# ESP Advanced Training Centre for Digital Pathology

a) **Name of the Centre**
ESP Advanced Training (EAT) Centre for Digital Pathology
The Centre is based on Ipatimup (Institute of Molecular Pathology and Immunology of the University of Porto)
Address: Rua Júlio Amaral de Carvalho, 45; 4200-135 Porto, Portugal
Director of Ipatimup: Manuel Sobrinho-Simões, MD, PhD

b) **Chair of the Centre**
Catarina Eloy, MD, PhD
e-mail: celoy@ipatimup.pt; catarinaeloy@hotmail.com

c) **Head of the Training Programme**
Catarina Eloy (Head of the Pathology Laboratory of Ipatimup, Pathologist and Researcher) in collaboration with António Polónia (Pathologist and Researcher at Ipatimup) and Sofia Campelos (Pathologist and Researcher at Ipatimup).

d) **Details about specific areas in which training can be offered**
Training will occur at the Pathology Laboratory of Ipatimup that is a fully digital laboratory for tissue specimens since July 2020. The training includes observation of the automated and adapted laboratorial processes with emphasis in the scanning area, as well as education on the quality control of these processes. Nearly 10 000 slides are scanned *per* month in the Pathology Laboratory with diagnostic purposes, including the following stains: haematoxylin-eosin, non-enzymatic histochemistry, immunohistochemistry, bright field in situ hybridization and dark field in situ hybridization. The experience on cytology scanned slides may be limited. The training programme contemplates a section devoted to the informatic network, image management and archive.
An engagement with research projects in the area may occur.
The practical component of the training include navigation for diagnosis under the digital environment in a workstation conceived for this purpose. Experience in a telepathology model is also provided.

e) **Number of positions offered for each year; expected duration of the training**
Two fellows can be hosted per year, for a duration of 2 months each.

f) **Specific periods of the year when the visit may be realized**
One visit in each of the 2nd and 4th trimesters of the year.
The exact dates will be defined by direct contact.

g) **Contact address for requesting details by the applicant**
Fátima Magalhães (Secretariat of Prof. Sobrinho Simões at Ipatimup and Medical Faculty); e-mail: fmagalhaes@ipatimup.pt

We further declare that we meet the requirements for hosting fellows in our Centre:
No charge for training
Help in finding low-cost accommodation
Help in getting visa, insurance or other documents if required
After completion of the training period the trainee will receive a detailed certificate describing the work
If necessary, a letter of invitation can be provided to the applicant

Short list of references

Eloy C, Vale J, Curado M, Polónia A, Campelos S, Caramelo A, Sousa R, Sobrinho-Simões M. Digital Pathology Workflow Implementation at IPATIMUP. Diagnostics (Basel). 2021 Nov 15;11(11):2111. doi: 10.3390/diagnostics11112111. PMID: 34829458; PMCID: PMC8620597.

Fraggetta F, L'Imperio V, Ameisen D, Carvalho R, Leh S, Kiehl TR, Serbanescu M, Racoceanu D, Della Mea V, Polonia A, Zerbe N, Eloy C. Best Practice Recommendations for the Implementation of a Digital Pathology Workflow in the Anatomic Pathology Laboratory by the European Society of Digital and Integrative Pathology (ESDIP). Diagnostics (Basel). 2021 Nov 22;11(11):2167. doi: 10.3390/diagnostics11112167. PMID: 34829514; PMCID: PMC8623219.

Eloy C, Bychkov A, Pantanowitz L, Fraggetta F, Bui MM, Fukuoka J, Zerbe N, Hassell L, Parwani A. DPA-ESDIP-JSDP Task Force for Worldwide Adoption of Digital Pathology. J Pathol Inform. 2021 Dec 16;12:51. doi: 10.4103/jpi.jpi_65_21. PMID: 35070480; PMCID: PMC8721866.

Aloqaily A, Polonia A, Campelos S, Alrefae N, Vale J, Caramelo A, Eloy C. Digital Versus Optical Diagnosis of Follicular Patterned Thyroid Lesions. Head Neck Pathol. 2021 Jun;15(2):537-543. doi: 10.1007/s12105-020-01243-y. Epub 2020 Oct 31. PMID: 33128731; PMCID: PMC8134627.

Polónia A, Campelos S, Ribeiro A, Aymore I, Pinto D, Biskup-Fruzynska M, Veiga RS, Canas-Marques R, Aresta G, Araújo T, Campilho A, Kwok S, Aguiar P, Eloy C. Artificial Intelligence Improves the Accuracy in Histologic Classification of Breast Lesions. Am J Clin Pathol. 2021 Mar 15;155(4):527-536. doi: 10.1093/ajcp/aqaa151. PMID: 33118594.

Araújo T, Aresta G, Castro E, Rouco J, Aguiar P, Eloy C, Polónia A, Campilho A. Classification of breast cancer histology images using Convolutional Neural Networks. PLoS One. 2017 Jun 1;12(6):e0177544. doi: 10.1371/journal.pone.0177544. PMID: 28570557; PMCID: PMC5453426.

Aresta G, Araújo T, Kwok S, Chennamsetty SS, Safwan M, Alex V, Marami B, Prastawa M, Chan M, Donovan M, Fernandez G, Zeineh J, Kohl M, Walz C, Ludwig F, Braunewell S, Baust M, Vu QD, To MNN, Kim E, Kwak JT, Galal S, Sanchez-Freire V, Brancati N, Frucci M, Riccio D, Wang Y, Sun L, Ma K, Fang J, Kone I, Boulmane L, Campilho A, Eloy C, Polónia A, Aguiar P. BACH: Grand challenge on breast cancer histology images. Med Image Anal. 2019 Aug;56:122-139. doi: 10.1016/j.media.2019.05.010. Epub 2019 May 31. PMID: 31226662.

Fondón I, Sarmiento A, García AI, Silvestre M, Eloy C, Polónia A, Aguiar P. Automatic classification of tissue malignancy for breast carcinoma diagnosis. Comput Biol Med. 2018 May 1;96:41-51. doi: 10.1016/j.compbiomed.2018.03.003. Epub 2018 Mar 8. PMID: 29544146.