

Welcome...to the first School of Engineering Research Newsletter

With the advent of the newly formed Research Office and departmental changes on the horizon, this newsletter aims to be a regular source of information and updates. For any of you who haven't been into the Research Office (F306) yet or browsed our web pages, we are here to support the research function of the department.

The producer of this newsletter is Research Office Manager, Sarah Pain (the one on the left in the picture). If you have any stories of success, funding, publications, or just general good news, please don't hesitate to email eng.research@warwick.ac.uk or pop in to the office. Any information is posted on our web pages, notice-boards or sent through to the University Communications team. If you like to write, and would like to submit some information about your research, let us know. We would welcome submissions from staff or students.

This newsletter is here to inform you, so if you have any enquiries, feedback or suggestions we want to hear them!

Sarah



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Focus on Fellowships

Fellowships can be an important way to kick-start or develop a research career. There are many different levels available, on many different terms. However, they all give researchers a chance to focus on their area of expertise, in order to develop both themselves, and the work of the School. Visiting fellowships also help to disseminate good practice and information between institutions, benefiting both parties.

We've spoken to some fellowship recipients to get more information about what it means to them, and to get their advice for anyone thinking of applying.

Dr. Mark Leeson

RAEng Leverhulme Senior Research Fellowship



In the project, "Information Capacity at the Nanoscale", Mark is implementing a program forming the basis for modeling point to point communications, employing efficient simulation & analytical techniques that have not been utilised previously in this field.

The award of the Fellowship has been a key development in Mark's career progression and has been instrumental in his recent promotion to Reader. It has enabled him to be extremely focused on research and to lay the foundations for future funding and publication success.

Dr Leeson advises other mid-career academics to strongly consider this scheme. "You need an outstanding and timely idea that it is possible to convey in a few pages. Although impact is one factor, the key is the excellence of the proposal in mainly academic terms. You also need to do the work yourself, so think what you could achieve given a year free of routine duties!"

Dr. Isaac Kuo-Kang Liu

RAEng Leverhulme Senior Research Fellowship

Another recipient of the Leverhulme Fellowship is Isaac Liu, a Reader in the SMM Research Group. Dr Liu was awarded his one-year fellowship in 2010, and is free from all teaching and administrative duty to pursue his research in "Nano-mechanically Engineered Tissues for the Next-Generation of Therapy". He aims to establish a new research direction for the school (nano-bioengineering) and produce substantial research outcome for larger funding applications and paper publications.

When asked what advice he would give to any of his colleagues who may be thinking of applying for the RAEng fellowship, Dr. Liu said;



"I found that most of the funded projects have very attractive project titles. It seems the thrust is very much in favour of the projects in the forefront of research areas. Also personal research track record is very important..."



Prof. Elizabeth Burton

EPSRC Dream Fellowship in Civil Engineering

The Dream Fellowship award enables researchers to take time out from their everyday activities, to give them freedom to gain new knowledge of novel creative problem solving techniques and develop new, ambitious research directions.



Libby is one of the first recipients this prestigious new award, for a 2-year fellowship due to commence in October 2011. She will be able to develop her research in Design for Wellbeing (DfW) in the built environment. It will also help her to develop international links and pursue funding for this new cross-disciplinary agenda.

Speaking of her award, Prof. Burton said; *"It's a real boost to my morale because it is acknowledgement by EPSRC that they think this is an important area, and should be supported. The fact that they are piloting a scheme like this shows that they know it's hard to get this sort of work funded through conventional routes...I have renewed purpose."*

Dr. Michael Jennings

Science City Research Fellow

Mike was appointed as a Research Fellow in early 2009. His research has focused on 4H-SiC (Silicon Carbide) making him an ideal fit for the power electronics work within the Science City project. He was awarded the HEFCE funded position, promoting industrial collaboration with the School, following a recommendation from his supervisor.

As part of his fellowship he attends to departmental duties (including lecturing), works with others to bring in funding, as well as undertaking a number of self-determined research projects. In addition, he has been invited to present to industry at seminars.



Dr. Jennings recommends that anyone looking to follow in his footsteps is aware of the range of work involved in such a fellowship, beyond simply the research aspect. However he believes that the position has offered him an invaluable variety of experiences to develop his career potential, opening up opportunities within academia or industry.

In addition to fellowships, **secondments to industry** offer opportunities for personal development as well as creating important links for the School, which may lead to funding opportunities or support. We spoke to two of our academics about what secondment means to them; one at the end of their placement and one due to start later this year. These places are supported by the **Royal Academy of Engineering**.

Dr. Qing Ni

ARUP: Apr 2010- Sep 2010



Dr. Qing Ni applied for this secondment to improve the relevance and quality of his teaching, as well as aiming to identify new research topics with greater impact on the industry and economy. The placement also gave him a much clearer understanding of the practicalities of civil engineering in the 'real' world, to back up his 10 years of experience in geotechnical engineering research.

In his own words; *"I felt like somebody who had been teaching the theory of driving, without having driven before"*!

During his time at Arup, Ni developed some new interests in geotechnical research, including secondary compression, and inundation collapse of fill & unsaturated soil mechanics. He believes that; *"the activities in this scheme harmonise with the University of Warwick's core values which celebrate excellence in research-led teaching, motivation, entrepreneurship, service and community spirit"*.

His secondment has furthered a relationship between the two knowledge hubs of Arup and the School of Engineering. Ni has also been able to share his experience to advise other members of his group, including Dr. James Covington (see right).

Dr. James Covington

Alphasense: Jul 2011-Jun 2012

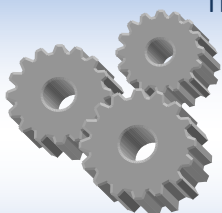
After receiving a flier on the RAEng Scheme, James contacted an associate at Alphasense, an independent sensor manufacturing & technology company.

With this link in place, he submitted a successful application, to fund a replacement lecturer during the secondment period.



Dr. Covington hopes to learn techniques from the industrial environment which he will apply upon his return to research. The placement will also offer the opportunity to create stronger links with the company for future research collaborations.

The advantages of fellowships and secondments are clear, so where do you start?



The Research Office web pages offer a summary of major fellowship schemes from both the University and external funders (go to the [funding information page](#)). Key providers include EPSRC, the Royal Society and the European Commission. The Royal Academy of Engineering offer many opportunities in both areas, and the easily navigable '[research and industry](#)' pages on their website detail upcoming opportunities. Upcoming application deadlines can be found on the [funding calendar](#) on the Research Office pages, and some are included on the final page of this document.

If you have any questions, don't hesitate to contact the Research Development Officer, Rachel Corke.



Civil Success

Double first grants for the Civil Research Group

The School is delighted to announce double award success for the CRG. Dr. Qing Ni and Dr. Tak-Ming Chan (r) have received confirmations of their EPSRC First Grants.

Dr. Chan's project is entitled "The behaviour of semi rigid through diaphragm connection between steel I-beams to tubular columns under monotonic and cyclic loading" and is due to start in the next few months. He has been Assistant Professor at the School of Engineering since 2007.



Fellow civil engineer, Dr. Ni, will commence his project around the start of June 2011, entitled "Laboratory simulation of field tube sampling using transparent soil & PIV". He has recently returned from a secondment to Arup (see previous article).

New Facilities for Biomedical and Biological Systems

Launch planned to celebrate new labs

The official launch of new labs for the Systems, Measurement & Modelling Group will take place early-summer; each offering superb research facilities for both the School and outside users. The **Gait Lab**, which began use at the start of this academic year, is an Advantage West Midlands funded space, utilising 12 infrared cameras and 2 video cameras. It provides detailed information and imagery of human movement, ground reaction force and muscle electromyography.

The second new space is a **Soft Tissue Bioengineering Lab**, where research led by Dr. Joanna Collingwood will investigate topics such as iron uptake into the brain and aspects of Alzheimer's Disease. The lab consists of three rooms, including a restricted access area for tissue work.

The labs will be opened by EPSRC Chief Executive, David Delpy, with invitations being extended to representatives from charities and sporting bodies who may benefit from the facilities research.

A final facility due to be developed soon, is a **Cell Mechanics Lab**, lead by the research of Dr. Isaac Liu. This includes the use of 'optical tweezers', which are capable of manipulating nanometer and micrometer-sized particles by exerting extremely small forces via a highly focused laser beam.

For more information on these labs, see Dr. Mike Chappell.

New World Solar Collaboration

Warwick researchers pave the way for solar efficiency

Researchers in the School of Engineering have been called upon by award-winning firm New World Solar, to implement state-of-the-art testing on solar panel performance. Dr. Stan Shire is Assistant Professor of Sustainable Energy Systems, and leads Warwick's work on this project. He describes the collaboration as "an excellent opportunity for both the company and the University to lead the way in developing green products".

A feature on the research was presented by **BBC Midlands Today**, where 'Energy Futures' Business Engagement Manager, Mike Ahearne, joined Dr. Shire for interview.



Prof. Phil Mawby with other key representatives at the new facility

Launch of Vehicle Energy Facility Science City gains unique powertrain testing equipment

The unique Vehicle Energy Facility (VEF) is the UK's only purpose built hybrid powertrain testing facility that is not owned and operated by an individual automotive company.

The new facility will use two dynamometers with the advanced Texcel control system plus a Robot Driver to allow the testing of various hybrid powertrain designs. The two dynamometers are installed in parallel and can test electric motors, gasoline, diesel, ethanol and Bio-fuels based internal combustion engines.

Diary Dates

LDC workshops

Promote Yourself

Mon 21 Mar & Tue 29 Mar
12:00 – 16:30

This workshop is for researchers who may be preparing to compete for new opportunities.

Technologies for Research: Focus on Funding

Tue 10 May 12:00 – 15:30

The session focuses on tools to help your search for funding opportunities and add impact to your grant applications. This workshop is aimed at Research Staff.

Looking Beyond Academia

Tue 17 May 12:00 – 14:30

This workshop will develop confidence in promoting yourself to non-academic employers. Recommended for early career Research and Academic staff.

IoH Event

Health Research @ Warwick Poster Event

Tue 5 Apr

The Institute of Health are convening a 1-day event for researchers from across the University with an interest in health-related research. Contact Prof. Gillian Hundt or Dr. Davide Nicolini at IoH for details.

PraxisUnico Impact Awards

Wed 6 Apr - closing date

Thu 9 Jun - awards

ceremony & conference

These awards recognise individuals & teams that have produced outstanding impact through knowledge transfer, boost reputation with researchers & industry.

For full details, visit:

www.impactawards.org.uk

Upcoming Deadlines

Here is a selection of upcoming funding, secondment, fellowship & award deadlines. See the funding calendar online for more information and details of other opportunities.

Technology Strategy Board
Driving Innovation

www.innovateuk.org

Highly innovative strategic technologies in low carbon vehicles

The Technology Strategy Board is looking to invest in highly innovative, industry-led collaborative projects aimed at achieving significant cuts in CO2 emissions for vehicle-centric technologies for low-carbon vehicles.

Closing date: 20 April 2011

Disruptive technologies in low carbon vehicles

On the same terms, the TSB is looking to invest in projects targeted at disruptive technology and research that challenges current conventions from a position of intellectual strength.

Closing date: 20 April 2011

Measurement of the energy yield from the biobased fraction of mixed waste

The objective of this competition is to identify and develop methodologies, techniques or technologies capable of measuring the energy output from biobased waste.

Closing date: 06 May 2011

Forthcoming call announcement from TSB:

Batteries for Low and Ultra Low Carbon Vehicles: Recycling and Re-Use

Opening date: 28 March 2011 **Closing Date:** 18 May 2011

BHF New Horizons Grants

To encourage scientists from outside traditional cardiovascular biology to engage in cardiovascular research and bring novel expertise to the field. Collaborations could include cooperatives between biologists & engineers, physicists etc.

An NHG could also lead to a future Programme Grant.

This grant scheme has regular closing dates.

The upcoming one is 31 May 2011.

See www.bhf.org.uk/research.



www.RAEng.org.uk/research

Distinguished Visiting Fellowship Scheme

The scheme provides funding to enable an academic engineering department in a United Kingdom (UK) university to be a host for up to a month to a Distinguished Visiting Fellow from an overseas academic centre of excellence.

Closing date: 31 May 2011

Industrial Secondment Scheme

Applicable to engineers of all disciplines, the scheme's objective is to enable the secondees to impart the fruits of this experience through case studies using up-to-date material.

The scheme provides funding for the university to employ a temporary replacement for the secondee.

Closing date: 30 September 2011

welcometrust

Translation Awards

Response-mode funding designed to bridge the funding gap in the commercialisation of new technologies in the biomedical area. Projects covering any aspect of technology development from a range of disciplines - including physical, computational and life sciences - will be considered. Projects must address an unmet need in healthcare or in applied medical research, offer a potential new solution, and have a realistic expectation that the innovation will be developed further by the market.

Next deadline for applications is 22 July 2011

Calling all Postgraduates... If you achieved a 2:1 or higher in your 1st degree, then why not apply for a Postgraduate Scholarship worth up to £10,000?

Four different scholarships are available – see www.theiet.org for full information. Nominations must be submitted by 20 April 2011.



And Finally...

If you think you've encountered a tough crowd when standing in front of a group of students or presenting to academics, how about fronting a comedy gig? That's what academics are invited to do at the **Bright Club** in London. The monthly event brings together scientists from quantum physicists to neutrino hunters to climb out of their comfort zone and become a comedian for a night. Guests have included human-computer interactions specialist Dom Furniss who tackles really big questions like **"Why don't things just work?!"**.

Billed as the **'thinking person's variety night'**, the Bright Club is where comedy and brains collide. If you fancy a laugh at other scientists' expense, then visit brightclub.org for details. Current performers are all UCL academics, but the organisers are keen to expand country-wide, so if you're feeling brave, drop them a line!