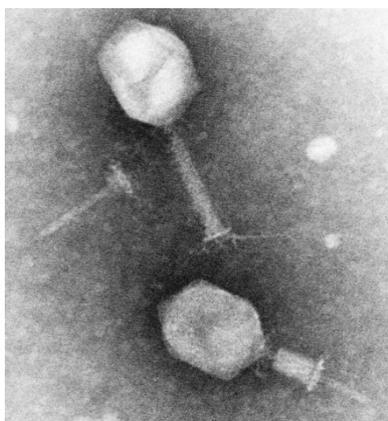


The overarching research theme of the Fineran laboratory is the interactions between bacteria and their mobile genetic elements (bacteriophages and plasmids), with a major focus on CRISPR-Cas biology. Our research utilises molecular genetics, bioinformatics, biochemistry and imaging to gain molecular insight into phage-host biology and to exploit this for biotechnology purposes.

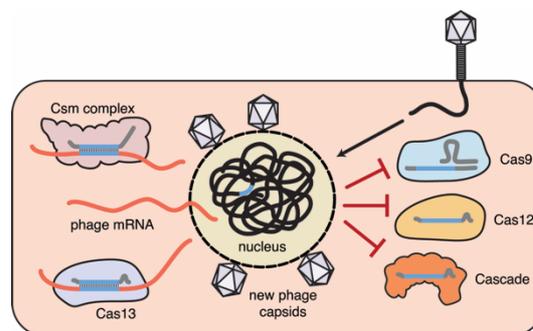
<https://micro.otago.ac.nz/our-people/teaching-research-and-support/peter-fineran/>



PhD projects are available on the **regulation of CRISPR-Cas bacterial immunity, anti-CRISPRs, phage biology and the biotechnological exploitation of phages**. The group has an excellent international track record and students gain excellent opportunities to build their scientific career in these exciting areas. **NB: Due to Covid-19 we are only able to support applications from candidates within NZ.**

The University of Otago is a top research university in NZ and has excellent facilities for our research (e.g. sequencing, proteomics, microscopy etc.). Our team actively collaborates with researchers nationally and internationally. The department has a thriving post-graduate community and our group is friendly and cooperative.

Successful candidates will hold a BSc(Hons) or MSc in molecular microbiology, biochemistry, genetics or a related discipline and be highly motivated about research. If interested, please contact Prof. Peter Fineran providing an explanation of your interest, a CV and details of 2-3 academic referees (peter.fineran@otago.ac.nz). Please include a copy of your full academic transcript. Starting dates are flexible, but preferably early in 2021.



The PhD positions will be allocated on a competitive basis and require the applicant to be eligible for admission to the PhD programme at the University of Otago and to be successful in obtaining a scholarship (<http://www.otago.ac.nz/study/scholarships/index.html>). A GPA of 7.5 or greater and demonstration of proficiency in English are essential. Funding for the PhD scholarship is NZ\$27,000 pa for three years. This scholarship is tax free and tuition fees are covered.

Recent relevant laboratory publications:

Hampton, H.G., Watson, B.N.J. and Fineran, P.C. (2020). The arms race between bacteria and their phage foes. *Nature*. 577. 327-36

Malone, L.M., Warring, S.L., Jackson, S.A., Warnecke, C., Gardner, P.P., Gummy, L.F. and Fineran, P.C. (2020) A jumbophage that forms a nucleus-like structure evades CRISPR-Cas DNA targeting but is vulnerable to type III RNA-based immunity. *Nature Microbiology*. 5. 48–55.

Watson, B.N.J., Vercoe, R.B., Salmond, G.P.C., Westra, E.R., Staals, R.H.J. and Fineran, P.C. (2019). Type I-F CRISPR-Cas resistance against virulent phages results in abortive infection and provides population-level immunity. *Nature Communications*. 10. 5526.

Birkholz, N., Fagerlund, R.D, Smith, L.M, Jackson, S.A. and Fineran, P.C. (2019). The autoregulator Aca2 mediates anti-CRISPR repression. *Nucleic Acids Research*. 47. 9658-65.