

Craig Anderson

Craig.Anderson@ed.ac.uk

Nationality:	British
2005 – 2008	First Class BSc (Hons) Biological Sciences The University of Plymouth, UK
2008 – 2012	PhD Cardiff University/ Centre of Ecology and Hydrology Wallingford, UK Thesis: Mechanistic Bases of Metal Tolerance: Linking Phenotype to Genotype
2012 – 2015	OCE Postdoctoral Fellow CSIRO, Black Mountain, Australia. Invertebrate population genomics
2015 – 2018	Postdoctoral Researcher University of Stirling, UK. Radioecology
2018 – Present	Postdoctoral Fellow University of Edinburgh, UK. Cancer evolutionary genomics

- Expert in evolutionary biology, with wide-ranging background in bioinformatics
- Skilled in variant calling, genome assembly and in development of novel methods to analyse genetic variation in enormous data sets
- Experienced user of Unix, Python and R (Github User: **CraigJAnderson**)
- Extensive toxicant exposure experience of aquatic and terrestrial models
- Multi-generational culturing of various species of field-derived invertebrate lab lines
- Fundamental molecular biology skills, including custom high-throughput sequencing library preparation, DNA/RNA purification and quantitation, PCR, cloning, etc.
- Coordinated field work at disused mine sites (UK) and across Chernobyl (Ukraine)

Selected Publications:

Anderson CJ and 17 others. Strand-resolved mutagenicity of DNA damage and repair. 2022. BioRxiv: <https://www.biorxiv.org/content/10.1101/2022.06.10.495644v1>

Aitken SJ, **Anderson CJ** and 27 others. Pervasive lesion segregation shapes cancer genome evolution. 2020. *Nature*, 582: 7815

Anderson CJ, Oakeshott JG, Tay WT, Gordon KHJ, Zwick A and Walsh TK. Hybridisation and gene flow in the mega-pest lineage of moth, *Helicoverpa*. 2018. *PNAS*, 115: 19

Song SV, **Anderson C**, Good RT, Leslie S, Wu Y, Oakeshott JG, Robin C. Population differentiation between Australian and Chinese *Helicoverpa armigera* occurs in distinct blocks on the Z-chromosome. 2018. *Bulletin of Entomological Research*.

Anderson CJ, Cunha L, Sechi P, Kille P and Spurgeon D. Genetic Variation in Populations of the Earthworm, *Lumbricus rubellus*, Across Contaminated Mine Sites. 2017. *BMC Genetics*, 18: 97.

Pearce S and 59 others. Genomic innovations, transcriptional plasticity and gene loss underlying the evolution and divergence of two highly polyphagous and invasive *Helicoverpa* pest species. 2017. *BMC Biology*, 15: 63.

Anderson CJ, Tay WT, McGaughan A, Gordon K and Walsh T. 2016. Global population structure of the pest moth, *Helicoverpa armigera*. *Molecular Ecology*, 25: 5296-5311.

Kille P, Andre J, **Anderson C**, Ang HN, Bruford MW, Bundy JG, Donnelly R, Hodson ME, Juma G, Lahive E et al. 2013. DNA sequence variation and methylation in an arsenic tolerant earthworm population. *Soil Biology and Biochemistry* 57: 524-532

Anderson CJ, Kille P, Lawlor AJ, Spurgeon DJ. 2013. Life-history effects of arsenic toxicity in clades of the earthworm *Lumbricus rubellus*. *Environmental Pollution* 172: 200-207

A complete list of my publications is available: <http://bit.ly/3amJwLC>

Grants:

- 2019 Relating genetic to molecular phenotypic heterogeneity in cancer using scATAC-seq. 10X sequencing. £18,000.
- 2010 A novel eRAD approach for transcriptomic quantification to inform a systems toxicology model of arsenic tolerance in the earthworm *L. rubellus*. NBAF small grants round, rated alpha 5. £7,790.
- 2010 Mechanistic bases of metal (copper) and metalloid (arsenic) tolerance: linking phenotype to genotype. NERC small grants round, rated high alpha 4. £6,000.

Selected Presentations:

- 2013 International Environmental 'Omics synthesis conference. **Anderson CJ**, Walsh T. Contemporary GBS for following and controlling the global pest *Helicoverpa armigera*. Cardiff University, UK.
- 2013 Biodiversity Genomics Conference (invited) – RADseq: Sample preparation and analysis for population genetics. Australian National University, Australia
- 2012 SETAC World Congress – Environmental OMICs: a global answer to environmental questions. **Anderson CJ**, Bundy JG, Spurgeon DJ and Kille P. Metabolism of and adaptation to arsenic in the earthworm, *Lumbricus rubellus*. Berlin, Germany.

Selected Posters:

- 2018 Genome Informatics. **Craig Anderson**, The Liver Cancer Evolution Consortium and Martin Taylor. Identification of Variation in Murine Tumour Developmental Pathways. Wellcome Genome Campus, UK.
- 2011 Gordon Research Conference, "Ecological and Evolutionary Genomics": **Anderson CJ**, Spurgeon DJ and Kille P. Arsenic Metabolism and Tolerance in the Earthworm, *Lumbricus rubellus*; Adaptive Trait Mapping Using a Systems Biology Approach. University of New England, USA.

Course Bursary Awards:

- 2011 NERC NBAF-Birmingham: Metabolomics Masterclass. University of Birmingham, UK.
- 2010 Wellcome Trust advanced course: Functional Genomics and Systems Biology. Wellcome Trust Sanger Institute, UK.

Professional Engagement:

- Executive Committee member of the Genetics Society (2022-2023)
- Member of the Genetics Society (UK) and EACR (EU)
- Grant reviewer for BBSRC
- Journal reviewer for *Molecular Ecology and Genome Medicine*
- Developed and supervised postgraduate research, most recently playing a key role in development of a Wellcome Trust ECAT project that was awarded a consumables budget for single cell sequencing.