National Recognition for Sheffield Entrepreneurs

Senate Award

Pedal Car Society in British Championship

MechMag.
Issue 3.
Welcome to the third issue of MechMag. The stories featured in this magazine exemplify the high standard of innovative teaching we provide our students and the culture of entrepreneurship we foster. From helping children with brittle bone disease to achieving childhood ambitions in Formula One, here’s what our students, graduates and staff have been getting up to...

Welcome to your magazine. If you have a story about a recent achievement, you want to sing the praises of one of our students or members of staff or even just get in touch with us, then please do contact me at Amy.Jones@sheffield.ac.uk or 0114 222 7804.
Dr David Batterbee, a research associate from the Department of Mechanical Engineering, has been nationally recognised as one of Britain’s most promising young entrepreneurs, after developing a product which has the potential to completely revamp the use of shock absorbers on mountain bikes.

Dr Batterbee has received the Royal Academy of Engineering’s ERA Foundation Entrepreneurs Award, for an innovative device which can uniquely detect differences in the terrain a mountain bike is travelling on. Dr Batterbee was awarded the £40,000 prize at the Royal Academy of Engineering Awards Ceremony in June this year.

The Award has been established to identify entrepreneurial researchers working in UK universities in the field of electro-technology who are at an early stage in their career and who demonstrate both considerable entrepreneurial promise and the potential to benefit the UK’s future prosperity.

Most mountain bikes have a shock absorber system in place to absorb the impact of bumps and keep the rider in control. However, these devices often compromise performance and the rider has to manually adapt the shock absorber to suit different terrains, by turning a switch. Dr Batterbee has developed a rear shock absorber that electronically monitors the severity of the terrain and then optimises the bike’s performance automatically. On smooth terrain, a platform is automatically switched on to reduce rider induced suspension movement and to maximise pedalling efficiency. On rough terrain the platform is automatically removed for enhanced shock absorption capability.

Dr Batterbee and his supervisor Dr Neil Sims have been awarded a Yorkshire Concept Fund to develop a market-ready prototype of the device, as well as a proof of concept fund from Sheffield University Enterprises Limited (SUEL). Last year David participated in the National Council for Graduate Entrepreneurship’s FlyingStart Programme for Engineers, which supports graduates developing new business ideas. The project has also benefited from the Connect Yorkshire Springboard programme which provides free help to technology companies in all stages of development.

Dr Batterbee said: “It is a great honour to have received this award and to have been recognised as one of Britain’s up and coming entrepreneurs. The award will directly contribute towards the business start up costs required to drive the first product to market – a magnetorheological mountain bike rear shock absorber. I feel privileged to have received such substantial funds and the mentoring that has been made available from leading business experts will be invaluable during the start up period.”

Graeme Hitchen, from Sheffield University Enterprises Limited (SUEL), said: “The high quality of David’s research and his obvious desire to see it in the market meant we gave it our fullest support and we are very pleased to see the potential of David’s work recognised by the Royal Academy of Engineering.”

Lloyd Snellgrove, Director of the Yorkshire Proof of Commercial Concept Fund, said: “On behalf of Yorkshire Forward the regional development agency, the Fund is proud to have co-invested in a project which demonstrates such great commercial potential and is driven by David’s entrepreneurial capability and enthusiasm.”

Simon Butt, from the National Council for Graduate Entrepreneurship, said: “David is an excellent example of a gifted researcher and entrepreneur intent on combining engineering expertise with his passion for mountain biking to generate a truly innovative technical solution. This improves performance and contributes something new to the marketplace – exactly what FlyingStart encourages graduates to do.”
The University of Sheffield has signed an agreement with a number of partners to conduct research into the performance of fuel which will be used to power commercial aircraft.

Professor Chris Wilson, Director of the University’s Low Carbon Combustion Centre, and Professor in the Department of Mechanical Engineering, Dr Eulian Roberts, Managing Director of QSTP, Dr Mark H. Weichold, Dean and Chief Executive Officer of Texas A&M in Qatar, and Mr Andy Brown, Shell’s Executive Vice President in Qatar signed the agreement to perform further in-depth assessment of the physical properties of GTL Jet Fuel for use in commercial planes.

Physical properties are critical to the performance of a fuel. The research will further investigate the physical properties of different blends of GTL Kerosene and oil-derived kerosene to maximise overall fuel performance.

The research agreement is part of scientific work being undertaken by a consortium of Airbus, Qatar Airways, Qatar Petroleum, QSTP, Rolls-Royce, Shell and WOQOD to quantify the benefits of using GTL Jet Fuel.

The agreement enables the consortium to access an even deeper pool of expertise, including in Qatar. The consortium is following a research network approach that links junior Qatari scientists with senior researchers in Qatar abroad.

A Qatar Airways Airbus A340-600 yesterday completed the first commercial passenger flight powered by GTL Jet Fuel, flying from London Gatwick to Doha. Data from this flight will be used by scientists in Qatar as part of the consortium’s research work. GTL Jet Fuel, with GTL kerosene up to 50 per cent, was fully and unconditionally approved as safe for use in civil aviation by ASTM International (originally known as the American Society for Testing and Materials) last month.

Professor Wilson from the Department of Mechanical Engineering said: “This project offers a unique opportunity for Qatari researchers to enhance collaborations with their peers around the world. Alternative fuel for aviation is a global commodity and collaborations such as these guarantee that we develop and use consistent methodologies when assessing new fuels. This helps to ensure that any new fuel is fit for purpose.”

Mr Brown, of Shell, said: “I am confident that this network approach to research, linking institutions in Qatar and beyond, will both deliver the research progress we need and help young Qatari scientists develop their expertise. The work is important since it will help Qatar maximise the value it derives from GTL, by accessing the aviation fuel market effectively.”
Dr Stephen Beck wins Senate Award for Sustained Excellence in Teaching and Learning

Dr Stephen Beck has won a prestigious prize for sustained excellence in teaching and learning. The University’s Senate Awards scheme aims to reward individuals for excellence in teaching and supporting and enhancing the students’ learning experience. It also aims to encourage and promote good practice and raise the status of teaching and learning as a scholarly activity.

Stephen completed his PhD in the Department of Mechanical Engineering in 1992 and became a Senior Lecturer in 2002. He is also the Director of Learning and Teaching for the Faculty of Engineering.

This award continues the Department of Mechanical Engineering's record of having won at least one of these awards every year since their inception in 2004 – unique in the University.

Enterprising educator receives national commendation

An enterprising senior lecturer from the Department of Mechanical Engineering, has received national acclaim at the first ever enterprise educators awards.

Elena Rodríguez-Falcon has become one of the first people to get the ‘educator highly commended’ award from the National Council for Graduate Entrepreneurship (NCGE) and Enterprise Educators UK (EEUK) at last week’s annual award ceremony, which recognised excellence within enterprise education.

Elena’s prestigious commendation recognises her as a trail-blazer for entrepreneurial education. She has worked with students on a number of enterprising projects and focuses on working directly with disadvantaged individuals with specific needs that can be improved by engineering and enterprise solutions. In particular, Elena and students from the Department have worked with staff and patients at Sheffield Children’s Hospital to develop a special walking frame for children with brittle bones. In addition, Elena and her students have collaborated with St Luke’s Hospice to design a BlinkLink device that could help patients alert their carers by blinking in different rhythms to signify if they need help, as well as a writing aid device to help people with rheumatic conditions.

Since joining the University in 2001, Elena has also achieved two University Senate Awards for learning and teaching, the Higher Education Academy Teaching Award in 2004 and two learning and teaching awards from the Royal Academy of Engineering, including a highly prestigious award from ExxonMobil. Most recently, Elena became the first person at the University of Sheffield to gain Senior Fellow status at the Higher Education Academy and has also just been made an ambassador for the Royal Academy of Engineering.

Elena Rodríguez-Falcon, senior lecturer in the Department of Mechanical Engineering, said: “Being recognised as a ‘highly commended enterprise educator’ is very rewarding to me as enterprise has been the major focus of my career in higher education and I am very grateful to the NCGE and EEUK for their support.”

Professor Paul White, Pro-Vice-Chancellor for Learning and Teaching at the University, said: “She enthuses students to think how their ideas could be turned into viable business projects, and inspires everyone around her with her commitment, good humour and drive.”

Alison Price, Director of Educator Development for the National Council for Graduate Entrepreneurship, said: “Elena is a well deserving winner and this important national award is further testament to the ground breaking achievements that Elena is driving in her work at the University of Sheffield. She is a true champion, working to develop entrepreneurial mindsets in engineers, as well as supporting institutional and regional enterprise activity.”

Students awarded Boeing scholarships

Three Mechanical Engineering students have been awarded scholarships from Boeing as part of the aerospace company’s efforts to encourage progression in the field of engineering.

Ten students from the University of Sheffield joined the Boeing Scholarship and Support Scheme which provides students with £2,000 to support them through their studies. Aimed at students with an interest in aerospace, the programme is intended to promote academic excellence and wider access to engineering.

The students were recently presented with their scholarships at the University’s Boeing Day with the Advanced Manufacturing Research Centre (AMRC) on 15 October 2009, Professor Mike Hounslow, Pro-Vice-Chancellor for the Faculty of Engineering at the University, and Bart Moenster, Director of Manufacturing Technology for Boeing Research and Technology and Chairman of the AMRC Board of Directors, presented the students with their awards.

Bart Moenster said: ‘Boeing works closely with selected colleges and universities worldwide to enhance curricula, support continuing education, recruit outstanding candidates for employment, and collaborate on research that benefits the long-term needs of our customers’ business. The University of Sheffield is an excellent example of how by working together we can achieve success.’

The scholarships are part of a wider initiative launched by Boeing for students at the University of Sheffield which includes support for a number of projects through the provision of funding for equipment and consumables to design and build mini-unmanned aerial vehicles.

Mike Kurth, Managing Director at Boeing Defence UK, said: ‘Our relationship with the University of Sheffield through the AMRC shows the benefits that University research, development and technology can have on industry. We look at these students as the future of Boeing here in the UK and wish them all the best with their studies.”

Timothy Gibbons, one of the scholars on the scheme, said: ‘I see my scholarship as a boost to my chances of achieving a good career as an engineer. It will make my time at Sheffield easier by helping cover the costs of living, whilst giving the opportunity to buy material that will help me achieve a high level degree. It will also be useful when applying for a job as it is great for my CV.”

The three recipients from the Department were Mr Timothy Gibbons, Mr Jasper Roseland and Miss Samatha Savage.
Professor takes role in regional centre to tackle climate change

The University of Sheffield has joined together with other Yorkshire universities and regional development agency Yorkshire Forward to form an innovative research centre which will address the global challenge of climate change.

The Centre for Low Carbon Future is a new £50 million venture focusing on low carbon technologies and the impact of climate change, and is led by the universities of Sheffield, Hull, Leeds and York.

The aim of the centre is to build a competitive, sustainable and carbon efficient regional economy, in addition to providing solutions to climate change on a national and international scale. Through an approach which will bring together expertise from sciences, engineering and social sciences, it is hoped the centre will identify ways in which organisations and communities can adapt to the challenges of climate change.

The centre’s initial research projects include working towards a low carbon economy, the development of biofuel plants and the capture of carbon from exhaust emissions.

Professor Chris Wilson, from the University of Sheffield’s Department for Mechanical Engineering, and Professor Lenny Koh, from the School of Management, are two of the principal investigators for the project.

Yorkshire Forward are providing £17m towards the Centre, with the remaining money being sourced by external means.

Interim Director of the centre, Tony Hardy, said: "The centre will provide the knowledge base to generate workable solutions for businesses and communities, promoting the uptake of innovations and creating change in the real world. Its work will protect those most vulnerable to the changes that climate change will bring to us all."

Tom Riordan, Chief Executive of Yorkshire Forward, said: "The Centre for Low Carbon Futures will put our region at the forefront of low carbon technologies. It will allow Yorkshire and Humber’s businesses to address low carbon challenges and access cutting edge solutions which will help them exploit the opportunities arising from climate change. In turn this will help build a competitive, sustainable and carbon efficient regional economy."

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STUDENT PROFILE

SHEHAN SOMARATNA

Birthplace?
Colombo, Sri Lanka

What are you studying in the Department?
Mechanical Engineering, B.Eng

What did you want to be when you were a child?
A concert pianist

What’s your proudest moment?
There are a few, but definitely 2 things that come to mind are:
• Receiving an Exhibition Award in 2003 for my Overall accomplishment in Music – Piano

Who was your favourite teacher at school?
I had many!

Do you have any hidden talents?
I guess I can sing a bit :)

Marmite: love it or hate it?
LOVE IT!

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STAFF PROFILE

GRAEME MANSON

Birthplace?
Thurso, falling off the top bit of Scotland

What is your position in the Department?
Senior Lecturer and MSc Course Director

How many years have you worked in the Department?
I moved to Sheffield from Manchester in 1995 for the last year of my PhD then managed to escape to go round the world for a year. I was subsequently tracked down and have been kept on a shorter leash in the Department since 1997 – blimey, that’s 13 years ago!

What did you want to be when you were a child?
When I was in primary school, I aspired to be a lollipop man – I think that was largely due to one not having to start work until one’s 60s – pretty rubbish pension though, I suspect.

What’s your proudest moment?
It has to be the birth of my kids – little did I realise that when my son, Noah, was born, the world just wasn’t ever going to be the same.

Who was your favourite teacher at school?
Mr Brooke, the PE teacher. I can still remember him (when he was about 60) lining up six of the hardest lads in our class and giving them two strokes of the belt each for having taken a short cut through a garden at cross country. He reduced them all to tears. Obviously, this all took place when physical violence was thought to help build character.

Do you have any hidden talents?
They must be pretty well hidden because I haven’t found them yet – oh, hang on, I make a pretty mean homemade toffee ice-cream, if I say so myself.

Marmite: love it or hate it?
I’m much more partial to the other by-product of the brewing process.
Female Students attend Doris Gray Conference

The weekend of the 14th November saw three young female Mechanical Engineering students travelling up to Edinburgh to attend the Doris Gray Student Conference courtesy of the Mechanical Engineering Department. The conference gave women students the opportunity to find out about what it is like to work within a male dominated subject, connect with others and develop skills useful for their future careers.

The conference was organised by the Women’s Engineering Society (WES), who are currently undertaking many campaigns; one of which is the ‘Purple Boot Campaign’. This highlights the issue that the majority of safety clothing in the workplace does not suit the requirements of many women; often the only safety equipment that is available is far too big and may cause additional hazards. This is relevant to our female students as they will soon be entering industry and do not want their achievement to be restricted by the safety clothing that is offered.

Here’s what the ladies had to say about their weekend:

Over the course of the weekend we were fortunate enough to listen to Tanya Ewing’s inspirational life story; she was invited to speak at the conference because she is a truly positive role model for women in Engineering. While suffering from illness and starting a family, Tanya had an idea and the motivation to develop a new energy monitor for home, work or industry. She explained the various problems she encountered along the journey; from making the idea into a successful product, to setting up her business ‘Ewgeco’ and gaining 10 awards for her invention. Tanya is a true inspiration and showed us that we as women are capable of being as creative and innovative as men.

Alongside the presentations and training sessions was an opportunity to explore Edinburgh by completing a treasure hunt. Our team of three was joined by two Oxford University students and we raced around the city to find clues and take pictures, in a Monopoly style contest; our hard efforts paid off and we came 2nd out of the 8 teams that took part. During the conference we also had a chance to talk with employees from engineering companies across the UK, such as SELEX Galileo and Google.

The conference provided us with the opportunity to learn valuable skills about networking and the importance of doing it well, which otherwise would have taken us years to perfect. In addition, we were able to meet many other female students in Engineering and share ideas and opinions. I personally have never been in a room filled with so many female engineers; surprisingly enough they were all pretty normal!

To find out more about the Women’s Engineering Society, take a look at their website: www.wes.org.uk

To find out more about Tania Ewing and her company ‘Ewgeco’, go to www.ewgeco.com

Rosalyn Cheetham, Laura Peach and Rachel Sanderson

The Pedal Car Society was established in April 2009, by a group of second year mechanical engineers, eager to apply a developing engineering knowledge base to both a complex and challenging task. With support from the University, the Wilson Memorial Fund and the Alumni Fund – the team designed and built the four wheeled recumbent racer to compete in the British Pedal Car Championship 2009.

The Championship consists of a series of races running from March till September each year, varying in length from frantic 1 hour sprints to 24 hour tests of endurance. Races require between four and six drivers, whilst a vital race support team man the pits ready for any eventuality. In 2010, the team will also be competing in the Annual European Pedal Car Championship (France).

With the society now into its second year, it continues to grow from strength to strength – a plethora of new members and a new sponsor (ATKINS), make for a prosperous championship battle in 2010 and beyond.

For further information and/or to get involved, please contact us:

Email: pedsoc@shef.ac.uk
Website: www.pedsoc.moonfruit.com
The Mechanical Engineering Society is back with the 09/10 committee.

This year, we’ve kept up the tradition of having weekly football kickabouts, as well as seeing some amazing socials by our awesome social secs!

We’ve had some combined events with the other engineering societies, so as to give our fellow Mech Eng students opportunities to meet more people too. We’ve also got some industrial visits planned for the future, so do keep in touch.

Sports
We now have four intramural 6-a-side football teams, with the first team at the top of their league and the others performing well too. Our 11-a-side team is second in their league and closing in on first place! If you enjoy playing football but don’t have the time to play every week, we have weekly kickabout sessions at the Goodwin pitches. An email is sent out every week with information about the kickabouts.

Also, look out for the Engineering Football Tournament in term 2, an event all the engineering teams look forward to every year. Teams from Mechanical, Aerospace, Civil, Automatic Control and Systems and Electrical Engineering battle it out to be the best in the Engineering Faculty.

Socials
We’re trying to organise more socials on a regular basis. Our social officers’ plans include pub golf, themed bar crawls which are a great opportunity to meet more people on the course. We’re always on the lookout for the best deals for you, and we pass the offers on as soon as we get them!

May Ball
As always, the highlight of the year is the May Ball, with great live entertainment and students from Mechanical, Civil and Aerospace Engineering and Human Communication Sciences. It’s an event not to be missed as we’re always aiming for bigger and better every year.

We are now on Facebook, so make sure you join the Mechanical Engineering Society facebook group. Don’t forget to check our website for updates too.

There’s always something suitable for everyone, but we’re open to new suggestions and more people who want to get involved, so get in touch.

The Committee:
President: Robyn Lee
Vice President: Ashley Bryant
Treasurer/Inclusion Officer: Gareth Llewellyn
Secretary: Nikki Hilton
Industrial Officer: Ashley Bryant
International Officer: Robyn Lee
Social Officers: Nikki Hilton, Charis Lestrange, Jorge Bronze
Sports Officers: Paul Emmett, Pete Halls, Steve Flynn

If you want to get involved, have any ideas or suggestions, email us at mechsoc@shef.ac.uk
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