Marta Pérez Alcántara

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EDUCATION

UNIVERSITY OF OXFORD

DPhil Genomic Medicine and Statistics
2015 - 2019 | awaiting viva

UNIVERSITY OF EDINBURGH

MSc Quantitative Genetics and Genome Analysis
2013-2014 | Distinction

PABLO DE OLAVIDE UNIVERSITY

5-year BSc Biotechnology
2008-2013 | 8.2/10

SELECTED SKILLS

PROGRAMMING

R • Python (including snakemake)
Bash • Perl • Java • LaTeX
R Markdown

BIOINFORMATICS

Omics data analysis, including:
• sequence mapping, feature calling and quantification pipelines • differential expression • QTLs • functional analysis of GWAS variants

WET-LAB

CRISPR KO and modulation • ChIP-seq • human cell culture iPSC differentiation • FACS • qPCR

LANGUAGES

English (Advanced, C2) • Spanish (Native) • French (Basic, A2) • German (Basic, A1)

LINKS

Github:// **mperalc**
LinkedIn:// **marta-pérez-alcántara**

POSTGRADUATE PROJECTS

DPHIL | Understanding the role of islet development in type 2 diabetes susceptibility

- Supervisors: Prof. Mark McCarthy and Prof. Ben Davies.
- Investigated how pancreatic islet development is involved in T2D susceptibility, through the analysis of an hiPSC differentiation model of beta cells. *Omics* data (RNA-seq, ATAC-seq, DNA methylation and H3K27ac ChIP-seq) was used to characterize temporal patterns and networks of gene expression and DNA regulation, to identify important genes regulating islet development and T2D risk. Data integration highlighted candidate T2D genes whose function in development was analysed in the laboratory, using CRISPR to modulate their expression and assessing how this altered the differentiation process.

MSC | Parent-of-origin effects in human complex trait variation

- Dissertation project supervised by Prof Chris S. Haley.
- I evaluated the role of imprinting in the variation of obesity measurements (WHR and BMI), investigating its weight in heritability and incorporating it in genome-wide association analyses.

PUBLICATIONS

• **Perez-Alcantara M**, Honoré C, Wesolowska-Andersen A, et al. Diabetologia (2018). Patterns of differential gene expression in a cellular model of human islet development, and relationship to type 2 diabetes predisposition.https://doi.org/10.1007/s00125-018-4612-4

• Gascoyne DM, Spearman H, Lyne L, Puliyadi R, **Perez-Alcantara M**, et al. (2015) The Forkhead Transcription Factor FOXP2 Is Required for Regulation of p21$^{WAF1/CIP1}$ in 143B Osteosarcoma Cell Growth Arrest. PLOS ONE 10(6): e0128513.

CONFERENCE PRESENTATIONS

• **Talk:** "Chromatin accessibility patterns of a hiPSC model of islet development highlight type 2 diabetes risk loci in beta cell differentiation"
Oct 2019 | American Society of Human Genetics | Houston, USA

• **Poster:** "Chromatin accessibility patterns of a hiPSC model of islet development and type 2 diabetes risk"
April 2019 | EASD Islet Study Group and Beta-Cell Workshop | Oxford, UK

• **Poster:** "Chromatin accessibility patterns of a hiPSC model of islet development and type 2 diabetes risk"
Oct 2018 | American Society of Human Genetics | San Diego, USA

• **Talk:** "Human islet differentiation model highlights developmental mechanisms contributing to type 2 diabetes pathology"
March 2018 | Leena Peltonen School of Human Genomics | Les Diablerets, Switzerland

• **Talk:** "Human islet differentiation model highlights developmental mechanisms contributing to type 2 diabetes pathology"
Feb 2018 | Keystone Frontiers in Islet Biology and Diabetes | Keystone, USA

• **Talk:** "Transcriptomic profiling of the developing human islet and mechanisms of type 2 diabetes predisposition"
Oct 2017 | American Society of Human Genetics | Orlando, USA

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GRANTS AND AWARDS

- **Epstein Trainee Award Semifinalist | American Society of Human Genetics**

Oct 2019

- **Wellcome Trust PhD Studentship**

Oct 2015 - Oct 2019

- **Bronze medal in European semifinals of MIT iGEM synthetic biology competition**

Oct 2011

OTHER RESEARCH EXPERIENCE

Genetics Department | University of Seville

Research intern | 2014-2015

Supervised by Prof. E. Cerda-Olmedo. I studied the role of carotenoids and terpenoids in the genetic mechanisms of sexual reproduction of the fungus *Phycomyces*.

University of Oxford

Research intern | Summer 2013

Supervised by Prof. A. Banham and Dr D. Gascoyne. Analysed the function of transcription factors FOXP1 and FOXP2 in breast cancer.

University of Cardiff

Research intern | Summer 2012

Supervised by Prof. J.P. Aggleton and Dr S. Vann. Characterized the patterns of gene expression in the brain during mice memory fixation.

iGEM competition | University of Seville

Team member | 2011

Participant in the MIT synthetic biology competition. Genetically engineered *E. coli* strains to employ them as logic gates.

OTHER ACTIVITIES

- Organiser of **postgraduate student presentation sessions**: October 2015 - October 2016
- Elected member of Amnesty International Spain, International Affairs Committee: May 2013 - May 2015
- Coordinator of Amnesty International local volunteer group, Seville branch: October 2014 - August 2015