



Alimentary Pharmabiotic Centre
Interfacing Food and Medicine

GUT REACTION

NEWSLETTER OF THE ALIMENTARY PHARMABIOTIC CENTRE

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Volume 4 No. 2 Winter 2007



WELCOME

The APC operates at the interface of the Food and Pharma Industry sectors which are of major strategic importance to the Irish economy. In keeping with Government strategy to develop the Knowledge Economy, the APC has increased its focus on highlighting collaborative opportunities at the food-pharma interface. In this issue of GUT REACTION we are delighted to highlight an upcoming Food Pharma Industry Workshop which is being organised by the European Technology Platform (ETP) Food for Life and hosted by the APC.

Clinical research on gastrointestinal disorders at the APC is also featured in the RESEARCH UPDATE from Eamonn Quigley. The recent award, by the Health Research Board, to UCC, of a multi-million Euro grant towards the establishment of a Clinical Research Centre at Cork University Hospital represents a major boost to clinical research programmes at the APC, as well as to all involved in clinical research in the area. This facility, which will be developed and administered to international standards appropriate for the conduct of clinical research, will permit the performance of high quality clinical research in Cork through the provision of customized facilities, dedicated research staff and appropriate statistical, IT and trial design support. This is exactly what a cutting edge research facility like the APC needs: a first rate clinical research partner.

EXPANDING INDUSTRY LINKS

Food Pharma Industry Workshop

January 31- February 1, 2008, Kingsley Hotel, Cork, Ireland

The Food and Pharma Industry sectors address major health issues that our society is facing but from different perspectives: many foods aim to prevent disease while most drugs aim to cure disease. This distinction, however, is not clear cut, because some functional foods address consumers with a particular defect while some pharma products aim to reduce risk factors and prevent disease. Hence, there are many areas where the food and pharma industries have a mutual interest. These include specific markets, legislation issues, and personalized products, but also relate to life science issues where approaches and scale, health paradigms, and biomarkers are common to both industrial sectors.



The European Technology Platform (ETP) Food for Life (www.etp.ciaa.be), which aims to strengthen the European-wide innovation process, improve knowledge transfer and stimulate European competitiveness across the food chain, has organized a Food Pharma Industry Workshop which will be hosted by the Alimentary Pharmabiotic Centre (APC) on January 31- February, 2008.

The aim of this ETP Food-Pharma workshop is to:

- Identify common ground across a selected areas of activities and discuss these with the objective of developing a common European Research Agenda
- Advance scientific developments on key areas of interest
- Build bridges between the food and pharma industries.

The Workshop will focus on a wide group of stakeholders, including industrialists and academics, the research community, legislators and innovators, large and small companies. It will include contributions from the pharma and the food sectors with a pan-European dimension and is organized with support from the ETP Food for Life (www.etp.ciaa.be) and the Irish National Platform linked to the ETP.

Organising Committee: Professor Roger Fenwick, Professor Charlie Daly, Professor Willem M. de Vos

The full Programme and Registration Form can be downloaded from <http://apc.ucc.ie>
Registration, on a first-come-first-served basis, should be forwarded before 23 January 2008 to:

Ms Andrea Doolan
Alimentary Pharmabiotic Centre
BioSciences Institute
University College Cork, Ireland

Email: a.doolan@ucc.ie
Fax: + 353 (0) 21 4901436

RESEARCH UPDATE

from Eamonn Quigley Clinical Research on Gastrointestinal Disorders at the APC



Converting scientific discoveries and advances made in the laboratory into clinical benefit for patients is a primary goal of the APC. To date our research has focused on three principal questions:

1. Can we better understand the cause of common gastrointestinal disorders including irritable bowel syndrome (IBS)?
2. Can we use information developed in the laboratory to develop new tests that would be valuable in making a diagnosis of IBS and similar disorders or in determining which patients will respond to certain treatments?

3. Will novel approaches to the treatment of IBS actually work in patients?

So what have we found so far? While our research programme is still at a relatively early stage I would highlight a few areas where we feel that we have made some real progress. Firstly, we have found evidence that disturbances in the balance between the commensal flora ("good bacteria") and pathogens ("bad bacteria") do occur in IBS though the definition of the precise nature of this disturbance represents a real challenge given the billions of different bacteria that normally live in the colon. Secondly, we, like others, have found evidence in the blood for a low level of inflammation in IBS and disturbances in immune function of the lining of the gut. These findings are very intriguing but it is still unclear what leads to this inflammation and how it relates to patient symptoms. Our third, and perhaps, most important, finding is that we have identified a very specific probiotic, which was characterized here in Cork, which seems very effective in IBS. We have demonstrated improvement in all of the main symptoms of IBS in two large clinical trials and, indeed, our campus company, Alimentary Health, has licensed this probiotic to the Procter and Gamble company for sale in the USA. For all of us who have been involved in research in APC this has been a very exciting and gratifying experience: seeing the science and clinical research performed here in Cork actually getting into the market to help patients. Many people have participated in this research but a special note of thanks to all of those patients who have participated in these studies and who have journeyed on this road of discovery with us.

NUI Cork, Diploma in Speciality Food Production

A Diploma in Speciality Food Production was launched three years ago by the Food Industry Training Unit (FITU) in UCC. The Diploma is a unique qualification established in response to the increasing number of people who are developing value-added food enterprises on-farm and for people working in food who have branched out into speciality food production and distribution. The Alimentary Pharmabiotic Centre is a partner in this Diploma as is FAS, the Food Safety Authority of Ireland, SafeFood-the Food Safety Promotion Board, Bord Bia and the Department of Agriculture, Fisheries and Food.

The Diploma is designed to facilitate study on a part-time basis. This year's class of 25 students come from a diversity of backgrounds including manufacturing, catering, retail, farming, marine and environmental health.

The course includes lectures and workshops in food science and technology including elements of food microbiology, food safety, food chemistry, process technology, nutrition and functional foods including probiotics. The students receive an introduction to small business management, financing and marketing, as well as an insight into the challenges of creating a small food enterprise. The programme gives the student an understanding of the increased diversity of the food markets, how taste, quality, sustainability, food safety and traceability are of increasing interest to a growing number of consumers and what social, cultural and economic changes have led to this new food culture.

Further details: Ms Denise Keohane, Programme Manager, Food Industry Training Unit, University College Cork, Ireland Tel: 021 4901423 Fax: 021 4901724 Email: d.keohane@ucc.ie

PROFILE - Catherine Buckley

Catherine Buckley is Education and Outreach (ED&O) Manager of the APC and is responsible for delivery of the APC's Ed&O Programme which is designed to promote an interest in the APC's research activities, capabilities and goals and to raise awareness in society of the importance and relevance of scientific research. This is a stimulating and exciting challenge.



The APC's Ed&O programme is coordinated by a dedicated Ed&O team, but the Centre's policy that all staff and students participate in education and outreach activities ensures a dynamic and expansive programme which benefits many stakeholder groups as well as the personal development of APC staff and students.

Catherine is a graduate of University College Cork where she received a BSc (Hons) and PhD in Biochemistry and HDip in Education. She has several years research experience in industry in the US, as a Research Fellow in Trinity College Dublin and in UCC, where she also lectured in the Biochemistry Department. She was Scientific Administrator of the former National Food Biotechnology Centre, UCC before taking up her current position in the APC.

Catherine has taken lead roles in the APC Bringing Science to Society series of Public Fora, as well as the annual Science for All competition, organised in conjunction with UCC's College of Science, Engineering & Food Science, where postgraduates present their research to the public without the use of jargon. She is also looking forward to APC's participation in the upcoming national Debating Science Issues competition for senior second level students. She is an active member, and former chairperson, of TReO (Third level Research Education and Outreach) a network of professionals involved in science communication, education and outreach in Ireland.

In her spare time Catherine enjoys cycling, hill walking and music.

NEW APPOINTMENT Sharon Sheahan



Sharon Sheahan has been appointed as APC Intellectual Property (IP) Co-ordinator. Sharon has a BSc in Biotechnology from the National University of Ireland, Galway and a Ph.D. in Cellular and Molecular Biology from the University of Edinburgh. Her PhD research investigated regulation of cell cycle control by the p53 tumour suppressor protein. She then carried out postdoctoral research at both Glasgow and Oxford Universities leading to identification of a novel mechanism of regulation

of p53. During her time at Oxford, Sharon was exposed to, and became interested in technology transfer and intellectual property. Effective management and exploitation of IP is a major goal of the APC and Sharon's role as IP Co-ordinator is to facilitate this process through dissemination and implementation of APC IP policies throughout the Centre, and through engaging with industry. Sharon benefited greatly from an internship at the Technology Transfer Office at Georgetown University in Washington D.C., organized by the APC, in addition to the wealth of support and expertise available within the Centre itself, the BioTransfer Unit, and UCC's Technology Transfer Office.

APC EDUCATION & OUTREACH ADVISORY BOARD APPOINTED



An Education & Outreach (Ed&O) Advisory Board has recently been established to provide advice on Ed&O policy, act as a channel for stakeholder viewpoints and to assist in identifying areas of cooperation with other organisations involved in conveying scientific messages to various audiences. Pictured are (left to right): Gerald Fitzgerald, APC; Sheila Morgan, APC; Jim Murphy, Janssen Pharmaceutical Ltd, Cork & Bridge to Employment Programme, Cork, Charlie Daly, Emeritus Professor, UCC (Chairman); Andrea Doolan, APC; Sally Cudmore, APC; Peter Hetherington, Pfizer Ringaskiddy API & American Chamber of Commerce in Ireland; Michael O'Brien, Cork City Council & Lifetime Lab; Mary McCarthy-Buckley, APC; Niall McGuinness, Independent Data Management Ltd & Cork Chamber of Commerce; Catherine Buckley, APC; Rosemarie Ferriter, St Vincent's Secondary School, Cork; Donal Lehane, Dunhill Cuisine, Co. Waterford; Noelle O'Reilly, Burnfort National School, Co. Cork; Tracey Connolly, Bridging the Gap Programme, Department of Education, UCC

EXTENDING THE APC

- UCC BioScience Institute and Biotechnology Centre, Moorepark Food Research Centre Extensions



BioSciences Institute

The BioSciences Institute which houses the Alimentary Pharmabiotic Centre in UCC is currently being extended with four additional floors of research laboratories. Two of these will be dedicated to the APC. Building work is due to be completed at the end of January 2008 with staff moving in in early March.

The Biotechnology Centre at Moorepark Food Research Centre is also being extended. The phase III extension will accommodate 6 new laboratories. These laboratories will house researchers dedicated to the Teagasc 'Vision' programme of research in addition to a dedicated bioactive discovery unit, where novel compounds demonstrating health promoting, disease prevention and anti-cancer properties should be investigated. A laboratory will also be available to industry (R&D) personnel, who may spend time on site developing technologies and improving skills under the guidance of Teagasc/APC staff. The 1400m² extension will facilitate further APC research and the advancement of the Food and Health research agenda and should be of benefit to the Food Industry and ultimately to the consumer.

Dr James Martin Walton Fellow at the APC

Dr James Martin, Meakins Christie Laboratories, McGill University, Montreal has been awarded a Walton Fellowship by Science Foundation Ireland to spend a year at the APC. James' research is in the area of asthma. Asthma is an inflammatory disease of the airways that is driven in many subjects by allergy to aeroallergens. The mechanisms of inflammation, in particular the contribution of various T cell subsets, lipid mediators such as leukotrienes and the structural changes in the airways caused by inflammation are major research themes in his laboratory. He is studying the role of intestinal bacteria in allergic diseases such as asthma as well as the possible therapeutic potential of probiotics in conjunction with investigators in the APC and Alimentary Health.



Upcoming Events

APC Bringing Science to Society

PUBLIC FORUM

Common Ailments - from allergies to asthma
Brookfield Health Sciences Complex UCC
Lecture theatre G01
7.00pm, 29 January 2008,
All welcome
admission free

World Digestive Health Day
29 May 2008

Details <http://apc.ucc.ie>

RELAY Workshops

National Teens' Food Survey
24 January, 2008, Morrison Hotel Dublin

Novel Approaches for Beverage Processing
20 February 2008, University College Dublin

Fruit for the Nation
28 February, 2008, Ashtown Food Research
Centre, Dublin

Contact: Dr. Amanda Forde
RELAY, University College Cork
t: 021 4902348; m: 086 3920235
f: 021 4276318
email: a.forde@ucc.ie; amanda.forde@teagasc.ie

Irish Society of Gastroenterology

Spring Meeting
24-25 April 2008

Two-day Food Microbiology Training Course,
April 2008, UCC
Contact: Mary McCarthy-Buckley,
Food Industry Training Unit, UCC
Tel. 021 4903363
E-mail m.mccarthybuckley@ucc.ie

Microbe Magic

Check out our new improved childrens'
website: <http://microbemagic.ucc.ie>

Staff Awards

Liam O'Mahony, Principal Investigator, APC, was awarded first prize for the Best Oral Presentation at the Irish Society of Gastroenterology Winter Meeting in Dublin.



Anne Cooney, AstraZeneca, Liam O'Mahony, APC and Fergus Shanahan, President ISG, APC

Carola Murphy, APC, was awarded second prize for her oral presentation at the Irish Society of Gastroenterology Winter Meeting in Dublin.



Anne Cooney, AstraZeneca, Carola Murphy, APC and Fergus Shanahan, President ISG, APC

IRELAND – THE COUNTRY WITH THE HIGHEST RATE OF COELIAC DISEASE IN THE WORLD



The First International Symposium on Gluten-Free Cereal Products and Beverages, www.glutenfreecork2007.com, took place in University College Cork from the 12 – 14 of September. The Symposium, the first dedicated to gluten-free foods and beverages in the world, addressed all aspects of Coeliac disease, which affects 1 in 60 Irish people. One of the major outputs of this Symposium will be a book entitled the Science of Gluten-Free Food and Beverages which will be published by the American Association of Cereal Chemists (AACC) in Spring 2008. Pictured at the Symposium are (left to right): Prof. Fergus Shanahan, APC, Dr Elke Arendt, UCC (organiser), Dr Nick Kennedy, TCD, Prof. Chris Mulder, Amsterdam, and Prof. Carlo Catassi, Baltimore USA



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Contact Details:

Catherine Buckley
Alimentary Pharmabiotic Centre
BioSciences Institute
University College Cork
Ireland
Email: apc@ucc.ie