CURRICULUM VITAE

William S. Pearman

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EDUCATION

2020 – Present	PhD Student – Department of Marine Sciences, University of Otago Advisors: A/Prof Ceridwen Fraser, Dist. Prof. Neil Gemell
2017 - 2020	Massey University – School of Natural and Computational Sciences (SNCS), **Master of Natural Science with Distinction**. GPA: 8.3/9 Thesis: Molecular Ecology of an understudied New Zealand Isopod: *Isocladus armatus* Advisors: Prof. James Dale, Dr. Nicole Freed.
2015 - 2017	Massey University, **Bachelor of Natural Science** Specialty: Molecular Ecology. GPA: 8/9

EMPLOYMENT

February 2019 - Present	**Lab Supervisor**, Massey University, Supervisor: Monika Merriman *Teaching undergraduate labs, coordinating a team of demonstrators. Course names: Biology of Cells and Biology of Animals.* 8-10 hours/week
February 2018 - Present	**Lab Demonstrator**, Massey University, Supervisor: Monika Merriman *Demonstrating lab techniques and teaching undergraduate labs Course codes: 162.101 and 122.102.* 5-6 hours/week
July 2017 – July 2018	**Research Assistant**, Massey University *Molecular Ecology research assistant, DNA extraction protocol development and performed extractions, bioinformatics pipeline development.* 3-6 hours/week

MANUSCRIPTS UNDER REVIEW

Pearman, W. S., Wells, S. J, Silander, O. K., Freed, N. E., & Dales, J (2020). Population structure and dispersal across small and large spatial scales in a direct developing marine isopod *Under review*. *Equal first author*

Arranz, V., **Pearman, W. S.**, Aguirre, D. J, & Liggins, L (2020). MARES: a replicable pipeline and curated reference database for marine eukaryote (COI) metabarcoding *Under review*. *Equal first author*

Pearman, W. S., Freed, N. E., and Silander, O. K., (2020). The advantages and disadvantages of short- and long-read metagenomics to infer bacterial and eukaryotic community composition. *bioRxiv*. https://doi.org/10.1101/650788. *Accepted in BMC Bioinformatics.*

Pearman, W. **S.**, Smith, A. N. H., Breckell, G., Dale, J., Freed, N. E., & Silander, O. K. (2018). New tools for diet analyses: nanopore sequencing of metagenomic DNA from stomach contents to quantify diet in an invasive population of rats. *bioRxiv*, 363622. https://doi.org/10.1101/363622. *In Review*.

HONORS AND AWARDS

2020 **University of Otago Doctoral Scholarship**

2020 **Invited participant:** Ira Moana Investigator Workshop
Invitation included full funding for accommodation and registration. The workshop included 13 national and international participants, of which I was one of only 2 students, with all other participants being established academics. Four days spent preparing publications.

2019 **Invited participant:** Ira Moana Project Early Career Workshop
Invitation included full funding for accommodation and registration. Three days of data wrangling.

2019 **Best oral presentation:** Massey University SNCS Postgraduate Conference. $100

2019 **Massey University Masters Scholarship**: $15,000
Awarded based on academic merit and project proposal.

2018 **Presentation Bursary**: Oxford Nanopore Conference. $1000
Awarded to Present at Ecological Society of Australia – 2018 Conference.
Awarded on basis of project merit and novelty.

2018 **Massey Scholarship – Sciences**: $4000
Awarded to top 5% of graduates

2018 **Natural Sciences Scholarship – Masterate Level**: $15,000. Massey University.

2017 **Undergraduate Achievement Award**: Massey University
Institute of Natural and Mathematical Science
Awarded to top student in each degree.

2017 **Second Place Prize for Oral Presentation**: New Zealand Molecular Ecology Conference

2017 **Conference Travel Award**: $250. New Zealand Molecular Ecology Conference.

2017 **Second Place Prize in Division for Oral presentations**: Massey University SNCS Postgraduate Conference. $50.

2015 - 2017 **Natural Sciences Undergraduate Scholarship:** $15,000. Massey University

CONFERENCE PRESENTATIONS

TALKS

Pearman, W., Freed, N. E., & Silander, O. K., Wells, S. J., Dale, J. (2019). Population genomics of an understudied native marine invertebrate – *Isocladus armatus*. Presented at: *New Zealand Molecular Ecology Conference 2019*. Wellington, New Zealand

Pearman, W., Freed, N. E., & Silander, O. K. (2018). The long and the short of it: Eukaryotic and microbial metagenomics are not the same. Presented at: *New Zealand Molecular Ecology Conference 2018*. Palmerston North, New Zealand

Pearman, W., Smith, A. N. H., Breckell, G., Dale, J., Freed, N. E., & Silander, O. K. (2018). New tools for diet analyses: nanopore sequencing of metagenomic DNA from stomach contents to quantify diet in an invasive population of rats. Presented at: *Ecological Society of Australia 2018*. Brisbane, Australia

Pearman, W., Smith, A. N. H., Breckell, G., Dale, J., Freed, N. E., & Silander, O. K. (2017). New tools for diet analyses: nanopore sequencing of metagenomic DNA from stomach contents to quantify diet in an invasive population of rats. Presented at: *New Zealand Molecular Ecology Conference 2017*. Otago, New Zealand

SKILLS AND EXPERIENCE

1) Bioinformatics
    a. Unix and bash familiarity
    b. *De novo* assembly of genomes
    c. Taxonomic classification with next generation sequencing
    d. Nanopore and Illumina sequence quality processing and demultiplexing
    e. Familiarity with a wide variety of software used for population genomics and metagenomics
        i. i.e Kraken2, MEGAN, STRUCTURE, minimap2, samtools etc.
2) R Scripting
    a. Data visualization and management, function and pipeline development.
3) Statistics

   a. Population genetic statistics
4) Molecular lab experience (i.e PCR, DNA Extraction, protocol development for DNA extraction, etc)
5) Library preparation and data processing for next generation sequencing (Nanopore)

NON-ACADEMIC ACTIVITIES

- Scientific outreach to high school students – 2017 – Present
    - Providing molecular lab experience to high school students – 15-20 hours per year
- President of Massey University Albany Community Garden – 2016-2017
- Secretary of Massey Albany Politics Club – 2015-2016
- Volunteer conservation trapper – Okura Bush, 2015-2018
- Recreational hobbies including cooking, 3D printing, and gardening.

CURRENT AND PAST COLLABORATIONS

- Dr. Olin Silander – Comparison of long and short read sequencing for metagenomics
- Dr. Libby Liggins – Metabarcoding database development and analysis pipelines for data re-use in population genetics.

REFEREES

- Dr. Nicole Freed – Academic supervisor, Master degree
    - Senior lecturer in Genetics, Massey University
    - Email: N.Freed@massey.ac.nz
- Professor James Dale – Academic supervisor, Master degree
    - Professor in Evolutionary Ecology, Massey University
    - Email: J.Dale@massey.ac.nz