



## Research Fellow - Immunodeficiency

<b>Department/Unit</b>	Department of Immunology and Pathology Central Clinical School
<b>Faculty/Division</b>	Faculty of Medicine, Nursing and Health Sciences
<b>Classification</b>	Level A
<b>Work location</b>	The Alfred Hospital
<b>Date document created or updated</b>	27 September 2017

### Organisational context

**Monash** is a university of transformation, progress and optimism. Our people are our most valued asset, with our academics among the best in the world and our professional staff revolutionising the way we operate as an organisation. For more information about our University and our exciting future, please visit [www.monash.edu](http://www.monash.edu)

The **Faculty of Medicine, Nursing and Health Sciences** is the university's largest research faculty. World-class researchers work across disciplines including laboratory-based medical science, applied clinical research, and social and public health research. The faculty is home to a number of leading medical and biomedical research institutes and groups, and has contributed to advances in many crucial areas. Our expertise in life sciences and biomedicine is recognised both nationally and internationally.

From a teaching perspective, our education curriculum covers a range of disciplines, including medicine, nursing, radiography and medical imaging, nutrition and dietetics, paramedic studies, biomedical sciences, physiotherapy, occupational therapy, behavioural neurosciences and social work. We take pride in delivering outstanding education in all courses, in opening students to the possibilities offered by newly discovered knowledge and in providing a nurturing and caring environment. To learn more about the faculty, please visit [www.med.monash.edu.au/](http://www.med.monash.edu.au/)

**Central Clinical School** encompasses the Departments of Clinical Sciences, Melbourne Sexual Health Clinic, Clinical Haematology, Immunology and Pathology, Infectious Diseases, Gastroenterology, Diabetes, Allergy and Respiratory Medicine and Psychiatry. It is located at the Alfred Hospital precinct in Melbourne, known as AMREP (Alfred Medical Research and Education Precinct). The school is involved in teaching students from both the Faculty of Medicine, Nursing and Health Sciences and the Faculty of Science and its teaching and research is conducted at Alfred Health, Cabrini, Epworth Richmond, Peninsula Health and also at Clayton. For more information about us and the work we do, please visit [www.med.monash.edu.au/cccs/](http://www.med.monash.edu.au/cccs/)

The **Department of Immunology** is focused on understanding basic immunological processes, as well as inflammation, and represents one of the premiere immunology research groups in Australia. The department has various integrated research facilities, new in vitro and in vivo models, and state-of-the-art cell sorting (flow cytometry) to advance our knowledge of immunology, and discover new treatments for autoimmune diseases, arthritis, diabetes, and asthma. The Department of Immunology has >60 people at various stages of their scientific career, have achieved considerable scientific success in the last 4 years, and has secured generous funding.

The **Van Zelm laboratory** is focused on the dissection of human B-cell function and its dysregulation in immune-mediated disease. Over the past 10 years, the group has made seminal discoveries into the diversity of human B-cell memory; new genetic defects underlying primary antibody deficiencies; and B-cell dysregulation in auto-inflammatory diseases and allergies. The laboratory is positioned at the Alfred Medical Research and Education Precinct (AMREP), which strengthens our capacity for translational research in close collaboration with The Alfred Hospital and the Burnet Institute. The research is supported by a Monash Establishment fund and a prestigious NHMRC Fellowship to Menno van Zelm. For more information, please visit [www.med.monash.edu.au/immunology/research/vanzelm-lab.html](http://www.med.monash.edu.au/immunology/research/vanzelm-lab.html)

## Position purpose

A Level A research-only academic is expected to contribute towards the research effort of the university and is an integral part of the team within the Department of Immunology and Pathology. The position takes broad direction from the Head and is responsible for conducting independent research under the Translational Immunology theme of the Van Zelm Laboratory.

The Research Fellow is expected to lead a project on the molecular pathways that underlie immune dysregulation in patients with primary antibody deficiency. Immune dysregulation includes such as autoimmunity and granulomatous inflammation, which are the main cause for morbidity and mortality in these patients. Still, the underlying disease mechanisms are poorly understood and difficult to treat.

In an exciting multi-institute collaboration at AMREP, we have identified a mechanism of autoinflammation using mouse models of antibody deficiency. Now we will translate these findings to dissect the molecular pathways that mediate immune dysregulation in our established cohort of antibody-deficient patients (Dept Allergy, Immunology and respiratory medicine, Alfred Hospital). Using primary patient material and in vitro studies, the Research Fellow will unravel how altered B-cell antigen receptor signalling and T-cell co-stimulation direct auto-inflammation. The project involves advanced techniques including >10-color flow cytometry, AMNIS ImageStream imaging flow cytometry, Ig gene cloning and sequencing and CRISPR-Cas9 mediated mutagenesis. The Research Fellow may be responsible for teaching honours students within the Basic Immunology project theme, will be expected to develop new experimental protocols and will present research data at professional seminars as required.

**Reporting line:** The position reports to the Laboratory Head, Associate Professor.

**Supervisory responsibilities:** The position may be required to supervisor Honours students.

**Financial delegation and/or budget responsibilities:** Not applicable

## Key responsibilities

A Level A research-only academic shall work with support, guidance and/or direction from staff classified at Level B and above and with an increasing degree of autonomy as the research academic gains in skill and experience.

Specific duties required of a Level A research-only academic may include:

- the conduct of research under limited supervision either as a member of a team or, where appropriate, independently and the production or contribution to the production of conference and seminar papers and publications from that research;
- involvement in professional activities including, subject to availability of funds, attendance at conferences and seminars in the field of expertise;
- limited administrative functions primarily connected with the area of research of the academic;
- development of a limited amount of research-related material for teaching or other purposes with appropriate guidance from other staff;
- occasional contributions to teaching in relation to her/his research project(s);
- experimental design and operation of advanced laboratory and technical equipment or conduct of advanced research procedures;

- attendance at meetings associated with research or the work of the organisational unit to which the research is connected and/or at departmental, school and/or faculty meetings and/or membership of a limited number of committees; and
- advice within the field of the staff member's research to postgraduate students.

## **Key selection criteria**

1. A PhD in an appropriate discipline or equivalent, with a competitive track record in a post-doctoral fellowship scheme, in particular, first or senior author on at least one publication, preferably in a journal with an IF>10;
2. Demonstrated skills in molecular biology and immunology including cell culture, FACS, ELISA, (quantitative) PCR and cloning, and a focus on B cell development and function;
3. Ability to assist with student supervision including supervision of honours students;
4. Deliver research outcomes and perform the assigned research projects to a very high standard of reproducibility, with the aim to publish works in internationally renowned research journals;
5. Develop and introduce new techniques to the laboratory where necessary, producing a standard operating procedure of the new technique for distribution;
6. Contribute to the running/maintenance of the Laboratory and Department;
7. Highly organised and meticulous;
8. Demonstrated capacity to work in a collegiate manner with other staff in your workplace;
9. Demonstrated high level of computer literacy;
10. Demonstrated strong work ethics and commitment to team work;
11. High standard of written and oral communication skills, with an expectation to write publication quality manuscripts as well as grant applications.

## **Other job-related information**

- Travel to other campuses of the University for sessions, meetings and training
- Due to the nature of the work, it will be necessary sometimes to work out of hours, either on weekdays or on weekends
- Peak periods of work during which the taking of leave may be restricted Travel (e.g. to other campuses of the University) may be required

## **Legal compliance**

Ensure you are aware of and adhere to legislation and University policy relevant to the duties undertaken, including: Equal Employment Opportunity, supporting equity and fairness; Occupational Health and Safety, supporting a safe workplace; Conflict of Interest (including Conflict of Interest in Research); Paid Outside Work; Privacy; Research Conduct; and Staff/Student Relationships.