

# MIB Newsletter

Feb 2010

**Research Highlight**  
**General News**  
**Health and Safety**  
**Funding News**  
**Congratulations**  
**Seminars**  
**Events / Symposia**  
**Publications**

## University - Women in Science websites

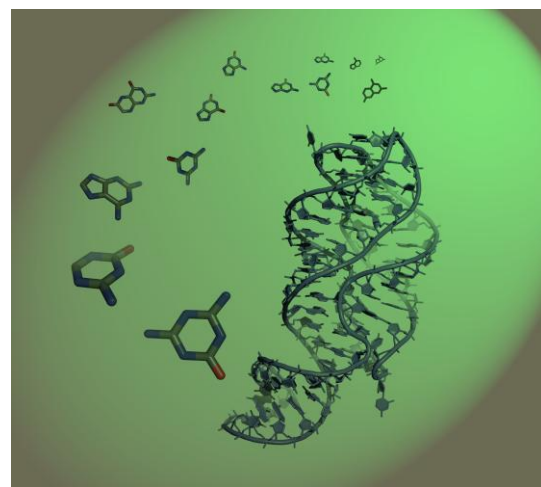
There are developing networks for all female academic and research staff, administrative staff and students within EPS and Life sciences. The faculties are dedicated to providing positive support for women in science, aiming to encourage women throughout their career here in Manchester, increasing recruitment, retention and progression. See the websites for more details.

**WiSET (Women in Science, Engineering and Technology)** [Website](#)  
**Women in Life Sciences (WiLS)** [Website](#)

## Research Highlight

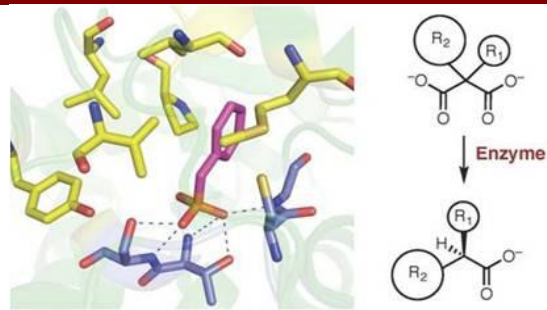
### A Chemical Biology Approach for Re-engineering Riboswitches, Enzymes and Biosynthetic pathways - Jason Micklefield

Research in the Micklefield lab is focused on challenges at the *chemistry-biology interface* utilising techniques and knowledge from organic chemistry through to biochemistry and molecular genetics. Current themes in the lab include: small molecule control of gene expression; enzyme mechanism and directed evolution; and biosynthetic engineering. For example we have been exploring how riboswitches, present within mRNA, can control gene expression in response to specific metabolites present in cells. Based on these insights, we succeeded in re-engineering (or rewiring) riboswitches so that they are no longer triggered by the natural metabolites, but instead can be controlled by the addition of various synthetic molecules [1] (Fig 1). Using our new orthogonally selective synthetic riboswitches we were able to demonstrate the simultaneous and differential control of multiple genes, in bacteria, which is very difficult to achieve using existing methods. We envisage that our riboswitches can be used to study fundamental biological pathways and processes *in vivo* and could also be used in pharmaceutical target validation, drug discovery and the emerging field of synthetic biology [1].



**Figure 1:** 1.7Å resolution structure of a re-engineered orthogonally selective riboswitch in complex with a synthetic ligand (image designed by N. Dixon & M. Dunstan) [1].

In the area of enzymology and biocatalysis, we recently elucidated the first structure and mechanism of the malonate decarboxylases (AMDases) [2]. This revealed a “dioxanion hole” motif, not previously described, which can stabilize a putative high-energy enediolate intermediate (Fig. 2). Based on these mechanistic and structural insights we were able to develop directed evolution approaches to extend the biocatalytic repertoire of the decarboxylases and also to select improved enzymes with over 50 fold increased catalytic activity. The new decarboxylases are of industrial importance because they can catalyse the asymmetric decarboxylation of pro-chiral disubstituted malonates to give valuable homochiral carboxylic acids (patented with BASF). We also, introduced



**Figure 2:** Structure of the AMDase with a mechanism based inhibitor bound.

the first biocatalytic method for the site-selective covalent protein immobilization [3]. The method uses a phosphopantetheinyl transferase enzyme to catalyse the ligation of tagged protein of interest, to CoA molecules covalently attached to solid surfaces (e.g. glass). This efficient single step method allows tagged proteins to be immobilised directly from crude lysates, thus alleviating the need for protein purification. This method has many applications, most notably in the highly sought after production of stable functional protein arrays [3].

Finally our lab has been investigating the biosynthesis of nonribosomal peptide natural products, which include several important therapeutic agents. For example, we elucidated the biosynthetic origins of the calcium dependant lipopeptide antibiotics (CDA) from *Streptomyces coelicolor* [4]. This involved a combination of gene knockouts and product analysis (NMR and MS-MS). In addition, many key biosynthetic enzymes were overproduced and characterised by *in vitro* assays with synthetic substrates and intermediates. Using this knowledge, we were able to develop a wide range of biosynthetic engineering approaches (combinatorial biosynthesis), altering the specificity of the biosynthetic enzymes, which enabled us to generate many “non-natural” lipopeptide variants. The lipopeptides share a similar structure and mechanism of action to daptomycin, which is one of the most potent intravenous antibiotics in the clinic. It is envisaged that the biosynthetic engineering approaches we have developed could be used to generate the second generation of lipopeptide antibiotics which are urgently required to combat the emerging drug-resistant pathogens. We are grateful to all our collaborators and coworkers.

[1] **Riboswitches** *Proc. Natl. Acad. Sci. USA* **2010**, *107*, 2830-2835 [Paper](#)

[2] **AMDase mechanism and directed evolution** *Angew. Chem. Int. Ed.* **2009**, *48*, 7691-7694 [Paper](#)

[3] **Site-selective protein immobilisation** *J. Am. Chem. Soc.* **2008**, *130*, 12456-12464 [Paper](#)  
*Chem. Rev.* **2009**, *109*, 4025-4053 [Paper](#)

[4] **Lipopeptide biosynthesis** *J. Am. Chem. Soc.* **2007**, *129*, 15182-15191 [Paper](#)

*J. Am. Chem. Soc.* **2006**, *128*, 11250-11259 [Paper](#)

*J. Am. Chem. Soc.* **2007**, *129*, 12011-12018 [Paper](#)

### Molecular Biotechnology Group

We are pleased to announce the formation of the 'Molecular Biotechnology Group' (MBG) – a partnership between the Manchester Centre for Systems Biology (MCISB) and the Centre of Excellence in Biocatalysis, Biotransformations and Biocatalytic Manufacture (CoEBio3). The new group will be headed by Farid Khan of FLS and has funding from Lonza through the Lonza Innovation for Future Technologies (LIFT) scheme. The project will focus on metagenomic and genomic approaches for organism/target protein identification, to create cDNA libraries and express novel bioluminescent enzymes, proteins and biocatalysts.

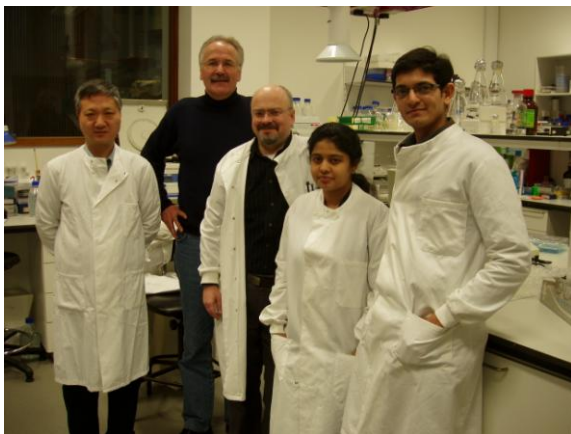


This is a very exciting venture. There is an urgent need to explore the high biodiversity of ecosystems that are currently under threat by man-made activities and global climate change," says Dr. Khan. "Coral reefs are the “rainforests of the oceans” and are the most diverse habitats on Earth. More than one million floral and faunal organisms are estimated to occur in tropical coral reefs and recent research also indicates high diversity of reef-associated microbes. However, the world’s coral reefs are diminishing, and there is an urgent need to preserve these fragile ecosystems not only as valuable physical barriers (e.g. shoreline protection) and local economic contribution (e.g. as a source of marine food and tourism), but particularly as an important source of new biotechnological and pharmaceutical products. While much of the focus to date has centred on

terrestrial based ecosystems, it is clear that the marine environment has an enormous gene reservoir that remains largely unstudied and untapped".

Dr. Hans-Peter Meyer of Lonza's LIFT program explains, "marine microbes and invertebrates are both extremely abundant and diverse; the environments they occupy likewise consist of very diverse niches. Enzymes isolated from marine microorganisms are likely to have a range of quite diverse biochemical and physiological characteristics that allow them to adapt and ultimately flourish in these conditions. These enzymes are likely to possess unique biocatalytic activity, stability and specificity under extreme conditions of pressure, temperature, salinity and nutrient availability".

The current limitations of marine bioprospecting call for concerted, interdisciplinary research effort. To explore a complex, highly diverse ecosystem for potential biotech products, what is needed is an



interdisciplinary group that together can work as an integrative unit; this is MBG's aim. Together with Professor Hans Westerhoff and MCISB, the group will also work on the development of new Systems Biology tools (fluorescent proteins), bioluminescent enzymes, xenobiotics and novel enzymes for industrial use. MBG's scientists include Dr. Ping Wang (molecular biology), Mr. Martin Read (cell biology), Ms Parvathi Menon (enzymology) and Mr. Venkatesh Kolluru (protein analysis). A PhD CASE- studentship has also been awarded to Mr. Tim Eyes (bioinformatics and protein engineering) to join the group, who will be co-supervised by Dr. Khan and Professor Andrew Doig.

The New Group (left to right): Ping Wang, Hans-Peter Meyer (Lonza), Martin Read, Parvathi Menon and Venkatesh Kolluru

## General News

### Anne-Marie Buckle - Undergraduate project prize fund

The MIB and the Faculty of Life Sciences are setting up a memorial fund for an undergraduate project prize in the memory of Anne-Marie Buckle who sadly died over Christmas. We hope to raise enough to award an annual prize of ~ £100-150 to an outstanding undergraduate project student for the next 10-15 years. If people wish to donate to this fund please can you give contributions to [Ros Le Feuvre](#) (please email me if you would like a gift aid form) or the MIB accounts office.

### UMIP

It is widely recognised that harnessing the power of the research, innovation and entrepreneurial activities of the University of Manchester helps improve the reputation of the University and promotes economic growth. The University therefore actively seeks to protect its intellectual property and to commercialise the results of research.

UMIP has been established by The University of Manchester to:

- Identify and protect the University's intellectual property
- Evaluate the commercial potential of the University's intellectual property
- Ensure that the commercial potential the University's intellectual property is fully exploited.

UMIP has a proven track record of success. The last 20 years of technology transfer activity have resulted in >250 inventions being licensed and >100 spin-off companies being created. Revenue



generated through commercialising the University's intellectual property can benefit you the researchers, the research itself and the Department, as well as the University.

The first step in the process of protecting and commercialising your research is making a 'disclosure' to one of UMIP's Commercialisation Executives. The main UMIP point of contact for EPS Faculty academic staff and students based in the MIB is **Lorna Farnsworth**. Lorna recently joined UMIP having spent two years working as a Technology Broker at Procter & Gamble after completing her PhD in synthetic chemistry and enzymology. Lorna also has experience working in the pharmaceutical industry. Lorna's academic research and industrial experience make her ideally suited to help commercialise any intellectual property that is created by the EPS Faculty academic staff and students of the MIB.

If you would like to learn more about how UMIP can help you to protect and commercialise your research, please visit [www.umip.com](http://www.umip.com) or contact Lorna Farnsworth, [lorna.farnsworth@umip.com](mailto:lorna.farnsworth@umip.com) 0161 306 8813



### Equity and Diversity Team – International Women's Day

The Equality and Diversity Team are delighted to announce a day of events to celebrate International Women's day on Monday 8th March. This is in conjunction with the recently launched Diversity Calendar where March's theme is International Women's day. More details and a full timetable can be found on the E&D website

<http://www.campus.manchester.ac.uk/equalityanddiversity/>

### Health and Safety News **Safety first..!**

**MIB in-house training courses** We have developed a new in-house training course on risk and COSHH/chemical risk assessment, which is available to all staff and post-graduate students in the MIB. The course lasts approx. 2 hours and is run in MIB. We would encourage all new wet-lab students to attend this course during their first year here. Please contact Tanya Aspinall for further details ([Tanya.aspinall@manchester.ac.uk](mailto:Tanya.aspinall@manchester.ac.uk); 65187)

**STDU safety training courses** STDU H&S courses are run in the Sackville Street Building, close to MIB. They are available, free of charge, to all staff and research students. To book any of the courses, see: <http://www.staffnet.manchester.ac.uk/employment/training/courses/>

Date	Course code	Course title
16/03/10	HS11	Application of COSHH to work with biological material
16/03/10	HS67	Risk assessment workshop – for lab based staff
17/03/10	HS15	Principles of risk assessment
26/03/10	HS42	Laser training
26/03/10	HS98	Laser safety awareness
21/04/10	HS7	Gas safety and regulators course
26/04/10	HS26	Safe use of genetically modified organisms

### Focus on.....**Safe transport of materials**

The article from the Manchester Evening News highlights the importance of ensuring that you transport samples to/from the MIB correctly. You are **strongly recommended** to send all samples **by courier**.

If you do intend to carry items yourself (ie. taking samples in your hand luggage by plane), **you must consider how you will do this well in advance of your journey.** Individual airlines may be able to offer assistance.

### **What is covered?**

**All hazardous substances**, including:

- **All** chemicals with a hazard warning symbol or signal word (eg. “Danger” or “Warning”).
- **All** biological agents – including microorganisms, GMOs and tissue/blood samples, etc.
- Your packaging material – eg. dry ice or liquid nitrogen used for transporting your samples

**Any non-hazardous items which are stored on dry or wet ice.**

### **What do you need to consider?**

- The travel distance – within the university? Within the UK? Worldwide?
- Means of transport – by foot? by car? using a courier service?
- The packaging – secondary containment? Leakproof? Shatter resistant?
- Filling in the correct paperwork

### **Where are you transporting your chemical/biological agent to/from?**

<b>Within the university – walking distance</b> (eg. MIB to/from Stopford Building, Brunswick Street, etc)	See <b>section 1</b>
<b>Within the university – too far to walk</b> (eg. MIB to/from Wythenshawe Hospital, etc)	See <b>section 2</b>
<b>Within the UK</b> (eg. MIB to another University, hospital, etc)	By courier – <b>Citysprint</b> See Stores for more information
<b>Within the EU</b> (eg. MIB to Germany, France, etc)	By courier – <b>FedEx</b> See Stores for more information
<b>Worldwide</b> (eg. MIB to USA, etc)	By courier – <b>FedEx</b> See Stores for more information

### **Section 1** - transporting items within walking distance within the University

- All items **must** be packaged correctly
- You must include all relevant paperwork, including contact details within the MIB (in case of emergency), and details of the contents, risk assessments, COSHH assessments, etc.
- It is not acceptable to simply put items in a carrier bag – they must be packaged correctly!

### **Section 2** - transporting chemicals/biological agents within the University, which are too far to walk to

- You **must not** use public transport – this is specifically **forbidden** by the University.
- You should not use your own car, as this would be classed as a work activity, which would not normally be covered by your car insurance. Please see **Appendix 1** (below) for more details. If you do decide to use your own car, you **must** comply with all of the rules in Appendix 1.
- You could use a taxi; if so, you **must** accompany your items in the taxi.
- You could use a courier (Citysprint) – see Stores for further information.
- However you decide to transport your items, they **must** be packaged correctly (see

## Terror alert at airport triggered by cow blood

■ Mystery powder used in medical research

■ Bosses insist they were right to evacuate

EXCLUSIVE PAUL BRITTON

**T**HE suspect white powder that sparked an evacuation at Manchester Airport has been identified... as dried cow's blood.

The harmless substance was discovered in the luggage of a passenger at the BMI check-in desk last Saturday.

Airport bosses evacuated terminal three and passengers were delayed for six hours as tests were carried out.

Now it has emerged that the substance was Bovine Serum Al-

bumin (BSA) – a protein made from cow's blood and used in lab tests and medical research.

One expert said: "It is a completely harmless and naturally-occurring protein."

"The only risk is if the cattle's blood has got any diseases."

Airport bosses said they were right to evacuate the terminal, a day after Britain's terror threat level was raised to 'severe'.

The passenger had been preparing to board a shuttle flight from Manchester to Heathrow when he was stopped by security staff as he answered routine questions.

Nineteen screw-top canisters, containing 20kg of the substance, were found in his bags.

An explosives team attended and found no evidence that they could be used in a bomb.

The consignment – which the passenger claims has still not



**SCARE** Terminal 3 at Manchester Airport was evacuated in a terror alert after a passenger was found with canisters of a mystery powder that turned out to be cow's blood.

been returned – is believed to be worth around £5,000. It is understood he was carrying it for use in a research project.

The passenger was questioned by police and UK Border Agency officials, then released.

The fire service declared a chemical incident but officers said later there was 'no risk'.

"Albumin is very easy to get hold of", a local research expert said. "Most biology laboratories will have pots of it in fridges. It is

one of the most widely-used proteins and is used when growing cultures in laboratories."

BSA can also be used for studies into DNA and to help diagnose diseases.

Airline BMI said it was unable to confirm whether the substance could be carried on flights but large quantities were likely to be seized. It is understood that notification of intent to carry it must be provided to airlines beforehand.

“packaging” below)

- You must include all relevant paperwork, including contact details within the MIB (in case of emergency), and details of the contents, risk assessments, COSHH assessments, etc.

## Funding News

### EPSRC Vacation Bursary Scheme 2010-11

The vacation bursary programme provides funding for undergraduate students to gain first hand positive and practical experience of research in a UK university. The Faculty of Engineering and Physical Sciences has a small allocation for the summer of 2010.

EPSRC (Engineering and Physical Sciences Research Council) expectations are that the funding will be available to engage students in research that:

- Falls within the identified ‘Roberts shortage areas’ of Statistics and Operational Research, ICT, Engineering or Materials;
- Is being carried out by internationally leading groups e.g. groups that hold EPSRC portfolio partnership or IRC grants
- That has strong industrial links.

In all cases, the programme should be accessible to underrepresented groups, such as women and ethnic minorities.

Eligibility of the student: The selected students should be registered for a first degree in a subject that falls within the remit of EPSRC and must be in the middle years of their degree. Students should fulfil the eligibility requirements of EPSRC’s Doctoral Training Grants (DTG) by the end of their undergraduate degree. For details of the eligibility requirements, please see the EPSRC web page at: [click here](#)

Research project: The proposed research project should be within the remit of the EPSRC, but should not be part of the normal degree course. It should have a clearly defined objective, which could be part of a much larger research activity and it should be at a suitable level for a student to sensibly complete within the timescale of the award. The student should not be used as a general assistant and must have adequate supervision.

Duration: Each bursary will last an average of 10 weeks and must take place during the summer vacation.

Scheme Costs: Stipend of £220 per week, Research consumables of £300 overall

The deadline for the EPSRC 2010-11 Vacation Bursary Scheme is 16 April 2010.

Please see further details and an application form at the following link:

<http://www.graduateeducation.eps.manchester.ac.uk/admin/bacburs/index.html>

Applications (or enquiries) should be sent to the Graduate Education Office, Room C4, Sackville Building or [email](#) by the deadline of 5pm on **Friday 16th April**.

Each application will be assessed by the Associate Dean for Graduate Education for its suitability under the EPSRC criteria. Once the deadline has passed a school representative Panel chaired by the Associate Dean will be convened to assess the most suitable for allocation. All applicants will be notified by preferred delivery method (eg email or post) thereafter.

For advice contact Christine Twigg in the Graduate Education Office on **(0161) 306 5902** or email [eps-subs@manchester.ac.uk](mailto:eps-subs@manchester.ac.uk)

### L'Oréal-Unesco For Women In Science fellowships 2010

Applications for the L'Oréal-UNESCO UK and Ireland Fellowships For Women In Science are now open. This year, four fellowships each worth £15,000, will be awarded to outstanding female post doctoral scientists in the UK or Ireland, adjudicated by a panel of prominent scientists. Entries can be made online at [www.womeninscience.co.uk](http://www.womeninscience.co.uk) and the four winners will be announced at an

awards ceremony held at the Royal Institution in June. The Fellowships organised by L'Oréal, the UK National Commission for UNESCO, the Irish National Commission for UNESCO and the Royal Institution of Great Britain, were launched in 2007 and are designed to provide practical help for the winners to further extend research in their respected fields. Winners may choose to spend their fellowships in whichever way is most helpful to them in continuing their research, whether it be buying scientific equipment, hiring an assistant or paying for childcare costs.

Dr Nathalie Seddon was one of the winners of the 2009 fellowships, awarded for her research on the evolution of animal communication. Her research involves spending extended periods of time in Central America studying the behavior of antbirds and ovenbirds. Dr Seddon used her award to help build aviaries and begin preliminary experiments at the Smithsonian Tropical Research Institute in Panama, as well as to fund her travel. Nathalie said: "The international and unique nature of my research has previously made it difficult to get initial funding from UK research councils. This of course presents some difficulties when your research material is the other side of the world. The L'Oréal-UNESCO prize has provided me with the support necessary to set up a centre from where I can really extend my scientific research." She added: "With international research it is always a struggle to achieve a work life balance. The L'Oréal For Women In Science award has allowed me the flexibility to begin thinking about starting a family of my own while I continue to pursue my career."

The 2010 awards will be adjudicated by a panel of eminent scientists chaired by Susan Greenfield, Professor of Pharmacology at Oxford University. The closing date for applications to the 2010 L'Oréal-UNESCO UK and Ireland For Women In Science Fellowships is Wednesday 7th April. For further information and to apply, please visit: [www.womeninscience.co.uk](http://www.womeninscience.co.uk)

### **Bright IDEAS Awards – The Big Pitch: Chemistry and Beyond**

EPSRC invite outline applications for exceptionally pioneering, potentially transformative research projects that cross the boundaries between chemistry and another discipline(s). This initiative will look to support research projects that have the potential to profoundly impact and/or transform a broad area of research. A high degree of risk in these applications is expected and welcomed. The focus for this call is on an individual with a bright idea. Successful applicants will be granted a Bright IDEAS Award.

This call will follow a non-standard format for submission and assessment, please read the call document carefully. <http://www.epsrc.ac.uk/CallsForProposals/PhysicalSciencesBigPitch.htm> . Up to £2 million from the Physical Sciences Programme will be available for this Call. Applications are limited to single applicants only. Applicants can apply for up to £250,000 in total and projects should be a maximum of 18 months in duration. Funding is available to support up to 8 Bright IDEAS Awards. (Please note: For this call we are unable to accept applications at the interfaces of chemistry /biology and chemistry/chemical process engineering. Please see the Technical Scope section of the call document for further information.) **The deadline for Pre-Pitch applications is 4pm Tuesday 30 March 2010**

### **EPSRC - Materials Research Equipment Database**

The EPSRC has a database that contains information about research equipment available in UK universities. Using this site you can share your equipment and look for equipment to use. <http://equipment.epsrc.ac.uk/Default.aspx>

### **MRC New Investigator Research Grants**

The New Investigator Research Grant is aimed at researchers who are capable of becoming principal investigators and who are now ready to take the next step towards that goal. The scheme

can provide talented early-career scientists with a route into a permanent lectureship position. For those who already have a post it provides funding and 'protected time' with which to establish an independent research career. A New Investigator Research Grant is also a potential source of research funding for fellows whose awards only cover a personal salary. New Investigator Research Grants provide funding for three years or more as long as the Full Economic Costing financial ceiling of £600k is not exceeded. Deadlines: May/June

<http://www.mrc.ac.uk/Fundingopportunities/Grants/NIRG/index.htm>

### **Enterprise Fellowships: Developing commercial potential of reserach**

BBSRC and The Royal Society of Edinburgh seek proposals to the Enterprise Fellowships scheme to support researchers who wish to play a key role in the commercialisation of their research. The Fellowships provide salary and formal business training, allowing the Fellows to focus on developing the commercial potential of their research over a 12-month period. The Fellowships are available to academic staff, research staff and postgraduates with relevant experience employed by a UK Higher Education Institution or a BBSRC-sponsored Research Institute. The business idea may be in any area within BBSRC's remit provided the original research was largely funded through the Research Council. The next closing date for applications is 5pm on 4 May 2010. Interviews will take place in early 2010 and Fellowships are expected to start in October 2010. Application forms and further details are available from:

[http://www.bbsrc.ac.uk/business/commercialisation/enterprise\\_fellowships.html](http://www.bbsrc.ac.uk/business/commercialisation/enterprise_fellowships.html)

or by contacting Dr Anuj Bhatt, [anuj.bhatt@bbsrc.ac.uk](mailto:anuj.bhatt@bbsrc.ac.uk), Tel:01793 413390

### **Royal Society Industry Fellowships:**

#### **Promoting knowledge exchange between academia and industry**

The Industry Fellowship scheme promotes collaboration between the UK science base and industry by supporting the exchange of mid-career researchers either from the science base to industry or vice-versa. The Fellowships are administered by the Royal Society, co-sponsored by the BBSRC and BBSRC Institute employees are now eligible to apply for a fellowship. The scheme has successfully supported researchers in the biosciences and has involved a range of industry sectors, from large pharmaceutical companies to Biotech SMEs.

The deadline for applications for the next round of funding is \*24 March 2010\* with further details at

[http://www.bbsrc.ac.uk/business/people\\_information/industry\\_fellowship\\_scheme.html](http://www.bbsrc.ac.uk/business/people_information/industry_fellowship_scheme.html)

or by contacting Anuj Bhatt, Email: [anuj.bhatt@bbsrc.ac.uk](mailto:anuj.bhatt@bbsrc.ac.uk), Tel: 01793 413390

### **Faculty of Life Sciences – Career Development Award**

Announcing the 2010 FLS Career Development Award (formerly known as the FLS Small Grant Award). This award is aimed at postdoctoral researchers and research assistants. This award has been named to highlight the main aim of the award: to support researcher career development. The award, supported by the Faculty Management Team, will provide up to £1500 per person (total fund value for 2010 is £5000) to provide the opportunity to further career progression by funding activities such as:

- Learning techniques in another lab.
- Attending a training course or workshop (e.g. communication skills, management, career development)
- Visiting another laboratory to discuss potential future collaborations

Please note this is not a conference travel award and applications of this nature will not be considered. The award is open for applications from Thursday 25 February until 17:00 on Friday 23 April 2010. It is anticipated that successful awardees will be informed by Friday 14 May 2010. Applications will be peer reviewed by a team of FLS academic staff, and feedback on applications will be offered to all applicants. All applicants are requested to ensure their application is

'sponsored' by (i.e. has agreement of) a member of FLS academic staff. The application form and guidelines will be e-mailed to all research staff by Friday 26 February, and are also available on the intranet at: [Forms](#) Queries can be directed to the 2010 FLS Career Development Award coordinator Dr Deborah Bentley, [deborah.bentley@manchester.ac.uk](mailto:deborah.bentley@manchester.ac.uk), x55465

## Funding Deadlines & Links

NERC Research, consortium, and partnership Grants 1<sup>st</sup> July <http://www.nerc.ac.uk/>

EPSRC <http://www.epsrc.ac.uk/default.htm>

BBRSC Responsive mode –14<sup>th</sup> April 2010 <http://www.bbsrc.ac.uk/funding/index.html>

MRC <http://www.mrc.ac.uk/index.htm>

Wellcome Trust <http://www.wellcome.ac.uk/Funding/Biomedical-science/index.htm>

ESRC <http://www.esrc.ac.uk/ESRCInfoCentre/index.aspx>

## Congratulations

[TOP](#)

### Recent Grant awards

**Sophia Ananiadou** has been awarded an NIH research grant for a “*Computer System for Functional Analysis Of Genomic Data*” of £82K

**Ardeshir Bayat** received a South Manchester University Hospitals Trust award for £60K for his project “*Use of Array Comparative Genomic Hybridisation in Combination with Whole Genome Expression and Autoantibody Profiling in Detection of Novel Molecular Targets in Dupuytren's Disease*”.

**John Gardiner** (Col) and Gordon Jayson (PI FMHS) have been awarded £311K by Cancer Research UK for a project on “*Development of Oligosaccharides Anti-Angiogenic Agents*”.

**Andrew Munro** (PI), **Nigel Scrutton** and **Derren Heyes** have been awarded £350K by the BBSRC for a study “*Elucidating and exploiting cytochrome P450 TxtE-catalysed tyryptophan nitration in thaxtomin phytotoxin biosynthesis*”

### Births

Congratulations to:

**Joshua Knowles** on the birth of his son, Daniel, born on 28<sup>th</sup> Jan

**Lesley-Ann Miller** on the birth of Oscar (8lb 14oz!) on 31<sup>st</sup> Jan

**Deborah Cornwell** on the birth of Scarlet Rose (5ib 12oz) on 12<sup>th</sup> Feb

## Seminars

[TOP](#)

### MIB Research Forum Talks 12.00 MIB LT

**Thursday 25<sup>th</sup> March**

Jason Micklefield, Andrew Almond and Finbarr Hayes  
*Lunch to follow! – all welcome to attend*

### MIB International Seminar Series 12.00pm MIB LT

**Thursday 4<sup>th</sup> March - Dr Mark Viant** University of Birmingham

*Can metabolomic signatures predict molecular and whole animal toxicity? - A fundamental challenge in environmental biomarker research.*

Thursday 15<sup>th</sup> April 2010 - Professor Daniel Herschlag, Stanford University

Thursday 13<sup>th</sup> May 2010 - Professor David Beebe, University of Wisconsin-Madison

If you would like to meet with any of the speakers during their visit please contact [Ros Le Feuvre](#)

Full seminar list: <http://www.mib.ac.uk/aboutus/newsandevents/news/ISS/iss%20full%20list.html>

### MIB Internal Seminar series 12.00

Wednesday 17<sup>th</sup> March 11.30 MIB LT

*This is an internal seminar series ran by post grads and post docs in MIB with short talks presented by PG/PD researchers.*

A free lunch is being provided by **Eurogentec** who will be presenting a short talk: *Recent developments in the field of services dedicated to proteomics research: From the production of your antigen of interest the selection of the right antibody development strategy and the right detection methods* - please try and attend!

#### 12.00 PG/PD talks:

Syed Farhatullah - Ardy Bayat group  
John Fletcher - John Vickerman group  
Ruchi Gupta - Peter Fielden group  
John Duncan - Jason Micklefield group



### Seminars in MIB

Tuesday 9<sup>th</sup> March 2-3pm **Prof Lennart Nilsson**. Karolinska Institute, Sweden. "Information Transfer in Nuclear Hormone Receptors studied by Molecular Dynamics Simulation".

### Seminars throughout the University

can be found at:

- [Faculty of Life Sciences](#)
- [School of Materials](#)
- [School of Physics and Astronomy](#)
- [School of Chemistry](#)
- [SCEAS](#)

## Events/Symposia/Meetings

[TOP](#)

### Biological Catalysis – A gateway to Industrial Biotechnology

June 11<sup>th</sup> 2010

One day event with speakers from Industry, academia and gov. Bodies.

Confirmed speakers: Alan Pettman (Pfizer), John Sime (KTN Biosciences) Toni Glieder (IMBT), Amy Peace (Chemicals NW), Christopher Dowle (CPI), Carol Boyer-Spooner (CIKTN), Keith Layden (Croda), Nick Turner (MIB), Nigel Scrutton (MIB) and Jon Lloyd (University of Manchester)

Please put this date in your diaries! If you would like further information please contact [Ros Le Feuvre](#) – to register for the event please [Click Here](#)

## Publications

Dixon N, Duncan JN, Geerlings T, Dunstan MS, McCarthy JE, Leys D, Micklefield J  
Reengineering orthogonally selective riboswitches. Proc Natl Acad Sci U S A. 2010 Feb

16;107(7):2830-5. Epub 2010 Jan 26. [Abstract](#) (Highlighted in Nature **463**, 591, Feb 2010)

**Doshi R, Day PJ, Carampin P, Blanch E, Stratford IJ, Tirelli N.** Anal Bioanal Chem. 2010 Feb 19. [Epub ahead of print] PMID: 20169336 [PubMed - as supplied by publisher] [Abstract](#)

**Ashton L, Dusting J, Imomoh E, Balabani S, Blanch EW.** Susceptibility of Different Proteins to Flow-Induced Conformational Changes Monitored with Raman Spectroscopy. Biophys J. 2010 Feb 17;98(4):707-714. [Abstract](#)

**Shaw A, Olivares-Chauvet P, Maya-Mendoza A, Jackson DA.** S-phase progression in mammalian cells: modelling the influence of nuclear organization. Chromosome Res. 2010 Feb 13. [Epub ahead of print] [Abstract](#)

**Köhler V, Bailey KR, Znabet A, Raftery J, Helliwell M, Turner NJ.** Enantioselective Biocatalytic Oxidative Desymmetrization of Substituted Pyrrolidines. Angew Chem Int Ed Engl. 2010 Feb 9. [Epub ahead of print] No abstract available. [Abstract](#)

**de Visser SP, Valentine JS, Nam W.** A Biomimetic Ferric Hydroperoxo Porphyrin Intermediate. Angew Chem Int Ed Engl. 2010 Feb 5. [Epub ahead of print] [No abstract available.](#)

**William Allwood J, Clarke A, Goodacre R, Mur LA.** Dual metabolomics: A novel approach to understanding plant-pathogen interactions. Phytochemistry. 2010 Feb 4. [Epub ahead of print] [Abstract](#)

**Nudds RL, Gardiner JD, Tickle PG, Codd JR.** Energetics and kinematics of walking in the barnacle goose (*Branta leucopsis*). Comp Biochem Physiol A Mol Integr Physiol. 2010 Feb 4. [Epub ahead of print] PMID: 20138237 [PubMed - as supplied by publisher] [Abstract](#)

**Handley CM, Popelier PL.** Potential Energy Surfaces Fitted by Artificial Neural Networks. J Phys Chem A. 2010 Feb 4. [Epub ahead of print] [Abstract](#)

**Shih B, Bayat A.** Genetics of keloid scarring. Arch Dermatol Res. 2010 Feb 4. [Epub ahead of print] [Abstract](#)

**Wharfe ES, Winder CL, Jarvis RM, Goodacre R.** Monitoring the effect of chiral pharmaceuticals on aquatic microorganisms by metabolic fingerprinting. Appl Environ Microbiol. 2010 Jan 29. [Epub ahead of print] [Abstract](#)

**Markey AL, Mohr S, Day PJ.** High-throughput droplet PCR. Methods. 2010 Feb 1. [Epub ahead of print]. [Abstract](#)

**Rosenberg MF, Oleschuk CJ, Wu P, Mao Q, Deeley RG, Cole SP, Ford RC.** Structure of a human multidrug transporter in an inward-facing conformation. J Struct Biol. 2010 Jan 28. [Epub ahead of print] [Abstract](#)

**Wolthers KR, Levy C, Scrutton NS, Leys D.** Large-scale domain dynamics and adenosylcobalamin reorientation orchestrate radical catalysis in ornithine 4,5 aminomutase. J Biol Chem. 2010 Jan 27. [Epub ahead of print] [Abstract](#)

**Basanta M, Jarvis RM, Xu Y, Blackburn G, Tal-Singer R, Woodcock A, Singh D, Goodacre R, Thomas CL, Fowler SJ.** Non-invasive metabolomic analysis of breath using differential mobility spectrometry in patients with chronic obstructive pulmonary disease and healthy smokers. Analyst.

2010 Feb;135(2):315-20. Epub 2010 Jan 5. [Abstract](#)

**Dillon LA, Stone VN, Croasdell LA, Fielden PR, Goddard NJ, Thomas CL.** Optimisation of secondary electrospray ionisation (SESI) for the trace determination of gas-phase volatile organic compounds. *Analyst*. 2010 Feb;135(2):306-14. Epub 2010 Jan 7. [Abstract](#)

**Bassan P, Kohler A, Martens H, Lee J, Byrne HJ, Dumas P, Gazi E, Brown M, Clarke N, Gardner P.** Resonant Mie scattering (RMieS) correction of infrared spectra from highly scattering biological samples. *Analyst*. 2010 Feb;135(2):268-77. Epub 2009 Dec 15. [Abstract](#)

**Fryszkowska A, Fisher K, Gardiner JM, Stephens GM.** A short, chemoenzymatic route to chiral beta-aryl-gamma-amino acids using reductases from anaerobic bacteria. *Org Biomol Chem*. 2010 Feb 7;8(3):533-5. Epub 2009 Nov 10. [Abstract](#)

**Bell NM, Wong R, Micklefield J.** A non-enzymatic, DNA template-directed morpholino primer extension approach. *Chemistry*. 2010 Feb 15;16(7):2026-30. [No abstract available.](#)

**Sattelle BM, Shakeri J, Roberts IS, Almond A.** A 3D-structural model of unsulfated chondroitin from high-field NMR: 4-sulfation has little effect on backbone conformation. *Carbohydr Res*. 2010 Jan 26;345(2):291-302. Epub 2009 Nov 23. [Abstract](#)

**Please send comments and items for inclusion in this newsletter to:**

**[Ros Le Feuvre](#) (Next edition deadline 24<sup>th</sup> March)**