Jaco Zandberg

Biography

I am an accomplished molecular microbiologist with significant experience in multiple bioinformatic, molecular, genetic engineering and plant-based projects in the medical and agriculture fields, including:

1.Identifying frost sensitivity of cereals in Western Australia caused by ice nucleation bacteria for the Council of Grain Grower Organisation Limited (COGGO) and Department of Primary Industry and Rural Development (DPIRD)

2.The genotyping and phenotyping of microbial organisms (*Pseudomonas sp., Bacillus sp., Salmonella sp., Klebsiella sp.* and *E. coli*) isolated from field sites and pastures for the Antimicrobial Resistance laboratory (AMR) at Murdoch University

3.The Australian native fauna mitochondrial genome sequencing projects in collaboration with the Conservation and Wildlife group at Murdoch University

4.The genome sequencing project ‘Genomic Encyclopaedia-Root Nodule Bacteria (GEBA-RNB)’

5.Curating the Murdoch University *Pseudomonas* culture collection

6.The validation of the Hydrobe® process (applied microbiology to produce hydrogen gas in a three staged bioreactor system) for Hydrobe Pty Ltd

Throughout my career I have upheld a high standard of work with peers, collaborators, and students. As a result I have built relationships with multiple scientific and government institutes such as the Institute for Immunology and Infectious Diseases, Joint Genome Institute, Anti-microbial research facility, Centre for Algal R&D, Murdoch University, Curtin University, University of Western Australia, DPIRD, COGGO and Grains Research & Development Corporation (GRDC). I have all the necessary skills and experience to meet all stipulated project outcomes.

Research Interests

My current research interests are in molecular biology for agricultural sciences, with a particular passion for multi-omics.

Current Project

A multi-omic approach towards understanding the fundamental nature of the canola-blackleg interaction and pathogenesis

Publications

1.**Zandberg, JD.** The Queuosine pathway is not essential for *Ensifer medicae* WSM419 symbiosis and certain components of this pathway modulate lipid biosynthesis. 2018. Honours Thesis (<https://researchrepository.murdoch.edu.au/id/eprint/41713/>)

2.Klonowaska, A., Moulin, L., Ardley, J., Braun, F., **Zandberg, J.D**., Gollagher, M., Marinova., Huntemann, M., Reddy, T.B.K., Varghese, N., Woyke, T., Ivanova., Seshadri, R., Kyrpdies, N., Reeve, R. Characterisation of multiple heavy metal resistance loci in the genome of the novel species *Cupriavidus neocaledonicus* STM 6070, a nickel- and zinc-tolerant Mimosa pudica microsymbiont isolated from mining site soil. 2020.

3.**Zandberg, J.D.**, Reeve, G.R., McConnel, S.M., Friend, A.J., Spencer, P.B.S. (2021). The complete mitochondrial genome of the vulnerable Australian Crest-tailed Mulgara (*Dasycercus cristicauda*). Mitochondrial DNA Part B.

4.**Zandberg, J.D**., Reeve, G.R., McConnel, S.M., Friend, A.J., Spencer, P.B.S. (2021). The complete mitochondrial genome of the Australian Common Rock Rat *Zyzomys argurus*. Mitochondrial DNA Part B.

5.**Zandberg, J.D**., Reeve, G.R., McConnel, S.M., Friend, A.J., Spencer, P.B.S. (2021). The complete mitochondrial genome of the Australian Ghost bat *Macroderma gigas*. Mitochondrial DNA Part B.

6.Eardly, B., Osman, W., Ardley, J., **Zandberg, J.D**., Gollagher, M., van Berkum, P., Elia, P., Marinova, D., Seshadri, R., Reddy, T.B.K., Markowitz, V., Ivanova, N., Pati, A., Woyke, T., Kyrpides, N., Reeve, W. The genome of the acid soil-adapted strain *Rhizobium favelukesii* OR 191 encodes determinants for effective symbiotic interaction with both an IRLC and a phaseoloid legume host. 2021. (Not yet accepted)

Contact Details

Jaco D. Zandberg

Email jaco.zandberg@research.uwa.edu.au

Room 1.122, School of Biological Sciences, Faculty of Science

The University of Western Australia

Crawley, WA 6009, Perth, Australia