



Maynooth University Ollscoil Mhá Nuad

Hamilton Institute

2 x Post-Doctoral Researcher (Molecular Computing) (24-month contract)

The Role

Applications are invited for up to two Post-Doctoral research positions in the field of molecular computing based in the group of Professor Damien Woods at the Hamilton Institute, with a possible co-appointment in the Department of Computer Science or other departments. Funding is provided by a five-year ERC project (Active-DNA) on the topic of molecular computing.

The role involves engineering DNA-based molecular computers and nanoscale machines in the wet-lab using carefully designed and clever experiments, as well as mathematically characterising their computational power. Successful candidates will develop their research skills, will publish high-quality work, and will have the opportunity to apply for funding, supervise students and advance their academic career. We seek candidates willing to take the lead on new research directions in an exciting and foundational research topic and who are excited to define the future of the field. The post will run for 24 months.

The ideal candidates should have a PhD and a background in the theoretical computer science **and/or** experimental practice of DNA-based molecular computing. Candidates with a theoretical background and experience are welcome but should try to demonstrate an interest and/or understanding of chemical, biochemical, physical theory relevant for thinking about molecular processes such as self-assembly, molecular robotics and/or chemical reaction networks. Also, candidates with a background in bioengineering, synthetic biology, molecular self-assembly, physics, chemistry and other related fields will be considered, but should have an interest in applying ideas from algorithms and computer programming to the molecular setting. The ideal candidate should have a history of outstanding research publications commensurate with career stage.

The level of appointment and salary will be in accordance with the research experience, including publication record, of the candidate. Please see <https://www.dna.hamilton.ie/woods/> and <https://www.dna.hamilton.ie/> for more details about the research group. Informal queries may be addressed to: damien.woods@mu.ie.

Hamilton Institute

The Hamilton Institute is the university's pillar research institute that aims to bridge the gap between mathematics, computation and its applications. Founded in 2001 with seed funding of €5M awarded by Science Foundation Ireland (SFI) it has won competitive research funding exceeding €35M.



The Institute's commitment to real applications work is reflected in its strong industry links, including partnerships with IBM, Medimmune, AstraZeneca and Unilever. Its commitment to research excellence is reflected in its research output as well as active links with leading international research groups (at MIT, Caltech, Imperial College London, the Walter and Eliza Hall Institute of Medical Research, Institute Curie, amongst others) and consistently high ratings in external quality reviews. The Institute has an active international visitor and workshop programme.

Recognition of its strategic role both within NUI Maynooth and nationally is reflected in its success in the last two rounds of PRTL national infrastructure funding where it was awarded recurrent funding to establish structured graduate programme and €4.5M capital funding for new research space.

Major focuses of research activity at the institute currently include the computational sciences, molecular computing, machine learning, optimization, probability and statistics, and the mathematics of networks.

The University

Maynooth University is committed to a strategy in which the primary University goals of excellent research and scholarship and outstanding education are interlinked and equally valued.

Maynooth University is one of the four constituent universities of the National University of Ireland and in 2017 was placed in the global top 100 universities under 50 years old in the Times Higher Education World University Rankings. Formally established as an autonomous university in 1997, but tracing its origins to the foundation of the Royal College of St. Patrick in 1795, Maynooth University draws on a heritage of over 200 years' commitment to education and scholarship. It is located in the University town of Maynooth, 25km from the centre of Dublin, Ireland's capital city.

The University is a modern institution - dynamic, research-led, engaged, and grounded in the traditions of liberal education. With more than 12,000 students, Maynooth is Ireland's fastest-growing university, yet we retain a collegial campus culture that is central to our ability to bring significant interdisciplinary expertise to bear in tackling some of the most fundamental challenges facing society today. MU has a distinctive disciplinary profile compared to other universities in Ireland, with research and teaching strengths in humanities and social sciences, science, electronic engineering, business, law and teacher education. The University has major research institutes and centres in the areas of: humanities; social sciences; mathematics, computation and communication; human health; business and service innovation; climate change; and Geocomputation.

The University has, under the *University Strategic Plan 2012-17*, further enhanced its capacity and reputation for research, transformed its undergraduate curriculum, grown postgraduate enrolments and become even more international, diverse and engaged. MU makes, and is seen to make, an important and distinctive contribution to our national system of higher education.

Maynooth University is now embarking upon a new and exciting phase with the development of the *University Strategic Plan 2018-22*, with a vision to consolidate the international reputation of Maynooth University "as a university known for outstanding teaching, excellent research, a global outlook, effective engagement with the society we serve, and our distinctive approach to the challenges facing modern higher education."

The *University Strategic Plan 2018-22* builds on the institution's strengths and accomplishments, concentrating energy and resources on further development in research and postgraduate education. The strategy focuses on:

- targeted investment in research capacity in a number of priority areas;
- extending the postgraduate portfolio and growing the postgraduate community;
- realising the full benefits of our innovative undergraduate curriculum;



- enhancing the student experience;
- comprehensive and ethical internationalisation;
- equality diversity inclusion and interculturalism as enablers of academic excellence

These strategic goals are underpinned by a commitment to invest, first and foremost in people and opportunities for their development and success, and also in the systems and infrastructure required to achieve scholarly and educational objectives.

Selection and Appointment

- Only shortlisted candidates will be invited for interview;
- It is anticipated that interviews will be held during April 2019;
- The appointment is expected to be effective from May 2019.
- Applicants should submit a CV along with a cover letter. The cover letter should be a research statement of up to 4 pages articulating suitability for the position. Candidates are free to choose the content for their research statement as they please; suggested topics include their research vision and plans, as well as justification of why their experience, interests and research plans make them an ideal candidate.

Data Protection Law

Maynooth University will process any personal data provided by you in connection with an application for this role in accordance with the General Data Protection Regulation and the Data Protection Acts 2018.

If your application is successful and you accept an offer of employment at Maynooth University, then your personal data will continue to be processed in accordance with Maynooth University's Staff Data Privacy Notice.

Both the privacy notices and further information relating to data protection, including Maynooth University's other data protection policies and processes, can be viewed at <https://www.maynoothuniversity.ie/data-protection>

Salary

Post-Doctoral Researcher (1 to 5 points): €37,223 to €41,827 per annum

Appointment will be made in accordance with the Department of Finance pay guidelines.

Application Procedure

Closing Date: 23:30hrs (local Irish time) on **Sunday, 7 April 2019.**

All applications must be made via our **Online Recruitment Portal** at the following link:
<https://www.maynoothuniversity.ie/human-resources/vacancies>

Any applications which are still in progress at the closing time will be cancelled automatically by the system.

**Maynooth University is an equal opportunities employer
The position is subject to the Statutes of the University**

