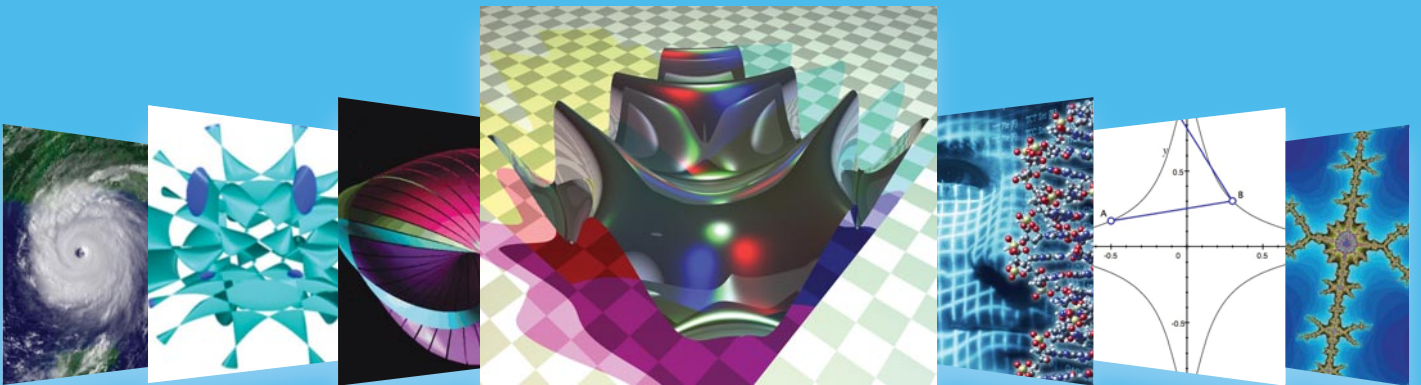




UCD School of Mathematical Sciences Careers

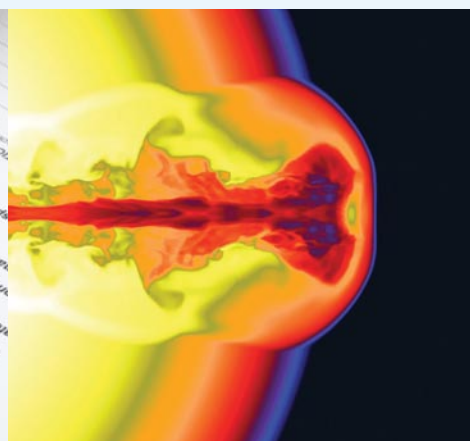
Allianz CanadaLife Vodafone
PWC Paddy Power J.P. Morgan O2
Man Investments Friends First
Deloitte And Touche The Irish Times
Grant Thornton SPSS Bank of Ireland
Airtricity Watson Wyatt Mercer



UCD

About Us

The UCD School of Mathematical Sciences is the largest and most diverse in Ireland with a history dating back to the formation of the University in 1854. We offer the greatest choice of programmes in Ireland at undergraduate, masters and PhD level across three subject areas: Applied & Computational Mathematics, Mathematics and Statistics & Actuarial Sciences. Graduates from our School have left us to join the world's leading universities including Oxford, Cornell, Caltech and Harvard, or work in a range of highly recognised companies including O2, Google, Paddy Power, EBay, Deloitte, AXA and Zurich.



Why study with the UCD School of Mathematical Sciences?

Despite the negative economic situation at the moment, graduates of our degrees are in huge demand. In recent years, students have chosen not to study mathematical degrees in Ireland, and now there is a real shortage of graduates in this area. Companies cannot find enough graduates with the skills offered in our degrees.

Studying in the UCD School of Mathematical Sciences is an enjoyable and intellectually challenging activity which rewards clear thinking and stimulates an enquiring mind. We see mathematical science as the systematic study of quantity, structure, space and change. Choosing Applied and Computational Mathematics, Mathematics, Statistics and Actuarial Science, Mathematical Sciences or Applied Mathematics and Mathematics Education as your degree will greatly enhance your career opportunities and is a prerequisite for graduate studies in a variety of disciplines.

Today, mathematical knowledge is a basic tool in all scientific subjects, including engineering, geography, computer science and economics. Advances in mathematical techniques and intensive numerical computation are also applied in biology, social science and finance.

Salaries for graduates with any of our degrees are very attractive. Some recent graduates started their first jobs on salaries exceeding 50,000 Euro. Studying for your degree within the UCD School of Mathematical Sciences will make you a versatile and highly sought-after employee.

Many of our graduates go on to be extremely successful in a whole variety of careers.

Undergraduate Programmes

CAO CODE	PROGRAMME NAME
DN200 MPG (UCD Science)	BSc Applied and Computational Mathematics
DN200 MPG (UCD Science)	BSc Mathematics
DN200 MPG (UCD Science)	BSc Statistics
DN200 MPG (UCD Science)	BSc Mathematical Science
DN200 MPG (UCD Science)	BSc Theoretical Physics
DN200 MPG (UCD Science)	BSc Applied Mathematics and Mathematics Education
DN200 MPG (UCD Science)	BSc Biology and Mathematics Education
DN200 MPG (UCD Science)	BSc Chemistry and Mathematics Education
DN200 MPG (UCD Science)	BSc Physics and Mathematics Education
DN230 (UCD Science Direct Entry)	Actuarial and Financial Studies
DN500 (Arts)	BA Statistics
DN500 (Arts)	BA Mathematics

Postgraduate Programmes

We offer a range of postgraduate study options such as Masters Degrees in Actuarial Science, Mathematics, Mathematical Science, and Statistics. We provide PhD degrees in Mathematics, Statistics and Applied and Computational Mathematics.

In addition to these options, we offer the following Higher Diplomas and Graduate Diplomas: HDip Mathematical Science, HDip Statistics, HDip Mathematical Studies and Graduate Diploma Actuarial Science. These diplomas allow students with bachelor's degrees in cognate disciplines the opportunity to achieve a recognised qualification in the mathematical sciences.

Careers for Mathematical Sciences Graduates

A degree from the UCD School of Mathematical Sciences enables students to choose from a range of careers such as:

- Academia
- Actuary
- Biostatistics
- Business and Finance
- Computing & Technology
- Data Analyst
- Energy
- Entrepreneurs
- Meteorology
- Pharmaceuticals and Biopharmaceuticals
- Research
- Statistics

Academia/Lecturer in Statistics

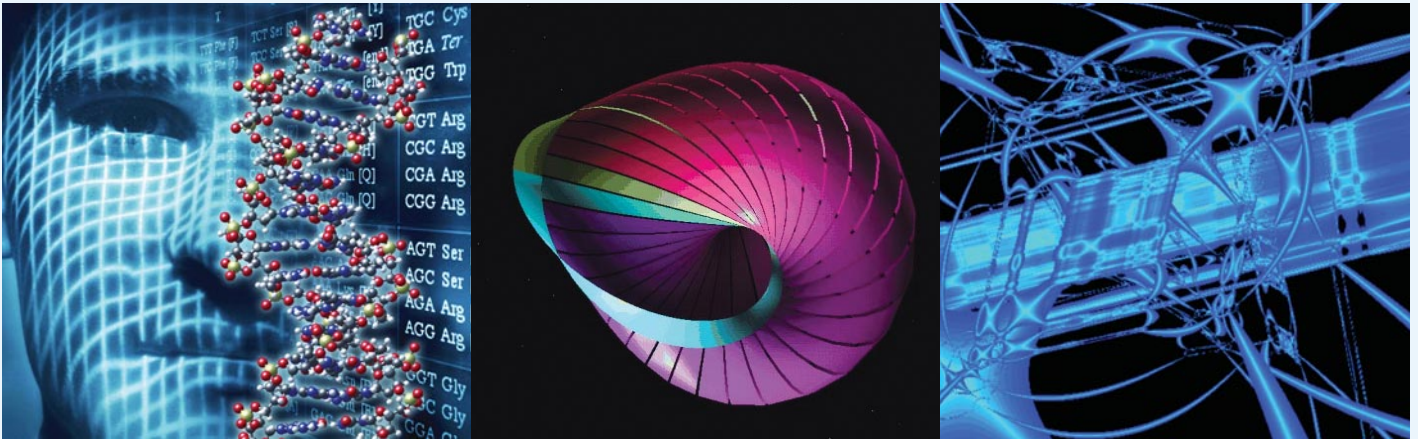


Dr Caroline Brophy, BSc Mathematics and Statistics, PhD Statistics, Department of Mathematics NUI Maynooth

I would recommend the School of Mathematical Sciences in UCD to prospective students; I found it to be a great place to study. At undergraduate level I had many classes with small groups. This allowed a lot of interaction with lecturers and made it easy to get to know other students. My positive experiences as an undergraduate helped in making my decision to continue with postgraduate studies at UCD. The postgraduate research activities in the School of Mathematical Sciences are growing each year in academic strength and student numbers, making it an ideal environment

Questions? Call us on +353 1 716 7152 or email us at mathsciences@mathsucd.ie
For further information please visit our website: <http://www.ucd.ie/mathsciences>

Allianz CanadaLife Vodafone
 PWC Paddy Power J.P. Morgan O2
 Man Investments Friends First
 Deloitte And Touche The Irish Times
 Grant Thornton SPSS Bank Of Ireland
 Airtricity Watson Wyatt Merce



to do postgraduate research. During my PhD I got to know many members of staff who were always willing to help in different ways. The resources and opportunities made available to me during this period have proved invaluable. Studying in UCD was challenging, rewarding and fun, and it led me into a career that I enjoy very much.

Actuary



Mr Troy Tyson, BSc Mathematical Sciences, MSc Actuarial Science, Trainee Actuary in the Product Management Department of New Ireland Assurance.

By the final year of my undergraduate degree in Mathematical Sciences,

I honestly didn't know what career I wanted to pursue. All I knew was that I wanted it to involve the application of the skills I had acquired over my four years as an undergraduate. Moreover, I wanted there to be a strong emphasis on expanding my skill-set to become an industry specialist. Actuarial science seemed to be the natural career progression for me, and the MSc Actuarial Science programme at UCD was definitely the best choice in terms of pursuing these goals. Not only did it give me an insight into what is expected of an actuary on an academic level, it also gave me the opportunity to see what the world of an actuary was like when I went on my research placement in semester three.

Although the exams taken over the year are somewhat demanding, they were seen by students as an opportunity rather than an obstacle, since they afford you the opportunity to acquire exemptions from the professional examinations of the Institute and Faculty of Actuaries, (mandatory if one wishes to become a fully qualified actuary). With regards to my

career as an actuary, the research placement portion of the year was extremely beneficial. It gave me an insight into the typical day of an actuary working in the life insurance sector, and allowed me to show my enthusiasm toward the profession and my willingness to work hard to achieve my goals. The time spent on research placement ultimately got me to where I am today, as I was asked to come back and work for the company when the academic year had come to an end. The goal of the research placement is to complete an actuarial dissertation, ideally combining academic knowledge with the applied industrial experience of semester three. This dissertation allows the student to discuss and even challenge a branch of actuarial work they enjoy and are interested in. For me it was highly beneficial to put together a professional document that displayed my determination and interest, not only to staff in the UCD School of Mathematical Sciences, but also to my peers in industry.

I would highly recommend the UCD MSc Actuarial Science programme to those looking for a challenging yet rewarding year, and a launching pad for their career as an actuary.

Biostatistician



Mr Stephan Sah, MSc Statistics, Monaghan Mushrooms R&D Department, Ireland

The Master's degree in Statistics in UCD prepared me well for my current job. The combination of classroom work and analysis of real world data using the

current statistical tools make this course exceptional. The lecturers were more than helpful, both inside and outside the classroom, in assisting me whenever I had difficulties with my studies. I chose to study in UCD

because of the interesting modules they offered. Now, my plan is to gain as much work experience as possible and hopefully obtain a doctoral degree.

Computing and Technology



Mr Donal McMahon, Actuarial and Financial Studies, MSc Statistics, Google California

I completed both my undergraduate (BAFS) and Master's degree (Statistics) in the UCD School of Mathematical

Sciences. The decision to study these degrees was motivated by the fact that I always had a keen interest in mathematics, and wanted to pursue an applied career in this field. Actuarial studies at UCD was a challenging and interesting undergraduate degree programme. It provided a broad exposure to many fields of study, from economics to mathematics, and computer science to business management. At the same time, it provided specialized training in statistics and the core actuarial subjects. I decided to spend a further year at UCD to complete an MSc in Statistics, which provided a solid grounding for my future graduate work at Stanford University in California.

The breadth of education I received at UCD has been pivotal in my career. It has allowed me to straddle different subject areas, collaborating with people on problems in actuarial science, biotechnology, education, medicine, the financial industry, internet technology, marine biology and personalized health care. At present, I work for Google as a statistician in the Ads Quality team, where we organise the advertising auction and design algorithms to determine the adverts shown on web search result pages.

Computing and Technology/ Computer Programmer



**Mr Peter Sweeney, BSc
Theoretical Physics,
Ecommerce**

The undergraduate degree in Theoretical Physics offered by UCD provides an excellent foundation in applied, pure and computational mathematics. This degree would suit anyone who enjoyed studying mathematics and physics during their secondary level education. The degree is affiliated with both the UCD School of Mathematical Sciences and the School of Physics, and as a theoretical physics student you will be studying alongside both the experimental physics and mathematical science students. In the experimental physics classes you study modules which cover all the fundamental forces of nature, and in the mathematical science classes you develop the mathematical and computational skills needed to model them.

Upon graduating, there was a range of industries in which I could have worked. Currently, there is a huge shortage of individuals in industry with a diverse mathematical background, such as the one provided by UCD, but in the end I chose to go down the computational route. I am currently working as a software developer for one of Ireland's leading eCommerce providers, providing back-end functionality for web applications using a range of programming languages. Though my job would arguably be more suitable for a computer science graduate, the BSc in Theoretical Physics provided me with enough programming expertise to secure this job.

Data Analyst/Statistician



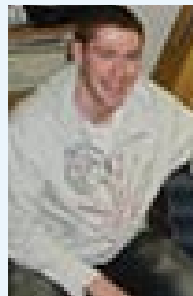
**Mr Colin Bolger, MSc
Statistics, Accenture
Dublin**

I have always had an interest in mathematical sciences. After graduating with a BSc in applied mathematics and statistics from another university, I felt I needed to hone my skills further to give me an edge in the business world. After much research, I felt the Master's degree in Statistics offered by the UCD School of Mathematical Sciences was the best option for me. The core modules of the course seemed to lay the foundations for any career in statistics, and there was a wide choice of optional modules to suit my particular career plan.

I found the lecturers excellent and the modules interesting and applicable. Although my undergraduate degree laid the foundations, I feel my MSc in Statistics from UCD was a real differentiator in terms of career prospects. I am working as a data analytics consultant at Accenture's Analytics and Innovation Centre, where I use the tools I have learned during my education to identify fraud and

non-compliance for major Irish, European and American clients. 'Analytics' is the buzz word at Accenture (and all of their clients) at the moment. It is truly one of the most in-demand skills right now and the UCD School of Mathematical Sciences offers the best courses with the best lecturers to equip you with the skills needed to thrive in this area.

Energy/Research Manager



**Dr Kenneth Doherty, BSc
Experimental Physics &
Applied Mathematics,
PhD, Aquamarine Power**

I specialised in both Experimental Physics and Applied Mathematics in UCD. The excellent courses and academic staff at UCD meant that I found these subjects both challenging and rewarding. I studied fluid mechanics, which is a major discipline in the field of applied mathematics.

I feel very fortunate now to be working at the heart of the pioneering industry that is marine renewable energy. My job description within Aquamarine Power encompasses a wide variety of research areas, including ocean dynamics, fluid structure interactions and wave and tidal energy devices.

The mathematical and computational skills I need for this job were acquired during my academic career in UCD. By studying Applied Mathematics, I developed the fundamental mathematical and computational skills necessary to achieve my goals. After all, mathematics has the ability to explain everything.

Meteorology/Research



**Mr John O'Sullivan,
MSc in Meteorology and
Climatology**

The MSc in Meteorology and Climatology is a very interesting course to undertake. The material covered in lectures is balanced well between theory and practical application. Before taking this course, I did my undergraduate mathematics degree in Trinity. A background in maths or physics is recommended for the MSc. I studied pure maths but only had Leaving Certificate physics, so don't be put off if you haven't studied physics at third level yet. The lecturers are world-renowned and actively researching and publishing. They're always available to answer questions about their courses, or to meet to discuss your future career or any difficulties you're having in a particular subject. They have a genuine passion and interest in the subject and this always comes across.

Dynamical meteorology gives a very thorough basis in the physics and fluid mechanics underlying all of the other material. I didn't have a physics background, but if you are good at mathematics

and have an interest in the subject, then you will be fine. Physical meteorology, synoptic meteorology and climate dynamics are more practical in nature. In physical meteorology, you learn about the main processes behind the weather we experience from day to day. In synoptic meteorology, the focus is on forecasting and the changing nature of the role of the forecaster in a meteorological station. Climate dynamics is similar to physical meteorology, except that you learn about the processes that drive our climate, which take place over a much longer time scale than those that drive our weather. Synoptic meteorology is good fun as you get to analyse all different types of charts by hand, and do a week-long forecasting course with Evelyn Cusack. Physical meteorology and climate dynamics have a good mix of mathematics and earth sciences, and are both enjoyable courses. Numerical weather prediction (NWP) is also fairly mathematical, but a very interesting module too. A decent amount of linear algebra and statistics is needed to explain how NWP models work to predict the weather in the future.

In addition to the taught and examined modules, you have to produce a thesis over the summer. I'm in the middle of doing mine at the moment, so we shall see how well the final product turns out! My time spent on my thesis so far has convinced me that meteorology and climatology are disciplines that are far from 'closed'. There is a very broad range of active research being undertaken, in disciplines as diverse as palaeoclimatology, nowcasting, cloud dynamics and extreme weather events. The MSc is a very useful qualification to have, either in order to move directly into industry, or to progress to further postgraduate studies. Industries such as the green energy and environmental sectors, the insurance sector, and meteorological services themselves are all potential employers.

I've been offered funding and an opportunity to pursue my studies within UCD further, by studying for a PhD in the use of climate models to predict changes in the nature of extreme weather events. The bottom line is that it's a really enjoyable course in an exciting sector, and there are many opportunities after you finish. If you think you might enjoy it, I'll save you some time - just go for it!

**Career: PhD student, UCD School of
Mathematical Sciences**

"When it comes to specific knowledge areas, organisations feel the greatest lack of knowledge is in mathematics: a third of the employers surveyed see a shortfall here."

www.gradireland.com May 2011

We hope to welcome you to the UCD School of Mathematical Sciences in the near future.