### Curriculum Vitæ

**Marisol Vazquez BSc (Hons), PhD**

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**Education**

*Oct/2009 to Jul/2014* - Cardiff University (Postgraduate Degree)

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*Oct/2006 to Jul/2009* - Cardiff University (Undergraduate Degree)

*Sept/2003 to Jul/2005* - Llantwit Major Comprehensive School (South Wales)

*Mar/1990 to Aug/2003* - St.Brigid’s Institute (Argentina)

**Qualifications**

*Jul/2014 -* **PhD in Bioscience:** passedwith minor corrections (viva date: 06/11/2013; see publication)

**Title:** *Development of a novel in vitro 3D osteocyte-osteoblast co-culture model to investigate mechanically-induced signalling.*

*Jul/2009 -* **BSc (Hons) in Genetics:** Upper Second Class Honours (2.1)

**Final Year Project Title:** Does exon skipping in the glutamate transporter EAAT1 influence osteogenesis?

*Jul/2005 -* **A-levels:** Biology (B), Chemistry (B), Physics (B)

**Awards**

*Mar/2014 -* Bone Research Society New Investigator Award for highest scored abstract submitted for Bone Research Society Annual Meeting, Sheffield June 2014.

*Mar/2014 -* Top 10 finalist presenting a poster at the SET for Britain Awards at the House of Commons.

*Sept/2011* - Best Presentation Prize at 1st South West Regional Regenerative Medicine Meeting, Bristol University, UK.

*Jun/2011* - Best Oral Communication Prize (Basic Science) at Bone Research Society and British Orthopaedic Research Society 3rd Joint Meeting, Cambridge University, UK.

*May/2011* - 1st Prize for a talk at Speaking of Science Conference, Cardiff University.

*May/2011* - Joint 1st Prize School of Bioscience Year 2 PhD Poster Evening, Cardiff University, UK.

*Dec/2006* - Adrian Johansson-Brown Award for best science student of 2005 (Llantwit Major Comprehensive School)

**Scholarships**

*Jun/2012* - Gillian Powell Memorial Travel Scholarship.

Travelled to Zurich, Switzerland to set up a collaboration between the Arthritis Research UK Biomechanics and Bioengineering Centre and Prof Ralph Müller’s group.

**Work Experience**

*Jul/2014 to present -* **Lecturer in Physiology (Teaching and Scholarship) - School of Biosciences, Cardiff University.**

My role includes being lecturer and practical leader to year 1 Dentistry and Medicine students, and preliminary, years 1, 2 and 3 Bioscience students. I am also module leader for year 1 module ‘BI1002: Structure and Function of Living organisms’, where I am in charge of organising timetables, exam scripts and staff for the various lectures and activities involved in the module. I am tutor/supervisor of final year project students and I am also a personal tutor to 10 Biosciences students. I am also involved in delivering small group teaching to year 1 Medicine students. In my spare time I am continuing my research on the effects of vitamin D on cardiovascular development (see below).

*May/2014 to present* **- Visiting Postdoctoral Scientist - School of Biosciences, Cardiff University.**

Investigating the effects of maternal vitamin D deficiency on cardiovascular foetal development in collaboration with Southampton University Main duties include collecting post-mortem foetal ovine aortas from Southampton, isolating vascular smooth muscle cells from foetal aorta explants, RNA extractions, cDNA preparation, RT-qPCR, mineralisation and microarray assays.

*Jul/2008 to Sept/2008 -* **Visiting Scholar (Laboratory Technician) - Centre for Endocrine and Diabetes Sciences, School of Medicine, Cardiff University.**

Investigating the role of adenosine receptors as therapeutic targets for neuroendocrine pancreatic and intestinal tumours (see publication). During this project I worked alongside a team of scientists and PhD students where my main duties included tissue culture, radio-immuno assays, RNA extractions, cDNA preparation, RT-PCR, RT-qPCR and Western Blots.

*Sept/2005 to Aug/2006 -* **Research Laboratory Technician - Centre for Endocrine and Diabetes Sciences, School of Medicine, Cardiff University.**

Investigating the relationship between diabetes and mitochondrial DNA mutations and the role of adenosine receptors in inflammatory diseases. During these projects I worked alongside a team of clinicians and scientists. My main duties included attending laboratory meetings, participating in the Diabetes Outpatients Clinic by explaining the research project to eligible patients in order to obtain signed consent forms for the acquisition of blood samples, isolating and purifying cells from these blood samples, tissue culture, extraction and purification of DNA and RNA from research specimens, cDNA preparation, RT-PCR, RT-qPCR, radio-immuno assays and Western Blotting.

*Feb/2004 -* **School** **Work Experience - Gastroenterology Department, Llandough Hospital.**

Shadowed doctors, nurses and hospital staff in various departments and learnt the different activities they undertake on a day-to-day basis. I was asked to help in some departments with duties that I was able to carry out on my own. I also acquired further knowledge on diseases and diagnostic techniques.

**Laboratory skills and expertise**

*Tissue culture -* primary cell isolation, culture of cell lines and primary cells in monolayer and 3D, cell viability assays.

*Molecular biology assays -* bacterial gene cloning, RNA and DNA extractions, Reverse Transcriptase-PCR (RT-PCR), RT-quantitative PCR (RT-qPCR).

*Protein assays -* western blotting, ELISAs, microplate-based assays.

*Immunohistochemistry and Imaging -* cryosectioning, immunocytochemistry, immunofluorescence, light, epi-fluorescence and confocal microscope imaging.

*Others -* isolation and purification of cells from blood samples, radio-immuno assays, *in vitro* mechanical loading.

**Further teaching expertise**

*Oct/2009 to Apr/2014* - **Demonstrator and Lecturer (Cardiff University).**

**Main duties:** demonstrated and marked a range of undergraduate Year 1 and 2 Medicine and Bioscience practical classes, and a week-long Year 2 Biomolecular practical where a small cohort of students was assigned to each demonstrator for practical and tutorial work. I informally assessed the progress of the students and provide verbal feedback on their performance, as well as being involved in the official assessment of tutorial groups. I was also involved in the C21 Medicine Programme as a Case Based Learning facilitator and small group teaching tutor for Year 1 Medicine students. Furthermore I lectured Tissue Engineering MSc and Year 1 Medicine students.

*Oct/2010 to Feb/2012 -* **Final Year Project student supervisor (Cardiff University)**

**Main duties:** organise and manage the experimental design and day-to-day activities for the student, teach the student laboratory protocols, experimental techniques and the importance of risk assessments, be involved in the official assessment of the student.

*Jan/2004 to Jul/2005* - **conversational Spanish teacher to fellow 6th form students during spare time.**

**Other Skills**

*Languages -* Spanish (first language), English (first language), French (beginner)

*IT* - very good computer literacy, able to work with several Microsoft based packages such as Word, Excel, Publisher, PowerPoint and Access. I can also use the statistics based software MINITAB.

*Driving -* Full UK driving license.

**Activities**

*Sept/2014 to present -* member of the 2nd Cardiff Athletic Ladies Hockey Team.

*Aug/2012 to present* - Associate Fellow of The Higher Education Academy.

*Oct/2011 to Jun/2013 -* member of the 4th Cardiff University Ladies Hockey Team.

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*Sep/2011* - Session Co-Chair at South West Regional Regenerative Medicine Meeting.

*Jul/2011 to Aug/2013* - member of The Biochemistry Society.

*Feb/2011 to Nov/2012* - Chair of Cardiff Institute for Tissue Engineering and Repair Society (CITER Soc), the post-graduate student group of CITER.

**Main duties:** active member of CITER Research Committee, organising and taking part in seminars and workshops, as well as, networking and public engagement events about interdisciplinary research under the umbrella of tissue engineering. Public engagement events ranged from maggot racing with primary school children, explaining the role of maggots in wound healing; to public of all ages at the Cardiff University Open Day involving stem cell puzzles and a human size “Operation” game. The seminar series involved short talks by invited experts on specific popular science topics (e.g. plastic/reconstructive surgery) followed by a debate session, and were aimed at the general public, 6th form students, university students and staff.

*Sept/2009 to Nov/2013* - member of British Society for Matrix Biology (BSMB) and Cardiff Institute for Tissue Engineering and Repair (CITER).

*Sept/2009 to present* - member of the Bone Research Society (BRS).

*Sept/2004 to Jul/2005* - active member of Llantwit Major School’s Charity Committee and Childline in Partnership with Schools (CHIPS).

**Publications**

Delaine-Smith R., Javaheri B., Edwards J., Vazquez M., Rumney R. (2015) Pre-clinical models for in vitro loading of bone derived cells. Submitted to BoneKey Reports, currently under review.

VAZQUEZ, M., EVANS, B. A., RICCARDI, D., EVANS, S. L., RALPHS, J. R., DILLINGHAM, C. M. & MASON, D. J. 2014. A new method to investigate how mechanical loading of osteocytes controls osteoblasts. Front Endocrinol (Lausanne), 5, 208. doi: 10.3389/fendo.2014.00208.

KALHAN, A., GHARIBI, B., VAZQUEZ, M., JASANI, B., NEAL, J., KIDD, M., MODLIN, I. M., PFRAGNER, R., REES, D. A. & HAM, J. 2012. Adenosine A2A and A2B receptor expression in neuroendocrine tumours: potential targets for therapy. Purinergic Signal, 8, 265-74. doi: 10.1007/s11302-011-9280-5.

**Published abstracts**

M. Vazquez, B.A.J. Evans, S. Evans, D. Riccardi, J.R. Ralphs and D.J. Mason. Three-dimensional bone model that incorporates mechanical loading for therapeutic testing. Bone Research Society Abstracts, Annual Meeting 2014. Front Immunol, 37.

Vazquez, M., Evans, B.A.J., Ralphs, J.R., Riccardi, D., Mason, D.J. 2012. eCM XIII - Bone Fixation, Repair & Regeneration:*In vitro* 3D osteoblast-osteocyte co-culture model. European Cells and Materials, 24, supplement 1, 7.

Vazquez, M., Evans, B.A.J., Ralphs, J.R., Riccardi, D., Mason, D.J. 2011. UK Purine Club 2011 Symposium. Bone *in vitro* 3D osteoblast-osteocyte co-culture model. Purinergic Signalling. 8, issue 4, 781-800.

Vazquez, M., Evans, B., Ralphs, J., Riccardi, D., Mason, D. 2011. Bone *in vitro* 3D osteoblast-osteocyte co-culture model. Frontiers in Endocrinology. Conference Abstract: 2011 joint meeting of the Bone Research Society & the British Orthopaedic Research Society.

Vazquez, M., Evans, B.A.J., Ralphs, J.R., Riccardi, D., Mason, D.J. 2011. British Society for Matrix Biology – Spring 2011 Meeting Report: Bone *in vitro* 3D osteoblast-osteocyte co-culture model. International Journal of Experimental Pathology, 92, A21.

**Oral Presentations (speaker)**

*Jun/2014* - Bone Research Society Annual Meeting, Sheffield, UK.

*Sept/2012* - 2nd South West Regional Regenerative Medicine Meeting, Bristol, UK. .

*Jun/2012* - eCM Bone Fixation, Repair and Regeneration, Davos, Switzerland.

*Sept/2011* - 1st South West Regional Regenerative Medicine Meeting, Bristol University, UK.

*Jul/2011* - Arthritis Research UK Biomechanics and Bioengineering Centre Symposium, Cardiff University, UK.

*Jun/2011* - Bone Research Society and British Orthopaedic Research Society 3rd Joint Meeting, Cambridge University, UK.

*May/2011* - Speaking of Science Conference, Cardiff University.

*Dec/2010* - Connective Tissue Biology Laboratories Seminar Series, Cardiff University, UK.

*Feb/2010* - Connective Tissue Biology Laboratories Seminar Series, Cardiff University, UK.

**Poster Presentations (presenting author)**

*Mar/2014* - SET for Britain Awards, House of Commons, London, UK.

*Nov/2012* - Arthritis Research UK Meeting of the Centres, Loughborough University, UK.

*Jul/2012* - Osteoporosis and Bone Conference 2012, Manchester, UK.

*Jan/2012* - Arthritis Research UK Biomechanics and Bioengineering Centre Advisory Board Meeting, Cardiff University, UK.

*Nov/2011* - UK Purine Club Meeting, Cardiff, UK.

*May/2011* - School of Bioscience Year 2 PhD Poster Evening, Cardiff University, UK.

*Apr/ 2011* - British Society for Matrix Biology Spring Meeting ‘Advances in Musculoskeletal Repair and Regeneration’, Bristol University, UK.

*Sept/2010* - Cardiff Institute of Tissue Engineering and Repair and Arthritis Research UK Biomechanics and Bioengineering Centre Joint Annual Scientific Meeting, Gloucestershire, UK.

*Jul/2010* - Arthritis Research UK Biomechanics and Bioengineering Centre Symposium and Advisory Board Meeting, Cardiff University, UK.

*Jan/2010* - School of Bioscience Year 1 PhD Poster Evening, Cardiff University, UK. .

**Personal Statement**

I am a highly experienced research scientist in the musculoskeletal arena. I am also a responsible, highly self-motivated scientist who displays clear organisational skills and determination, capable of working alone or as an excellent team player.

My genuine interest in science, especially genetics, has been consolidated by the university studies and jobs I have undertaken over the last few years. I am always striving to improve my scientific process skills and learn new techniques in the different projects I undertake. I am passionate about science and am an excellent communicator of it, as demonstrated by the numerous awards I have received during the last 4 years. I have been a permanent resident in the UK for the last decade.

**Referees**

**Dr Deborah Mason, Reader (PhD Supervisor)** *address:* The Sir Martin Evans Building, Museum Avenue, Cardiff University, CF10 3AX. *phone:* (+44) (0)2920874561 *email:* masondj@cardiff.ac.uk

**Dr Jim Ralphs, Senior Lecturer, Director of Undergraduate Education (Current employer)**

*address:* The Sir Martin Evans Building, Museum Avenue, Cardiff University, CF10 *3AX. phone:* (+44) (0)2920874954 *email:* Ralphs@cardiff.ac.uk

**Dr Beatrix Fahnert, Senior Lecturer, Assistant to the Directors of Undergraduate Education (Teaching supervisor)** *address:* The Sir Martin Evans Building, Museum Avenue, Cardiff University, CF10 3AX. *phone:* (+44) (0)2920870250 *email:* FahnertB@cardiff.ac.uk