



Post Specification

Post Title	PhD Studentship
Post Status	Full-time for 4 years
Research Group/ Department/School	Muñoz-Wolf Lab - Translational & Respiratory Immunology / Clinical Medicine Tallaght / School of Medicine
Location	School of Medicine, Trinity Biomedical Sciences Institute, Trinity College Dublin, the University of Dublin, College Green, Dublin 2, Ireland
Reports to	Supervisor: Res. Asst. Professor Natalia Muñoz-Wolf Co-supervisor: Prof. Seamas Donnelly
Terms & Conditions	€18,000 annual stipend plus academic fees
Closing Date	5pm (Irish Standard Time UTC +01:00), 31st January 2021

NOTE: Applicants must have been resident in an EU member state for 3 out of the last 5 years to be eligible for EU fees.

Post Summary

THE GUT LUNG AXIS OF IMMUNE REGULATION: DEFINING THE ROLE OF THE GUT MICROBIOME IN COPD INFLAMMATORY OUTCOMES AND LUNG INFECTION.

Summary of the project:

Chronic Obstructive Pulmonary Disease (COPD) is a progressive lung disease and the 3rd leading cause of death globally affecting up to 6% of older adults. The available drug treatments can help ease the symptoms but are currently unable to reverse lung damage. Therefore, COPD remains an incurable disease. Dr Natalia Munoz-Wolf and her research group at Trinity College Dublin aim at designing novel treatments to improve COPD outcomes by harnessing one's own immune system. New evidence points towards a connection between the gut and the lungs that defines the '*Gut-Lung Axis of Immune Regulation*'. The gut microbiome and microbial-derived metabolites play an important role in this cross-talk influencing the immune function and cell trafficking in the lungs. Shifts in the composition of the gut microbiome or dysbiosis correlate with worsening of inflammatory lung conditions and respiratory viral infections which often affect COPD patients causing COPD acute exacerbations or flare-ups that accelerate lung function decline.

Cutting edge research by the PI and her collaborators, identified microbial-derived metabolites in the gut capable of inducing protection against bacterial infections in the lungs by modulating the activity of innate cells. These metabolites hold great potential for the treatment of lung infections and inflammatory conditions such as COPD.

Using state-of-the-art techniques, the PhD student will dissect the molecular mechanisms whereby these microbial-derived metabolites modulate lung immunity and build the foundations for their

clinical application. The PhD candidate will work in a highly collaborative and dynamic environment at the intersection of immunology, microbiology and respiratory medicine.

This project will allow us to harness the power of the gut microbiome to develop nutritional and microbiome-based therapies for improved clinical management of acute and chronic lung conditions including COPD.

Standard Duties and Responsibilities of the Post

This is a full-time 4 year position where the student will work within the Translational & Respiratory Immunology group towards their PhD, fulfilling all School and college requirements. The student will spend most of the time working at TBSI, but work at Tallaght Hospital or short stays at collaborating laboratories in Ireland and/or abroad can be expected.

Funding Information

This is a fully funded position is funded by the Health Research Board (HRB) Emerging Investigator Awards to Dr. Natalia Muñoz-Wolf.

Person Specification & Qualifications

The ideal applicant will have a 1st Class or upper 2.1 Honours Bachelor's degree or a Master's degree in *Immunology, Biochemistry, Microbiology or a related discipline*. The researcher will work closely with other members of a multidisciplinary project team and with international scientific collaborators so strong written and oral English communication skills are required.

Application Procedure

Applicants should submit a full Curriculum Vitae and cover letter including the names and contact details of at 2 referees (including email addresses) to:

Name: Research Assistant Professor, Dr Natalia Muñoz-Wolf

Email Address: munozwon@tcd.ie

Shortlisted applicants may be contacted for an online/phone interview.

Further Information for Applicants

URL Link to Trinity College Dublin	www.tcd.ie
URL Link to Human Resources	https://www.tcd.ie/hr/
URL Link to School	https://www.tcd.ie/medicine/
Links to the Translational & Respiratory Immunology group	www.respiratoryimmunology.com https://www.tcd.ie/medicine/clinical-medicine/news/hrb-emerginv-award-2019.php

Trinity College Dublin, the University of Dublin

Trinity is Ireland's leading university and is ranked 108th in the world (QS World University Rankings 2020). Founded in 1592, the University is steeped in history with a reputation for excellence in education, research and innovation.

Located on an iconic campus in the heart of Dublin's city centre, Trinity has 18,000 undergraduate and postgraduate students across our three faculties – Arts, Humanities, and Social Sciences; Engineering, Mathematics and Science; and Health Sciences.

Trinity is ranked as the 17th most international university in the world (Times Higher Education Rankings 2020) and has students and staff from over 120 countries.

The pursuit of excellence through research and scholarship is at the heart of a Trinity education, and our researchers have an outstanding publication record and strong record of grant success. Trinity has developed 19 broad-based multidisciplinary research themes that cut across disciplines and facilitate world-leading research and collaboration within the University and with colleagues around the world. Trinity is also home to 5 leading flagship research institutes:

- Trinity Biomedical Sciences Institute (TBSI)
- Trinity College Institute of Neuroscience (TCIN)
- Trinity Translational Medical Institute (TTMI)
- Trinity Long Room Hub Arts and Humanities Research Institute (TLRH)
- Centre for Research on Adaptive Nanostructures and Nanodevices (CRANN)

Trinity is the top-ranked European university for producing entrepreneurs for the past five successive years and Europe's only representative in the world's top-50 universities (Pitchbook Universities Report).

Trinity is home to the famous Old Library and to the historic Book of Kells as well as other internationally significant holdings in manuscripts, maps and early printed material. The Trinity Library is a legal deposit library, granting the University the right to claim a copy of every book published in Ireland and the UK. At present, the Library's holdings span approximately 6.5 million printed items, 400,000 e-books and 150,000 e-journals.

With over 120,000 alumni, Trinity's tradition of independent intellectual inquiry has produced some of the world's finest, most original minds including the writers Oscar Wilde and Samuel Beckett (Nobel laureates), the scientists William Rowan Hamilton and Ernest Walton (Nobel laureates), the political thinker Edmund Burke, and the former President of Ireland Mary Robinson. This tradition finds expression today in a campus culture of scholarship, innovation, creativity, entrepreneurship and dedication to societal reform.

Rankings

Trinity is the top ranked university in Ireland and ranked 108th in the world (QS World University Rankings 2020). Trinity ranks in the top 50 in the world on 6 subjects and in the top 100 in 20 subjects (QS World University Rankings by Subject 2019). Full details are available at: www.tcd.ie/research/about/rankings.

Application Procedure

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Applicants should submit a full Curriculum Vitae and cover letter with the names and contact details of 2 referees (including email addresses), to:

Research Assistant Professor Dr Natalia Muñoz-Wolf

Email Address: munozwon@tcd.ie

Deadline January 31st, 5pm (Ireland time)

For informal queries please contact Prof. Muñoz-Wolf via e-mail.



Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin

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