Position Description

Lecturer/Senior Lecturer in Advanced Bionics Manufacturing and Medical Robotics

Position Number: 00060907
Position Title: Lecturer/Senior Lecturer in Advanced Bionics Manufacturing and Medical Robotics
Date Written: 7th May, 2018

Faculty / Division: Engineering
School / Unit: Graduate School of Biomedical Engineering and Mechanical and Manufacturing Engineering
Position Level: Level B/C

ORGANISATIONAL ENVIRONMENT

UNSW is currently implementing a ten year strategy to 2025 and our ambition for the next decade is nothing less than to establish UNSW as Australia’s global university. We aspire to this in the belief that a great university, which is a global leader in discovery, innovation, impact, education and thought leadership, can make an enormous difference to the lives of people in Australia and around the world.

Following extensive consultation in 2015, we identified three strategic priority areas. Firstly, a drive for academic excellence in research and education. Universities are often classified as ‘research intensive’ or ‘teaching intensive’. UNSW is proud to be an exemplar of both. We are amongst a limited group of universities worldwide capable of delivering research excellence alongside the highest quality education on a large scale.

Secondly, a passion for social engagement, which improves lives through advancing equality, diversity, open debate and economic progress. Thirdly, a commitment to achieving global impact through sharing our capability in research and education in the highest quality partnerships with institutions in both developed and emerging societies. We regard the interplay of academic excellence, social engagement and global impact as the hallmarks of a great forward-looking 21st century university.

To achieve this ambition we are attracting the very best academic and professional staff to play leadership roles in our organisation.

UNSW BEHAVIOURS

UNSW recognises the role of employees in driving a high performance culture. The behavioural expectations for UNSW are below.

Please refer to the UNSW Behavioural Indicators for the expectations of your career level (level B/C).
OVERVIEW OF RELEVANT AREA AND POSITION SUMMARY

Graduate School of Biomedical Engineering
The Graduate School of Biomedical Engineering (GSBmE) is internationally recognised for its international contributions by highly experienced academic staff who offer a high quality educational experience and dedicated researchers who conduct world class research and have made astounding breakthroughs. The vision of the GSBmE is to provide the best research and teaching outcomes relevant to the development of applications in the human health sector to help in the diagnosis, treatment and quality of life of Australians with life-threatening or debilitating diseases and conditions. For further information about the School, please visit http://www.engineering.unsw.edu.au/biomedical-engineering/. GSBmE provides concurrent undergraduate / postgraduate coursework programs and postgraduate coursework and research programs in the multidisciplinary area of biomedical engineering. It also undertakes rigorous novel research programs in a range of biomedical engineering fields. The School currently has 17 full time staff and approximately 500 undergraduate coursework students, 100 postgraduate coursework students and over 50 PhD students.

School of Mechanical and Manufacturing Engineering
The School of Mechanical and Manufacturing Engineering is one of the largest and most prestigious in Australia, with 2500 student enrolments, 80 academic staff, 25 professional staff, and total annual budget of over $22 million including external research grants. Our mission is to prepare students for careers of leadership and innovation, create new scientific advances, and translate research outcomes to positively impact national and global industry and society. We are seeking to attract high-calibre researchers and educators to expand our thriving research programs and contribute to our education excellence in Aerospace, Mechanical Engineering, Advanced Manufacturing Engineering, Robotics and Mechatronics. For further information about the School, please visit http://www.engineering.unsw.edu.au/mechanical-engineering/.

The purpose of this role is to deliver outstanding research and teaching in the area of Advanced Bionics Manufacturing and Medical Robotics. The Engineering Faculty has a well-established track record in assistive technologies; care robotics is targeted as a specific area for focus. There are significant opportunities for building collaboration and further cross-faculty capacity as well as strong collaborations with Medicine, the Lowy Cancer Research Centre and clinical collaborators through this appointment.

A level B academic is expected to carry out activities to develop their scholarly research and professional activities both nationally and internationally and to contribute significantly to achieving the teaching and service missions of the Schools and Faculty.

A Level C academic is expected to develop an internationally recognised research program in the field and to contribute significantly to achieving the teaching and service missions of the School and Faculty. The role of position reports jointly to both Heads of School, and has nil direct reports.

RESPONSIBILITIES
It is expected that the appointee at level B or C will progress on a continual satisfactory and upward trajectory in their performance and specific performance expectations will be set individually with the Head of School/Supervisor.

Specific responsibilities for the role of Lecturer (Level B) include (but are not limited to):

• Develop and contribute to research projects in medical robotics and bionics.
• Deliver high quality teaching of computational modeling of surgical robotics, tactile sensing and control, autonomous systems, robotic assistance and assistive technologies, neurorobotics, bionics, including medical device micromanufacturing and microfabrication, computing for robotics and other advanced topics such as optimization, computer vision, data fusion and nonlinear control systems.
• Provide high quality supervision of major honours and postgraduate student research projects
• Contribute to academic excellence through world-leading research activity.
• Actively engage with Governments, industry and the community to develop significant collaborative partnerships, attract external funding and participate in professional activities.
• Work collaboratively with peers across the Faculty and UNSW in all aspects of academic endeavour and contribute to mentoring of other staff
• Contribute to broad administrative functions of the School and/or University, coordinate subjects, attend departmental and/or faculty meetings, participate in Open days and recruitment activities and play a major role in planning and/or committee work or other responsibilities, as directed by Head of School
• Ensure hazards and risks are identified and controlled for tasks, projects and activities that pose a health and safety risk within your area of responsibility

The specific duties of the Senior Lecturer (Level C) include (but are not limited to):

• Initiate and lead research projects that bring rapidly evolving robotics research closer to industrial reality.
• Deliver high quality teaching of robotics and autonomous systems, including computational modeling of surgical robotics, tactile sensing and control, autonomous systems, robotic assistance and assistive technologies, neurorobotics, bionics, including medical device micromanufacturing and microfabrication and computing for robotics with sound pedagogical methodologies and innovative technologies
• Provide high quality supervision of major honours and postgraduate student research projects
• Contribute to academic excellence through world-leading research activity.
• Actively engage with Governments, industry and the community to develop significant collaborative partnerships, attract external funding and participate in professional activities.
• Work collaboratively with peers across the Faculty and UNSW in all aspects of academic endeavour and contribute to mentoring of other staff
• Contribute to broad administrative functions of the School and/or University, coordinate subjects, attend departmental and/or faculty meetings, participate in Open days and recruitment activities and play a major role in planning and/or committee work or other responsibilities, as directed by Head of School
• Ensure hazards and risks are identified and controlled for tasks, projects and activities that pose a health and safety risk within your area of responsibility

SELECTION CRITERIA

Applicants from industry and professional backgrounds should demonstrate their equivalent level of standing as demonstrated by professional experience.

Lecturer
• PhD in Advanced Manufacturing related directly to Implantable Bionics, and/or Medical Robotics or equivalent relevant professional experience
• Demonstrated ability and track record in advanced micromanufacturing, microfabrication, encapsulation and design of implantable and wearable sensors and devices and/or medical robotic systems. Other
discipline expertise could include: biomaterials for neural interfacing, tactile sensing and control, robotic assistance and assistive technologies, neurorobotics.

- Proven experience in translating research results into practical outcomes
- Demonstrated capacity for development of alternative delivery models for teaching, including online and blended delivery
- High level communication skills and ability to network effectively and interact with a diverse range of students and staff
- Demonstrated ability to work in a team, collaborate across disciplines and build effective relationships
- Willingness to undertake any compliance and supervisor training as required
- Ability and capacity to implement required UNSW health and safety and knowledge of equal opportunity principles

**Senior Lecturer**

- PhD in Advanced Manufacturing related directly to Implantable Bionics, and/or Medical Robotics or equivalent relevant professional experience
- Demonstrated ability and track record in advanced micromanufacturing, microfabrication, encapsulation and design of implantable and wearable sensors and devices and/or medical robotic systems. Other discipline expertise could include: biomaterials for neural interfacing, tactile sensing and control, robotic assistance and assistive technologies, neurorobotics.
- Extensive experience in translating research results into practical outcomes
- Demonstrated capacity for development of alternative delivery models for teaching, including online and blended delivery
- Excellent level communication skills and ability to network effectively and interact with a diverse range of students and staff
- Demonstrated ability to work in a team, collaborate across disciplines and build effective relationships
- Willingness to undertake any compliance and supervisor training as required
- Ability and capacity to implement required UNSW health and safety and knowledge of equal opportunity principles

**PRE EMPLOYMENT CHECKS REQUIRED FOR THIS POSITION**

Verification of qualifications

*It is not the intention of the position description to limit the scope or accountabilities of the position but to highlight the most important aspects of the position. The aspects mentioned above may be altered in accordance with the changing requirements of the role.*