



MSc Biotechnology Student Experience



Current Student Testimonial

Eva Walsh
BSc in Food Science & Health,
University of Limerick



I am a current student in the MSc in Biotechnology Programme and come from a BSc in Food Science background. From completing my undergraduate degree during the covid-19 pandemic I was fascinated by how the biotechnology industry pivoted so quickly by adapting to problems in real time posed by the pandemic. This led me to re-assess my long-term career goals as I felt I wanted to be a part of this exciting industry developing novel solutions that had a positive impact on people's lives.

The MSc in Biotechnology Programme allowed me to take my fundamental knowledge from food science and apply it to a broader future in science. I studied several exciting new modules that further developed my proficiency such as Pharmacology, Industrial Processes, Protein Technology and Immunology. These modules opened so many doors that have a distinct focus on training your mind to the up-and-coming biotechnological advances of today's world. I found these modules gave me the skill and understanding that I could bring to a practical fast-paced industrial environment.

I was delighted to have the opportunity to do a five-month lab research project in which I am currently developing diagnostic tools to identify new bacterial strains. This project is giving me practical lab experience in a research-based environment.

The small class size enhanced interactive learning which considerably increased my understanding of the course material. The curriculum has a clear emphasis on improving presentation and scientific communication skills to take way beyond the realms of this masters that I will use for the rest of my scientific career.

Overall, this masters has uniquely positioned me to look at real world problems and come up with innovative ways of solving them. It has put me at the cutting edge of the practical applications of science and if that is something you want to be a part of then I would highly recommend this course.

Past Student Testimonial

Gráinne O'Connor
MSc Biotechnology Graduate



Present Position: Research Assistant, UniCoV project, NUI Galway

I decided to do the MSc Biotechnology at NUI Galway after completing my BSc in Microbiology. I wanted to learn more about the Biotech Industry and gain skills that I could apply in future employment. I knew from experience that the facilities and staff at NUI Galway are first-class. I am very happy with my decision to continue my studies here, I really enjoyed the year that I spent undertaking the MSc. Modules were taught by lecturers who were experts in their field, meaning that the material was up-to-date and included cutting-edge research. Alongside lectures, the programme helped me refine my presentation and scientific communication skills. The small class size made for an interactive learning environment and encouraged discussion between lecturers and students. Students were from diverse scientific backgrounds, leading to interesting scientific conversations and opinions that I previously may not have thought of. Highlights of the year included industry visits and setting up our own brewery. It left me feeling prepared for industry or further research and I believe that it has given me scientific and communication skills that I will use for the rest of my scientific career.



2015 MSc Biotechnology Graduates

Major advantages of the MSc Biotechnology Programme

- ✓ Small class size promotes interactive sessions



2015 MSc Biotechnology Class

- ✓ A 5-month MSc Research project enables students gain first-hand experience in a research active laboratory or within an industry laboratory setting

"The MSc in Biotechnology at NUI Galway opens up doors for anyone who does not know how they would like to apply their scientific knowledge in the workforce. I completed the course in 2010 and it was one of the most enjoyable and rewarding years of my college life. I got more from the course than I ever expected. You get a taste of everything, from lectures in immunology to marketing, so each day I was learning something new. Although it was a taught masters, it was very much group work orientated with lots of student-lecturer interaction. For my 4 month lab-based research project I was working with nanoparticles, a next generation technology that is at the forefront of modern biotechnology. I worked with microbiologists, physicists, and molecular biologists and met the most helpful and enthusiastic people that clearly have a love for science. Everyone in the department from the lab technicians to the lectures to the course co-ordinators are very approachable and there is a very good relationship between the masters students and the staff. The knowledge and experience I have gained doing the programme at NUI Galway has enabled me to work anywhere in the world. I am currently working in a research lab in Madrid, experiencing a new culture while doing what I love in the lab!"



Mona Connolly
MSc Biotechnology Graduate
(2010)

- ✓ MSc Research Symposium Day 2015
 - ✓ On completion of the MSc Research element students presented their findings in the format of a poster presentation. A prize for the most outstanding poster was award on the day.



Roisín Higgins receiving her 2015 MSc Research Symposium trophy from Prof. Vincent O'Flaherty, Head of School of Natural Sciences, NUI Galway



2014-2015 MSc Biotechnology students presenting their research at the MSc Research Symposium Day

- ✓ Industry visits - Medtronic site visit and many industry guest speakers were invited to present to the MSc Biotechnology students

Research Project



Boston
Scientific

eagasc
AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY

A **5-month laboratory research project** within an **academic research team** on a subject related to biotechnology

Or

May opt to carry out their research project within **Industry**

2015 MSc Research Symposium winner Roisín Higgins describes her impressions of her year on the MSc Biotechnology programme at NUI Galway



On finishing my undergraduate studies, I was determined to broaden my knowledge of the complexity of biological systems, while embracing the opportunity to apply my biochemistry knowledge to medical use. The MSc Biotechnology Programme at NUIG has not only advanced my theoretical knowledge and practical skills, but has also broadened my understanding of current technologies and the various processes used in the biotechnology industry.

I have always been keen on pursuing a career within the Biopharmaceutical industry. Through optional elective modules, the MSc Biotechnology Programme allowed me to structure the programme to meet my own particular requirements, allowing me to focus on my particular area of interest - protein therapeutics. Students from various scientific backgrounds can therefore gain the theoretical knowledge and experience necessary to pursue their individual career paths, be it industry oriented or research focused. The incorporation of a business module (which integrated management, marketing and accounting), which includes the development of a biotechnology business plan, provides a new perspective for identifying and developing creative ideas within the Biotech industry. A 5-month research project forms a core part of the programme, during which students are given the opportunity to get hands on experience working alongside some of NUIG's leading researchers. The availability of a wide range of projects in various disciplines throughout the University ensured each student gained the practical experience within their desired field. The opportunity to work in the Recombinant Protein Lab at NUIG has not only given me the practical skills for the expression of recombinant proteins, but has provided me with the invaluable experience of working with senior scientists on a Marie Curie Industry-Academia funded project, involving other academic institutions and industrial partners, all the while working in state-of-the-art research labs.

For me, the MSc Biotechnology Programme has been an invaluable experience and one that I would highly recommend to anyone who wishes to expand their theoretical knowledge and to gain the hands on practical experience necessary to secure a job within the Biotech industry. The programme certainly exceeded my expectations. Not only did I gain invaluable skills, all of which are transferable from academia to an industry setting, but the continual interaction with the course co-ordinators ensured an extremely well run programme, making it a very enjoyable year.

Medtronic Visit

MSc Biotechnology Students describes their visit to Medtronic

Juee Mahakal

Sometimes you can match few things with your dreams... A visit to Medtronic was one such in my case. A few weeks before the visit I gave a paper presentation on 3D-Bioprinting and I wished to see a 3D- Bioprinter someday. I had no idea that an industrial visit to Medtronic would fulfil my dream. It was a very interesting day, in fact with a visit of one day which gave us so much to look about in future as a career perspective. The history of Medtronic was very inspiring - how a person started from zero and made it so large in the Medical diagnostic field which serves millions of people in the world who suffer from various medical complications. The rounds in to the various departments in Medtronic gave me an overview of how well they have amalgamated the new advanced technology with the old. We saw how much effort, dedication and innovation is required to make one stent or to design one pacemaker and this is done just taking patients into consideration and makes their lives easier post-treatment. By experiencing the working environment in Medtronic and the quality of work they do, it made me want to explore and grab the chance of working in such an amazing company.



Juee Mahakal

**MSc Biotechnology
Student (2015-2016)**

Aidan McGrath

My career plans involve gaining a few years in industry once I graduate and then deciding whether or not to pursue a PhD programme. Although I would travel, my first preference would be to gain this experience in Ireland. As Galway is a hub of activity in the medical device industry and extremely close to home, gaining this experience here would be ideal. Medtronic is one of the largest medical device manufacturers in the world and it has a large facility located in Parkmore Business Park West in Galway. As a student of NUIG's Biotechnology master's programme I was given a tour of this facility and was extremely impressed by the size and scope of the operations being carried out. We met some of the engineers working in the research and development department and were given a description of how their labs work. We were also given a short presentation as regard to the medical device industry in Ireland and Medtronic's operation in particular. It was mentioned during the presentation that the medical device industry is expected to see significant growth over the coming decades due to an aging population in developed countries and growing opportunities in developing countries. This in turn should lead to more employment opportunities here in Galway. Although it may be difficult to get a position in the research and development department it was made clear that there are many opportunities in other departments such as quality control and sterilization. My lasting memory of our visit to Medtronic was how the practical application of science to improve people's quality of life is one of the reasons I chose to pursue a career in Biotechnology and Medtronic's facility is example of how this can happen. It was clear that Medtronic is one of the companies that can help me achieve my career goals and for this reason, as well as the reasons above, I intend to apply for a position there as soon as I graduate.

