Welsh Crucible 2011

Participants

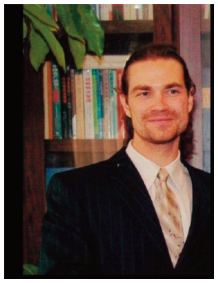
Paul Brennan
Cardiff University

Paul has a broad interest in human health, biology, plants and micro-organisms. Paul completed his undergraduate and post-graduate training in Biochemistry at Trinity College, Dublin. After four years post doctoral immunology research in London, he moved to Cardiff to take up a lecturer position. In Cardiff, now for 12 years, he studies lymphocytes, key cells of the immune system and how these cells cause cancer. To do this, Paul uses a variety of approaches including cell biology, microscopy, biochemistry and proteomics. His aim is to develop novel drug targets by understanding the molecules controlling lymphocyte growth and survival. Paul likes to work in inter-disciplinary teams and has collaborated productively with scientists, clinicians, mathematicians, an artist and two poets. He believes in using scientific knowledge to improve our lives and our environment. Outside of work, Paul enjoys family life, meditation, and growing fruit.

Grace Carolan-Rees
Cedar, Cardiff Medicentre

Grace has an Oxford physics degree, an MSc in medical physics from Aberdeen University, a PhD from UWCM, management diploma from University of Glamorgan and a PG Cert in Health Economics from Aberdeen. Following various roles in medical physics she is now Director of Cedar, an External Assessment Centre for NICE for the Medical Technology Evaluation Programme. Recent Cedar projects for NICE include an assessment report on CardioQ-ODM, a medical device used to guide fluid management during surgery. This was featured on the news at ten http://www.bbc.co.uk/iplayer/episode/b00zzmrj/BBC_News_at_Ten_29_03_2011/ and Fergus Walsh, BBC Medical Correspondent has also written a news story which is available at BBC news online http://www.bbc.co.uk/news/health-12899316. Cedar is a partner in a collaborative grant funded project with the Gynaecology Department at Cardiff and Vale UHB and Grace is interested to develop similar projects with local researchers.

Gregory Chass
Bangor University



Gregory completed undergraduate studies (Chemistry) at U. Toronto, and his Ph.D. with Professor Imre G. CSIZMADIA between U. Toronto and U. Szeged in Hungary (Summa cum Laude, Dec. 2001), in the same laboratories where the 1937 Chemistry Nobel prize was awarded for the discovery of Vitamin C. His post-doctoral years were spent under the mentorship of several renowned senior colleagues, in addition to fellowships, a short-time in industry and a visiting professorship in Beijing, gaining experience and independence across 3 continents. This international 'scientific pilgrimage' proves to be his greatest asset in teaching, integrating research with education, organising symposia and formulating international research networks. His current research focuses on the development of the novel discipline Systems Chemistry, as the scientific counterpart to Systems Biology, through 'case study' sub-projects. Each involves the use of quantum-theory designed neutron and muon-beam experiments carried out at large-scale accelerator and neutron/muon facilities. Project systems include: 1) Industrial Catalysts; 2) Natural Anti-Oxidants & Chinese Medicines; 3) Bone Implants & Adhesives; 4) Peptides & Proteins.

David Cole
Cardiff University

Presently: Senior Postdoctoral Fellow at Cardiff University, Department of Immunity, Infection and Biochemistry. Studying new therapies for treating infectious diseases and cancer.

October 2003 to October 2006: David completed a DPhil at Green College - Oxford University through an MRC funded DPhil position at the Nuffield Department of Medicine (NDM) under the supervision of Dr George Gao and Professor John Bell. David spent 3 years studying T cell antigen recognition and activation using molecular, biochemical, crystallographic and cellular techniques. During his time at Oxford, David collaborated with a number of individuals who have been highly involved in his research career - Dr Bent Jakobsen (T cell immunologist) from Immunocore LTD; Dr Pierre Rizkallah (Crystallographer), at Daresbury Laboratories; Professor Andrew Sewell (T cell immunologist), who, at the time, was based in the Peter Medawar building in Oxford.

Anna Croft
Bangor University

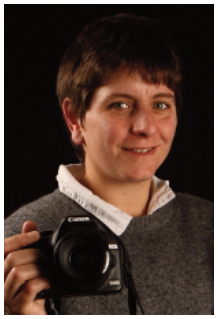
Anna obtained her BSc degree, majoring in Chemistry and Biochemistry, from the University of Adelaide, Australia. After completing an honours degree in Organic Chemistry at the same institution, she went on to complete her PhD at the Australian National University looking at the processes governing formation of free radicals in proteins. She subsequently completed a European union-funded postdoctoral fellowship at the University of Newcastle upon Tyne, examining the chemistry of coenzyme B12-dependent enzymes, and was then offered a permanent lecturing post at Bangor University.

Her current research has a strong focus on free-radicals, highly reactive species that can be both incredibly damaging to biological systems, causing the signs and symptoms of aging, yet are fundamental to many biochemical reactions, including those that make some vitamins and DNA. She recently completed a sabbatical at MIT to further study a special class of free-radical utilising enzymes, the SAM-radical enzymes, found in many pathogenic anaerobic bacteria, with a hope to developing a better understanding of these systems for the development of more effective antibacterial agents in the future. Anna is strongly motivated to show how science has a tangible and direct impact on improving people's lives.

Leanne Cullen-Unsworth
Cardiff University

Leanne has a B.Sc. in Marine Biology from Newcastle University, a M.Sc. in Marine Environmental Protection from Bangor University and a Ph.D. from Essex University. After completing a CSIRO postdoctoral fellowship in Australia, Leanne returned to the UK to take up a Research Fellowship within the newly formed Sustainable Places Research Institute at Cardiff University. Her role involves the development of a research package around mobilities, flows and migration – of people, resources, water, goods and more –in order to understand the impacts of such flows and implications for sustainability. Leanne's research focuses on linked social-ecological systems, recently within a terrestrial context (Queensland's Wet Tropics); but her background is within the marine sciences. Leanne is interested in the threats posed to livelihoods and the economy, food security and lifestyles from a changing global environment. She is also interested in mitigation, adaptation and human behavioural changes and in the development of socio-economically appropriate conservation and sustainable use policy. She is skilled in community engagement and cooperative research and has experience in place-based research/learning approaches. Leanne has had extensive experience working with Indigenous peoples in remote areas of Indonesia and Australia particularly around joint management issues and governance of natural resources.

Hannah Dee
Aberystwyth University



Hannah completed her BSc in Cognitive Science in 1996 and an MA in Philosophy in 1998. After several years as a Teaching Fellow helping non-computing students to understand computers and IT she returned to study and completed a PhD in Artificial Intelligence in 2005. This was followed by post-doc research contracts in Kingston, Leeds and Grenoble. Hannah started a lectureship at Aberystwyth in October 2010. Her research areas are computer vision for the analysis of human behaviour; the detection of shadows and reasoning about shadows; and student attitudes to the study of computer science. She's also a women in computing activist and deputy chair of BCSWomen, the British Computer Society's group for women. Hannah is actively involved in public engagement projects trying to encourage schoolchildren that computer science is more than just spreadsheets.

Parisa Eslambolchilar
Swansea University

Parisa completed her PhD in Ireland (Hamilton Institute) in 2006 in Computer Science. She has been a lecturer in the computer science department at Swansea University since 2007. Her most current research is nudging people to improve their physical activity by telling them how other people do. This involves a mobile phone application to facilitate the capture and feedback of activity level data. In the last 18 months, Parisa has extended her skills in human-computer interaction in portable devices to the design of safe and error-prone design of glucose meters, glucose pumps and other homecare medical devices. Parisa has organised two international workshops in the subject of Persuasion, Influence, Nudge and Coercion (PINC) in conjunction with Mobile HCI'10 conference in Sept'10 and in conjunction with the CHI 2011, May'11. Parisa has given many talks on continuous and novel interaction techniques with mobile devices and guest lectures on persuasion including talks at SONY Research Institute (Paris), SHARP research lab (Oxford), Knowledge Media Institute & Computer Science (Open University).

James Gibbons
Bangor University

James obtained his BA degree in Natural Sciences at the University of Cambridge and went on to complete a PhD in tropical forest ecology at Stirling University. He then worked at University of Nottingham modelling impact and mitigation of climate change. He is now lecturer in ecological modelling in the School of Environment, Natural Resources and Geography at Bangor University. James uses modelling and analysis to gain insight into interdisciplinary problems, recent examples include valuation of marine biodiversity, assessment of mitigation of greenhouse gas emission using ruminant dietary manipulation and a theoretical framework for comparing conservation payments made by action and results. A main emphasis of James' research is improved representation and communication of uncertainty and improving decision making under uncertainty.

Antonio J. Gil
Swansea University

Antonio is a Chartered Civil Engineer and University Senior Lecturer in the College of Engineering at Swansea University. After finishing his MEng and MRes degrees in the University of Granada (Spain), he moved to Swansea where he completed his PhD in the field of computational analysis of membranes. As a result of his PhD, postdoctoral and academic positions, he has been involved in different and complementary research areas in computational modeling. His current research interests are: (i) computational simulation of nanomembranes, biomembranes (heart valves) and superplastic medical prostheses, (ii) modelling of smart electro-mechanical materials/devices and (iii) numerical analysis of fast transient dynamical phenomena. Antonio collaborates with cardiothoracic surgeons at Morriston Hospital (Swansea) and he is a member of the Interdisciplinary Cardiovascular Engineering Research Forum, which brings scientists and clinicians together within South Wales. He is interested in building collaboration with medical scientists, physicists, engineers and SMEs pursuing interdisciplinary computational modelling.

Ian Grimstead
Cardiff University

Ian obtained his B.Sc. degree in computer science at Cardiff University, and then went on to complete his Ph.D. in the same department, specialising in CAD/CAM. He left to work in the games and computer graphics industry, working on a range of projects from Nintendo GameCube 3D engine support through to Ethernet device drivers. He subsequently returned to Cardiff University in 2003 after a break in industry of 10 years, and worked in the area of distributed, collaborative visualization. Since then he has been involved in a variety of collaborative projects, such as arterial cell modelling, endoscopy simulation and haptic control for drug design, alongside more computer-science focused work which includes display calibration and 3D displays. My research interest is the gap between data stored in a computer and the consumption of it by the user – why must it be so hard for the lay person?

Michael Harbottle
Cardiff University

Michael obtained a MEng degree in Engineering Science from the University of Oxford. Following three years working in industry around and underneath offshore oil platforms, he returned to Oxford to study for a DPhil in environmental engineering. He then worked as a postdoctoral researcher at Cambridge University Engineering Department in a similar area, and was also Fellow in Engineering at Robinson College, Cambridge. Since 2006 he has been Lecturer in Geoenvironmental Engineering at Cardiff University, with research interests in many areas of civil and environmental engineering and the science behind it. This particularly extends to the behaviour of microorganisms and how they can be harnessed for engineering purposes, but he is interested in developing links between all areas of academia and industry where his expertise is relevant to explore new frontiers.

Jan Geert Hiddink
Bangor University

Jan obtained a degree in Marine Biology from Groningen University in the Netherlands and continued to complete a PhD there. He started a postdoc at Bangor University to study the large scale effects of bottom trawls on the benthic ecosystem in a DEFRA funded study. Jan was appointed lecturer in marine biology in Bangor in 2006 and promoted to senior lecturer in 2010. His most current research is examining the effect of climate change and fisheries on marine ecosystems, and the way in which we can manage and mitigate these impacts. Jan is keen to set up collaborations with socio-economists to enhance the spatial management of marine resources through the modification of the behaviour of its users, and hopes that in doing so his research will be able to make more of an impact in providing policy advice to UK and international management bodies.

http://www.sos.bangor.ac.uk/staff/php/staffdetails1.php?person=0090

Sally Holland
Cardiff University

Sally is a senior lecturer in social work. She is co-convener of the inter-disciplinary childhood research group, responsible for doctoral students' support and development and vice-chair of the School Research Ethics committee. She was born and brought up in Perthshire and her first degree was in history at Aberdeen University. She then completed a Master's degree in social work at Oxford University before becoming a social worker in child protection settings in wales. In 1996 she began a PhD, as a tutorial fellow, in Cardiff and following completion became a lecturer in 1999. She has worked part-time since starting in academia in 1996. Current research projects are concerned with child protection, children in care or child welfare more generally. Sally is keen to work across disciplines to conduct and publicly communicate research with children and families.

Elaine Jensen
Aberystwyth University

Elaine left a career in banking to travel and undertake conservation work and from this her enthusiasm for renewable and sustainable systems developed. She returned to education as a mature student and received a PhD studentship to continue her BSc dissertation project interest in legume-rhizobia interactions, an important component of sustainable agriculture. She now leads a project in the bio-renewable energy programme at IBERS, developing understanding of the energy crop Miscanthus. Elaine hopes to use her experience and knowledge to inspire, inform and develop global understanding of sustainable issues. She has initiated and participated in events articulating research in the bio-renewable sector to farmers, businesses, students and school children and collaborates internationally in the renewable energy field.

Martina Lahmann
Bangor University

Martina obtained her Ph.D. in Organic Chemistry at the University of Hamburg, Germany. After postdoctoral years at Stockholm University (Sweden) and first steps in academia at Göteborg University (Sweden), she received the Docent degree in Organic Chemistry from Göteborg University in September 2005. After a year in the Arrhenius Laboratory at Stockholm University focussing on research, Martina joined Bangor University in September 2007 where she is currently working as Senior lecturer in Organic Chemistry.

Martina's main research interest is in synthetic carbohydrate chemistry in the wider context of glycobiology and biological chemistry. Inhibition of bacterial adhesion as an alternative approach to challenge antibiotic resistance, synthetic carbohydrate based vaccines, and biocompatible medical devices represent some possible applications. Her multidisciplinary research is interlinked with a number of research groups and industrial partners. In her spare time Martina enjoys playing the violin and hardly misses an opportunity to tell about the beauty and usefulness of chemistry in everyday life.

Lijie Li
Swansea University

Lijie Li received his BSc degree in solid state electronics at Lanzhou University, China, and his PhD degree from the University of Strathclyde in MEMS in 2004. He was a Semiconductor Process Engineer at Hebei Semiconductor Research Institute in China. He had been a Research Fellow at the Centre for Microsystems and Photonics, University of Strathclyde since 2000. He was a Senior Design Engineer at the Institute for System Level Integration, Livingston, UK, and a Lecturer at the University of Strathclyde. In April 2010, he became a Senior Lecturer at the School of Engineering, Swansea University, UK. Dr Li is a Senior Member of IEEE, and chair member of the Technical Committee in MEMS in the IEEE Industrial Electronics Society. He serves as a member of Editorial Board for Nano-Micro Letters. Dr Li's research has focused on developing MEMS transducers, optical and radio frequency (RF) MEMS devices and systems.

Simon Neill
Bangor University

Simon has a BEng in civil engineering from the University of Dundee, and went on to complete a PhD in civil engineering and oceanography from the University of Strathclyde in Glasgow. After 6 years working on various applied oceanography projects as a postdoctoral researcher in the School of Ocean Sciences, Bangor University, he was appointed to his present position as research lecturer in physical oceanography. Simon's particular expertise is coupling oceanographic models with climate forcing in order to understand mean and extreme events at a range of scales. His research interests are wide-ranging, from examining changes in the tidal and wave climates due to sea-level rise over the last 20,000 years, to understanding present-day and future patterns of jellyfish and marine larval dispersal, through to modelling the environmental impacts of large-scale exploitation of the marine renewable energy resource.

Martin O'Neill
Cardiff University

Martin spent the earliest and some of the happiest years of his life growing up on the Gurnos Estate in Merthyr Tydfil which today is one of the poorest areas of Europe and the sickest part of the UK. Having left school with few qualifications and following a varied career which included periods working as a roadie, bus driver and ambulance man he entered higher education in his late thirties. After completing a B.Sc in sociology and social anthropology and then a Ph.D he embarked on a research career where his interests developed in the areas of action and participatory research and the way I.C.T and digital media can be used to help facilitate this. Much of his research has involved working with the Gurnos community to develop solutions to the problems they face. Martin's research interests include social and economic regeneration, health, aging and elderly care

Ned Powell
Cardiff University

After a first degree in Medical Microbiology, Ned worked as a Clinical Scientist at the Central Public Health Laboratory before completing a PhD at Swansea University (cloning antibiotic biosynthetic genes for the pharmaceutical company Pfizer). He then undertook post doctoral research into DNA repair before helping to establish the Human Cancer Studies Group at the (then) new Swansea Medical School. Ned is currently a lecturer in the Human Papillomavirus (HPV) Research Group at Cardiff University Medical School; this post unites his interests in microbiology and cancer genetics. The aim of Ned's current research is to use knowledge of the basic biology of HPV infection to improve prevention and treatment of HPV associated diseases (e.g. cervical cancer). Ned really enjoys working at the interface between basic science and clinical medicine.

Rhys Pullin
Cardiff University

Dr Rhys Pullin is a senior researcher and commercial manager at the Cardiff School of Engineering. He has been working in the field of structural health monitoring since 1997 with his research focusing on the application of Acoustic Emission monitoring. Initial research started in civil structural applications with techniques developed at Cardiff now being used under license by Physical Acoustics Limited and a significant contribution to the writing of a Highways Advice note. More recently Rhys has concentrated his research energy into aerospace applications and is currently working on AE related projects with Messier Dowty, Airbus, Marshall Aerospace, MOD and Boeing. Finally Rhys is a national committee member for the British Society of Strain Measurement.

Sarah Rodgers
Swansea University

Sarah obtained her undergraduate degree in geographical science at Portsmouth University before completing her Masters and PhD degrees at Reading University. She is now working as a lecturer in the College of Medicine at Swansea University. She uses spatial and non-spatial health, social and environment data to investigate the geographic variation in health and disease burden. Her research is focussed on the aspects of the environment in relation to obesity and chronic health conditions. Sarah does spatial analyses of environment data and then links these to health data. This is made possible using anonymous links from house and environment data to routinely collected health data for individuals. She would like to further develop the databank to allow the seemingly impossible; anonymous spatial analyses of health data for individuals. She hopes that clearly presented results from these powerful insightful analyses will encourage improvements to our environment, allowing healthful living for all.

Tatiana Tatarinova
University of Glamorgan

Tatiana obtained her diploma in Theoretical Physics at Moscow Engineering Physics Institute (Russia), and then received MSc in Physics at University of Utah. After working for two years for different international project lead by WHO, CDS and World Bank, she returned to academia and obtained PhD in Applied Mathematics at the University of Southern California, Los Angeles. She worked as a computational biologist for a plant biotech company Ceres, Inc and later as an Assistant Professor at Loyola Marymount University, California State University Channel Islands, Georgia Institute of Technology and University of Maryland. She is now working as a senior lecturer in Statistics in the mathematics department at the University of Glamorgan. Tatiana's research team GlaComBio is developing algorithms for functional genomics, and they closely collaborate with other departments at the University and with universities in UK, USA, India, China and Russia. Tatiana has black belt in Shotokan karate, she teaches karate at Pontypridd YMCA, and had recently won a prestigious Nisei week martial arts tournament.

Bernard Tiddeman
Aberystwyth University

Bernard obtained his BSc degree in Applied Mathematics from the University of St Andrews and his MSc in Computer Science from the University of Manchester. For his PhD from Heriot-Watt University he worked with facial surgeons to develop 3D scanning equipment and shape analysis software. He then returned to the University of St Andrews as a postdoctoral researcher in the School of Psychology, developing texture processing algorithms for facial perception research. He continued to collaborate with both psychologists and medical specialists as a lecturer in St Andrews, developing improved facial transformation algorithms (e.g. for simulated face ageing), face feature tracking and 3D analysis software. He has been involved in public engagement activities through his face transforming exhibits, which have featured in a number of museums, websites and in the media. He moved to Aberystwyth in 2010 as a RIViC funded senior lecturer.

Eric M. Tippmann
Cardiff University

Dr. Tippmann obtained his BSc degree in chemistry from Purdue University in the States. He then completed his Ph.D at The Ohio State University, where his interests were lasers, organic chemistry and biochemistry. PhD studies were followed by postdoctoral studies at The Scripps Research Institute in La Jolla, California. He is a research board member of Cardiff Institute of Tissue Engineering and Repair (CITER) and founding member of the Cardiff Physical Organic Chemistry Centre. His research has attacted nearly £2.5 million in funding since 2008, nearly all of this through collaborations. New directions for his research includes cell biology, with a specifc goal of developing new technologies in stem cells.

Raoul van Loon
Swansea University

Raoul obtained his BSc and MSc in mechanical engineering at University of Technology in Eindhoven. His dissertation project was on the swelling behaviour of intervertebral discs. After this taster in biomedical engineering he decided to complete a PhD on modelling of the aortic valve in the bioengineering department at the same university. The strong emphasis on blood flow in this project led him to pursue his career as a post-doctoral researcher in the aeronautics department at Imperial College London. During this period his research focused on modelling techniques on the one hand and the development of a bioreactor for tissue engineered heart valves with the Heart Science Centre in Harefield on the other hand. Currently Raoul is an RCUK fellow and lecturer in computational biomedical engineering at Swansea university. He now uses his computational models to improve the understanding of valvular disease in close collaboration with the Cardiac Centre at Morriston Hospital.

Carolyn Wallace
University of Glamorgan

Carolyn is a registered nurse and worked in the NHS for 20 years in clinical and managerial roles until she joined the University of Glamorgan in 2004. She is a Principal Lecturer, she teaches nurses and social workers and is a fellow of WIHSC. Carolyn undertook an Open University degree and an MSc in Interprofessional Studies (Health) in UWIC and later completed her PhD in 2010 with Coventry University in collaboration with the University of Worcester. Her most current research activity has been a post doctoral fellowship with the Wales School for Primary Care Research. It gave her the opportunity to develop research bids for frailty and integrated care. Carolyn is keen to develop a collaboration of people who have an interest in developing research in integrated care and participatory evaluation.

Yingli Wang
Cardiff University

Yingli is a lecturer in Logistics and Operations Management at Cardiff Business School. She obtained her first degree in Food Engineering from China in 1995 and an MBA with Distinction in 2003 from the UK. Her PhD research investigated the potential relational, process and technological configurations between organisations when using Electronic Logistics Marketplaces (ELMs) for transport provision. Yingli's recent research interests focus on the use of ICT for logistics and supply chain management. Prior to her academic career, i.e. from 1995 to 2002, she undertook in a variety of managerial roles in Nestlé China, in production, logistics and HR functions.

William Wilkinson
Cardiff University

Bill obtained his B.Sc. in Pharmacology from Bristol University in 2003 and went on to complete a Ph.D. in Molecular Physiology at The University of Manchester in 2006. For the last 5 years he has been a postdoctoral researcher at Cardiff University in three research groups. His current research is looking at the role of purinergic receptors that detect the presence of extra-cellular ATP in the pancreas, their role in normal physiology and how they might play a role in diseases such as pancreatitis. Bill is an enthusiastic science communicator and plans for scientific communication to play a large role in his future career. To date he has taken part in Beacons Researchers in Residence programme undertaking a number of school visits, and has also taken part in the BBC programme "Bang Goes The Theory" answering questions from the general public on the BBC website for the programme.

Martin Willis
University of Glamorgan

Martin is Reader in English at the University of Glamorgan, and has previously worked at the Universities of Worcester and Edinburgh. He received his doctorate from Edinburgh in 1997, and since then has focussed his research on the interconnections between literature and science; publishing a series of books and articles individually and collaboratively. Although predominantly working on late nineteenth-century science and fiction, Martin has also undertaken work on contemporary medicine (on illness narratives) and he is particularly interested in applying interdisciplinary and multidisciplinary perspectives to current issues in the sciences and medicine.