

# Jake Ireland



I am a recent masters graduate with a collective two years of laboratory experience who is fascinated with the heart. I am looking for a position in bioinformatics in expand on my coding abilities. I have a range of skills that make me more than just a scientist, I'm also an entrepreneur and a highly dedicated individual looking for an opportunity to help change the future of cardiovascular disease.



641415@swansea.ac.uk



+44 (0)7880343075



Oxford, UK



heartdiaries.com



linkedin.com/in/jakeireland

## Education

2015-2016

### MRes Tissue Engineering & Regenerative Medicine (Distinction) University of Manchester

**Research:** My research focused on the development and optimisation of a novel cardiac model generated from larval zebrafish. I tested the electrophysiological responses of this model when exposed to arrhythmogenic drugs which showed its potential as an in vitro safety pharmacology assay. I also improved purification of zebrafish cardiomyocytes with lactate, and investigated the cardiomyocyte functional characteristics after altering the generation protocol from enzymatic digestion with trypsin to collagenase.

2012-2015

### BSc (Hons) Medical Genetics (2:1) Swansea University

**Research:** My research investigated the human intestinal pathogens, *Escherichia coli*. Using a genome-wide association study I was able to identify genetic differences between *E.coli* that had come from a host or a secondary source. In-particular I found few strains that had developed certain virulence and fitness factors, adapted in a secondary environment, that made them facultative to the human gut. In essence a potential method of how pathogenicity develops.

2007-2012

### A'Levels: Biology, Chemistry, Physics, Mathematics, and Design technology Cokethorpe Sixth Form and

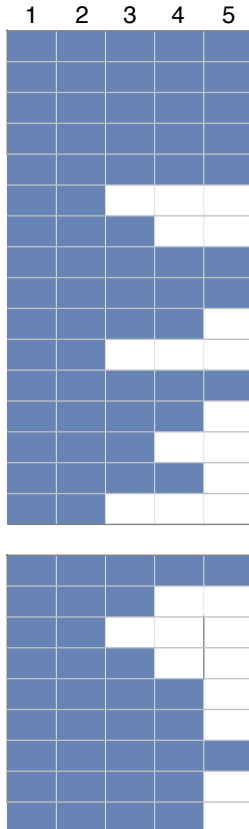
## Skills & Competences

### Practical Skills

Tissue Culturing  
Bacterial culturing  
Lentiviral production  
Zebrafish care and husbandry  
Qiagen DNA & RNA extraction  
Illumina Genome Sequencing  
Flow assisted cell sorting (FACS)  
Process Research & Development  
Bright Field microscope  
Confocal/Florescence Microscopy  
Electron microscopy  
Cryosection  
Paraffin processing and Microtomy  
Visual and Infrared spectroscopy  
SDS PAGE and Gel Electrophoresis  
ELISA

### Soft Skills

Literature research  
Raspberry-Pi 3  
Database Architecture  
HTML5, CSS3, Javascript, JQuery  
Ruby, Ruby-on-Rails, Git.  
Leadership  
Performance under pressure  
Sociability  
Social network adrevisment/marketing



## Career Summary

01/2017 - Present

Oxford, UK

### Upstream Scientist (Process R&D) Oxford Biomedica

#### Tasks

Participation in the development of the first commercial gene therapy. Develop and optimise production of lentiviral vectors. Scale up and scale down bioreactor cell culture activities. Conduct characterisation assays for lentiviral vectors. Design of experiments for high-throughput cell cultures. Flow assisted cell sorting assay design for lentiviral markers. Writing of Process characterisation protocols. Design and writing of batch manufacturing records. Training with Ovisio bioreactor monitoring microscopes. Assisting in GMP cell banking. Trained to use blood gas analyser and metabolic analysis equipment. Trained to use conductivity, osmol, and pH measurement equipment

06/2015 - 09/2015

Oxford, UK

### Laboratory Assistant Oxford Biomedica

#### Tasks

Tissue culture of Human Embryonic Kidney (HEK) cells. Maintenance of all laboratory equipment. Monitoring of laboratory and PCR equipment. Good manufacturing practise training. Training in GMP PCR suite. Educated about Corrective Action Plans (CAPA) and Deviation management.

07/2014 - 09/2014

Oxford, UK

### Medical Scientific Officer Cancer Research UK - Oxford University

#### Tasks

Collection, processing and storage of human tissue samples. Corresponding with over 100 clinical trials teams. logistical arrangements for human tissue samples. Maintenance of centrifuges, Safety Cabinets and -80 Freezers. Good clinical Practise and medical shipping training.

06/2013 - 09/2013

Oxford, UK

### Laboratory and Facilities Assistant Wellcome trust centre for human genetics - Oxford University

#### Tasks

Maintenance of Laboratory equipment and machinery. Assisting in autoclave duties. Assisting in Illumina Hi Seq 2000 sequencing. Assisting in storage, cataloguing and dispatching orders. Setting up standard solutions and Tetrad DNA amplifying.

01/2011 - 06/2012

Oxford, UK

### Laboratory Assistant and Theatre Runner Oxford Musculoskeletal biobank - NHS

#### Tasks

Collection, Screening, allocating and storage of human tissue samples. Assisting in pathology analysis of disease tissue. Preparation of tissue samples for storage and research purposes. Experience of joint replacement surgeries. Chosen for biobank project at Guy's and St Thomas' hospital London. Mentored in clinical and surgical pathology by orthopaedic surgeons.

01/2011 - 06/2012

Oxford, UK

### Data Entry Clerk Botnar Research Centre - NHS

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## Achievements & Certificates

- Home office training for Zebrafish (PIL-A, PIL-B, Module-K)
- Winner of the 2014 Terry Matthews start up challenge for best social enterprise with my start up company, NoteShare.
- Sold my company NoteShare to Swansea University
- Swansea University employability award
- Good Laboratory Practise Training
- Good Manufacturing Training
- Emergency First response (CPR/First aid –primary and secondary care)
- Biological Substance Shipping training (Mayo Clinic and Roche methods).
- National pool lifeguard qualification
- Advanced PADI open water diver
- Duke of Edinburgh bronze award
- RYA/MCA costal skipper & yacht master offshore theory
- RYA/MCA yacht master power and sail craft (practical)

## Other Qualifications

- Google Scholars front end web development nano-degree.
- Completion of the Odin Project (Online web development course)
- Course certification in Dinosaur Paleobiology from the University of Alberta.
- Course certificate for "Writing in Science" from Stanford University.
- 7 Course certificate in Bioinformatics from the UCSD.
- Course certificate in Biology Meets Programming form the UCSD.
- Course certificate in Astrobiology for Edinburgh University.

## Publications

### First Author

- Ireland, J., Mohamet, L., Hodgson, P., Shiels, H & Grunow, B. (Under review). Zebrafish In Vitro 3D Cell Culture Model Recapitulates In Vivo Cardiac Function. Journal of Internal Medicine.

## Society Membership

- Physiology Society (associate member)
- British Cardiovascular Society (Non-Clinical Membership)
- British Society for Cardiovascular Research
- European cardiovascular society (Professional Member)
- The Cokethorpe Society

## Conference Presentations

**Institute of Life Sciences Undergraduate showcase 2015**  
Swansea University  
Genomic and phenotypic comparison of Eschericia coli isolated from host and environmental sources

**The Heart Symposium 2016**  
University of Manchester  
3D heart cell culture model from Zebrafish larvae for cardiac research

**Northern Cardiovascular Research Groups Meeting 2016**  
Leeds University  
Generating an in vitro 3D heart cell culture model from zebrafish larvae for cardiac research

**Physiology 2016**  
Dublin  
3D heart cell culture models from Zebrafish larva for cardiac research

## Volunteering

I regularly run for a variety of charities including Prostate Cancer and Get Kids Going. I have raised thousands in sponsorship for both these organisations.

## Interests

- Cardiac Science
- Palaeontology
- Palaeobiology
- Astronomy
- Sport and Trad Climbing
- Running
- Basketball
- Sailing
- Surfing
- Scuba Diving

## Commendations



**Dr Holly Shiles, Senior Lecturer, Division of Cardiovascular Science, University of Manchester.**

"Jake has displayed a mature attitude to becoming a research scientist, this is not only displayed in the excellent research he has performed this year but also in the ways he approaches his work".



**Dr George Johnson, Associate Professor, Swansea University Medical School.**

"Jake is a very entrepreneurial individual and received numerous accolades for his start up company based on e-learning. Swansea University and Sir Terry Matthews commended this project".