

RUAIRI ROBERTSON B.Sc. Ph.D

Postdoctoral Research Fellow

SUMMARY

I am a postdoctoral research fellow with extensive experience in health science research focusing on host and nutrient interactions with the developing gut microbiota. In 2017, I was awarded a prestigious 4-year Sir Henry Wellcome Postdoctoral Research Fellowship from the Wellcome Trust to conduct research in Queen Mary University of London. My research is examining host and nutrient interactions with the early-life gut microbiota and the implications for metabolic programming in the context of malnutrition. My expertise include 16s rRNA and whole metagenome shotgun sequencing, metabolomics, molecular biology, preclinical animal models and biostatistics. Previously, I conducted my PhD research in the world-renowned APC Microbiome Institute in University College Cork, during which time I was awarded a Fulbright Scholarship to Harvard University Medical School and Massachusetts General Hospital. I have since established a strong publication record, gained awards for my research, organized international symposia and presented my research at international conferences. Collectively, these experiences have allowed me establish a strong international collaborative network and provided me with the foundations to pursue my further career ambitions in academic research.

EDUCATION

Oct '12 – Sept '16

University College Cork

- **Ph.D** – School of Microbiology, APC Microbiome Institute, Teagasc Food Research.
- Awarded Teagasc Walsh Fellowship, 2012
- My research examined how dietary omega-3 fatty acids affected gut microbiota development in early-life. Specifically I examined how the interaction between omega-3 fatty acids and gut microbiota affected host metabolism, immune function, central nervous system functioning and behaviour.
- **Laboratory skills:** Microbiology | Molecular biology | Animal and human research | 16s sequencing | Gas-chromatography | qPCR | Animal behaviour | Mammalian cell culture | Bacterial culture | *in vitro* fecal fermentation | ELISA |

Sept '08 – Aug '12

University College Dublin

- **B.Sc** - Human Nutrition – 1st class honours
- Academic Entrance Scholarship to University College Dublin, 2008
- Through this degree I obtained theoretical and practical skills in all areas of nutrition research by undertaking modules in molecular nutrition, physiology, microbiology, public health and international nutrition.

RESEARCH EXPERIENCE

Aug '18 – present University of British Columbia

- **Position:** Visiting Postdoctoral Fellow
- I am currently a visiting Postdoctoral Fellow conducting whole metagenome shotgun sequencing of infant stool samples in collaboration with Dr. Ameer Manges.

Sept '17 – present Queen Mary University of London

- **Position:** Postdoctoral Research Fellow
- I am currently a Sir Henry Wellcome Postdoctoral Research Fellow at the Blizard Institute, Barts and the London School of Medicine and Dentistry.
- My research is employing a multi-omics approach in order to examine the role of the gut microbiome on the long-term metabolic disturbances and clinical outcomes in infants with severe acute malnutrition in Zimbabwe and Zambia.

Oct '16 – Jan '17 APC Microbiome Institute, University College Cork

- **Position:** Postdoctoral Researcher
- I was a postdoctoral fellow within the APC Microbiome Institute in University College Cork and Teagasc Moorepark Food Research Centre.
- My research examined nutrient interactions with the gut microbiota in both human and animal models using 16S sequencing library preparation, compositional microbiome data analysis and gas chromatography for analysis of short chain fatty acid production.

Sept '15 – July '16 Harvard Medical School/Massachusetts General Hospital

- **Position:** Research Scholar
- I was a visiting researcher (Fulbright Scholar) to the Laboratory of Lipid Medicine and Technology at Harvard and MGH. My research focused on the effect of maternal and early-life omega-3 status on the gut microbiota and metabolic programming.
- Through this research I gained invaluable expertise in transgenic animal models, molecular biology and 16s rRNA sequencing analysis.

Jun – Aug '12 Maventy Health International, Anivorano, Madagascar

- **Position:** Assistant Project Coordinator
- I worked as an assistant coordinator of a child malnutrition screening programme in a rural area of northern Madagascar for the NGO, Maventy Health International. This work aimed to track child malnutrition in the surrounding province, prescribe multivitamins to chronically malnourished children and provide nutritional education to mothers. This experience required full working proficiency in French.
- Specifically I gained expertise in anthropometric data collection according to WHO protocols, database management, Z-score assessment of weight-for-age, height-for-age etc. In addition I produced nutritional education documents for mothers.

Sept '10 – July '11 Tufts University, Boston, MA, USA

- **Position:** Research Assistant
- I worked as a research assistant for one year in the Nutrigenomics lab in the Human Nutrition Research Centre on Ageing. During this time I gained valuable laboratory skills in human genetic research.

OTHER EXPERIENCE

- *Science Writing* - Authority Nutrition at Healthline (www.healthline.com); University College Dublin University Observer
- *Committee Membership* - Founding member of the Blizard Institute Postdoc Society formed to foster collaboration and career mentorship for postdocs; Global Nutrition Leadership Platform; International Development Society, University College Cork
- *Conference Organization* – I was the founding organiser of the UCC/Imperial College Postgraduate Symposium, which supported collaboration and networking among postgraduate students of the two universities involved in ‘omics’ research;
- *Public Speaking/Science Communication*: I am heavily involved in science communication having organised and spoke at events in Ireland and internationally. TEDx Talk: <https://www.youtube.com/watch?v=awtmTJW9ic8>
- *Media Portfolio*: BBC Radio; RTÉ Television
- *Volunteer work/International Development* - I have extensive experience as a volunteer in a number of international and local settings including University-led international development programmes (University College Dublin Volunteer Overseas; Somoto, Nicaragua – 2010; University College Cork International Development Society) and volunteer-led therapeutic programmes for individuals who are medically ill (Barretstown, Ireland)
- *Languages* – English (Native); French (Working proficiency)

AWARDS

- Wellcome Trust and WHO Transformative Nutrition Meeting - Young Researcher
- Lindau Nobel Attendee – Nominated as one of 600 young scientists worldwide to attend the prestigious Lindau Nobel Meeting (June 2018)
- Sir Henry Wellcome Postdoctoral Fellowship (The Wellcome Trust; 2017) – I was awarded a prestigious 4-year fellowship grant of £250,000 in order to conduct postdoctoral research in Queen Mary University London.
- Fulbright Scholarship (2015-16) – Through my leadership, scientific expertise and vision for global collaboration in food and health, I was appointed a Fulbright Scholar to Harvard University and Massachusetts General Hospital.
- European Nutrition Leadership Programme Attendee, Luxemburg (April 2016)
- European Nutrition Leadership Programme – Science Writing Award (April 2016)
- New Investigator Awardee (2016) - International Society of Fatty Acids and Lipids
- Selected as one of 50 young researchers worldwide to attend and present at the New York Academy of Sciences, Journey Through Science Day in New York, (2014)
- Science Communication: “Making an Impact” Ireland Winner, FameLab Ireland - 2nd place (’14, ’15), Thesis in 3 – 2nd place (’14), UCC Doctoral Showcase Winner (’15)
- Michael C Berndt Research Innovation Gold Medal Awardee (2014) - Best Speaker in Food and Medicine at the UCC College of Medicine and Health Research Day
- Academic Entrance Scholar (2008) - University College Dublin

TEACHING AND PEER REVIEW

- **Teaching**: Tutor - M.Sc Food Nutrition and Health, University College Dublin; Problem-based learning facilitator – Medicine, Queen Mary University London
- **Invited peer reviewer**: Gut Microbes; Neuropharmacology; Nutritional Neuroscience; PeerJ

SELECTED PUBLICATIONS

H-index: 7 (September 2018)

- **Robertson RC**, Manges AR, Finlay BB et al. The Human Microbiome and Child Growth – First 1000 Days and Beyond. *Trends Microbiol*, (2018)
- **Robertson RC**, Kaliannan K, Strain CR et al. Maternal omega-3 fatty acids regulate offspring obesity through persistent modulation of gut microbiota. *Microbiome*, 6(1):95 (2018)
- **Robertson RC**, Seira Oriach C, Murphy K et al. Deficiency of essential dietary omega-3 polyunsaturated fatty acids disrupts the cecal microbiome and metabolome in mice. *Br J Nutr*, 118 (11), 959-970 (2017)
- **Robertson RC***, Seira Oriach C*, Murphy K et al. Omega-3 polyunsaturated fatty acids critically regulate behaviour and gut microbiota development in adolescence and adulthood. *Brain Behav Immun*, 59, 21-37 (2017)
- Seira Oriach C*, **Robertson RC***, Cryan JF et al. Food for Thought: The role of nutrition in the microbiota-gut-brain axis. *Clin Nutr Exp* (6) 25-38 (2016)
- Ordovas JM, **Robertson R** & Ní Cleirigh E. Gene-gene and gene-environment interactions defining lipid-related traits. *Curr Opin Lipidol* 22, 129-136 (2011).

FUNDING

- The Wellcome Trust – Sir Henry Wellcome Postdoctoral Fellowship; Primary grant holder; 09/2017 – 08/2021; £250,000
- Wellcome Trust and WHO Transformative Nutrition Pump-Priming Grant: Joint grant holder; 10/2018 – 10-2019; £50,000
- QMUL, Centre for Genomics and Child Health Postdoctoral Grant; Primary grant holder; 04/2018 – 09/2018; £5,000
- The Fulbright Commission; Primary grant holder; 09/2015 – 07/2016; €25,000
- Teagasc Walsh Fellow; Primary grant holder; 10/2012 – 09/2016; €22,000 p/a
- The Irish Food and Health Research Alliance; Primary grant holder; 09/2014 – 10/2014; €1,200
- NutraMara (Marine Institute) Travel Grant; Primary grant holder; 01/2014 - 03/2014; €2,000
- Marine Institute Travel & Networking Grant; Primary grant holder; 04/2016 – 05/2016; €750

INVITED ACADEMIC TALKS

- European Microbiome Congress – Invited Talk (London, UK – Nov ‘18)
- Max Planck Institute for Developmental Biology – Invited Lecture (Germany - Jul ‘18)
- Lindau Nobel Meeting - Panel Discussion on Personalised Medicine with Nobel Laureate Aaron Ciechanover (Lindau, Germany - Jun ‘18)
- Joint Malnutrition Meeting – Oral Presentation (Harare, Zimbabwe - May ‘18)
- MSc Public Health Lecture, University of Zimbabwe Medical School (May ‘18)
- Physicians Associate Society, University of Western England – Invited Lecture (Mar ‘18)
- Department of Pediatrics, Parirenyatwa Hospital - Seminar (Harare, Zimbabwe - Dec ‘17)
- International Society for the Study of Fatty Acids and Lipids International Congress – Oral Presentation (Stellenbosch, South Africa - Sept ‘16)