Overview

I obtained my PhD from the University of Glasgow in Infection and Immunity studying with Prof Markus Meissner and then had a 6-year post-doctoral researcher role at CRUK Beatson Institute working on cancer cell migration with Prof Laura Machesky. I have 10 years research experience using gene editing techniques to study genetic knockout lines in both mammalian cells and parasites.

While gaining experience of a wide variety of research techniques ranging from molecular and cellular biology, biochemistry, large omics studies and some in vivo work, I mainly focused on using microscopes to visualise and answer questions related to the actin cytoskeleton in these cells. My images have won multiple awards and featured on the cover of Focal Plane.

Now as a lecturer at UWS, I focus on teaching biomedical sciences and researching host-pathogen interactions, in particular the obligate intracellular parasite, *Toxoplasma gondii*.

Qualifications

Associate Fellow of Recognised Excellence in Teaching (RET-AF), University of Glasgow
Award Date: 3 Jun 2019

Doctor of Philosophy, Infection and Immunity, University of Glasgow
Award Date: 6 Jan 2017

Master of Science, Molecular Parasitology, University of Glasgow
Award Date: 30 Sept 2012

Bachelor of Science (Hons.), Parasitology, University of Glasgow
Award Date: 30 Jun 2011

Employment

Lecturer
Lecturer
School of Health and Life Sciences
University Of The West Of Scotland
1 Aug 2022 → present

Post doctoral Researcher
CRUK Beatson Institute
United Kingdom
1 Oct 2016 → 1 Jul 2022

Research outputs

Single-sample image-fusion upsampling of fluorescence lifetime images
Kapitany, V., Fatima, A., Zickus, V., Whitelaw, J., McGhee, E., Insall, R., Machesky, L. & Faccio, D., 23 May 2024, In: Science Advances. 10, 21, 12 p., adn0139.

CYRI-B mediated macropinocytosis drives metastasis via lysophosphatidic acid receptor uptake
Nikolaou, S., Juin, A., Whitelaw, J. A., Paul, N., Fort, L., Nixon, C., Spence, H. J., Bryson, S. & Machesky, L. M., 7 May 2024, (E-pub ahead of print) In: eLife. 83712.

Collagen VI expression is negatively mechanosensitive in pancreatic cancer cells and supports the metastatic niche
Papalazarou, V., Drew, J., Juin, A., Spence, H. J., Whitelaw, J., Nixon, C., Salmeron-Sanchez, M. & Machesky, L. M., 22 Dec 2022, In: Journal of cell science. 135, 24, p. 1-16 16 p.

Super-resolution time-resolved imaging using computational sensor fusion
Callenberg, C., Lyons, A., den Brok, D., Fatima, A., Turpin, A., Zickus, V., Machesky, L., Whitelaw, J., Faccio, D. & Hullin, M. B., 18 Jan 2021, In: Scientific Reports. 11, 8 p., 1689.
Fluorescence lifetime imaging with a megapixel SPAD camera and neural network lifetime estimation
Zickus, V., Wu, M.-L., Morimoto, K., Kapitany, V., Fatima, A., Turpin, A., Insall, R., Whitelaw, J., Machesky, L., Bruschini, C., Faccio, D. & Charbon, E., 2 Dec 2020, In: Scientific Reports. 10, 10 p., 20986.

The WAVE regulatory complex is required to balance protrusion and adhesion in migration
Whitelaw, J. A., Swaminathan, K., Kage, F. & Machesky, L. M., 7 Jul 2020, In: Cells. 9, 7, 22 p., 1635.

Apicomplexan F‐actin is required for efficient nuclear entry during host cell invasion
Del Rosario, M., Periz, J., Pavlou, G., Lyth, O., Latorre-Barragan, F., Das, S., Pall, G. S., Stortz, J. F., Lemgruber, L., Whitelaw, J. A., Baum, J., Tardieux, I. & Meissner, M., 5 Dec 2019, In: EMBO reports. 2019, 20, 18 p., e48896.

CYRI/ Fam49 proteins represent a new class of Rac1 interactors
Whitelaw, J. A., Lilla, S., Paul, N. R., Fort, L., Zanivan, S. & Machesky, L. M., 23 Jul 2019, In: Communicative & Integrative Biology. 12, 1, p. 112-118 7 p.

Fam49/CYRI interacts with Rac1 and locally suppresses protrusions
Fort, L., Batista, J. M., Thomason, P. A., Spence, H. J., Whitelaw, J. A., Tweedy, L., Greaves, J., Martin, K. J., Anderson, K. I., Brown, P., Lilla, S., Neilson, M. P., Tafelmeyer, P., Zanivan, S., Ismail, S., Bryant, D. M., Tomkinson, N. C. O., Chamberlain, L. H., Mastick, G. S. & Insall, R. H. & 1 others, Machesky, L. M., 31 Oct 2018, In: Nature Cell Biology. 20, p. 1159-1171 13 p.

Parasites lacking the micronemal protein MIC2 are deficient in surface attachment and host cell egress, but remain virulent in vivo
Gras, S., Jackson, A., Woods, S., Pall, G., Whitelaw, J., Leung, J. M., Ward, G. E., Roberts, C. W. & Meissner, M., 24 Jul 2017, In: Wellcome Open Research. 2, 27 p., 32.

Toxoplasma gondii F-actin forms an extensive filamentous network required for material exchange and parasite maturation
Periz, J., Whitelaw, J., Harding, C., Gras, S., Minina, M. I. D. R., Latorre-Barragan, F., Lemgruber, L., Reimer, M. A., Insall, R., Heaslip, A. & Meissner, M., 31 Mar 2017, In: eLife. 6, 29 p., e24119.

Surface attachment, promoted by the actomyosin system of Toxoplasma gondii is important for efficient gliding motility and invasion
Whitelaw, J. A., Latorre-Barragan, F., Gras, S., Pall, G. S., Leung, J. M., Heaslip, A., Egarter, S., Andenmatten, N., Nelson, S. R., Warshaw, D. M., Ward, G. E. & Meissner, M., 18 Jan 2017, In: BMC biology. 15, 23 p., 1.

The Dynamic Nature and Functions of Actin in Toxoplasma Gondii
Whitelaw, J., 6 Jan 2017, Glasgow: University of Glasgow. 239 p.

Parasites lacking the micronemal protein MIC2 are deficient in surface attachment and host cell egress, but remain virulent in vivo
Glas, S., Jackson, A., Woods, S., Pall, G., Whitelaw, J., Leung, J. M., Ward, G. E., Roberts, C. W. & Meissner, M., 24 Jul 2017, In: Wellcome Open Research. 2, 27 p., 32.

Toxoplasma gondii F-actin forms an extensive filamentous network required for material exchange and parasite maturation
Periz, J., Whitelaw, J., Harding, C., Gras, S., Minina, M. I. D. R., Latorre-Barragan, F., Lemgruber, L., Reimer, M. A., Insall, R., Heaslip, A. & Meissner, M., 31 Mar 2017, In: eLife. 6, 29 p., e24119.

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Whitelaw, J. A., Latorre-Barragan, F., Gras, S., Pall, G. S., Leung, J. M., Heaslip, A., Egarter, S., Andenmatten, N., Nelson, S. R., Warshaw, D. M., Ward, G. E. & Meissner, M., 18 Jan 2017, In: BMC biology. 15, 23 p., 1.

The Dynamic Nature and Functions of Actin in Toxoplasma Gondii
Whitelaw, J., 6 Jan 2017, Glasgow: University of Glasgow. 239 p.

Toxoplasma gondii establishes an extensive filamentous network consisting of stable F-actin during replication
Periz, J., Whitelaw, J., Harding, C., Lemgruber, L., Gras, S., Reimer, M., Insall, R. & Meissner, M., 1 Jul 2016

The toxoplasma Acto-MyoA motor complex is important but not essential for gliding motility and host cell invasion.
Egarter, S., Andenmatten, N., Jackson, A. J., Whitelaw, J. A., Pall, G., Black, J. A., Ferguson, D. J. P., Tardieux, I., Mogilner, A. & Meissner, M., 14 Mar 2014, In: PLoS ONE. 9, 3, 17 p., 0091819.

Apical membrane antigen 1 mediates apicomplexan parasite attachment but is dispensable for host cell invasion.
Bargieri, D. Y., Andenmatten, N., Lagal, V., Thiberge, S., Whitelaw, J. A., Tardieux, I., Meissner, M. & Ménard, R., 10 Oct 2013, In: Nature Communications. 4, 13 p., 2552.