UNIVERSITY of OTAGO

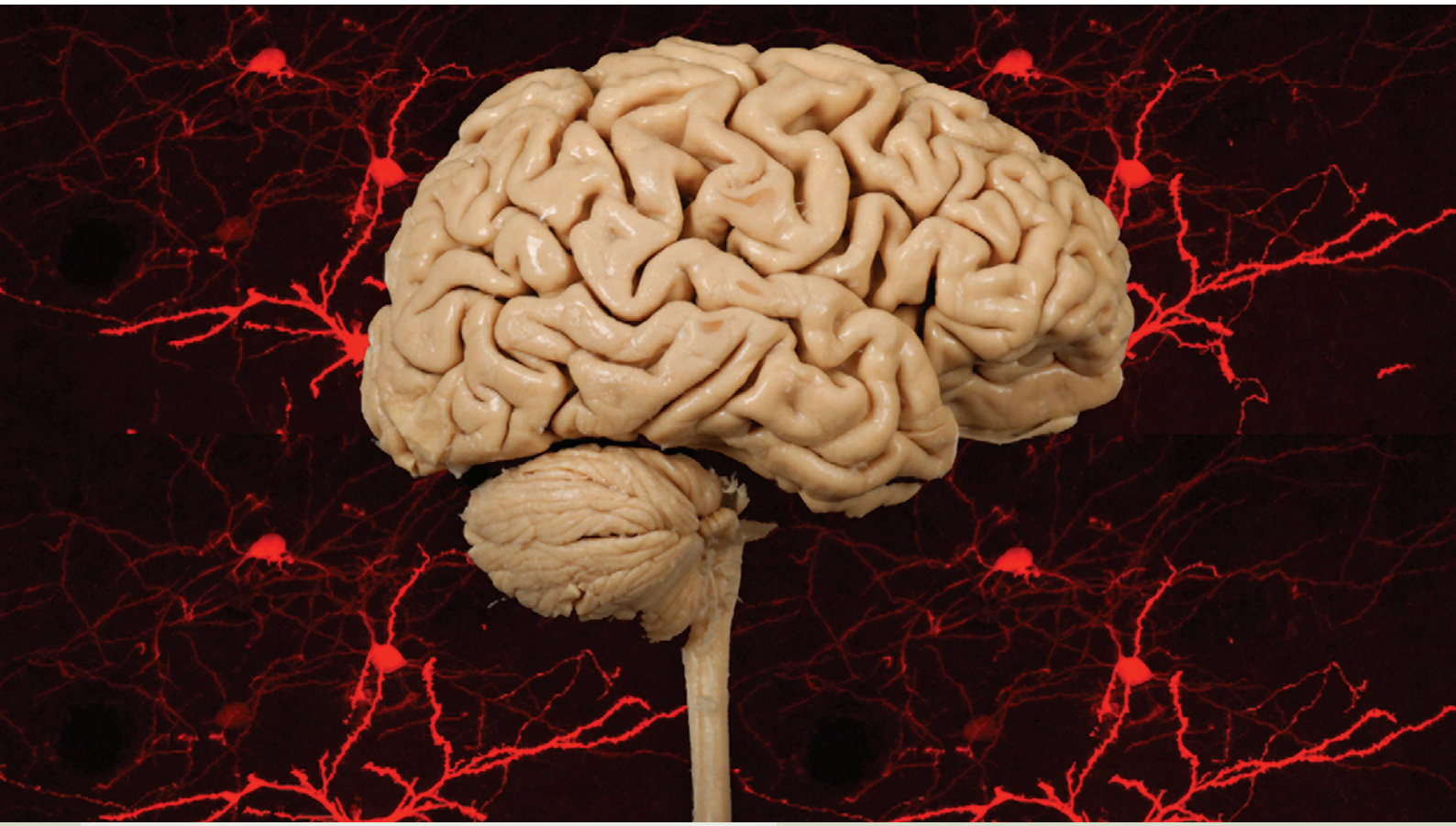
Te Whare Wānanga o Otāgo

NEW ZEALAND

YOUR PLACE IN THE WORLD

anatomy and structural biology

More than you think



Anatomy – you can't leave home without it. It's with you everywhere you go. It holds you together, it controls what you do, and it enables you to run, jump and play. There is more to studying anatomy than immediately meets the eye – there's cell biology, neurobiology, clinical and functional anatomy, body systems, reproductive biology, and developmental biology.

Otago is the only New Zealand university that offers a bachelors degree majoring in Anatomy and Structural Biology. You have the opportunity to explore the traditional approaches to studying anatomy as well as using the latest techniques and hi-tech equipment to explore the human body at all levels of its structure.

"I really enjoyed studying at the Anatomy Department, and now I have a great job that I love! It makes me feel really happy about my choice to major in anatomy."

Elisha White BSc

UNIVERSITY OF Otago

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Why study Anatomy and Structural Biology?

Anatomy and Structural Biology is a diverse, vibrant, and visual subject. It explores the relationship between the structure of the body and the functions it performs, and can be studied at both the microscopic and macroscopic levels.

You will learn: how the body develops from just a single cell to an individual with millions of cells organised into many different tissues and organ systems; how the desire to move is transmitted from the brain to the muscles; how you can tell the age a person was when they died just by looking at their bones; what changes occur when we develop from child to adult; how the brain actually works; how the reproductive system functions; if the knee bone really is connected to the thigh bone; and much more.

Studying papers in Anatomy and Structural Biology will expose you to world leading research in the anatomical sciences. You will learn techniques such as immunohistochemistry, cell culture and gene sequencing, and have access to state-of-the-art equipment such as electron and confocal microscopes.

Background required

You don't need any particular subjects to get into the first year papers that lead into Anatomy and Structural Biology. However, because these courses are biologically oriented, it is helpful to have Year 13 biology and chemistry.

Careers in Anatomy and Structural Biology

An Otago graduate in Anatomy and Structural Biology has the world at their feet. Opportunities available to them are varied and numerous, ranging from research/teaching in a tertiary environment or technical work in medical laboratories, to sales, marketing and research positions with pharmaceutical or medical companies. One graduate was even accepted as an apprentice funeral director! So there is definitely something there for everyone.

The Department aims to graduate students who have a high level of knowledge and competencies across a broad range of topics, with a range of skills that can be applied to any chosen career. These skills range from learning to speak in a group environment and extending the skills to think and communicate ideas, through to having an awareness and understanding of ethics and developing the ability to undertake self-directed learning. And then of course there are the technical and applied skills that are used every day in practical labs.

Some graduates use their degree as a stepping stone to further study in a health professional course, while others have gone on to postgraduate study in forensic science, clinical embryology, and the various research fields offered here in the Department.

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Anatomy and Structural Biology at Otago

Anatomy and Structural Biology is offered as a major for the Bachelor of Science (BSc), and BSc Honours degree programme. We also offer the Reproduction, Genetics and Development theme as part of the Biomedical Science (BBiomedSci) degree. This can be taken at the Bachelor (three-year) or Honours (four-year) level.

The Department also contributes to the teaching of a BSc and BSc(Hons) in Neuroscience, and offers BIOA (Biological Anthropology) papers as part of a BSc or BA (Arts) degree.

What does a BSc in ANAT involve?

In your first year you will be introduced to the structure, function and development of the various body systems in the human body. You will also learn about the biology of cells and human genetic variation, as well as the diversity of microorganisms and microbial virulence and diseases. In addition, you will take other general first year Health Science papers, including Chemistry or Statistics.

At the end of your first year you will have a good basic knowledge of the whole body, be able to recognise the different cells, muscles, and organelles in the body, and be able to tell us if your back bone really is connected to your shoulder bone (it's not by the way)!

The skills and knowledge learnt at first year will then be developed more in-depth in second and third year with papers which cover human cells and systems, neurobiology, reproductive and developmental biology, functional anatomy, and cell biology.

Teaching Style

Papers are taught in a lecture and laboratory format. Laboratory classes are exciting and "hands-on" and can involve the use of human material (including dissection); tissue/cell culture; electron, light and confocal microscopy; immunohistochemistry; histology; stereology; molecular biological techniques; and skeletal forensic investigations.

Laboratory rooms are well equipped and modern, and you will have access to hi-tech equipment in the electron and confocal microscopy units. You will also be able to study in our historic and world-leading W.D. Trotter Anatomy Museum.

Postgraduate Study

If you wish to take your knowledge beyond third year, a range of postgraduate opportunities is available. We have a large family of postgraduate students and they are vital contributors to the ongoing research in the Department.

You could find yourself doing an Honours degree, or a one-year Postgraduate Diploma in Science. Or perhaps a Masters in Science. Or why not aim high and shoot for a PhD?

For questions about Anatomy and Structural Biology
Tel 0800 80 80 98
Email university@otago.ac.nz

www.otago.ac.nz/anatomy

profile

BRIDGET GENTLE

Working as an ambulance volunteer when she was a student, Bridget Gentle realised she had found the career she wanted, and so tailored her degree to suit, completing a BSc in Anatomy and Structural Biology in 2007.

She is now working as an Ambulance Officer in Auckland, providing care and attention for the sick and injured. Although, as Bridget says, the job isn't quite that simple. "As well as being medical professionals, we act as detectives, using problem solving skills to get an idea of what is happening with our patients."

The inter-personal and written communication skills she developed through her degree have helped her in her job. Bridget says that although a BSc in Anatomy was not a pre-requisite, her employers have recognised the skills and knowledge that her degree demonstrates. "My degree also shows that I have the ability to work both independently and in a team, to work under pressure and keep to deadlines, all of which are important skills to have in any job."

To achieve the highest ambulance qualification, Bridget will need to study for a Bachelor of Health Science (Paramedic) at AUT, but with her BSc in Anatomy she is almost half way there, as she can cross-credit many of her papers towards her new degree.

Where to now for Bridget? The sky may well be the limit. She can see herself in some sort of medic or rescue work, maybe overseas. "I enjoy flying and would love to combine the two. Working as a heli-medic would be a fantastic challenge," she says.

Wow – all this from a degree in Anatomy and Structural Biology. Just think what you could achieve!

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