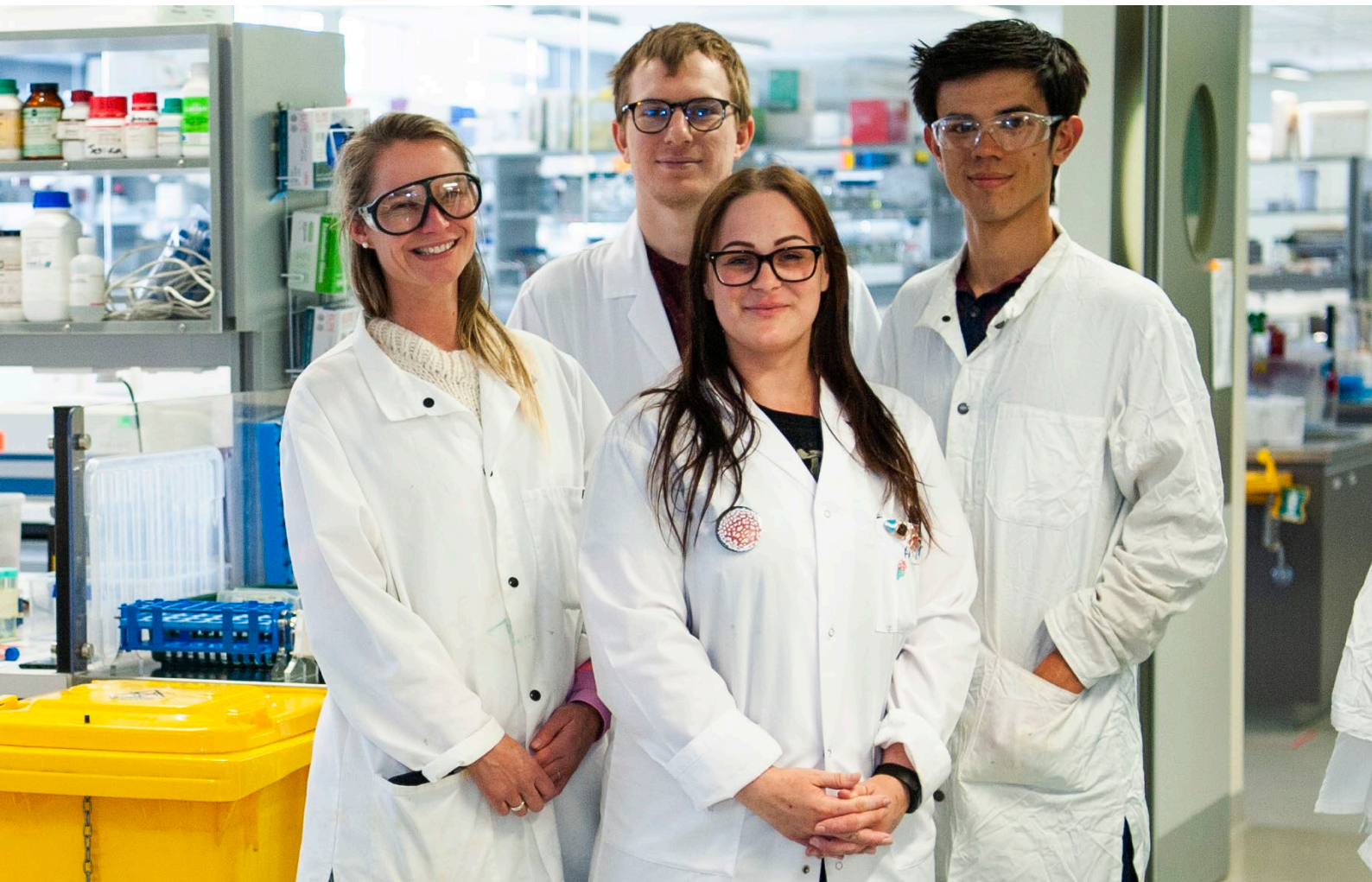


Te Kura Pūtaiao Koiora  
School of Biological Sciences

# Biological Sciences Postgraduate 2022



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*Information is correct as at the time of publication but is subject to change. The University's official regulations and policies are available online at [www.canterbury.ac.nz/regulations](http://www.canterbury.ac.nz/regulations)*

# Contents

# Ngā Kai o Roto

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3	Welcome to Biology at UC	9	Subject Majors	16	Field Stations
4	Graduate Student Profiles	11	Course Descriptions	17	Research Centres
5	Inspirational Alumni	14	Choosing a Research Topic	18	Additional Information
6	Postgraduate Degrees	15	Research Facilities	19	Contact Information





# Kia ora Welcome to Biology at UC



The School of Biological Sciences is a research-focused centre covering all areas of Biology. We are one of the leading biological research schools in Australasia, and many of our staff have strong international research profiles.

Our postgraduate degrees help prepare you for a career in biology across a wide range of areas. You will find our courses exciting, challenging, and at the cutting edge. We have a large cohort of new staff, including three Rutherford Discovery Fellows, who bring new ideas and enthusiasm to the School.

Our staff are actively engaged in research, ensuring your projects are relevant and employ the latest methods. We have emerging and established strengths across a wide range of areas including Genetics, Evolution, Ecology, Biochemistry, Microbiology, Bioinformatics, Plant Science and Cell Biology.

The School of Biological Sciences has the best field station facilities in the country, a modern research facilities, and our postgraduate courses are taught by leading national and visiting international researchers. Several of our staff have received Tertiary Teaching Excellence Awards.

This booklet is designed to help you plan your course of postgraduate study in Biology. We look forward to welcoming you into our postgraduate programme.

#### **Equity and Diversity**

The School of Biological Sciences recognises the inherent worth of every person and group. We celebrate diversity in gender, sexuality, race, religion, culture, ability, and all other forms of diversity. We promote equity, diversity, access, and inclusion in science, and stand up against bullying, harassment and discrimination. The School is committed to realising the principles of Te Tiriti o Waitangi and acknowledges the distinct status of Māori as tangata whenua. These values are at the core of our teaching, research and outreach.

**‘I enjoy that the university community is quite diverse and that UC promotes tolerance and equity. It is the ideal institution for learning.’**

#### **Iveren (Ivy) Abiem**

Bachelor of Science in Plant Sciences,  
MSc in Conservation Biology  
PhD in Ecology

# Student Profiles

See more at [www.canterbury.ac.nz/get-started/why-uc/student-profiles](http://www.canterbury.ac.nz/get-started/why-uc/student-profiles)

Our postgraduate program is designed to build upon your basic undergraduate training and to give you recognisable practical skills in research science. Our graduates gain diverse jobs all over the world, from remote villages to capital cities. UC is ranked in the top 3% of universities in the world. A degree from Canterbury is seen by the world as a quality degree and opens many doors.



**'I enjoy getting outside to learn and become familiar with the environment...'**

Ani had completed studies in Zoology, Māori Studies, and Marine Science before coming to UC to begin her PhD in Environmental Science.

'I wanted to further my research skills in shellfisheries function, to understand local management, and to gain experience in contaminant research relating to estuarine and coastal systems.'

'The Ngāi Tahu Research Centre and the School of Biology were supportive of my research scope. They are specialists in Ngāi Tahu Mahinga Kai – culturally important practices and harvest of food and habitats, and eco-toxicological research.'

As a Ngāi Tahu Research Centre student, Ani had the opportunity to do her research on an international scale. She has taken part in the First Nations' Futures Programme at Stanford University in California, USA, which focused on developing leadership skills for work within the community.

'This experience enriched my development as a person, an academic, and as a role model,' she says.

**Dr Ani Kainamu (Ngāpuhi)**

Recently awarded a PhD in Environmental Science



**'Biochemistry has a pleasant mix of molecular biology and chemistry that lets me satisfy my curiosity...'**

The chemical properties of the health-boosting enzymes found in the humble kiwifruit are the focus of Eric's Master of Science thesis.

'I am researching the stability and structure of various bioactive proteins and how different chemical and physical environments might affect their activity,' he explains. 'I have been analysing the product processing line to see if optimisation may be accessible which could increase the amount of active enzymes present in the exported product.'

Eric's project is a collaboration with a biotechnology company with interests in the lucrative 'neutraceuticals' industry. Thanks to a Callaghan Innovation scholarship, he is working in the labs of UC's Biomolecular Interaction Centre (BIC) which fosters partnerships between academic research and industry.

Eric says the real-world uses for such research make it a fascinating area to work in.

**Eric Richards**

Recently awarded an MSc in Biological Sciences



**'There are many things that are constantly being discovered in the field of biochemistry...'**

Rudy had always wanted to have a career 'in a white lab coat working in a pristine laboratory' since he was young, which eventually led him onto Biochemistry studies.

Originally from India, Rudy moved to New Zealand for its reputation in scenic views and kind locals.

Biochemistry ended up being his passion, because of how well it fitted into other science subjects and its relevance to the world.

With one of his favourite things about his Science degree being the opportunity to make contacts with industry experts, Rudy landed an amazing internship with a commercial medical diagnostics lab in India.

'I wish to lead a successful research group that produces meaningful results that have an impact on the lives of people who are less privileged than I am,' he says.

**Rudranuj (Rudy) Bundela**

Recently awarded a BSc(Hons) in Biochemistry



# Inspirational Alumni

See more at [www.canterbury.ac.nz/science/biology/alumni](http://www.canterbury.ac.nz/science/biology/alumni)



Since her first year at high school Wafaa has been intrigued by biochemistry—the chemical reactions and pathways that underpin life.

After completing her BSc in 1992 she took on a number of roles, from a biochemist at a kidney transplant unit to the Director of Medical Laboratories for Al-Rusafa district, Baghdad.

In 2013 Wafaa made the big move to New Zealand to take up a PhD position, where despite the hardship of being away from her family she felt welcome and at home. She was a highly respected citizen within the School and supported inclusive activities such as the Biological Sciences International Food Festival.

Her PhD research focused on disrupting receptors involved in ovarian cancer cell growth, her findings have been published in the prestigious journal *Cancer Letters*.

On her return to Iraq she took on a two year assignment to the challenging role of Director of Central Public Health Laboratories (CPHL), where she had to be ready to respond, 24 hours a day, to any disease crisis within the country.

Wafaa is currently a Health Security Partners (HSP) Fellow and has recently taken up a lectureship position at the College of Medicine, Ibn Sina University.

**Dr Wafaa Al-Hussaini**  
2018 PhD in Biochemistry



Jamie has expertly woven together strands of Māori culture and science to achieve research excellence

Being Māori and a scientist has shaped Jamie's career and his personal journey that has included appearances on the national kapa haka stage, Māori community environmental research, governance roles in Māori business and education initiatives. In these roles he is recognised as a leader within the Māori and science communities.

On completing his studies, Jamie took up a post-doctoral fellowship at Manaaki Whenua Landcare Research where he went on to become a senior scientist with a joint appointment as a senior Māori lecturer at Lincoln University.

He now holds positions at the Bio-Protection Research Centre, Cawthron Institute and Ngā Pae o Te Māramatanga.

Jamie conducts his research within multi-disciplinary/multi-organisational programmes embedded in Māori cultural process and communities but linked strongly with end-user organisations. This approach explores mechanisms that promote mutual understanding and equality of uptake in policy and decision making with respect to environmental resource management.

**Dr James Ataria**  
Rongomaiwahine, Ngāti Kahungunu,  
Ngāti Raukawa  
1991 BSc  
1994 MSc



Sara started the 'Falcon Ambassadors' programme in New Zealand schools.

As a conservation biologist, Sara is interested in farming landscapes and human-wildlife conflicts and was also a founding member of the Marlborough Falcon Conservation Trust.

Her PhD research at UC focused on the efficacy of reintroducing the threatened New Zealand falcon (*Falco novaeseelandiae*) into the vineyards of Marlborough, New Zealand's largest wine region, as both a conservation scheme and as a source of natural pest control. The research combined behavioural ecology, ornithology, and conservation biology to examine the changes that occurred in the falcons themselves and in the vineyard ecosystems.

Sara has recently taken up a position at California State University, Sacramento following her role as a Post-doctoral Research Scholar at the University of California Davis where she constructed predator-prey models to determine whether barn owls are able to control rodent pests on Californian farms.

Prior to this Sara was a 2013 David H. Smith Conservation Research Post-doctoral Fellow at the University of California Davis and The Nature Conservancy.

Sara believes that outreach is one of the most rewarding parts of doing research, and views it as an important component of her commitment to conservation.

**Dr Sara Kross**  
2012 PhD

# Postgraduate Degrees

At the School of Biological Sciences we offer several postgraduate degree paths:

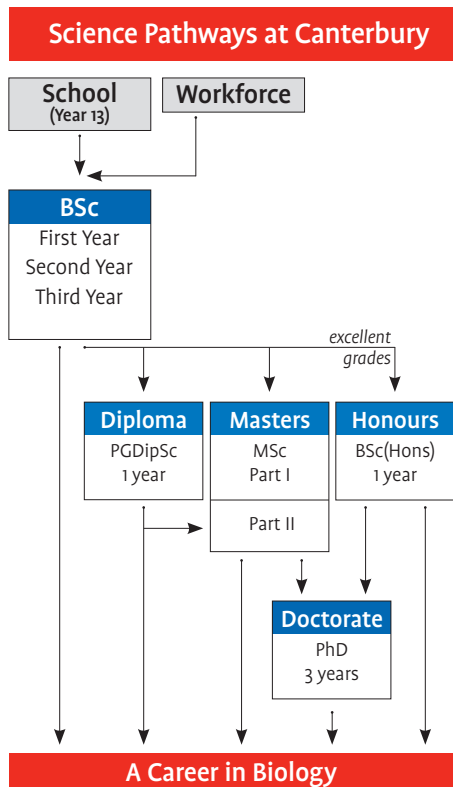
- **Bachelor of Science (Honours)** – BSc(Hons)
- **Postgraduate Diploma of Science** – PgDipSc
- **Master of Science** – MSc
- **Doctor of Philosophy** – PhD

## Applying for Postgrad studies – what to do first

1. Contact the Fourth Year Course Advisor to discuss your course of study and proposed major.  
*See page 9 for a list of majors.*
2. Apply to enrol online (current UC students). Students new to UC should consult the Future Students webpage:  
[www.canterbury.ac.nz/future-students](http://www.canterbury.ac.nz/future-students)
3. Monitor your email over summer as the Course Advisor may need to contact you.
4. Once you have been approved for entry you will receive a letter of offer and fees invoice.

More information is available on the Biological Sciences and UC postgraduate websites:

- [www.canterbury.ac.nz](http://www.canterbury.ac.nz)
- [www.canterbury.ac.nz/postgraduate](http://www.canterbury.ac.nz/postgraduate)
- [www.canterbury.ac.nz/publications](http://www.canterbury.ac.nz/publications)



## PgDipSc

The Postgraduate Diploma of Science is a one-year program equivalent to the first year of an MSc. Students take eight 400-level courses, including BIOL411 (Research Preparation) and BIOL412 (Research Proposal), but do not carry out research. *See page 11 for the list of courses we offer.*

The PgDipSc is a great option if you are unsure whether you want to commit to an MSc or if you want to extend your theoretical grounding in biology prior to entering the workforce.

It is common for students enrolled in a PgDipSc to transfer to MSc part II providing they achieve a B average or better in their 400-level courses.

## Entry Requirements

Normally a B- average (GPA 4) for your 300-level science courses.

## How is my grade calculated

Class	Letter Grade	GPA
Distinction	A-, A, A+	7-9
Merit	B+	6
Pass	B-, B	4-5

## Transferring from a PgDipSc to MSc part II

If you are interested in progressing into MSc part II you need to decide on a research project and complete a research outline and proposal (see below). Don't wait until you receive your grades before organising a project and supervisor.

## Things you need to know

- To transfer to MSc part II you need to obtain a B average (GPA 5) across your 400-level courses.
  - If you are awarded a PgDipSc then your MSc result is determined on thesis only. You can be awarded an MSc with Merit/Distinction
  - Your **MSc research outline** forms part of the assessment of BIOL 411 and is **due in late April**. This brief statement tells us that you are intending on doing an MSc research project, that you have spoken to a prospective supervisor, that they have agreed to take you on as a student and that you have a provisional topic. This topic might change later.
  - Your **MSc Thesis Proposal** forms part of the assessment for BIOL 412 and is **due in late September**. This is a more detailed document outlining the main aims and methods of your proposed research and contains details on what permits, equipment and funding you might need.
- Both of these documents need to be signed by your potential supervisor and submitted to the School office.



## MSc

A Master of Science degree comprises one year of coursework (part I) and a 12 month research project (part II).

The MSc degree provides a solid grounding in the scientific process and provides sought after research skills applicable to a wide range of careers.

### Entry Requirements

**MSc part I:** B average (GPA 5) in 200- and 300-level science courses.

**MSc part II:** B average (GPA 5) across your 400-level courses and an accepted research proposal.

### Things you need to know

- You must enrol and pay fees in February every year of your degree.
- You must include BIOL 411 (Research Preparation) and BIOL 412 (Research Proposal) as two of your 4th year courses.
- All papers must be passed at the first attempt but if no more than one paper is failed, a pass in the year as a whole may be recommended, provided that a B- average (GPA 4) is attained including the failed course. However it should be noted that normally a B- would be insufficient to allow progress from MSc part I to MSc part II. If your grades are not sufficient for progress to MSc part II, but you have passed MSc part I, you will be awarded a PgDipSc.
- Your **MSc Research Outline** forms part of the assessment for BIOL 411 and is due in **late April**. This brief statement tells us that you are intending on doing an MSc research project, that you have spoken to a prospective supervisor, that they have agreed to take you on as a student and that you have a provisional topic. This topic might change later.
- Your **MSc Thesis Proposal** forms part of the assessment for BIOL 412 and is **due in late September**. This is a more detailed document outlining the main aims and methods of your proposed research and contains details on what permits, equipment and funding you might need.

Both of these documents need to be signed by your potential supervisor and submitted to the School office.



### MSc Part II

- The recommended commencement date for MSc part II is 1st March. However, preliminary work can be started earlier (e.g., summer fieldwork) and so we encourage students to enrol in BIOL 401/402 (summer research courses) prior to the start of MSc part II.
- Your research proposal is due two months after commencement, and your progress report is due at six months.
- You must complete your thesis in the equivalent of 12 months (full-time).
- If you take a break between Part I & Part II and enrolment is not completed by March 1st or August 1st then a start date must be registered.
- In exceptional circumstances it may be possible to complete Parts I and II concurrently. For more information contact the 4<sup>th</sup> Year Course Advisor.

### How is my grade calculated?

Your thesis will be marked by two examiners, one external to the University and one examiner from within the University. Members of your supervisory team cannot be examiners. If you completed MSc part I then your final grade is calculated on a ratio of 2:3 (coursework:thesis). If you completed only MSc part II, your final grade is based solely on your thesis. Grades are calculated on your GPA.

Class	Letter Grade	GPA
Distinction	A-, A, A+	7-9
Merit	B+	6
Masters	C+, B-, B	3-5
PGDipSc		<2

## BSc (Hons)

Honours is an intensive one-year programme designed for high achieving students seeking to fast-track to a PhD.

Honours students must take six 400-level courses, including BIOL 411 (Research Preparation) and BIOL 412 (Research Proposal), and a research project.

We recommend this option only for students with an A- average (GPA 7) or higher at 300-level.

### Entry Requirements

B average (GPA 5) for 200- & 300- level science courses and an accepted research proposal

### Things you need to know

- The research project is worth 30 points (20% of your Honours year grade).
- You must pass all your courses (including the project) on the first attempt.
- Your Honours thesis is due on November 1st. Exceptions may apply if you are taking courses outside of Biology.
- You should be contacting prospective supervisors by July or August of the year **before** your honours year officially starts.

### How is my grade calculated

Class	Letter Grade	GPA
1st	A-, A, A+	7-9
2nd Div 1	B+	6
2nd Div 2	B-, B	4-5
3rd	C+	3

## PhD

The PhD at UC is a research degree that typically requires three, but no more than four years of study. It is the highest academic qualification available at the University. Completing a doctorate is a mark of academic achievement and requires self-discipline and commitment.

A PhD prepares you for an academic or research career and the skills you gain are increasingly sought after in the international job market.

### Entry Requirement

BSc (Hons) or MSc with a B+ average (GPA 6).

### Things you need to know

- Entry is competitive and grades do not guarantee acceptance into the degree programme.
- UC and external doctoral scholarships are available for domestic and international students. For more information see the UC scholarships webpage: [www.canterbury.ac.nz/get-started/scholarships](http://www.canterbury.ac.nz/get-started/scholarships)
- You need to arrange a supervisor and decide on a research project (see Choosing a Research Topic page 13).
- A detailed research proposal must be submitted and accepted within six months of beginning your PhD.
- After 12 months there will be a Doctoral Confirmation where we will confirm that you are capable of undertaking a PhD, that you understand the science behind the project and that you have begun to make significant progress towards your PhD.
- Progress reports are due every 6 months.

## Research Proposal

A research proposal is a detailed document that describes the questions your intended research project will address, how you will address them, and why answering these questions is scientifically important.

Make sure you start writing your proposal well before its due date, allowing time for your supervisors to comment on one or two drafts. It is not unusual for your proposal to go back to your supervisors several times before it is polished enough to hand in.

## Grade Point Average (GPA)

GPA's are rated as follows:

Grade	GPA	Percentage
A+	9	89.5+
A	8	84.5-89.4
A-	7	79.5-84.4
B+	6	74.5-79.4
B	5	69.5-74.4
B-	4	64.5-69.4
C+	3	59.5-64.4
C	2	54.5-59.4
C-	1	49.5-54.4
D	0	39.5-49.4
E	-1	<39.5



# Subject Majors

Undergraduate Theme	Postgraduate Major
Any Science Background	Biological Sciences or Environmental Science
Biochemistry	Biochemistry
Bioinformatics	Biological Sciences
Cell & Organismal Physiology	Biological Sciences, Cellular & Molecular Biology, Biotechnology or Microbiology
Ecology, Evolution & Behaviour	Biological Sciences or Ecology
Molecular/Micro Biology & Systematics	Biological Sciences, Biotechnology, Cellular & Molecular Biology or Microbiology

Postgraduate study in Biological Sciences is organised into a number of subject majors and you should identify one of these (and discuss your choice with the Fourth-Year Advisor) before you enrol. If you are studying for a BSc(Hons), PGDipSc or MSc you will need to take eight courses in your first year, including the compulsory courses BIOL 411 (Research Preparation) and BIOL 412 (Research Proposal).

Some majors are quite flexible with regard to course choice, while others have distinct requirements and these are listed below. Prerequisites (P) are also shown.

Short descriptions of the courses are given on page 11, full details are on our website.

To ensure you have an appropriate combination of courses you should discuss your choices with the Fourth Year Advisor.



‘Studying in Christchurch, we are right on the doorstep of some of New Zealand’s most amazing wilderness.’

**Steve Pohe**  
Ngāti Hine  
Recently awarded a PhD in Ecology

## Biochemistry

UC offers a full programme of biochemistry, integrated into the Department of Chemistry and the School of Biological Sciences.

Courses totalling at least 120 points as approved by the Director of Biochemistry. Normally courses are selected from BCHM 455 (BIOL 455), BCHM 456 (BIOL 456), BCHM 457 (BIOL 457), BCHM 459 (BIOL 459), BCHM 460 (BIOL 460), BCHM 461 (BIOL 461), BCHM 462 (BIOL 462), BCHM 420, and CHEM 421–422. Other suitable courses include: BCHM 407–409, BIOL 429–462, BIOL 481, BIOL 496.

**P:** (1) BCHM 305, BCHM 306, BCHM 338, BCHM 339 and BCHM 381; and  
(2) A minimum of 15 points from CHEM 335, 337, 340, BIOL 313, 330, 351 or 352.

## Biological Sciences

This is a broad major designed for students wishing to focus on any aspect of biological sciences or on projects which are interdisciplinary or span more than one sub-discipline in biology. It provides students with a suitable pathway for broad, interdisciplinary careers in biology, and fits well with the School of Biological Sciences' philosophy of embracing modern trends in scientific endeavour.

Courses totalling at least 120 points including BIOL 411 and BIOL 412. At least 60 points are to be selected from other BIOL 400-level courses. The remaining courses may be selected with the approval of the School of Biological Sciences Fourth Year Coordinator.

**P:** (1) 60 points from 300-level BIOL courses; and  
(2) BIOL 309 or equivalent

## Biotechnology

This is an applied subject major encompassing work on plants and their uses in biotechnology.

Courses totalling at least 120 points including BIOL 411, BIOL 412 and BIOL 496. At least 45 points are to be selected from BIOL 429, BIOL 455–457 (BCHM 455–457), and BIOL 459–463 (BCHM 459–462). The remaining courses may be selected with the approval of the School of Biological Sciences Fourth Year Coordinator

**P:** At least 60 points from BCHM 301, BCHM 305, BCHM 306, BIOL 313, BIOL 333, BIOL 334, BIOL 335, BIOL 351, BIOL 352 or appropriate advanced level courses in biochemistry and the molecular biosciences.

## Cellular and Molecular Biology

Cellular and Molecular Biology and Genetics are strongly represented at UC. This area overlaps with other majors such as Biochemistry, Microbiology, Physiology, and increasingly, Ecology and Environmental Science.

Courses totalling at least 120 points including BIOL 411 and BIOL 412. At least 30 points are to be selected from BIOL 455–456 (BCHM 455–456), BIOL 459–462 (BCHM 459–462) and BIOL 496. The remaining courses may be selected with the approval of the School of Biological Sciences Fourth Year Coordinator.

**P:** At least 60 points selected from BCHM 301, BCHM 305, BCHM 306, BIOL 313, BIOL 330, BIOL 333, BIOL 334, BIOL 335, BIOL 351, BIOL 352.

Note: A student will normally be expected to take BIOL 309.

## Ecology

Our Ecology major is designed for students wishing to focus on any combination of ecology, behaviour or evolutionary biology with an emphasis on field research.

Courses totalling at least 120 points including BIOL 411 and BIOL 412. Additional courses are to be selected, with the approval of the School of Biological Sciences Fourth Year Coordinator, from BIOL 420, BIOL 423–429, BIOL 438, ENVR 410, ENVR 411, and FORE 616.

**P:** (1) 60 points from BIOL 370–384; and  
(2) BIOL 309 or equivalent.

## Environmental Science

Environmental Science is a multidisciplinary major encompassing many departments across the campus. Its aim is to equip students with an understanding of environmental science, its application and use as a management tool. Students taking postgraduate papers must take the compulsory papers ENVR 410 & 411, plus 90 points selected, with the approval of the Coordinator of Environmental Sciences (Dr Daniel Foley), from a wide range of topics within the Faculties of Science and Engineering. Students planning on completing a research project based in the School of Biological Sciences must include BIOL 411 and BIOL 412 in their 4th year courses.

**P:** 90 points in appropriate 300-level courses in Science, Engineering and Forestry approved by the Environmental Sciences Coordinator. A minimum B grade in relevant 300-level courses is normally required.

## Microbiology

This is a broad major, covering bacteria, archaea, eukaryotic microbes and viruses, and environmental, evolutionary and molecular microbiology.

Courses totalling at least 120 points including BIOL 411, BIOL 412, BIOL 455 (BCHM 455) and BIOL 456 (BCHM 456). At least 30 points are to be selected from BIOL 457 (BCHM 457), BIOL 459 (BCHM 459), BIOL 460 (BCHM 460), BIOL 463 and BIOL 496. Additional courses may be selected with the approval of the School of Biological Sciences Fourth Year Coordinator.

**P:** (1) BIOL 313; and  
(2) At least 45 points selected from BCHM 301, BCHM 305, BCHM 306, BIOL 330, BIOL 331, BIOL 333, BIOL 335, BIOL 351, BIOL 352.

Note: A student will normally be expected to take BIOL 309.



**'I chose to return to UC because I really enjoyed my undergraduate and I knew there would be good people to work with and opportunities along the way.'**

**Hannah McKerchar**

Bachelor of Laws and a Bachelor of Science with Honours in Biochemistry Studying towards a PhD in Biochemistry

# Course Descriptions

For full details of our courses contact our course coordinators.

All courses listed below are 15 points each.

Note: If too few students enrol in a course it may not be run.

## Semester 1

BIOL 411

### Research Preparation

**Coordinator:** Prof Elissa Cameron

The general aim of the course is to prepare postgraduate students to engage in research – it has been designed for BSc(Hons), MSc Ptl and PGDipSci students as a compulsory component of the 4<sup>th</sup> year postgraduate experience. It will comprise a series of modules in contemporary research methodology in the biological sciences, such as research and professional scientific communication skills (including written, visual and oral communication); self-directed inquiry and problem solving skills; critical analysis and research design and planning; scientific career development. The skills developed in this course will serve students progressing to research projects (through BIOL 412 and MSc Ptl) and those students who decide to pursue other careers.

Recommended preparatory course(s): none.

BIOL 425

### Freshwater Ecology

**Coordinator:** Prof Angus McIntosh

The aim of this course is to give students an understanding of current issues in freshwater ecology with particular reference to ecological theory, and the application of research to management and conservation issues in New Zealand. An additional goal is to equip students with the skills needed by professionals working in freshwater-related areas of research, consultancy, and management.

Recommended preparatory course(s): BIOL 375.

BIOL 427

### Global Change Biology

**Coordinator:** Prof Matthew Turnbull

This course will address selected major issues concerning the role of biological processes in the Earth System and the impact on these of human activities (global change). Discussion will include carbon and nutrient cycling in terrestrial and marine ecosystems, the impacts of past and future climate change on biota, the significance of biodiversity loss on ecosystem processes and strategies to mitigate climate change.

Recommended preparatory course(s): More than one of BIOL 214, BIOL 252, BIOL 374, BIOL 377, BIOL 378 or BIOL 384.

BIOL 428

### Marine Biology and Ecology

**Coordinator:** Prof David Schiel

This course builds on the knowledge and skills acquired in undergraduate courses, particularly ecology, physiology and behaviour. The focus is on marine ecosystems, how they are maintained and what affects them. The course includes critical examination of the literature across a variety of topics and issues, and a practical exercise involving procedures and information required for marine resource consents. The topical issues traversed in this course combine theory and management, and offer a sound basis for greater understanding of sustainable management of the marine domain.

Recommended preparatory course(s): Either (1) BIOL 270 or (2) BIOL 275 and BIOL 275 or (3) BIOL 250.

BIOL 429

### Conservation Genetics

**Coordinator:** Assoc Prof Tammy Steeves

This course addresses contemporary issues in conservation genetics with a strong emphasis on the conservation genetic management of threatened captive and wild populations in partnership with relevant iwi, hapū and Māori trusts, and in collaboration with diverse stakeholders including relevant conservation agencies, conservation trusts and community groups. Topics include the genetic consequences of small population size, intra- and interspecific hybridisation, and the resolution of taxonomic uncertainties.

Recommended preparatory course(s): BIOL 330 or BIOL 332 or BIOL 334.

BIOL 438

### Behaviour

**Coordinator:** Prof Jim Briskie

Current topics in the study of animal behaviour with an emphasis on empirical tests of theoretical issues. Topics vary from year to year but include sexual selection, foraging strategies, parental care and parasitism, problem solving and animal cognition.

Recommended preparatory course(s): BIOL 355, BIOL 377, BIOL 378, BIOL 371, BIOL 373 and/or BIOL 383.

BIOL 455 / BCHM 455

### Applied and Molecular Microbiology

**Coordinator:** TBA, contact Prof Elissa Cameron

This course emphasises the study and use of microbes in multiple contexts, including for industrial microbiology, medicine, environment and genomics. The course can cover all kinds of microbes both cellular and viral. The course is structured to have a large hands-on practical component covering topics in molecular microbiology.

Recommended preparatory course(s): at least one of BIOL 313, BIOL 333, BCHM 301, BCHM 305, BCHM 306, BIOL 331.

BIOL 460 / BCHM 460

### Molecular Biology

**Coordinator:** Assoc Prof Pieter Pelsler

Molecular biology comprises a suite of tools and approaches for understanding the structure and function of DNA, RNA and proteins, and for using genetic and genomic data to understand evolutionary patterns and processes. The primary goal of this course is to assist the development of scholars with advanced technical skills in molecular biology who can use these tools to infer evolutionary and functional relationships. This course focuses on the principles of molecular phylogenetics and builds skills in DNA sequence alignment, selecting models of nucleotide substitution, and phylogeny reconstruction. It is aimed at students with an interest in genetics, bioinformatics, systematics, molecular ecology, and biochemistry.

Recommended preparatory course(s): Any of BCHM 301, BCHM 305, BCHM 306, BIOL 331, BIOL 333, BIOL 334, BIOL 335.



BIOL 461 / BCHM 461

## Protein Science

**Coordinator:** Dr Grant Pearce

The general aim of the course is to introduce students to some of the different techniques used in protein science, and how these are applied to contemporary protein issues. Students will master methods used for studying proteins. They will also be able to use and understand primary scientific publications, and have the ability to independently plan, carry out and critically evaluate experiments. Proteins play an essential role in life, acting as catalysts to speed up chemical reactions, scaffolds that determine cell shape, or signalling molecules that regulate development and responses. In this course we will take an in depth look at the structure and function of proteins, with an emphasis on how understanding the fundamental biochemistry of proteins opens up exciting areas of research. We will explore the methodology used in studying enzymes and the ability to analyse and critically interpret experimental data. The aim is to build a sound understanding of contemporary protein science and an ability to think critically about the current research literature in the field. We will cover a range of issues including protein purification, folding, and aggregation; and the structure, function and evolution of proteins.

Recommended preparatory course(s): BIOL 331 / BCHM 301, or BCHM 305 and BCHM 306.

BIOL 463

## Cell Biology

**Coordinator:** Assoc Prof Ashley Garrill

A critical examination of recent advances in cell biology with emphasis on cell signalling, the cytoskeleton, cell junctions and the nucleus. The focus ranges from fundamental cellular and molecular biology to consideration of cellular mechanisms within the context of physiological or pathological processes. During the course our aim is to encourage and provide advice and feedback to enable you to develop skills in written and oral communication, and in the efficient acquisition of scientific information. The course will involve group discussion, presentation of scientific papers, and preparation and critique of a review article.

Recommended preparatory course(s): BIOL 351 or BIOL 331 / BCHM 301 or BCHM 305 and BCHM 306.

## Semester 2

BIOL 412

### Research Proposal

**Coordinator:** Prof Matthew Turnbull

The general aim of the course is to prepare postgraduate students to engage in research through the development of a detailed research proposal – it has been designed for BSc (Hons), MSc Ptl and PGDipSci students as a compulsory component of the 4<sup>th</sup> year postgraduate experience. It comprises a series of modules in contemporary research methodology and proposal preparation and time to engage with potential supervisors to discuss project ideas. The skills and perspectives developed in this course will serve students progressing to research projects (in BSc Hons and MSc Ptl) and those students who decide to pursue other careers.

Recommended preparatory course: BIOL 411. For those students who begin 4<sup>th</sup> year in the middle of the year, BIOL 411 and BIOL 412 must be completed in Semester 1 of the following year.

BIOL 420 **\*\*NOT OFFERED IN 2022\*\***

### Terrestrial Ecology

**Coordinator:** TBA

This course covers current advances in terrestrial ecology with a focus on population and species ecology. It covers species interactions, such as herbivory, pollination, seed dispersal, and epidemics. Examples concentrate on interactions among vascular plants (trees and shrubs), vertebrate and invertebrate animals, and pathogens, and interactions of those species with the physical environment.

Recommended preparatory course(s): BIOL 378.

BIOL 423

### Evolutionary Ecology

**Coordinator:** Assoc Prof Hazel Chapman

This course lies at the interface of ecology and evolution. The thread linking the discussion topics is the Anthropocene- specifically how humans impact (and have always impacted) the evolution of other species. It explores how a combination of molecular, experimental and ecological approaches can be used to investigate how human–non human interactions influence the distribution and abundance of organisms. Key principles include natural selection/

adaptation and phenotypic plasticity/epigenetics, and how they interact. It will be useful for those with interest in conservation, biodiversity, invasion biology and global change.

Recommended preparatory course(s): At least one of BIOL 377, BIOL 378 or BIOL 371.

BIOL 424

### Community Ecology

**Coordinator:** Dr Mads Thomsen

The aim of this course is to investigate fundamental aspects of community ecology—the study of interactions between two or more species and their consequences. The course will be of value to anyone interested in biodiversity, global environmental change, and ecological theory. Major themes include food web ecology, metacommunities, determinants of community structure, community assembly, species interactions in diverse assemblages, and threats to biodiversity. Given the strong conceptual basis of the course material, we will often present topics via a mix of both theoretical (modelling) and empirical research when possible. Although a strong background in mathematics isn't required, we do expect that you will make an earnest effort to dissect equations and models and be able to explain what they show in plain English.

Recommended preparatory course(s): At least one of BIOL 377, BIOL 378 or BIOL 375.

BIOL 426

### Conservation Biology

**Coordinator:** TBA, contact Prof Elissa Cameron

This course covers aspects of biology that are useful in applied conservation situations. In other words, how can ecologists help to preserve biodiversity? Topics covered include: what is rarity; extinction rates past and present; limiting factors in endangered species management; adaptive management of NZ species; reserve design in theory and practice; conservation and climate change. This course complements BIOL429 which looks at conservation genetics.

Recommended preparatory course(s): At least one of BIOL 374, BIOL 375, BIOL 377, BIOL 378, BIOL 379 or BIOL384.

BIOL 456

## Dynamics of Microbiological Interactions

**Coordinator:** Prof Ian Dickie

Biological interactions, particularly with micro-organisms, impact on almost every aspect of biology, from plant nutrient uptake and photosynthesis to animal digestion to ecosystem function. We will explore the intimate interactions of micro-organisms (bacteria, oomycetes, fungi, archaea) with plants and animals, other micro-organisms and extreme environments. Students will develop skills in evaluating how molecular, ecological, biochemical and synthetic community approaches all contribute to our understanding of these critical, yet challenging to study, interactions. Students will apply their understanding to practical questions in using micro-organisms for biological control and primary productivity and to understanding gut microbiome.

Recommended preparatory course(s): at least one of BIOL 313, BIOL 332, BIOL 333, BIOL 334, BIOL 335, and/or BCHM 301, BCHM 305, BCHM 306, (BIOL 331). Experience in ecology would be helpful.

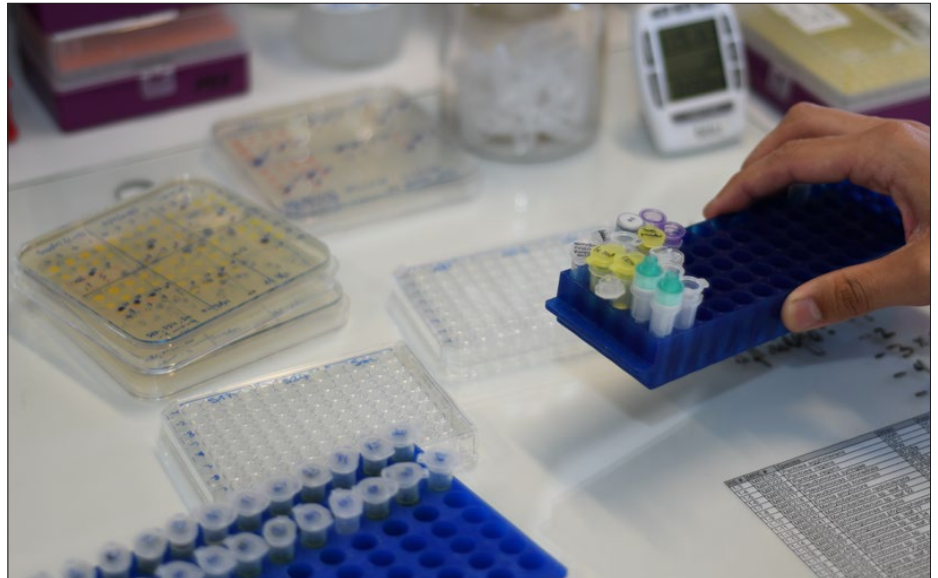
BIOL 457 / BCHM 457

## Macromolecular Evolution & Engineering

**Coordinator:** Prof Ren Dobson

In this course, we will examine how (and why) nature has evolved its repertoire of biological macromolecules (DNA, RNA, and proteins) to perform the functions of life. The last 50 years has seen an explosion in our knowledge of how these macromolecules function. Importantly, we are now able to design and build our own macromolecules for bespoke purposes—for example, enzymes to access to new synthetic methods, proteins as biosensors, and the design and engineering of new biosynthetic pathways in cells to produce biofuels. Thus, in parallel to learning how nature has evolved its macromolecule repertoire, we will also explore how we design new macromolecules; that is, synthetic biology. Within this context, we will consider a broader understanding of the social and cultural sensitivities to genetic engineering and use of native New Zealand genetic diversity.

Recommended preparatory course(s): Either (1) BIOL 331/BCHM 301, or BCHM 305 and BCHM 306, and/or (2) BIOL 461 / BCHM 461, which is designed to be a compatible course run in S1. In addition,



one from the following is highly recommended: BIOL 313 or BIOL 333 (or equivalent, as determined by course coordinator).

BIOL 459 / BCHM 459

## Genomics

**Coordinator:** Dr Amy Osborne

Genomics is an integrally important part of biology. Through the sequencing, characterisation, and study of DNA, it is now possible to decode the complete genetic complement of any organism. Genome science is revolutionising almost all fields of biological enquiry. In this course we will look at the genomic technologies that are transforming biology, the biological and evolutionary insights arising from genome research, and the process of genome sequencing, from start to finish. You will learn about genome sequencing, annotation and the analysis of genomes using experimental and bioinformatics tools.

Recommended preparatory course(s): Any of BIOL 313, 333, 334, 335 or 300-level BCHM.

BIOL 462 / BCHM 462

## Medical Biochemistry

**Coordinator:** Assoc Prof Steven Gieseg

This course will examine broad topics of medical interest where biochemical techniques have been used to examine the basis of human pathological process. The topics may include free radical stress, cardiovascular disease, neurological disorders, Alzheimer's disease and cancer biochemistry. The course will examine and critically evaluate the research literature

and evaluation of competing theories on the mechanism of selected disease pathologies. Participants will critically assess selected research publications and present the work in a series of seminars on each topic for discussion.

Recommended preparatory course(s): Either BCHM 306, BIOL 351 or BIOL 463

BIOL 481

## Environmental Animal Physiology

**Coordinator:** Prof Elissa Cameron

Physiological adaptations that allow animal life to survive in diverse environments. The course will look at the strengths and weaknesses of the comparative approach and its relationship to phylogeny. Topics that may be addressed include osmoregulatory physiology and water balance, thermoregulation, metabolic rates, exercise and cardiovascular physiology.

Recommended preparatory course(s): BIOL 354.

BIOL 496

## Plant Developmental Biology and Biotechnology

**Coordinator:** Assoc Prof David Leung

This course examines recent advances in plant biology research and their implications for biotechnological applications. Seminar topics may include any aspect of plant development and plant response to its biotic and abiotic environment.

Recommended preparatory course(s): BIOL 352.

# Choosing a Research Topic

Research is a central part of the postgraduate experience. It can be very rewarding, but also requires good time management skills and a high level of engagement.

If you are planning to enrol in BSc (Hons), MSc or PhD, your degree will involve a significant research component. The following tips are designed to help you get started on choosing a research topic and supervisor.

## Tip # 1 - Start looking early

Choosing a topic requires careful thought, so begin the process as soon as you can. Bear in mind, supervisors can only take on a finite number of students so if you want to work with a particular person, approach them early.

### BSc (Hons)

You should be thinking about your research project in July or August, the year before your course officially starts. Your enrolment into BSc (Hons) will not be approved until you have advised the 4th year Course Advisor of your research project and supervisor. Most students doing field work will need to have finalised plans before the start of the field season in November, and may need to start their field work over the summer before 4th year officially starts.

### MSc

Research is a major part of your degree so you should spend as much time thinking about your research interests as you do thinking about which 400-level courses to take.

Most students begin preliminary research in October/November, and will routinely enrol in BIOL 401 and/or BIOL 402 the summer before starting MSc part II, especially if they are working in the field.

There are a variety of scholarships available for MSc Part II, so ensure that you browse the University scholarships page throughout the year.

### PhD

Find a research topic that is of interest to you and a supervisor well in advance of scholarship application due dates. Scholarships are highly competitive so make sure you begin the application process several months in advance of the due dates so that you are able to apply.

## Tip # 2 - Pick an area of genuine interest to you

Research comes with highs and lows and requires high motivation to get through the tough times. The secret to success is to work in an area where you really want to know the answer to the research questions you pose. If you are only mildly curious about the topic, it will be tough to get through the more challenging parts and see the thesis through to completion.

We don't recommend taking on a project that doesn't sound interesting to you just because an academic is offering you a spot in their lab.

## Tip # 3 - Look for a good match between supervisor and topic

The most important action that you can take is to approach staff members who have interests that overlap your own. All staff members welcome such approaches, either face to face, or via email.

Academic staff members often have research ideas that can be developed into proposals by students, so it is a good idea to ask them what they are currently working on. Alternatively, research projects may develop from discussions with staff around a research topic of mutual interest: don't be afraid to take your ideas to them.

Bear in mind that topics staff lecture on may not necessarily reflect their core research interests – have a look at their recent publications, and find out more about their current research.

Research projects are not guaranteed and you may be competing with your fellow students for available topics and your choice of supervisor. Academics receive more expressions of interest for research than they have space in their labs so to give yourself the best chance read up on the research area and go prepared to discuss possible projects in detail.

The number one mantra for anyone wishing to pursue a career in research is “Publish or Perish”, so ensure you chose a lab that is actively publishing in good journals.

It is also worth talking to postgraduate students from the lab you wish to join – they will be able to give you a sense of what the research is like, and what the academic is like to work with.

## Tip # 4 - Relationships matter

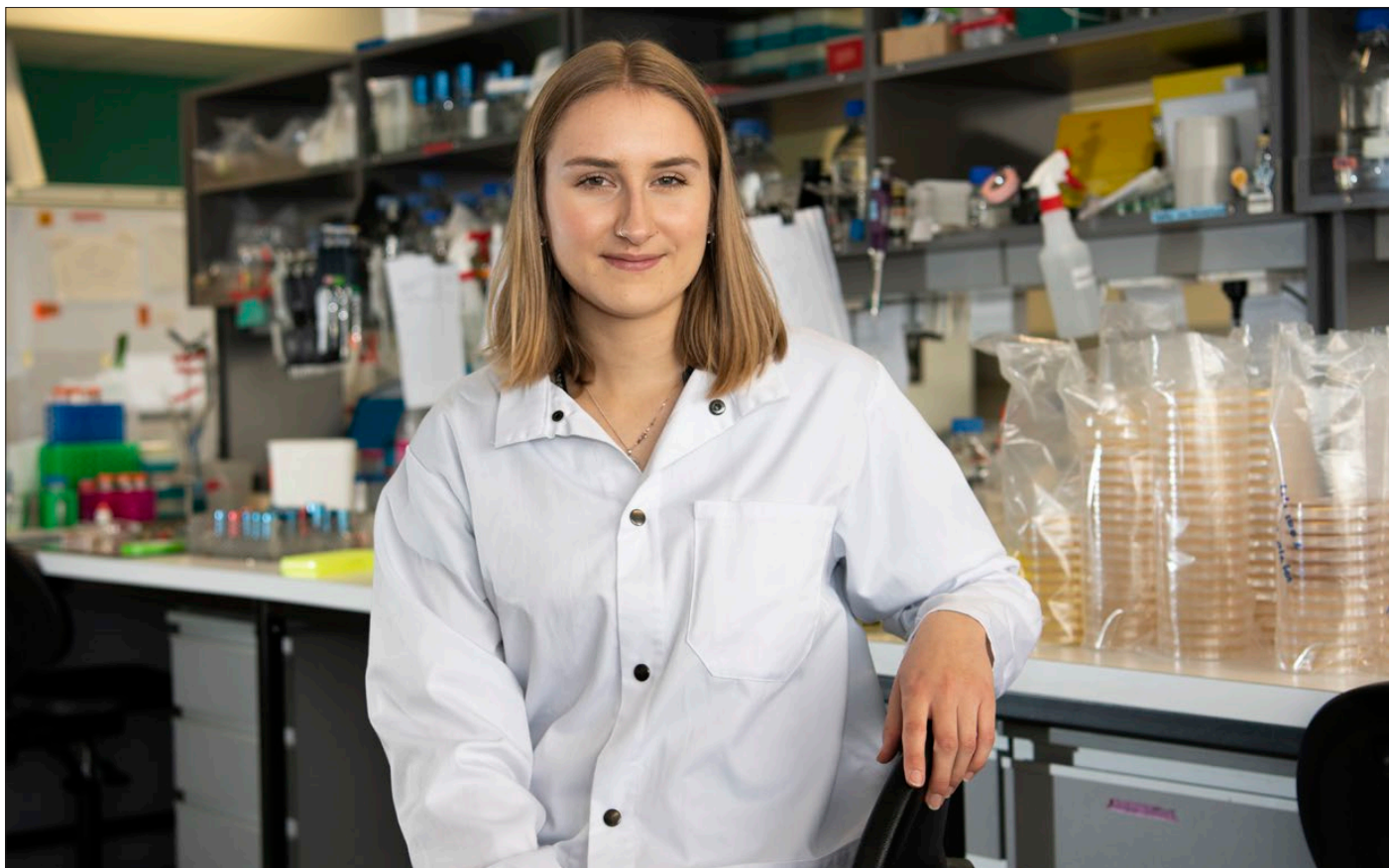
Once you have teamed up with a supervisor you will have regular meetings and will work together to evolve your project and develop approaches to tackle your research. Your supervisor and committee are there to help, don't be afraid to ask questions and seek advice from them.



**It's a competitive process. It is up to you to give yourself the best chance of getting where you want to be!** Dr Yinon Dolev, recently awarded a PhD in Biological Sciences



# Research Facilities



The School of Biological Sciences has modern, well-equipped research laboratories. Our research buildings have state of the art facilities to allow us to conduct research across a wide range of biological fields.

Ecology laboratories are equipped to measure environmental parameters at the macro and micro levels. They include seawater, Antarctic and freshwater aquaria, as well as environmental chambers with controlled light and temperature. A large microscopy facility is also available for sorting and identifying organisms.

Animal physiological laboratories contain research equipment for neurophysiology, ion and water regulatory physiology, cardiac, respiratory and exercise physiology.

Molecular genetics and molecular biology research laboratories are fully equipped for DNA, RNA and protein analysis, recombinant DNA techniques, real-time PCR and microinjection of

macromolecules into cells. We also house the Canterbury Sequencing Facility and Ancient DNA laboratory.

We have a microscopy facility which includes a confocal microscope.

An extensive plant herbarium and insect collection are housed in specialist facilities.

Plant physiology laboratories have research equipment for transgenic plant production, including comprehensive plant growth rooms and greenhouse facilities.

Biochemistry and biotechnology labs house advanced tools for the study of macro-molecular structure and enzyme function.

Microbiology laboratories have equipment to study the genetics, physiology and biochemistry of a diverse range of microbes.

The School has a computational cluster for high performance applications such as bioinformatics and ecological modelling. Researchers can also access High Performance Computing facilities which operate multiple supercomputers.

I enjoy the great labs and facilities in Biological Sciences, along with the supportive staff and the multi-cultural/multi-national environment.

**Sophie van Hamelsveld**

BSc in Biological Sciences  
Studying towards a PhD in Microbiology

# Field Stations



Weta (genus *Hemideina*) inhabiting 'motels' in the beech forest surrounding the Cass fields station.

Research activities are greatly assisted by field stations located around the South Island and around the world. The most widely used South Island stations are at Cass and Kaikōura, but additional stations exist at Hari Hari, Westport and Mount John. Our extensive global collaborations also allow access to field sites around the world.

## Cass Field Station, Mid Canterbury

Situated at Cass, 105 km west of Christchurch in the mountains of the Waimakariri Basin, the field station has a research laboratory and associated residential facilities for hardy terrestrial and freshwater field workers. The Cass area comprises a wide range of environments – montane grasslands, scrub, riverbed, scree, beech forest, swamp, bog, lake, stream and alpine habitats. Close by, Arthurs Pass and the Craigieburn Range also provide accessible areas from alpine habitats to lowland and montane mixed podocarp-broadleaved forest of Westland.

## Kaikōura

A research base is maintained within Kaikōura township to allow students and staff easy access to a range of habitats, from the rocky coastline to the bush clad hillsides. This site is used extensively by researchers conducting marine studies and also bird behaviour researchers.

## Mount John, Tekapo

Researchers have access to accommodation facilities at the UC Mount John Observatory in Tekapo. From this location they can conduct research across the Mackenzie Basin. Currently there is a focus on kakī (black stilts), the robust grasshopper and a range of invasive plant species.

## Scott Base, Antarctica

In collaboration with Gateway Antarctica, Biological Science staff and students make regular summer visits to the Antarctic to work on mosses, lichens, microbes including algae, soils, fish, birds and seals. These studies can be extended at the University using environment controlled rooms in the Biological Sciences research building.

## Ngel Nyaki, Nigeria

This field station is situated on the Mambilla Plateau in Eastern Nigeria, adjacent to the montane forest reserve of Ngel Nyaki. It is available for use by staff and students from UC as well as Nigerian and International Universities. Associate Professor Hazel Chapman leads the Nigerian Montane Forest Project, which is closely associated with this research facility. There are 15 full time research assistants based at the facility allowing for extensive data collection.



# Research Centres



## Biomolecular Interaction Centre (BIC)

The Biomolecular Interaction Centre (BIC) is a multi-disciplinary centre dedicated to the study of molecular interactions critical to biological function. Understanding biomolecular interactions is central to a range of fundamental sciences, new treatments for disease, and a wide range of highly functional products.

The Centre was founded in 2007 at the University of Canterbury and includes researchers from the Colleges of Science and Engineering and partners with several New Zealand CRIs, Universities and Callaghan Innovation. In 2010, BIC received a multi-million dollar investment from the University of Canterbury to become one of two new premier research institutes on campus.

BIC has 7 Principal Investigators and more than 30 Partner, Associate and Affiliated Investigators. These investigators are supported by 7 Postdoctoral Fellows and more than 30 Postgraduate students researching biomolecular interactions. The biomolecular flagship projects include investigating protein and peptide surface coatings, protein as building blocks and enzyme evolution and design. Together BIC supports a dynamic research environment for both staff and students.



## Centre for Integrative Ecology (CIE)

### Innovative Research and Education

Cross-scale, cross-ecosystem, ecologically-focused, the Centre of Integrative Ecology involves some of NZ's best scientists and students.

Our community of learners is united with collaborators and end-users in generating the depth of understanding required for effective and practical cross-ecosystem management.



The Centre seeks to develop the intellectual capacity to mitigate negative human impacts on essential ecosystem services, and maximise the sustainable provision of multiple services.

Enduring solutions to the problems caused by human impacts must be multidisciplinary and cut across biological scales, from molecules to landscapes to the entire planet.

By educating tomorrow's trans-disciplinary, solutions-focussed scientists and policy-makers, we will effect lasting, positive impact on NZ's natural environment for future generations

## The Centre for Integrated Research in Biosafety (INBI)

INBI is a multi-disciplinary centre devoted to career-minded researchers in the biological, physical and social sciences, philosophy, law, engineering and cultural studies. The primary mission of the centre is to produce graduates and professionals equipped to contribute to the global demand for research and expertise in bringing forth safe and effective biotechnologies.

Currently, our research focus is on the effects of agricultural chemicals on microbes and how to

integrate science-informed research into public policy and communication.

INBI actively collaborates with civil society and industry organisations around the world. We work on special projects with governments and the United Nations Environment Programme. We will assist you in building an international career.

## Centre of Excellence in Aquaculture and Marine Ecology (CEAME)

CEAME is a joint marine research centre that provides students an opportunity to engage with University staff and scientists from the National Institute of Water and Atmospheric Research (NIWA). The objectives of CEAME are to promote and enhance excellence in aquaculture and marine ecological research, to attract the best students nationally and internationally.

Projects within CEAME include a broad range of disciplines such as mathematics and engineering, theoretical and conceptual issues of marine science, sustainability of cultured fisheries, and genetics based research..



# Additional Information

‘I am using new techniques, new software, and a different point of view, which undoubtedly will help me in my future career.’

**Dr Ayelen Tayagui**

Recently awarded a PhD in Cellular and Molecular Biology



## Need help? We are here for you

During your time as a student at UC, you may go through difficult periods in your life. This might come with anxiety and depression, making it challenging to focus and stay motivated on your studies. You might even start questioning your abilities and your sense of belonging at university. We would like you to know that we understand this and care about your wellbeing. It is therefore important that you reach out and get help if you need it. Your lecturers can discuss with you how we can better support you academically during difficult times. You are also very welcome to seek help from the Biology Undergraduate Advisor or the College of Science Student Advisors. The UC Student Care Team specifically supports students who are going through a rough time. Their services are free and available for all students.

## Scholarships and prizes

The University of Canterbury awards a number of postgraduate scholarships and prizes each year in order to help postgraduates conduct MSc or PhD research. Information about these can be obtained from the Scholarships Office:

[www.canterbury.ac.nz/get-started/scholarships](http://www.canterbury.ac.nz/get-started/scholarships)

Note that the closing date for many awards is **mid October** each year.

Financial support for MSc and PhD students can sometimes be obtained from sources outside the University, including government agency contracts and not-for-profit organisations. You can discuss this possibility with your supervisor or the Head of School.

## Laboratory Demonstrating

MSc and PhD students are strongly encouraged to demonstrate and instruct in undergraduate laboratory classes for which they receive payment. Details are released prior to the start of each semester.

## International Students

If you are contemplating undertaking a postgraduate degree in biological sciences at UC, your first port of call is the International Office: [www.canterbury.ac.nz/international](http://www.canterbury.ac.nz/international)

Here you can find details about enrolment, the University, scholarship opportunities and fees.

**Canterbury Doctoral and Masters Scholarships are open to overseas students**, but cover tuition fees only at the New Zealand student rate. All PhD students pay tuition fees at the NZ rate, but MSc students pay international fees.

Many countries offer scholarships for students wishing to undertake postgraduate studies overseas. Check with your current University for information on funding opportunities.

## Student Representation

### Postgraduate Student Committee (Biology)

To ensure the quality of your experience with us is as good as possible, the School runs a postgraduate student committee with representatives from among the fourth-year, MSc and PhD students, a postdoctoral scientist and a member of academic staff. The committee reports back to students regarding important decisions in the School, and ensures student issues are heard at staff meetings.

[www.canterbury.ac.nz/science/biology/postgraduate-study](http://www.canterbury.ac.nz/science/biology/postgraduate-study)

### Postgraduate Students' Association (PGSA)

UCSA also has a postgraduate student association which ensures representation of postgraduates within the wider university community.

[www.ucpgsa.org](http://www.ucpgsa.org)

# Contact Information



‘There is a perfect balance between life and work at UC. There are various clubs to indulge in activities other than studying.’

**Samarth**

Past president of the UC Indian Students’ Association  
Recently awarded a PhD in Biology

Please contact us if you have further questions regarding our courses or research, questions for individual staff members can be sent via email using the format [firstname.surname@canterbury.ac.nz](mailto:firstname.surname@canterbury.ac.nz).

## Head of School

Prof Matthew Turnbull

## Enquiries

Phone: +64 3 369-5200

E-mail: [biology@canterbury.ac.nz](mailto:biology@canterbury.ac.nz)

Web: [www.canterbury.ac.nz/science/biology](http://www.canterbury.ac.nz/science/biology)

Postal Address: School of Biological Sciences  
University of Canterbury  
Private Bag 4800  
Christchurch  
New Zealand

## Postgraduate Advisors

### Fourth Year Course Advisor

**Prof Elissa Cameron**  
[elissa.cameron@canterbury.ac.nz](mailto:elissa.cameron@canterbury.ac.nz)  
Phone: +64 3 369 5596

### MSc Postgraduate Coordinator

**Assoc Prof Daniel Stouffer**  
[daniel.stouffer@canterbury.ac.nz](mailto:daniel.stouffer@canterbury.ac.nz)  
Phone: +64 3 369 2880

### PhD Postgraduate Coordinator

**Assoc Prof Tammy Steeves**  
[tammy.steeves@canterbury.ac.nz](mailto:tammy.steeves@canterbury.ac.nz)  
Phone: +64 3 369 5378

## Student Advisor, College of Science

The Student Advisor is available to provide accurate and timely academic advice and assistance on course options and/or degree programmes in science subjects.

### Bengu Korkut Yalcin

College of Science  
[bengu.korkutyalcin@canterbury.ac.nz](mailto:bengu.korkutyalcin@canterbury.ac.nz)  
Phone: +64 3 369 3858

## University of Canterbury Contact Centre

For more information about study options or an enrolment pack get in touch with the Contact Centre on:

**Freephone:** 0800 VARSITY  
(0800 827 748) in NZ

**Or phone:** +64 3 369 3999

**Email:** [enrol@canterbury.ac.nz](mailto:enrol@canterbury.ac.nz)

**Web:** [www.canterbury.ac.nz](http://www.canterbury.ac.nz)

**School of Biological Sciences**  
**Te Kura Pūtaiao Koiora:**

T: +64 3 369 5200

E: [biology@canterbury.ac.nz](mailto:biology@canterbury.ac.nz)

University of Canterbury  
Te Whare Wānanga o Waitaha  
Private Bag 4800  
Christchurch 8140  
New Zealand

[www.canterbury.ac.nz/science/biology](http://www.canterbury.ac.nz/science/biology)