



## Position Description

College/Division:	ANU College of Science
Faculty/School/Centre:	Research School of Physics
Department/Unit:	Department of Theoretical Physics
Position Title:	Postdoctoral Fellow
Classification:	Academic Level A
Position No:	TBC
Responsible to:	Director, Research School of Physics
Number of positions that report to this role:	
Delegation(s) Assigned:	

### PURPOSE STATEMENT:

The purpose of this appointment is to

- Strengthen the Research School of Physics as an international centre of excellence in Theoretical Physics; and
- Contribute to the objectives of an externally funded project

The Research School of Physics at the Australian National University is a node of the Australian Research Council Centre of Excellence for Dark Matter Particle Physics and is seeking to appoint a theoretical physicist for three years to work within this Centre. The Centre is composed of experimentalists and theorists working to investigate a profound problem in physics: finding the nature of Dark Matter particles. The candidate is expected to actively collaborate with members from the Centre and to contribute to its activities.

Using theoretical concepts and tools to describe direct detection of WIMPs, the candidate is expected to generate new knowledge and improve understanding of the nature of Dark matter particles as well as their interaction mechanisms with “normal” matter. Experience in nuclear and/or particle theory, for instance in Effective Field Theory, is recommended. The project aims to leverage Australian capacity in nuclear and particle physics theory to produce a predictive model of direct detection of WIMPs. It will provide new theoretical guidance to experimental programs of the Centre. Close collaborations between theorists and experimentalists are highly encouraged.

The Postdoctoral Fellow is expected to undertake work in all three areas of academic activity –research, education and service (including outreach). The allocation of time to each area will be discussed with the position supervisor annually and be reflective of the external funding conditions that support the appointment, the appointees research agenda, school and interdisciplinary teaching requirements and leadership opportunities within the School environment. The Postdoctoral Fellow may also be required to supervise or assist in the supervision of students, and contribute cooperatively to the overall intellectual life of the School, College and University.

### POSITION DIMENSION AND RELATIONSHIPS:

The Postdoctoral Fellow will be a member of Research School of Physics, accountable to the Head, Department of Theoretical Physics and Director of the School. The Postdoctoral Fellow will be expected to work collegially, leading by example to develop and maintain effective, productive and beneficial workplace relationships within the all academic and professional School and College staff, students and honorary appointees, as well as with industry stakeholders. This position will also have a mentoring role for students and will engage in collegial and productive collaborations with local, national and where possible, international colleagues.

In this specific position the appointee will also be required to work full-time on research, under the supervision of Prof. C. Simenel. The work will principally be directed towards the research project(s) for which funding was received from the Australian Research Council, into Dark Matter Particle Physics, developing new theoretical modelling and numerical simulations, and publication.

## Role Statement:

In their role as an Academic Level A the Postdoctoral Fellow is expected to:

1. Undertake independent research in the area of Subatomic Physics with a view to publishing original and innovative results in refereed journals, present research at academic seminars and at national and international conferences, and collaborate with other researchers at a national level. This includes working as part of a team on an externally funded project subject to deadlines.
2. Collaborate with senior staff to actively seek and secure external funding, assist to prepare and submit research proposals to external funding bodies as appropriate.
3. Subject to the requirements of the funding source and where an opportunity exists, the occupant may be required to contribute to the teaching activities of the School at the undergraduate and graduate levels. This includes, but is not limited to, the preparation and delivery of lectures and tutorials, the preparation of online material, marking and assessment, consultations, and with students or acting as subject coordinators.
4. Supervise students working on individual or group projects at undergraduate, honours, graduate-coursework levels. Assist with supervision of research students.
5. Assist to supervise research support staff in your research area.
6. Actively contribute to all aspects of the operation of the School.
7. Assist in outreach activities including to prospective students, research institutes, industry, government, the media and the general public.
8. Maintain high academic standards in all education, research and administration endeavours.
9. Take responsibility for their own workplace health and safety and not willfully place at risk the health and safety of another person in the workplace.
10. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.
11. Other duties as required that are consistent with the classification of the position.

## Skill Base

A Level A academic will work with the support and guidance from more senior academic staff and is expected to develop their expertise in teaching and research with an increasing degree of autonomy. A Level A academic will normally have completed four years of tertiary study or equivalent qualifications and experience and may be required to hold a relevant higher degree.

A Level A academic will normally contribute to teaching at the institution, at a level appropriate to the skills and experience of the staff member, engage in scholarly, research and/or professional activities appropriate to their profession or discipline, and undertake administration primarily relating to their activities at the institution. The contribution to teaching of Level A academics will be primarily at undergraduate and graduate diploma level.

## SELECTION CRITERIA:

1. A PhD (or awarding of a PhD within six months of appointment commencement) in Physics, or equivalent qualifications and experience in a related area, with a track record of independent research in the field of Nuclear or Particle Physics as evidenced by publications in peer-reviewed journals and conferences
2. Evidence of the ability to articulate and prosecute innovative research in the field of Subatomic Physics
3. An ability and commitment to contribute to bids for competitive external funding to support individual and collaborative research activities.
4. Evidence of an ability and willingness to teach at all levels.
5. The ability to assist in the supervision of students working on research projects.
6. The ability to work as part of a team and to meet deadlines.
7. Excellent oral and written English language skills and a demonstrated ability to communicate and interact effectively with a variety of staff and students in a cross-disciplinary academic environment and to foster respectful and productive working relationships with staff, students and colleagues at all levels.
8. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.

Delegate Signature:

Date:

Printed Name:

Professor Cedric Simenel

Position:

## References:

[Academic Minimum Standards](#)



## Position Description

College/Division:	ANU College of Science
Faculty/School/Centre:	Research School of Physics
Department/Unit:	Department of Theoretical Physics
Position Title:	Research Fellow
Classification:	Academic Level B
Position No:	TBC
Responsible to:	Director, Research School of Physics
Number of positions that report to this role:	TBC
Delegation(s) Assigned:	

### PURPOSE STATEMENT:

The purpose of this appointment is to

- Strengthen the Research School of Physics as an internationally centre of excellence in Theoretical Physics; and
- Contribute to the objectives of an externally funded project

The Research School of Physics at the Australian National University is a node of the Australian Research Council Centre of Excellence for Dark Matter Particle Physics and is seeking to appoint a theoretical physicist for three years to work within this Centre. The Centre is composed of experimentalists and theorists working to investigate a profound problem in physics: finding the nature of Dark Matter particles. The candidate is expected to actively collaborate with members from the Centre and to contribute to its activities.

Using theoretical concepts and tools to describe direct detection of WIMPs, the candidate is expected to generate new knowledge and improve understanding of the nature of Dark matter particles as well as their interaction mechanisms with “normal” matter. Experience in nuclear and/or particle theory, for instance in Effective Field Theory, is recommended. The project aims to leverage Australian capacity in nuclear and particle physics theory to produce a predictive model of direct detection of WIMPs. It will provide new theoretical guidance to experimental programs of the Centre. Close collaborations between theorists and experimentalists are highly encouraged.

The Research Fellow is expected to undertake work in all three areas of academic activity –research, education and service (including outreach). The allocation of time to each area will be discussed with the position supervisor annually and be reflective of the appointees research agenda, school and interdisciplinary teaching requirements and leadership opportunities within the School environment. The Research Fellow may also be required to supervise or mentor less senior staff, and undertake leadership roles as applicable. The staff member will contribute cooperatively to the overall intellectual life of the School, College and University.

### POSITION DIMENSION AND RELATIONSHIPS:

The Research Fellow will be a member of Research School of Physics, accountable to the Head, Department of Theoretical Physics and Director of the School. The Research Fellow will be expected to work collegially, leading by example to develop and maintain effective, productive and beneficial workplace relationships within the all academic and professional School and College staff, students and honorary appointees, as well as with industry stakeholders. This position will also have a mentoring role for students and will engage in collegial and productive collaborations with local, national and where possible, international colleagues.

In this specific position the appointee will also be required to work full-time on research, under the supervision of Prof. C. Simenel. The work will principally be directed towards the research project(s) for which funding was received from the Australian Research Council, into Dark Matter Particle Physics, developing new theoretical modelling and numerical simulations, and publication.

## Role Statement:

In their role as an Academic Level B the Research Fellow is expected to:

1. Undertake independent research in the area of Subatomic Physics with a view to publishing original and innovative results in refereed journals, present research at academic seminars and at national and international conferences, and collaborate with other researchers at a national and/or international level.
2. Actively seek and secure external funding including the preparation and submission of research proposals to external funding bodies.
3. Contribute to the teaching activities of the School at the undergraduate and graduate levels. This includes, but is not limited to, the preparation and delivery of lectures and tutorials, the preparation of online material, marking and assessment, consultations with students, acting as subject coordinators and the initiation and development of course/subject material.
4. Supervise students working on individual or group projects at undergraduate, honours, graduate-coursework levels. Supervision of research students.
5. Supervise Postdoctoral Fellow's and research support staff in your research area.
6. Actively contribute to all aspects of the operation of the School. This may include representation through committee memberships.
7. Assist in outreach activities including to prospective students, research institutes, industry, government, the media and the general public.
8. Maintain high academic standards in all education, research and administration endeavours.
9. Take responsibility for their own workplace health and safety and not willfully place at risk the health and safety of another person in the workplace.
10. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.
11. Other duties as required that are consistent with the classification of the position.

## Skill Base

A Level B academic will undertake independent teaching and research in their discipline or related area. In research and/or scholarship and/or teaching a Level B academic will make an independent contribution through professional practice and expertise and coordinate and/or lead the activities of other staff, as appropriate to the discipline.

A Level B academic will normally contribute to teaching at undergraduate, honours and postgraduate level, engage in independent scholarship and/or research and/or professional activities appropriate to their profession or discipline. The academic will normally undertake administration primarily relating to their activities at the institution and may be required to perform the full academic responsibilities of and related administration for the coordination of an award program of the institution.

## SELECTION CRITERIA:

1. A PhD in Physics or a related area, with a track record of independent research in the field of Nuclear or Particle Physics as evidenced by publications in peer-reviewed journals and conferences, a record of developing and maintaining collaborations and by other measures such as awards, and invitations to present at conferences.
2. Evidence of the ability to articulate and prosecute innovative research in the field of Subatomic Physics and a vision for the activities they will undertake at the ANU.
3. A demonstrated ability and commitment to apply for competitive external funding to support individual and collaborative research activities.
4. Evidence of an ability and willingness to teach at all levels.
5. An ability to supervise and graduate high quality PhD/Masters research students.
6. The demonstrated ability to work as part of a team, contributing to team management and a demonstrated ability to meet deadlines.
7. Excellent oral and written English language skills and a demonstrated ability to communicate and interact effectively with a variety of staff and students in a cross-disciplinary academic environment and to foster respectful and productive working relationships with staff, students and colleagues at all levels.
8. A demonstrated understanding of equal opportunity principles and policies and a commitment to their application in a university context.

Delegate Signature:		Date:	
Printed Name:	Professor Cedric Simenel	Position:	

## References:

[Academic Minimum Standards](#)