

DAVID WILKINS

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| Current position | Consultant bioinformatician |
| Previous positions | City University of Hong Kong, Hong Kong SAR Postdoctoral Fellow, microbial ecology December 2013–December 2014 |
| Education | University of New South Wales, Sydney, Australia Ph.D, molecular genetics July 2009–November 2013 <ul style="list-style-type: none">Thesis title: <i>Microbial Ecology and Biogeography of the Southern Ocean</i>.Supervisor: Prof. Ricardo Cavicchioli.Cosupervisor: Dr. Federico M. Lauro. B.Sc. (Honours, 1 st class) March 2005–April 2009 <ul style="list-style-type: none">Major: Microbiology.Minor: Development studies. |
| Peer-reviewed publications | <p>D. Wilkins, X.-Y. Lu, Z. Shen, J. Chen, and P. K. H. Lee. <i>Pyrosequencing of mcrA and archaeal 16S rRNA genes reveals diversity and substrate preference of anaerobic digester methanogen communities</i>. Applied and Environmental Microbiology, 2014 (accepted). doi:10.1128/AEM.02566-14</p> <p>D. Wilkins, E. van Seville, S. R. Rintoul, F. M. Lauro, and R. Cavicchioli. <i>Advection shapes Southern Ocean microbial assemblages independent of distance and environment effects</i>. Nature Communications, 2013. doi:10.1038/ncomms3457</p> <p>D. Wilkins, F. M. Lauro, T. J. Williams, M. Z. DeMere, M. V. Brown, J. M. Hoffman, C. Andrews-Pfannkoch, J. B. McQuaid, M. J. Riddle, S. R. Rintoul, and R. Cavicchioli. <i>Biogeographic partitioning of Southern Ocean microorganisms revealed by metagenomics</i>. Environmental Microbiology, 2013, 15:1318–1333.</p> <p>D. Wilkins, S. Yau, T. J. Williams, M. A. Allen, M. V. Brown, M. Z. DeMaere, F. M. Lauro, and R. Cavicchioli. <i>Key microbial drivers in Antarctic aquatic environments</i>. FEMS Microbiology Reviews, 2013, 37:303–335.</p> <p>M. H. Y. Leung, D. Wilkins, E. K. T. Li, F. K. F. Kong, and P. K. H. Lee. <i>Diversity and dynamics of the indoor air microbiome in an urban subway network</i>. Applied and Environmental Microbiology, 2014, in press. doi:10.1128/AEM.02244-14</p> <p>T. J. Williams, D. Wilkins, E. Long, F. Evans, M. Z. DeMaere, M. J. Raftery, and R. Cavicchioli. <i>The role of planktonic Flavobacteria in processing algal organic matter in coastal East Antarctica revealed using metagenomics and metaproteomics</i>. Environmental Microbiology, 2013, 15:1302–1317.</p> <p>M. V. Brown, F. M. Lauro, M. Z. DeMaere, L. Muir, D. Wilkins, T. Thomas, M. J. Riddle, J. A. Fuhrman, C. Andrews-Pfannkoch, J. M. Hoffman, J. B. McQuaid, A. Allen, S. R. Rintoul and R. Cavicchioli. <i>Global biogeography of SAR11 marine bacteria</i>. Molecular Systems Biology, 2012, 8:1–13.</p> <p>F. M. Lauro, M. Z. DeMaere, S. Yau, M. V. Brown, C. Ng, D. Wilkins, M. J. Raftery, J. A. E. Gibson, C. Andrews-Pfannkoch, M. Lewis, J. M. Hoffman, T. Thomas, and R. Cavicchioli. <i>An integrative study of a meromictic lake ecosystem in Antarctica</i>. The ISME Journal, 2010, 5:879–895.</p> |
| Other publications | <p>K. S. Siddiqui, T. J. Williams, D. Wilkins, S. Yau, M. A. Allen, M. V. Brown, F. M. Lauro, and R. Cavicchioli. <i>Psychrophiles</i>. Annual Review of Earth and Planetary Sciences, 2013, 41:87–115.</p> <p>T. J. Williams, D. Wilkins, M. Z. DeMaere, F. Lauro, and R. Cavicchioli. <i>Microbes under the microscope</i>. Australian Antarctic Magazine, June 2011</p> <p>F. M. Lauro, M. Allen, D. Wilkins, T. J. Williams and R. Cavicchioli. <i>Genetics, genomics and evolution of psychrophiles</i>, in Extremophiles Handbook. Springer Verlag GmbH, Heidelberg, Germany, 2010.</p> |
| Conference abstracts | <p>D. Wilkins, M. H. Y. Leung, and P. K. H. Lee. <i>Household surface microbial assemblages are shaped by human-associated groups</i>. 15th International Symposium on Microbial Ecology, Seoul, Korea. August 24–29 2014.</p> |

D. Wilkins, F. M. Lauro, T. J. Williams, and R. Cavicchioli. *Biogeographic partitioning of Southern Ocean picoplankton*. 14th International Symposium on Microbial Ecology, Copenhagen, Denmark. August 19–24 2012.

M. H. Y. Leung, **D. Wilkins**, and P. K. H. Lee. *Comparison of bacterial microbiomes in Hong Kong urban household aerosols*. 15th International Symposium on Microbial Ecology, Seoul, Korea. August 24–29 2014.

R. Cavicchioli, F. M. Lauro, M. Z. DeMaere, T. J. Williams, M. V. Brown, S. Yau and **D. Wilkins**. *Microbial ecology of Antarctic aquatic ecosystems determined using metagenomics and metaproteomics*. 14th International Symposium on Microbial Ecology, Copenhagen, Denmark. August 19–24 2012.

R. Cavicchioli, F. M. Lauro, M. Z. DeMaere, T. J. Williams, M. V. Brown, S. Yau and **D. Wilkins**. *Extremophiles in Antarctica: insight into adaptation, evolution and ecosystem function of cold aquatic systems using metagenomics and metaproteomics*. 9th International Congress on Extremophiles, Sevilla, Spain. September 10–13 2012.

Technical skills

Bioinformatic

- Expertise in Perl and R for biological and bioinformatic applications.
- Microbial community analysis using high-throughput sequencing, including both 16S rRNA tag pyrosequencing and shotgun metagenomics.
- Statistical and machine learning techniques to examine microbial community structure and biogeographic distribution.
- Statistical graphics and generation of publication-quality data visualisations.
- High-throughput management of large volumes of genetic data and experimental results in Unix-like environments.
- GitHub profile at <https://github.com/wilkox>

Laboratory

- Microbiological laboratory techniques including culturing, media preparation, biochemical testing, staining and microscopy and microbial identification, for both research and clinical microbiology.
- Molecular biology laboratory techniques including cloning, nucleic acid extraction and purification, PCR and RT-PCR, gel electrophoresis, spectrophotometry and fluorescence microscopy.
- Experienced in recovery of DNA and RNA from low-yield and recalcitrant samples.

Teaching

City University of Hong Kong, Hong Kong SAR

September 2014–present

Teaching assistant for *Introduction to Energy and Energy-related Environmental Policy*.

University of New South Wales, Sydney, Australia

March 2009–October 2012

Postgraduate tutor, demonstrator and marker for courses *Genetics*, *Genetics (advanced)*, *Microbiology 1*, *Molecules Cells and Genes*, *Microbial Genetics* and undergraduate medicine classes including medical microbiology, biochemistry, molecular biology and genetics.

Scholarships

Australian Postgraduate Award

August 2009–February 2013