Veterinary Medicine
at the University of Lisbon



Rui Manuel de Vasconcelos e Horta Caldeira
(Full Professor)