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PREVIOUS EMPLOYMENT

10.2009 – 12.2013: Senior Post-Doctoral Scientist, Forschungsanstalt Agroscope Wädenswil (Swiss Federal Department of Agriculture Research Centre), Switzerland. 10.2006 – 09.2009: Health Research Board research fellow, Trinity College Dublin (TCD), Ireland. 10.2005 – 09.2006: Post-doctoral researcher in the Department of Clinical Microbiology at TCD, Ireland. 08.2003 – 09.2005: Post-doctoral researcher in collaboration with Astra Zeneca Plc., University of Edinburgh, United Kingdom.

QUALIFICATIONS

2003 Ph.D. (Medical Microbiology), University of Edinburgh, Scotland.

1998 BSc (Hons) Microbiology (1st class), National University of Ireland, Galway, Ireland.

RESEARCH PROFILE

My main areas of research are characterising and comparing the antibiotic resistome in food animals (pigs Coordinator of ERA-Net ANIHWA total €1,090,181, Irish funding: €248,660, chickens Alltech sponsored PhD studentship in my group €236,115), the environment especially soil (Swiss SNSF NFP72 CHF483,799) and water (Water JPI Stare €149,245), the food plants e.g. lettuce and the human microbiome (Maynooth University funds). In addition, I investigate the microbiome & resistome changes due to human influences e.g. treatment with antibiotics for animals or humans or manure or irrigation water for plants & soil (Swiss SNSF NFP72 CHF483,799). Using metagenomics, microbiome analysis, bacterial culture and molecular biology we have identified and characterised the plasmid mediated resistance mechanisms in these samples. This has led to the identification of novel resistance mechanisms and plasmids. The water project has also identified the specific resistances leaving our wastewater treatment plants (WWTP) and entering the environments across the EU. Currently, there is no legislation or policy to either test for resistance or minimise resistance emerging from our WWTPs. The Swiss SNSF project (collaboration with Dr Drissner, 2017 start) links the water resistome with the plant and soil resistomes. We will be able to identify the resistance mechanisms present in irrigation water, determine which resistance mechanisms transfer to the lettuce plants and soil and also which remain. This linking of the water and plant are vital to understand the transmission of resistance from the environment to the start of the food chain. I was awarded the American Society for Microbiology (ASM) outstanding service award (2014).

PUBLICATIONS (Total: 33 published. Total citations:1019, h-index: 17, i10-index: 25)

Selected five publications:

1. Antibiotic resistance genes across a wide variety of metagenomes. David Fitzpatrick, Fiona Walsh. *FEMS Microbiology Ecology* 2016 92 (2): fiv168. IF 3.568 [Editor's choice](#)
2. Tackling antibiotic resistance: the environmental framework. Thomas U. Berendonk, Célia M. Manaia, Christophe Merlin, Despo Fatta-Kassinos, Eddie Cytryn, Fiona Walsh, Helmut Bürgmann, et al. *Nature Reviews Microbiology* 2015. Mar 30. 13 (5), 310-317. (IF 23.317)
3. Streptomycin use in apple orchards did not increase abundance of mobile resistance genes. B Duffy, E Holliger, F Walsh. *FEMS Microbiol Lett.* 2014 Jan 350(2):180-189. (IF 2.121)
4. The Culturable Soil Antibiotic Resistome: A Community of Multi-Drug Resistant Bacteria. F. Walsh, B. Duffy. *PLoS ONE* 2013 Jun 8(6): e65567. (IF 3.234)
5. Influence of soil use on prevalence of tetracycline, streptomycin, and erythromycin resistance and associated resistance genes. M. Popowska, M. Rzeczycka, A. Miernik, A. Krawczyk-Balska, F. Walsh, B. Duffy. *Antimicrobial Agents and Chemotherapy* 2012 Mar 56(3):1434-1443. (IF 4.476). Antibiotic resistant bacteria proliferate in agricultural soils. ASM Press Release 2012 Mar.