

Staff member	Organisation	Academic Group	Project Size 45/60/90/120 points	Title/Area	Relevant UG Courses and other notes
<b>Phylogeny and Evolution</b>					
Alexei Drummond	SBS	EEB	45/90/120	Computational models for single-cell sequencing and tumour evolution	
Alexei Drummond	SBS	EEB	120	Statistical models of protein structure evolution	
Alexei Drummond	SBS	EEB	45/120	Statistical geometry of phylogenetic tree space	COMPSCI 369
Nicholas Matzke	SBS	EEB	45/60/90/120	Phylogenetic biogeography: methods and application	
Nicholas Matzke	SBS	EEB	45/60/90/120	Phylogenetic history of bacterial flagellum proteins and relatives	
Nicholas Matzke	SBS	EEB	45/60/90/120	Phylogenetic history of bacterial flagellum proteins and relatives - evolution of FliA and related sigma factors	
Nicholas Matzke	SBS	EEB	45/60/90/120	Phylogenetic history of bacterial flagellum proteins and relatives - evolution of FlIF	
Nicholas Matzke	SBS	EEB	45/60/90/120	Phylogenetic history of bacterial flagellum proteins and relatives - evolution of axial proteins	
Nicholas Matzke	SBS	EEB	45/60/90/120	Protein structure phylogenetics: Applied to a deep protein evolution question of interest	
Caroline Puento-Lelièvre	SBS	EEB	45/60/90/120	Plant phylogenetics and evolution	
Simon Greenhill	SBS	EEB	45/60/90/120	A phylogenetic analysis of the languages of New Guinea	
Simon Greenhill	SBS	EEB	45/60/90/120	Using AI and Large Language Models to automatically code cultural data	
Simon Greenhill	SBS	EEB	45/60/90/120	Visualising language phylogenies: adapting NextStrain.org to language data	
Simon Greenhill	SBS	EEB	45/60/90/120	How far back can we trace language history?	
Matthew Fullmer	SBS	EEB	60/120	Agent-absed modeling	
Manpreet Dhani	SBS/LCR	EEB	120	What makes a successful competitor? Understanding eco-evolutionary dynamics in nectar yeasts. Data-analysis based project	Student stipend available, experience in statistical modelling required
Manpreet Dhani	SBS/LCR	EEB	90/120	Shifting landscape of the antibacterial resistome in the kiwi gut microbiome - genomic data analysis based project	
Manpreet Dhani	SBS/LCR	EEB	120	Disentangling global patterns of host-bacteria co-evolution using basal NZ scale insects and their symbionts, collaborative project with OIST	
Austen Ganley	SBS	BHB	90/120	Evolutionary dynamics of tandem repeats in ribosomal RNA genes	
<b>Marine/Freshwater Projects</b>					
Alice Della Penna	IMS/SBS	EEB	60/90/120	Can oceanic eddies trap mesopelagic fish? A modelling study	
Andrew Jeffs	IMS/SBS	EEB	120	Baby food for mussels - what do mussel infants need in order to thrive?	
Emma Carroll	SBS	EEB	120	Southern right whale immune system genetics	
Emma Carroll	SBS	EEB	60/90/120	Beaked whale population genetics	
Maren Wellenreuther	SBS/PFR	EEB	120	Image-based phenomics: using AI to quantify growth in snapper	
Maren Wellenreuther	SBS/PFR	EEB	120	Marine water microbiomes and fish diseases	
Mary Sewell	SBS	EEB	120	Early lipid use in the Antarctic sea urchin, <i>Sterechinus neumayeri</i>	
Mary Sewell	SBS	EEB	120	Spatial patterns in the zooplankton of Rangitahua (Kermadecs)	
Xavier Pochon	IMS/Cawthron	JGS		Environmental DNA monitoring in aquatic ecosystems	
<b>Zoology/Behaviour/Biodiversity Projects</b>					
Anne Gaskett	SBS	EEB	45/60/90/120	sensory ecology, interactions, animal colour vision (e.g. seabird plastic ingestion or light pollution, or plant-animal interactions such as pollination or fruit dispersal, with native plants, esp. mosses, orchids, other flowering plants)	BIOSCI338, BIOSCI337, BIOSCI325, BIOSCI735
Brendon Dunphy	SBS/IMS	EEB	45/60/120	Heavy metal pollutants in seabird populations	
Darren Ward	SBS	EEB	90/120	Comparing biodiversity records from citizen scientists and museum collections	
David Pattemore	SBS/PFR	EEB	45/60	Factors correlated with successful occupation of artificial nest sites by bumble bees	
David Pattemore	SBS/PFR	EEB	45/60/90	Effects of new motorways on bird and bat activity	
David Pattemore	SBS/PFR	EEB	45/60	How well are five minute bird counts and automated classification of bird call recordings correlated?	
David Pattemore	SBS/PFR	EEB	45/60/90	Can community gardens provide both desired produce and support pollinator populations? - case study	
David Seldon	SBS	EEB	120	Revision of the <i>Mecodema infimate</i> species group (ground beetles)	
David Seldon	SBS	EEB	90/120	Parasitoid micro-wasp diversity in forest restoration	

David Seldon	SBS	EEB	90/120	Parasitoid micro-wasp diversity of salt marsh/mangroves	
David Seldon	SBS	EEB	120	Why do Megadromus/Zeopocilus have colour reflections (ground beetles vs birds?)	
David Seldon	SBS	EEB	120	Revision of Pterostichini genera (ground beetles)	
Greg Holwell	SBS	EEB	45/60/90/120	Flexibility in web building behaviour in spiders	
Greg Holwell	SBS	EEB	45/60/90/120	Adaptive significance of camouflage in spiders	
James Russell	SBS/Stats	EEB	60	Attitudes to pest management in China	
Kristal Cain	SBS	EEB	45/60	Avian vocalisation changes in response to captivity	BIOSCI 337 & 338
Kristal Cain	SBS	EEB	120	Weka or pukeko vocalisations and movement	BIOSCI 337 & 338
Margaret Stanley	SBS	EEB	60/90/120	urban ecology (urban forest, birds, etc), invasive species (any terrestrial taxa!), desktop analysis projects, fieldwork	BIOSCI394, BIOSCI 747, BIOSCI 748 (any ecology courses!)
Jacqueline Beggs	SBS	EEB	45/60/90/120	Ecology of urban industrial zones	

<b>Plant and Other Terrestrial Projects</b>					
Anne Gaskett	SBS	EEB	45/60/90/120	sensory ecology, interactions, animal colour vision (e.g. seabird plastic ingestion or light pollution, or plant-animal interactions such as pollination or fruit dispersal, with native plants, esp. mosses, orchids, other flowering plants)	BIOSCI338, BIOSCI337, BIOSCI325, BIOSCI735
Bruce Burns	SBS	EEB	60/120	Meta-analysis of fern ecology in the Chinese literature & comparison with NZ fern ecology	
Cate Macinnis-Ng	SBS	EEB	60	A range of projects exploring climate change effects on plants and ecosystems	
Cate Macinnis-Ng	SBS	EEB	120	Responses of native plants to drought and heatwaves using glasshouse trials	
Gavin Lear	SBS	EEB	60/90/120	Soil microbiology and ecosystem health	
Gillian Lewis	SBS	EEB	45/60/90/120	Inferred functionality in biofilm bacterial communities in native forest, urban and agricultural catchments.	
Gillian Lewis	SBS	EEB	45/60/90/120	Microbial carbon sequestration in different types of wetland	
James Brock	SBS	EEB	45/60/90/120	Bryophyte use by birds in nests	
James Brock	SBS	EEB	120	Tree fern epiphytism: competition and stress	
ZhiQiang Zhang	SBS/LCR	EEB	120	Unseen forces on plants: effects of mites on plant health	
ZhiQiang Zhang	SBS/LCR	EEB	120	Behaviour and ecology of insect-mite interactions on plants	
ZhiQiang Zhang	SBS/LCR	EEB	120	Native and naturalised nematode fauna of Pinus radiata in New Zealand	
Zhi-Qiang Zhang	SBS/LCR	EEB	120		
Nari Williams	SBS/PFR	EEB	45/60/90/120	Investigating the persistence of Phytophthora species in forest soils	
Shane Wright	SBS	EEB	45/60/90	Comparative colour in the Genus <i>Myrsine</i>	
Susan Thomson	SBS/PFR	CMPB	120	Refining resistance gene annotations across Actinidia species	

<b>Biomedical and Human Biology</b>					
Anthony Phillips	SBS	BHB	120	Lymphatic modulation	
Billy Sheppard	SBS	BHB	120	Gene editing for fragile skin conditions	
Christopher Walker	SBS	BHB	120	Understanding GPCR regulation and signalling	
Garth Cooper	SBS	BHB	120	"Role of altered cerebral proteolysis in the pathogenesis of sporadic Alzheimer's disease"	
John Taylor	SBS	BHB	45/60/90/120	Screening natural and synthetic molecules for antiviral activity	
Juliet Gerrard	SBS	BHB		The interface between science and science policy	
Kerry Loomes	SBS	BHB	45	Malic enzyme and cancer: structure-activity relationships	
Paul Harris	SBS	BHB	120	Novel polymyxins to treat Gram negative pathogens	
Paul Young	SBS	BHB	90/120	Engineering self-assembling proteinaceous insecticides	
Jennifer Miles-Chan	SBS	BHB	90/120	Peak nutrition for metabolic health	BIOSCI358 / MEDSCI315
<b>Cellular, Molecular and Physiological Biology</b>					
Andrew Allan	SBS/PFR	CMPB	120	Encouraging sugar over-accumulation in kiwifruit	
Anthony Poole	SBS	CMPB	90/120	Building phylogenies from protein structures	
Augusto Barbosa	SBS	CMPB		Improving gene knockdown using RNA interference	
Chris Carrie	SBS	CMPB	45/60/90/120	Developing a cell type specific CRISPR system in Arabidopsis	
Chris Carrie	SBS	CMPB	45/60/90/120	Plant mitochondrial genome evolution: How long does it take to lose a functional gene?	
Chris Carrie	SBS	CMPB	45/60/90/120	Gene regulatory network prediction in plants.	

Christopher Squire	SBS	CMPB	45/60/90/120	Discovering new molecular superglues OR the ubiquity of the Ig domain	
Christopher Squire	SBS	CMPB	45/60/90	How do polymyxin analogues disrupt membranes?	
Christopher Squire	SBS	CMPB	45/60/90/120	Simulating molecular superglue dynamics - is my glue too floppy?	
Craig Millar	SBS	CMPB	60	A circadian and circannual framework for the coming ethomics era	
Craig Millar	SBS	CMPB	90/120	Developing methods to sequence the complete mtDNA of avian species using nanopore technology	
Craig Millar	SBS	CMPB	60/90	Population genetic analysis of the endangered Chatham Island Taiko	
Esther Bulloch	SBS	CMPB	60/90/120	Developing antivirals to treat flavivirus infection.	
Ghader Bashiri	SBS	CMPB	60/90/120	Molecular technologies for methane mitigation in livestock	
Ghader Bashiri	SBS	CMPB	60/90/120	Novel protein targets against tuberculosis	
Ghader Bashiri	SBS	CMPB	60/90/120	Understanding regulatory mechanisms in proteins	
Ghazanfar Khan	SBS	CMPB	45/60/90/120	Uncovering molecular mechanisms to increase nutrient-use-efficiency in plants	
Iain Hay	SBS	CMPB	45/60/90/120	Characterising a novel phage derived pore forming antibacterial toxin	
Iain Hay	SBS	CMPB	60/90/120	Bacteria Type II secretion system assembly	
Iain Hay	SBS	CMPB	45/60	Phage discovery	
Iain Hay	SBS	CMPB	60/90/120	Tailocin receptor binding protein engineering (customisable bacteriocins)	
Jo Putterill	SBS	CMPB		Gene editing in Medicago and kiwifruit	
Karine David	SBS	CMPB	45/60/90/120	Analysis of candidate genes involved in fruit shape and size	
Karine David/Robert Schaffer	SBS	CMPB	45/60/90/120	Mechanisms underlying fruit flesh formation	
Kendall Clements	SBS	CMPB		The relationship between pharyngeal structure and diet in parrotfishes	
Matthew Templeton	SBS/PFR	CMPB	60/120	Plant pathogen evolution, role of effector proteins, biocontrol	
Soledad Perez Santangelo	SBS	CMPB	45/60/90/120	Circadian regulation of temperature responses in plants.	
Soledad Perez Santangelo	SBS	CMPB	45/60/90/120	The role of the circadian clock in modulating plant physiology under a changing climate.	
Paul Harris	SBS	CMPB	120	Synthesis of Daptomycin antibiotics	
Rebecca Deed	Chemical Sciences/SBS	CMPB	45/60/90/120	The role of cytochrome p450 in lactone biogenesis in yeast	
Rebecca Deed	Chemical Sciences/SBS	CMPB	60/90/120	Investigating the long lag phase of oak-derived yeast	
Rebecca Deed	Chemical Sciences/SBS	CMPB	45/60/90/120	Origins of volatile phenols in Goji berry wine	
Richard Kingston	SBS	CMPB		Inhibition of viral polymerases by nucleoside analogs	
Robert Schaffer	SBS/PFR	CMPB	120	Molecular control of fruit quality traits	
Tony Hickey	SBS	CMPB	60/90/121	Bird red cell mitochondria	
Tony Hickey	SBS	CMPB	60/90/120	Free radical detection in breath	
Xue-Xian Zhang	SBS	CMPB	120	Gene regulation in bacteria: what determines the regulatory mode of a given gene?	
Iman Kavianinia	SBS	CMPB	120	Development of Antibody-Drug Conjugates for targeted cancer therapy	
Iman Kavianinia	SBS	CMPB	120	Smart nanodrugs for precision-based treatment of folate receptor alpha-positive malignancies	
<b>Genetics/Genome Biology</b>					
Austen Ganley	SBS	BHB	45/60/90/120	Are there forbidden DNA motifs in biology?	
Austen Ganley	SBS	BHB	90/120	Experimentally measuring the selective effects of different ribosomal RNA gene copy numbers	
Austen Ganley	SBS	BHB	45/60/90/120	Improved enzymatic methods of synthesizing long random DNA	
Nobuto Takeuchi	SBS	CMPB	90/120	Mathematical or computational modelling of microbial evolution	
Nobuto Takeuchi	SBS	CMPB	45/90/120	Comparative genomics of prokaryotes	
Anna Santure	SBS	EEB	45/120	Recombination in hihi (stitchbird): why do males do it more?	
Anna Santure	SBS	EEB	45	Comparing mitochondrial and genomic signals of invasion in the common myna	
Anna Santure	SBS	EEB	45/120	Invasion genomics of garden snails – where and when did they arrive in Aotearoa?	