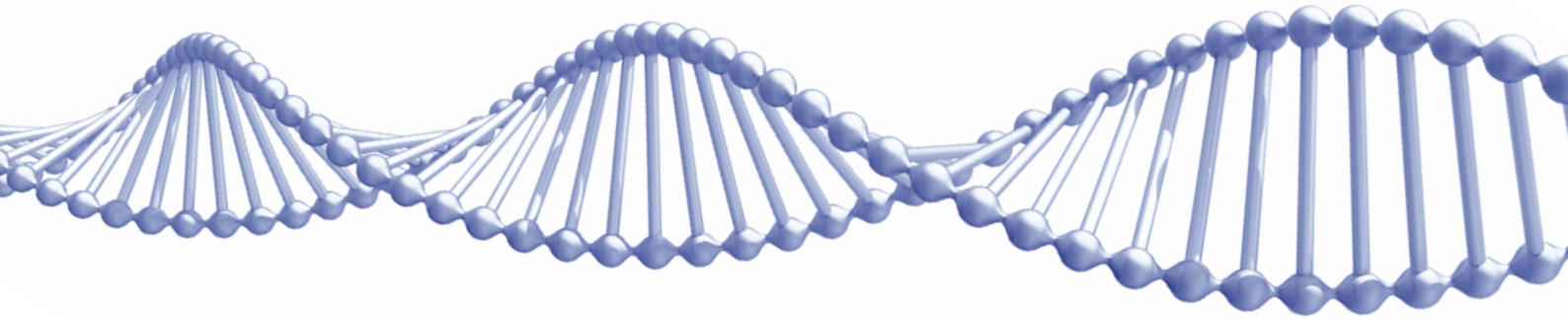
What can I do with a degree in
Biochemistry?

UC UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Biochemistry.



Career planning: what do I need to know?

Knowledge of yourself is important for career decision making. Start by looking at your personal goals, abilities, values and interests to explore study and career options that are relevant to you. Some of these may change over time, so it is important to self-reflect and evaluate your career on an ongoing basis.

What do employers look for?

Many employers look for generic skills such as communication, customer-focus, bicultural competence, cultural awareness and teamwork. With technology and globalisation changing the nature of society, skills such as resilience, problem solving and adaptability are valuable at work as well as in life.

How can I develop these skills?

- Some skills are developed through your degree
- Extra-curricular activities can help, for example getting involved in clubs, mentoring, cultural groups, part-time work or volunteering
- Be open to professional and personal development opportunities. Whether it is undertaking an internship, overseas exchange, skills seminar, or joining an industry group — these activities will enhance your employability.

What else should I know?

The career options in this brochure are examples only and the list is not exhaustive. Some careers may require further study beyond a first degree or additional work experience. Some pathways and degrees have a recommended school background. Find more subject details at
💻 www.canterbury.ac.nz/subjects/bchm

If this brochure does not answer your questions, talking to an expert such as a career consultant can help you to identify the next steps in your career decision making journey.
💻 www.canterbury.ac.nz/careers

What is Biochemistry?

Biochemistry brings together a number of branches of science with a view to understanding the chemistry of life. Such a unique and privileged position at the interface of the traditional sciences makes for a dynamic and exciting discipline. It provides basic insight into biological processes such as enzyme action, drug action, genetic engineering, photosynthesis and colour vision.

Biochemistry is at the cutting edge of contemporary science, research and industry. Biochemical innovation is critical in adding value to Aotearoa New Zealand's agricultural production, advancing medicine and understanding the fundamentals of the biological world around us.

Some knowledge of Biochemistry is useful for any student majoring in Biological Sciences and many areas of Chemistry.

AT A GLANCE

3,600+ people work across seven Crown Research Institutes, NZ's largest science research hubs^

$2.3b is contributed to the economy annually by the Natural Health Products industry*

$130K is the potential salary for a senior biochemist with a PhD**

^ *www.careers.sciencenewzealand.org/crown-research-institutes*

* *www.naturalproducts.co.nz*

** *www.careers.govt.nz/jobs-database/science/science/biochemist*

What skills have UC graduates gained?

Through their Biochemistry degree, graduates gain a valuable set of transferable skills such as:

- Analytical and problem solving
- Good planning and organisation
- Oral and written communication
- Teamwork and leadership
- Capacity to think creatively, logically and quantitatively
- Mathematical and computer competencies
- Observation, research and development abilities.

Applied learning opportunities are available such as laboratory sessions, and fieldtrips. These experiences deepen your skillset, awareness of others, working knowledge and employability.

Where have UC graduates been employed?

Biochemists are found working in a number of different industries. UC graduates have been employed in:

- Pharmaceuticals industry eg, Baxter Healthcare
- Government bodies eg, Rotorua District Council
- Diagnostic departments in hospitals eg, Canterbury District Health Board
- Crown Research Institutes eg, Plant and Food Research, Institute of Environmental Science and Research, Landcare Research
- Laboratories eg, Canterbury Health Laboratories
- Food and beverage producers eg, Deep South Ice Cream, Goodman Fielder
- Manufacturing and processing companies eg, Izon Science Ltd
- Biotechnology organisations
- Agribusiness eg, Livestock Improvement Corp, Ballance Agri-Nutrients
- Software companies eg, Jade Software Corporation
- Water management eg, Hydroxsys Ltd
- Health and beauty care organisations
- Engineering consultancies eg, Aurecon
- Secondary schools teaching biology, chemistry and other science subjects
- Tertiary sector eg, Lincoln University, Ara Institute of Canterbury, Otago School of Medicine, Charité – Universitätsmedizin Berlin
- Their own company or self-employed as a consultant eg, Ethique

What jobs and activities do UC graduates do?

Graduates with this degree are employed in a range of jobs — see some examples below.

Note: Some of the jobs listed may require postgraduate study. See the 'Further study' section.

Biochemist

- Studies the composition of all living things
- Develops and tests new pharmaceutical products
- Studies how disease or vaccines interact

Research scientist, researcher, research and development assistant

- Undertakes experimental lab work and develops scientific solutions to problems
- Carries out field and lab tests, records data
- Conducts analysis and writes technical reports
- Communicates results/impacts to various audiences such as policymakers and the public

Manufacturing scientist, product formulation specialist

- Researches a client's brief, a social need, or a gap in the market
- Designs and develops prototype sample
- Commercialisation through trials, industry submissions and production runs
- Complies with quality standards/regulations

Laboratory / field technician

- Plans and carries out research experiments
- Maintains and calibrates equipment
- Liaises with scientists and industry personnel
- Collects and collates data, and drafts reports

Data analyst, bioinformatician

- Analyses data and models techniques to solve problems
- Gains insight for decision-making purposes

Biotechnology technician

- Tests micro-organisms and monitors data
- Develops and tests methods
- Assists with developing new products

Medical laboratory technician

- Carries out tests on samples eg, blood, tissue
- Communicates results to patients and/or medical professionals

Secondary school teacher

- Plans and delivers instructional lessons
- Evaluates performance and provides feedback
- Sets and marks assignments and tests

Science journalist, technical writer

- Researches specialist scientific publications
- Interviews scientists, medical staff, academics
- Writes and edits scientific articles, journals, organisational documents eg, reports, manuals

Entrepreneur & self-employment

Entrepreneurship and innovation are an increasing part of the working landscape. Through generating a business idea, or getting involved in a start-up/business venture, you have the potential to create a work opportunity that aligns with your knowledge, skills, values and risk profile. To get started on how to establish, run and grow a new business, go to Te Pokapū Rakahinonga, Centre for Entrepreneurship at the University of Canterbury
💻 www.canterbury.ac.nz/uce

What professional organisations can I engage with?

Connecting with professional bodies and organisations can help you to establish professional networks and learn more about different career options in your area of interest. Gaining valuable insight into a profession can assist in making informed career decisions.

- Te Apārangi Royal Society of New Zealand
  💻 www.royalsociety.org.nz
- Australasian Association of Clinical Biochemists
  💻 www.aacb.asn.au
- Australian and New Zealand Society for Comparative Physiology and Biochemistry
  💻 www.anzscpb.curtin.edu.au
- New Zealand Microbiological Society
  💻 www.nzms.org.nz
- New Zealand Association of Scientists
  💻 http://scientists.org.nz

Having a professional presence on social media networks such as 💻 www.linkedin.com and Facebook can help you to keep up to date with important industry developments and trends, networking opportunities, events and job vacancies. Following relevant professional bodies, organisations, companies and thought leaders is a great way to gain a deeper awareness of the industries that interest you. Social media presents an opportunity to build and enhance networks as well as to display your involvement in projects and any academic successes.

Why do further study and what are my options?

Postgraduate study can facilitate career benefits such as specialist skills, higher starting salary, and advanced research capability. It can also lead to an academic job. It is important to determine which, if any, further study will help your career.

Biochemistry graduates can progress into a number of programmes from honours to master's and PhD level. These develop advanced research skills and provide the chance to specialise.

Some prepare for a career through further training eg, in teaching, business management, product formulation.

For UC listings and prerequisites visit
💻 www.canterbury.ac.nz/courses

Useful links

Te Rōpū Rapuara UC Careers
💻 www.canterbury.ac.nz/careers

Careers New Zealand
💻 www.careers.govt.nz

Crown Research Institute careers
💻 www.careers.sciencenewzealand.org

Physicians and Scientists for Global Responsibility
💻 www.psgr.org.nz

NZBIO
💻 www.nzbio.org.nz

Lisa

Bachelor of Science in Biochemistry
Master of Science in Biochemistry
Postdoctoral Fellow, Centre for Soil and Environmental Research (CSER) and New Zealand – China Water Research Centre, Te Whare Wānaka o Aoraki | Lincoln University
CEO, Gigvvy Science

Why are you passionate about the sciences?

I am curious about everything around me, from how nature works to why nature works that way. Science is a beautiful subject, it is intellectually challenging, and it makes me feel alive!

I always feel excited when thinking about the future, and how we can solve bigger problems.

What was your inspiration behind creating Gigvvy Science?

After graduating from the University, I realised science knowledge is locked behind a huge paywall. Gigvvy Science is a platform for independent academics to publish their own open-access journal. Our mission is to create a world where science is open, transparent, and freely accessible to everyone.

We have published over 100 COVID-19 related research articles as a collaborative effect with Aerosol and Air Quality Research. Our goal is to disseminate scientific knowledge as fast as possible, but most importantly freely accessible to all.

Do you have other big science challenges you want to tackle next?

The rapid expansion of the New Zealand dairy industry is putting us at high risk from exposing nitrate contamination into our drinking water. We are now at an urgent time for clean drinking water, swimmable rivers and lakes, and a sustainable environment for our future generations. My career goal is to eliminate nitrate from drinking water and at the same time develop an ecosystem approach for sustainable, healthy agro-ecosystems for New Zealand.

What advice do you have for our future scientists wanting to make a difference?

Failure is a beautiful thing, because you can only learn by failing. No matter what you do, whichever path you choose, don't be afraid to fail, keep trying and keep innovating!

Read more online

Read more stories about our students' university experiences online. UC alumni make a difference in varied ways around the globe. To find out where graduates are now visit 💻 www.canterbury.ac.nz/getstarted/whyuc/student-profiles

The information in this brochure was correct at the time of print but is subject to change.

More information

UC students seeking study advice.

Te Kura Matū | School of Physical and Chemical Sciences

The School is made up of over 80 staff and runs an exciting programme of teaching and research using state-of-the-art facilities. Our areas of scholarship are diverse and we collaborate nationally and internationally.

Our teaching staff are all active researchers and very passionate. Dynamic teams are leading research in a wide range of disciplines, from molecular cloning to stellar astrophysics, from the design of new pharmaceuticals to nanotechnology devices.

T: +64 3 369 4141
E: scienceugadvice@canterbury.ac.nz
💻 www.canterbury.ac.nz/science

Anyone seeking careers advice.

Te Rōpū Rapuara | UC Careers

UC offers intending and current students and recent graduates a wide range of services, including individual career guidance, seminars, career resources and student and graduate employment opportunities.

T: +64 3 369 0303
E: careers@canterbury.ac.nz

💻 www.canterbury.ac.nz/careers

Prospective students seeking study advice.

Te Rōpū Takawaenga | Student Liaison

The liaison team provide advice to future students who are starting their degree for the first time. They can assist with information on degrees, scholarships, accommodation, and other aspects of university life. We have offices in Christchurch, Auckland and Wellington.

Ōtautahi | Christchurch
T: 0800 VARSITY (0800 827 748)
E: liaison@canterbury.ac.nz

Tāmaki Makaurau | Auckland
T: 0800 UCAUCK
E: auckland@canterbury.ac.nz

Te Whanganui-a-Tara | Wellington
T: 0800 VARSITY (0800 827 748)
E: wellington@canterbury.ac.nz

💻 www.canterbury.ac.nz/liaison

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