

ESP ADVANCED TRAINING CENTRE FOR BREAST PATHOLOGY

a) Name of the centre, address,

Servicio de Anatomía Patológica, Hospital Germans Trias i Pujol, Universitat Autònoma de Barcelona, Carretera del Canyet s/n; 08916 Badalona, Barcelona, Spain

b) Chair of the centre,

Pedro Luis Fernández, MD, PhD

c) Head of the training programme,

Pedro Luis Fernández, MD, PhD

d) Details about specific areas in which training can be offered (particular method, field of subspecialty – e.g. kidney transplantation, etc.)

Breast Pathology:

Our center is a third level hospital with a strong workload in Oncology of which a significant percentage corresponds to mammary neoplasms. It is also involved in population screening programs and is a referral center for breast cancer and other tumors for the North of Catalonia. Our department processes and diagnoses some 200 new cases of mammary carcinoma per year, which include initial biopsies and surgical specimens, as well as recurrences and non-neoplastic pathologies for a total of more than 1000 cases. Besides, consultation cases are referred to our department from other hospital for second opinion or patient transfer. Our tight collaboration with the medical Oncology

department allows us to take part in many national and international clinical trials. Also, we have access to the most modern diagnostic, prognostic and predictive tools for breast cancer (Nanostring/PAM50, NGS, molecular staging by OSNA, digital pathology, immunohistochemistry, in situ hybridization, etc). We want also to stress our weekly involvement in the Breast Pathology Committee, where most breast cancer cases are multidisciplinary discussed and in the renowned *Master in Breast Pathology* of the University of Barcelona, in which we have taught for the last 26 years. Finally, we have at the applicants' disposal a teaching collection of interesting breast pathology cases for consultation and review as well as the possibility to collaborate in different research projects and publications, of which we herein enclose some from the last 10 years (annex 1):

e) Number of positions offered for each year, expected duration of the training .

2 applicants, for 3-4 months each, every year and not simultaneous

f) Specific periods of the year when the visit may be realized (should be defined in direct contact between b1) and the applicant

Spring and autumn (negotiable)

g) Contact address for requesting details by the applicant (accommodation options, travel possibilities, etc.)

Pedro L Fernández, MD,PhD

Servicio de Anatomía Patológica, Hospital Germans Trias i Pujol, Universitat Autònoma de Barcelona, Carretera del Canyet s/n; 08916 Badalona, Barcelona, Spain

Telephone: +34 934978853

Email: plfernandez.germanstrias@gencat.cat

Our hospital Visitors' Office can help with all kinds of paperwork as well as with accommodations

Annex 1:

1. Velasco M, Santamaría G, Ganau S, Farrús B, Zanón G, Romagosa C, Fernández PL. MRI imaging of metaplastic carcinoma of the breast. *AJR Am J Roentgenol* 184:1274-8,2005.
2. Santamaría G, Velasco M, Farré X, Vanrell JA, Cardesa A, Fernández PL. Power doppler sonography of invasive breast carcinoma: does tumor vascularization contribute to prediction of axillary status? *Radiology* 234: 374-380,2005.
3. Perez N, Vidal-Sicart S, Zanon G, Velasco M, Santamaria G, Palacin A, Campo E, Cardesa A, Fernández PL. A practical approach to intraoperative evaluation of sentinel lymph node biopsy in breast carcinoma and review of the current methods. *Ann Surg Oncol* 12:313-321,2005.
4. Cuatrecasas M, Santamaría G, Velasco M, Camacho E, Hernández L, Sánchez M, Orrit C, Murcia C, Cardesa A, Campo E, Fernández PL. ATM gene expression is associated with differentiation and angiogenesis in infiltrating breast carcinomas. *Histol Histopathol* 21:149-156,2006.
5. Castillo M, Sanjuán A, Pérez N, Zanón G, Bons N, Vilanova M, Vanrell JA, Merino MJ, Fernández PL. Fibrous histiocytoma-like spindle-cell proliferation in the nipple after body-piercing. *Int J Surg Pathol* 14:89-93, 2006.
6. Santamaría G, Velasco M, Farrús B, Zanón G, Fernández PL. Preoperative MRI of pure intraductal breast carcinoma. A valuable adjunct to mammography in assessing cancer extent. *Breast* 17:186-94, 2008.

7. Santamaría G, Velasco M, Bargalló X, Caparrós X, Farrús B, Fernández PL. Radiologic and pathologic findings in breast tumors with high signal intensity on T2-weighted MR images. *Radiographics* 2010 ;30:533-48
8. Sanz-Pamplona R, Aragüés R, Driouch K, Martín B, Oliva B, Gil M, Boluda S, Fernández PL, Martínez A, Moreno V, Acebes JJ, Lidereau R, Reyál F, Van de Vijver MJ, Sierra A. Expression of endoplasmic reticulum stress proteins is a candidate marker of brain metastasis in both ErbB2-positive and -negative primary breast tumors. *Am J Pathol.* 2011;179:564-79
9. Santamaría G, Velasco M, Farrús B, Caparrós FX, Fernández PL. Dynamic contrast-enhanced mri reveals the extent and the microvascular pattern of breast ductal carcinoma in situ. *Breast J.* 2013; 19:402-10
10. Calvo J, Sánchez-Cid L, Muñoz M, Lozano JJ, Thomson TM, Fernández PL. Infrequent Loss of Luminal Differentiation in Ductal Breast Cancer Metastasis. *PLoS ONE* 2013; 8: 1-12
11. Garcia-Recio S, Fuster G, Fernandez-Nogueira P, Pastor-Arroyo EM, Park SY, Mayordomo C, Ametller E, Mancino M, Gonzalez-Farre X, Russnes HG, Engel P, Costamagna D, Fernandez PL, Gascón P, Almendro V. Substance P Autocrine Signaling Contributes to Persistent HER2 Activation That Drives Malignant Progression and Drug Resistance in Breast Cancer. *Cancer Res.* 2013 ;73:6424-34.
12. Sagasta A, Saco A, Rodríguez-Carunchio L, Rull R, Ruiz A, Carrió A, Falcón-Escobedo R, Fernández PL. Exuberant complex metaplastic carcinoma of the breast with sox2 expression: covering the full spectrum of ductal neoplasia of the breast. *Revista Española de Patología* 2014, doi: 10.1016/j.patol.2014.10.002

13. Herrero L; Naranjo-Hans D; Solé M; Santamaría G; Bargalló X; Velasco M; Fernández PL. Amyloidosis of the breast: three different and unusual presentations of a rare entity. *Pathobiology*. 2015;82:264-268
14. Santamaría G, Bargalló X, Fernández PL, Farrús B, Caparrós X, Velasco M. Neoadjuvant Systemic Therapy in Breast Cancer: Association of Contrast-enhanced MR Imaging Findings, Diffusion-weighted Imaging Findings, and Tumor Subtype with Tumor Response. *Radiology*. 2017;283:663-672
15. El Hadi H, Abdellaoui-Maane I, Kottwitz D, El Amrani M, Bouchoutrouch N, Qmichou Z, Karkouri M, ElAttar H, Errihani H, Fernandez PL, Bakri Y, Sefrioui H, Moumen A. Development and evaluation of a novel RT-qPCR based test for the quantification of HER2 gene expression in breast cancer. *Gene*. 2017 ;605:114-122
16. Fernandez-Martinez A, Pascual T, Perrone G, Morales S, de la Haba J, González-Rivera M, Galván P, Zalfa F, Amato M, Gonzalez L, Prats M, Rojo F, Manso L, Paré L, Alonso I, Albanell J, Vivancos A, González A, Matito J, González S, Fernandez P, Adamo B, Muñoz M, Viladot M, Font C, Aya F, Vidal M, Caballero R, Carrasco E, Altomare V, Tonini G, Prat A, Martin M. Limitations in predicting PAM50 intrinsic subtype and risk of relapse score with Ki67 in estrogen receptor-positive HER2-negative breast cancer. *Oncotarget*. 2017;8:21930-21937.
17. Sánchez-Cid L, Pons M, Lozano JJ, Rubio N, Guerra-Rebollo M, Soriano A, Paris-Coderch L, Segura MF, Fueyo R, Arguimbau J, Zodda E, Bermudo R, Alonso I, Caparrós X, Cascante M, Rafii A, Kang Y, Martínez-Balbás M, Weiss SJ, Blanco J, Muñoz M, Fernández PL (co-senior author), Thomson TM. MicroRNA-200, associated with metastatic breast cancer,

promotes traits of mammary luminal progenitor cells. *Oncotarget*. 2017 Sep 7;8:83384-83406.