

Spring 2015

Mathematics News

Research Assessment success for Mathematics



In the recent Research Excellence Framework (REF2014), the Department of Mathematics maintained its position as one of the best departments in Wales. The department returned almost 90% of our staff, the highest proportion of any Welsh mathematics department, indicating that cutting-edge research is at the heart of our teaching. The results showed that 1 in 8 of our research outputs are world leading, and more than 60% are either world leading or internationally excellent. All of our research, and the impact it has outside universities, was judged to be of international standard.



Professor Ken Walters joins International Academy of Engineering

The Department of Mathematics would like to congratulate Professor Ken Walters – a Distinguished Research Professor at Aberystwyth University – for being elected as a member of the International Academy of Engineering (formerly the Engineering Academy of USSR). An inauguration ceremony took place in Vienna on the 27th November 2014, where new members were welcomed personally by the President of the Academy, Professor Boris Gusev.



Degree Accreditation

The Programme Accreditation scheme of the Institute of Mathematics and its Applications (IMA) accredits university degree programmes from which all its graduates will meet the educational requirements for the Chartered Mathematician (CMath) designation.

The following degrees have now had their accreditation by the IMA renewed:

- MMath (Hons) Mathematics
- BSc (Hons) Mathematics
- BSc (Hons) Applied Mathematics and Pure Mathematics
- BSc (Hons) Applied Mathematics and Statistics
- BSc (Hons) Pure Mathematics and Statistics
- BSc (Hons) Mathematics with Economics
- BSc (Hons) Mathematics with Business and Management
- BSc (Hons) Financial Mathematics
- BSc (Hons) Mathematics with Accounting and Finance
- BSc (Hons) Mathematics with Education
- BSc (Hons) Mathematics and Physics

All students commencing a degree between 2008 and 2019 will benefit from the accreditation.



Exemplary Course Award for Dr Vellender

Congratulations to Dr Adam Vellender on being awarded "Highly Commended" in the University's 2014 Exemplary Course Awards.

Students responded positively to Dr Vellender's use of Blackboard

Congratulations to Dr Adam Vellender on being awarded "Highly Commended" in the University's 2014 Exemplary Course Awards. The award is for his generation and presentation of supplementary material for the module MA34110 Partial Differential Equations. The judges commented in particular on "real innovation and excellent use of technology" providing "opportunities for students to reinforce or supplement the material covered in the lectures", and the use of revision checklists and videos. Dr Vellender expanded on his use of technology during lectures:

"Developing supplementary online material (both instructional and interactive) to accompany and enhance a fairly traditional mathematics lecture course has been a really worthwhile process. Thank you to the MA34110 students who have given lots of useful and encouraging feedback and also to the E-learning team for their help. I look forward to implementing similar ideas in my other modules; in fact I've already had requests along the lines of 'Can you do the same on Blackboard next semester?'"

Control characterisation of noisy quantum devices

Quantum technology has the potential to revolutionise science and technology. For example, quantum devices that can measure individual nuclear spins seem just about within reach. The main obstacle to future use of this technology is background noise: because of a lack of theoretical tools, noise is ignored at the device design stage and its consequences can only be tested in the actual experiment.

Now, Dr Burgarth has been awarded an EPSRC grant "Control characterisation of noisy quantum devices" to develop tools that will allow the modelling of noise in quantum devices.



Dr Daniel Burgarth is a Senior Lecturer at the Department of Mathematics

SET for Britain

Monika Perkowska, a PhD student in the department, was selected to present her research on Hydraulic Fracturing to Members of Parliament at SET for Britain. She presented her work at the event in March, within the Mathematical Sciences session.



The SET for Britain exhibition took place on 9th March 2015

Russian Academy of Sciences Medal

Nikolai Gorbushin was awarded a Medal of the Russian Academy of Sciences for his Masters work on "Incubation processes in dynamic fracture and phase transformation of continuous media", which he undertook when a student at St. Petersburg State University. He also collects a prize of 25,000 roubles. Nikolai is now working towards his PhD in the research group of Professor Gennady Mishuris as part of the CERMAT2 project, funded by the European Union FP7 programme. The goal of the project is to develop new ceramic technologies and novel multifunctional ceramic devices and structures.



Open Day

The next Open Day will be held on Wednesday 1st July 2015. The Department of Mathematics warmly invites all prospective students, parents, teachers and advisors to sample life at Aberystwyth University.