

Australasian Structural Phylogenetics Meeting 2023

Date: Tuesday 24 to Wednesday 25 October 2023

Venue: B09-303 and B11-303, Science building, University of Auckland, New Zealand

Host: Centre for Computational Evolution

Welcome to the inaugural Australasian Structural Phylogenetics Meeting (ASPM2023), sponsored by the Centre for Computational Evolution. This meeting will bring together researchers of all career stages, working at the intersection of structural biology and phylogenetics. This will be an opportunity to showcase the latest methodologies and discoveries made in the field.

The meeting consists of presentations from field experts, plus a discussion session either day. The objective of these discussions will be to brainstorm and communicate the challenges in structural phylogenetics, and the rapid methodological advancements being made in the field. We hope that long-term collaborative relationships will emerge from this meeting.

Coffee/tea, morning tea, lunch, and afternoon tea will be provided. We warmly invite everyone for drinks and dinner at the Old Government House. This part will be self-funded.

For any inquiries please contact our organisers:

Jordan Douglas: jordan.douglas@auckland.ac.nz

Caroline Puente-Lelievre: caroline.puente-lelievre@auckland.ac.nz

Tuesday 24 October

Opening remarks from the organisers (Room 303-B09)	9:15 - 9:20 am
<u>Session chair:</u> Caroline Puente-Lelievre	
Ashar Malik, Baker Heart and Diabetes Institute and The University of Queensland <i>On inferring deep evolutionary relationships using protein structures</i>	9:20 - 9:45 am
Matthew Fullmer, University of Auckland <i>Some limitations of rigid structure comparisons</i>	9:45 - 10:10 am
Coffee break	10:10 - 10:40 am
<u>Session chair:</u> Jane Allison	
Remco Bouckaert, University of Auckland <i>Models for protein evolution</i>	10:40 - 11:05 am
Peter Wills, University of Auckland <i>Reduced substitution matrices</i>	11:05 - 11:30 am
Jordan Douglas, University of Auckland <i>Bayesian phylokinetics: ancestral protein reconstruction and functional characterisation in a Bayesian framework</i>	11:30 - 11:55 am
Lunch break	11:55 - 1:00 pm
Keynote speaker: Martin Steinegger, Seoul National University <i>Structure analysis in the era of next-generation structure prediction</i> Session hosted at BLT 204, open to public	1:00 - 2:00 pm
Travel break across campus	2:00 - 2:30 pm
Panel discussion session: <i>Interface between experimental and computational structural biology.</i> <u>Chair:</u> Matt Baker (Room 303-B11). <u>Panel:</u> Martin Steinegger, Nick Matzke, Ren Dobson, Shaun Lott	2:30 - 3:15 pm
Afternoon tea	3:15 - 3:40 pm
Discussion continued	3:40 - 4:15 pm
Drinks and dinner at Old Government House (self-funded)	4:30pm -

Wednesday 25 October

Session chair: Peter Wills (**Room 303-B09**)

Liz Florez, University of Auckland & Plant and Food Research 9:30 - 9:55 am
Structure prediction and functional characterisation of effector proteins in the necrotrophic fungal pathogen, Neovectria ditissima

Desiree Langer, University of Auckland 9:55 - 10:20 am
Can structural phylogeny shed light on viral evolution?

Coffee break 10:20 - 10:45 am

Session chair: Nick Matzke

Caroline Puente-Lelievre, University of Auckland 10:45 - 11:10 am
Unravelling the evolution of bacterial flagellar motility through deep phylogenies and protein structure

Pietro Ridone, University of New South Wales 11:10 - 11:35 am
Investigating Functional Modules and Cross-Compatibility Between the Mot and Exb Systems

Jamiema Sara Philip, University of New South Wales 11:35-12:00 pm
Genomic insights into bacterial flagellar genes: A comprehensive study of motility genes

Lunch break 12:00 - 1:00 pm

Session chair: Jordan Douglas

Nick Matzke, University of Auckland 1:00 - 1:30 pm
Homology and characters in protein-structure phylogenetics: some considerations

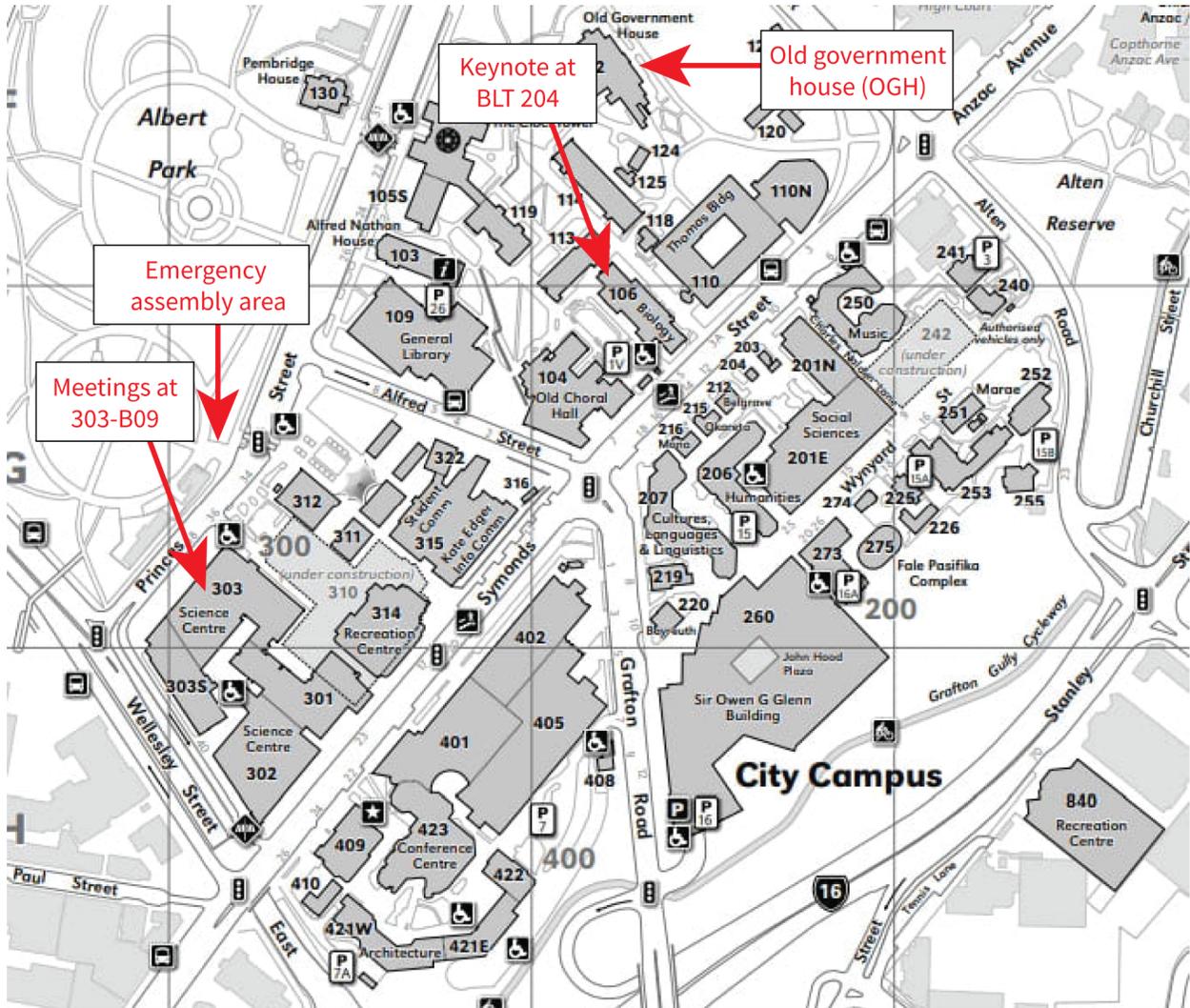
Discussion session: *Challenges and methodological advancements in structural phylogenetics.* Chair: Caroline Puente-Lelievre (**Room 303-B11**) 1:30 - 2:15 pm

Afternoon tea 2:15 - 2:45 pm

Discussion continued 2:45 - 3:15 pm

Closing remarks from organisers 3:15 - 3:20 pm

University of Auckland Campus Map



List of attendees

Name	Institute	Email
Ashar Malik	Baker Heart and Diabetes Institute and The University of Queensland	ashar.malik@uq.edu.au
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