



## News

The following news items illustrate some of our activities during the last 3 months. To keep up to date with our activities, please take a look at our news pages at:

<http://www.food.rdg.ac.uk/news.htm>

### 30 March 2006: School takes the lead as University launches unique food and health research programme



Today the University of Reading has officially launched a multi-disciplinary science programme to investigate Food Chain and Health issues. Harnessing £5 million of current funding, the new programme will investigate how diseases such as heart disease, Type II diabetes, gastroenteritis and cancers can be prevented by changes in lifestyle, food production and diet.

Chronic diseases are a major and growing societal and financial concern. Moreover, an increasingly ageing population means that there is a greater prevalence of these diseases.

Exploiting the University's international expertise across a wide-range of Schools, this programme is focuses on a long term vision that will also generate short-to-medium term benefits for this crucial area of public health.

Researchers wish to investigate particular food ingredients that may have beneficial properties, underpinning their investigations by exploring the effects. Subjects that will be

examined during the programme include; factors influencing dietary choice, milk and its role in health and disease, diet and ageing, food and performance, DNA based analysis of ancient gut flora components and the bioactive components from foods.

**Professor Glenn Gibson**, leader of the Food Chain and Health research programme, said, 'Food Chain and Health is the first of a number of research programmes being launched at the University which will use expertise from a large selection of our Schools. Reading's research strengths lie in a diverse number of areas, enabling the University to take a unique approach to its research by developing a number of cross-discipline research themes.'

Joining the School of Food Biosciences in this initiative are the Schools of Agriculture, Policy and Development, Archaeology, the BioCentre, Biological Sciences, Pharmacy and Psychology.

A brochure giving further details is available on-line as a pdf file at: <http://www.food.rdg.ac.uk/sfb-research/food-chain-health-brochure.pdf>. There is also a University web page at: <http://www.info.rdg.ac.uk/research/themes/foodchainhealth.htm>

### 30 March 2006: School role in key meeting on separation techniques for high value food products

In recent years there has been an increased interest in the production of value added products in the food industry. These products are also classified as functional foods, i.e.: a food which targets functions in the body, beyond adequate nutrition, in a way that improves health and well-being or reduces the risk of disease.

**Dr Paula Jauregi**, a lecturer in the School of Food Biosciences, is directly involved in this work and chaired a Society of Chemical Industry (SCI) Meeting in London today.

Examples of the products considered were proteins found in whey, e.g.: lactoferrin and lactoperoxidase, bioactive peptides and others such as carotenoids. Extensive studies on the additional health benefits that these products could bring have driven research into their development as food ingredients and medicines. Due to their additional functionalities these molecules are more fragile than traditional food ingredients, therefore a more complex downstream processing is required for their selective separation from fermentation broths or other renewable sources. In addition a wide range of separation methods are needed for the recovery and purification of such diverse bioproducts.

The aim of the meeting was for scientists from academia and industry to exchange their ideas and research findings in the separation of a number of value added products. The meeting provided an ideal forum for industrialists to present and discuss their current separation processes including their bottlenecks as well as for scientists to present new ideas and propose novel separation methods which could find an application in these processes.

This conference consisted of a number of talks from experts in industry and academia on the recovery and separation of value added products in the food industry including: (1) proteins and bioactive peptides from whey and milk (2) carotenoids and other compounds with anti-oxidant properties (3) polysaccharides, using a wide range of novel separation methods and technologies such as, affinity membranes, novel chromatographic techniques and novel extraction and flotation methods.

As well as chairing the meeting, Dr Jauregi presented a paper describing her work on colloidal gas aphrons (CGA) and **Dr Goulas**, also of the School of Food Biosciences, described his work on membrane separations for the fractionation of enzymatically synthesised oligosaccharides.

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## 26 March 2006: Further visit to China to prepare for transfer of students from Henan University of Technology to the School

As part of our link scheme with Henan University of Technology, **Professor Niranjana** and **Dr Weili Li** have spent two weeks in Henan. The link provides for the transfer of suitable students who have completed two years in Henan to enter our programmes in Year 2. Alternatively, suitable students completing 4 years in Henan can join one of our MSc programmes.

This month's visit enabled Professor Niranjana and Dr Li to give some lectures to those students hoping to transfer. About 20 students currently following a food science and technology or a biotechnology programme in Henan are hoping to join the School here in Reading next October.

It is planned that Dr Weili Li, who has been a postgraduate researcher with the School of Food Biosciences for several years, will take on overall pastoral responsibility for our new Chinese students.

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## 25 March 2006: School presence as Reading F.C. gain promotion to Premiership!

Loyal supporters of Reading Football Club (also known as the 'Royals') were delighted today when the Royals gained promotion to the Premiership. The game, away at Leicester, was drawn but that gave Reading the necessary points.

And one of our technicians, **Sue Mouring**, was there to see it happen and said that it was "fantastic!!!". Sue has been a supporter of the Royals for nearly 23 years and has travelled with them to many football grounds around the country. Reading have never been in the Premiership and so Sue will now be able to visit clubs like Manchester United, Arsenal and Chelsea as she follows her club.

The news was also welcomed by **Professor Glenn Gibson**, our Director of Research. Glenn commented: "As a very long suffering supporter of Sunderland Football Club (a lifetime - but it seems longer...), I can think of no better side than Reading to take our place in the Premiership. This assumes that Sunderland will be demoted at the end of the season of course - given that we are now 68 points adrift of Chelsea, it does not look good. Congratulations to Steve Coppell's side and sorry we won't be there to guarantee you 6 points next season."

Reading will be pleased to offer top class football to its other many attractions. Potential students might like to note that Leeds United are still in the Championship (the league below the Premiership) and Nottingham Forest are in an even lower league!

Further details of Reading F. C. can be found on their web site at: <http://www.readingfc.co.uk>

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## 17 March 2006: Professor Williams elected to be Dean of the Faculty of Life Sciences

The Head of the School of Food Biosciences, **Professor Christine Williams**, has been elected to become the new Dean of the Faculty of Life Sciences with effect from the 1st August 2006.

Professor Williams has been with the School since 1995, joining us from the University of Surrey to take up the new post of Sinclair Chair in Human Nutrition. She has been instrumental in developing the research and teaching in human nutrition within the School and, since 2003, has been Head of the School of Food Biosciences. Under her leadership, the School has been strengthened with increased research income and an enhanced focus to all of our activities.

Her promotion will be a loss to the School but we are confident that she will still retain her interest in nutrition and food issues and lend her support to our activities.

The 1st August will be a time of significant change for the School when we will formally be joined to the current School of Chemistry and the School of Pharmacy to create a new School of Chemistry, Food Biosciences and Pharmacy. Within the new School, the current 'School of Food Biosciences' will become the 'Department of Food Biosciences'. The Vice Chancellor is currently consulting on the appointment of the new Head of School of Chemistry, Food Biosciences and Pharmacy.

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### 14 March 2006: Final year students demonstrate their product development skills



Each Spring Term, as part of their final year programmes, all of our food students participate in a Product Development Exercise. Students, working in small groups, are given a general brief to devise a competitive product meeting certain broad requirements. The module always provides an exciting range of new product ideas, attractively presented and with consideration being given to the manufacturing requirement and with a high emphasis on the requirements for consumer safety.

The module includes substantial external input. Professor Basil Jarvis, a Visiting Professor to the School and former Research Director of both Express Foods and Bulmers, provides the main support. This year, all the groups received expert advice on recipe development from Chris Young, a chef at the three Michelin starred 'The Fat Duck Restaurant'. Also helping out with the judging was Liz Cooper of Kerry Foods.

There were 6 groups involved and the competition has been intense. The result will only be announced when the groups' technical submissions have been evaluated. The winning group will receive the sum of £500 as a prize - this is provided by Kerry Foods who support this exercise.

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### 28 February 2006: Society of Dairy Technology Award presented to School researcher



At an award ceremony held today, **Helen Grimley**, a PhD student in the School, was presented with the 2005 Foss Prize from the Society of Dairy Technology (SDT). The presentation was made by the current President of the SDT, our very own **Mr Andrew Wilbey**, lecturer in the School of Food Biosciences. Helen had successfully beaten other researchers when she prepared a poster on her research work.

As well as an impressive certificate, Helen also received a cheque for £300 as a contribution to travel to a conference or symposium. Congratulations to Helen!

More details of the Society of Dairy Technology can be found on their web site at: <http://www.sdt.org/>

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### 28 February 2006: Professor Williams welcomes report indicating continuing strong demand for food science and technology graduates

The food industry needs highly trained food science and technology graduates to ensure that it continues to deliver food which is both safe and of the right quality for the consumer. However, in recent years there has been a decline in the number of applicants to food science and technology courses and the result is a shortage of graduates. The situation has been highlighted in a report just published by 'Improve Ltd', the Food and Drink Sector Skills Council.

**Professor Williams**, Head of the School of Food Biosciences, commented upon the report: "It is good to see that the industry is aware of the problems caused by falling student numbers in food science and technology. Whilst we at Reading have been actively seeking to maintain the supply of quality graduates for the industry, we have also been working with industry with initiatives to encourage and support students onto appropriate programmes - our summer course for sixth formers is an example of this"

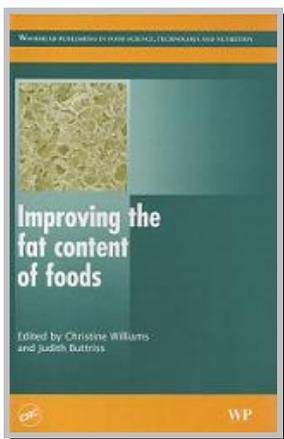
The picture is not all bad news however as Professor Williams pointed out: "As our current graduates are finding, this report demonstrates that our future graduates will be in great demand. A Reading Food Science or Food Technology degree is recognised by the food industry as

providing a high quality training leading to an interesting, challenging and rewarding career."

Further details of the research can be found on the web site of 'Improve Ltd' at: <http://www.improveltd.co.uk/> Follow the links to 'Research Report' and, following free registration, you can read the full document.

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## 20 February 2006: Major role for School in new book on the fat content of foods



With consumers, governments and industry all growing increasingly aware of the need to tackle issues linked to obesity, the publication of a major new reference book on 'Improving the Fat Content of Foods' is very welcome.

With its strong team of nutrition lecturers, led by **Professor Christine Williams**, the School is one of the leaders in the subject. This is demonstrated by the number of contributions from members of the School of Food Biosciences.

The book is edited by Professor Christine Williams and Judy Buttriss of the British Nutrition Foundation. Chapters with Reading authors (in bold) include:

- Dietary fatty acids, insulin resistance and diabetes **D I Shaw, W L Hall and C M Williams**
- Health benefits of polyunsaturated fatty acids (PUFAs) **A M Minihane and J A Lovegrove**
- Conjugated linoleic acids (CLAs) and health **P Yaqoob and S Tricon**, G C Burdge and P C Calder
- Optimising dairy milk fatty acid composition **D I Givens** and K J Shingfield

As health problems such as obesity, heart disease and diabetes increase in many developed and developing countries, the food industry has come under mounting pressure to improve the nutritional quality of its products. Particular attention has focused on the health problems associated with saturated fats in food and on the potential health benefits of increasing monounsaturated and polyunsaturated fat content. Summarising key research in this field, this important collection reviews both the influence of dietary fats on health and practical strategies for improving the fat content of food products.

The 560 page hardback book is published by Woodhead Publishing at £150. Its ISBN is 1 85573 965 8

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## 10 February 2006: School gains Fellowship to enhance our career management skills provision

The importance that the University of Reading places on career management skills was recognised last year by the establishment of a national Centre for Career Management Skills (CCMS) at this University. This Centre of Excellence for Teaching and Learning has now awarded a CCMS Fellowship to **Orla Kennedy** and **Glynis Jodrell** in the School. The Fellowship comes with funding of £10,100 which will be used to enhance the quality of Career Management Skills in the School of Food Biosciences.

Most students on degree programmes in Food Biosciences undertake 12 months industrial training in their third year. Although we provide support to our students, it is felt that, when applying for placements during the second year, students may not have sufficient knowledge of the various roles within the food industry. For instance they are likely to have limited understanding at this stage in their programme of the role of a Quality Assurance Technician. It is therefore difficult for them to comprehend fully what opportunities the placement would provide.

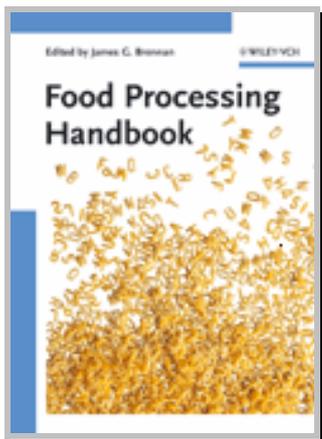
The project will develop digital video clips and 'job blogs' of various roles in the food industry as a resource for our students. This will allow students to explore the tasks associated with various roles and what a typical day or typical week in this role would be. Where ever possible the intention is that the video clips and job blogs will feature graduates of the SFB, thus making the material more 'real' to the students in the class.

In order to demonstrate the variety of roles within the food industry and the different levels, they will video students on placements, graduates on company training schemes and potential employers in more senior management roles. In addition they will create 'a day in the life' type 'job blog' which would be placed on the School's web site.

It is hoped that a recent graduate from the School of Food Biosciences will be employed for a short period of time to carry out the interviewing.

More details of the Centre for Career Management Skills can be found on their web site at: <http://www.rdg.ac.uk/ccms/index.php>

## 17 January 2006: Staff play major role in the writing of a new reference book on food processing



A major new book, *Food Processing Handbook*, has now been published. The book is edited by **James (Jim) Brennan**, former Senior Lecturer in the School and now an Honorary Fellow. The book is a collaborative effort with contributions from several members of the School's staff including: **Drs Dobraszczyk, Grandison, Lewis, Mr Wilbey, Professor Niranjana and Emeritus Professor Ledward**.

Focusing on the technology involved, this handbook describes the principles as well as the equipment used and the changes - physical, chemical, microbiological and organoleptic - that occur during food preservation. In doing so the text covers in detail such techniques as post-harvest handling, thermal processing, evaporation and dehydration, freezing, irradiation, high pressure processing, emerging technologies, baking, extrusion, frying and packaging. In addition current concerns about the safety of processed foods and control of food processes are addressed, as are the impact of processing on the environment and separation and conversion operations widely used in the food industry.

Scientists and engineers involved in food manufacture, research and development in both industry and academia will benefit greatly from the contents as will students studying food related topics at undergraduate and postgraduate levels.

The book is published by Wiley-VCH at 159 Euros. Further details can be found on their web-site at: <http://www.wiley-vch.de/publish/en/>

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## 3 January 2006: 'Chocolate - Behind the Bars' lecture to the Association of Science Education Annual Conference

Several thousand science teachers from schools throughout the United Kingdom have descended on the University of Reading this week for the Annual Conference of the Association of Science Education.

This year one of the workshops available to delegates was given by **Professor Niranjana** (from the School) and **John**

**Schollar** (from the National Centre for Biotechnology Education based on the campus here at Reading).

This workshop explored the science and technology behind the production of chocolate and the manufacture of some of the chocolate bars that we find in shops. How do they get the bubbles in bars like Aero? Which chocolate fruit predated by six years Terry's Chocolate Orange? Which chocolate bar was the best selling bar of 1966? How can chocolate be used as an educational resource? What practical activities can pupils do in the classroom? These and many more questions were asked ..... and answered in this workshop.

The workshop included some sensory analysis of commercial chocolates. In addition they enjoyed the experience of tasting chocolates aerated with nitrous oxide (laughing gas), carbon dioxide, nitrogen and argon. This was found fascinating to those involved!

The web site of the SAE can be found at:  
<http://www.ase.org.uk>

## Our Degree Programmes

The **School of Food Biosciences** offers the following programmes

- BSc Food Science;
- BSc Nutrition and Food Science;
- BSc Food Technology;
- BSc Biotechnology;
- BSc Food Science with Business
  
- MSc Food Science;
- MSc Food Technology Quality Assurance;
- MSc Nutrition and Food Science
  
- PhD, MPhil - Research degrees

For full details, visit our web site at:  
<http://www.food.rdg.ac.uk/index.htm>