

ES&G Student numbers reach record levels

As we move into the final stages of the academic year, it is timely to reflect on some of the recent changes and events that have occurred within Earth Sciences and Geography at Keele. The start of the year saw a record number of students entering on to our programmes, with Geology and Physical Geography, almost doubling numbers compared to previous years. In addition, the student intake was boosted by the introduction of two new Single Honours degree programmes in Environment and Sustainability, and Geoscience. The former course provides students with an innovative and interdisciplinary study of environment and sustainability issues, and integrates over eleven different disciplines, ranging from geology to economics and health. Our new Geoscience programme provides a modern approach to the study of Planet Earth and is mainly designed for those students who want to focus on geology topics for the three years of their undergraduate degree studies, as opposed to studying two subjects under the Keele Dual Honours degree scheme.

There was also a healthy intake of new postgraduate students embarking on PhD projects on a diverse range of research topics, as well as providing much needed demonstrating undergraduate numbers. In addition, a new and Green Technology ran for the first

“... Geology and Physical Geography, almost doubling numbers”

Although the increase in student numbers presented a number challenges that particularly in terms of the delivery Fortunately, significant funding was acquired for major (and much needed!) refurbishment of the Mineralogy laboratory during the summer vacation last year. This refurbishment exercise was completed just in time for the start of teaching and we owe special thanks to members of the technical staff for their hard work in moving and sorting tons of rock material and laboratory equipment. We now have a modern geoscience teaching laboratory that provides seating capacity for 50 students.

support to cope with the increased MSc course in Environmental Sustainability time this academic year.

has been a welcome development, it has have required some “creative thinking”, of practical classes and field courses.

There have been a number of staff changes during the year and, in particular, we say goodbye to Tony Phillips, who retired in January of this year after a long and successful career as both researcher and teacher in Human Geography. We also welcome the arrival of a number new colleagues; Mrs Karen Babb (MSc Course Administrator), Stacie Forrester (Project Officer - Sustainable Business), Professor Clare Holdsworth (Chair in Social Geography), Dr Silvana Kutztz (Lecturer in Environmental Sustainability and Green Technology), Mr Steven Rogers (Teaching Fellow in Geology), Nicola Ruston (Environmental Education Officer) and Dr Paul Simpson (Lecturer in Human Geography). The arrival of all of these new staff is a reflection of the dynamic teaching and research environment that continues to thrive within Earth Sciences and Geography at Keele.

Tony Phillips Retires!

The retirement of Tony Phillips at the beginning of 2010 came after nearly forty-two years of distinguished service to Keele University, and marked the end of an era in the history of Geography at Keele, since Tony was the last member of the current academic staff to be appointed by Professor Stanley Beaver, the founding Chair of Geography.

Tony arrived at Keele in 1968 fresh from embarking upon his PhD in Historical Geography at University College London where he had also picked up both the Parry and Sir William Meyer Prizes for Geography during his undergraduate days.

His early career saw the development of significant interdisciplinary links with the History Department and what was to become a lifelong promotion of the geography, historical and otherwise, of the local region – initially through his editorship from 1970-1979 of the North Staffordshire Journal of Field Studies and later through such devices as his editorship of a collection of essays under the title *The Potteries: Continuity and Change in a Staffordshire Conurbation* which was produced to mark the 1993 visit of the British Association for the Advancement of Science to the region, and of course most recently by his almost daily devotions to the joint-editorship of the award-winning *New Historical Atlas of Cheshire* and the forthcoming *Historical Atlas of Staffordshire*.

It was the late 1960's and early 1970's that also witnessed the beginnings of a prolific research career that was focussed for the most part upon agricultural history, taking in

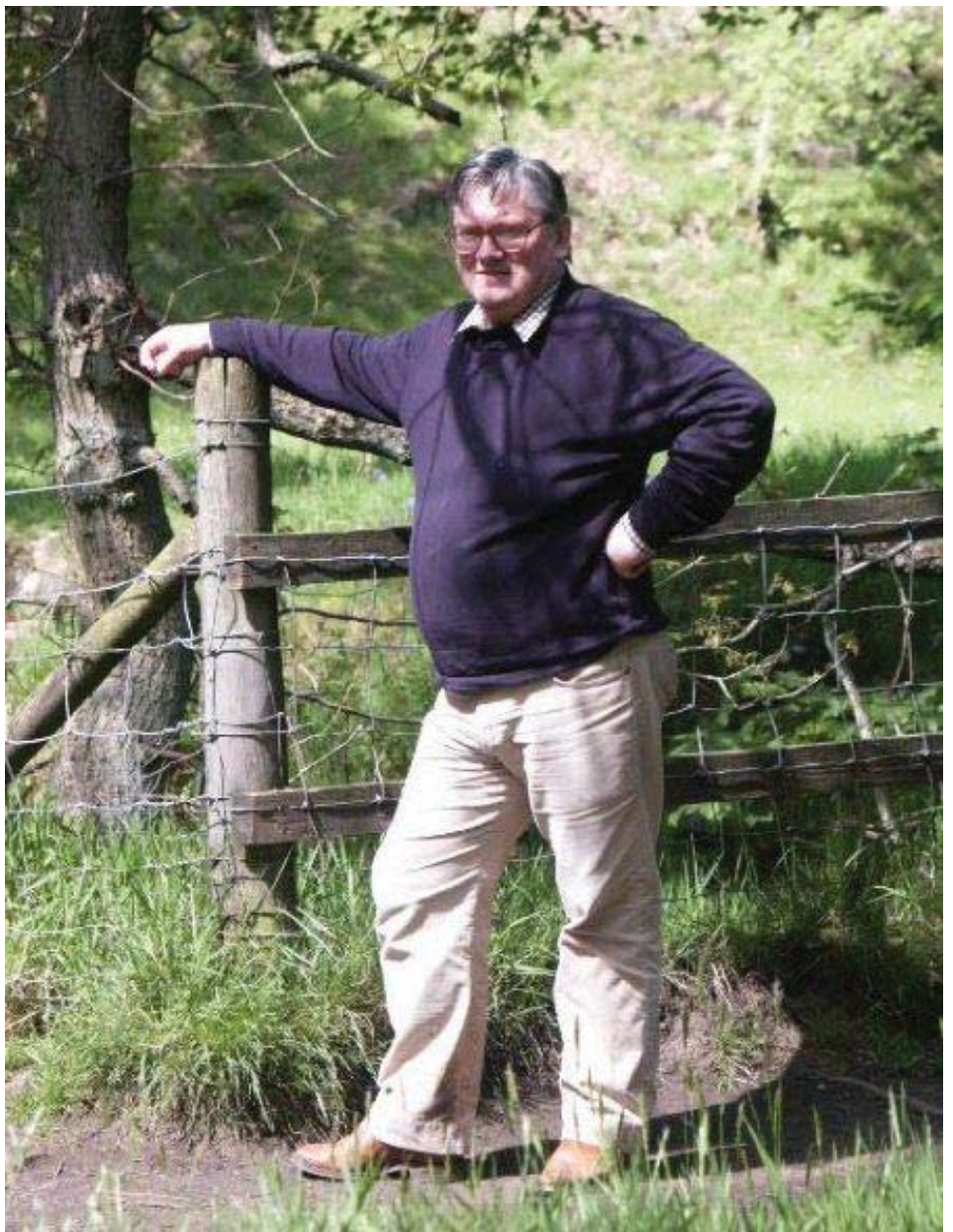


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aspects of agricultural improvement and investment – primarily underdraining – and agricultural land use and cropping, and well as such diverse topics as sugar beet production in northern France and mossland reclamation and refuse disposal in Cheshire, but also incorporating various forays into other areas including the realms of historical cartography. Indeed it was Tony's enthusiasm for the activities of a local land surveyor and cartographer styled William Smith that was in part, at least, responsible for the naming of the building that now houses Earth Sciences and Geography as the William Smith Building (although it has to be said there might also have been an important mineral surveyor cum geologist in the minds of some others at the time of this naming!).

Tony's early research received a considerable boost when he was awarded in 1980 a grant of £23,000 from the Social Science Research Council for a project on the spatial adoption of farm buildings in England, 1850-1900. This was a not inconsiderable sum of money at that time and enabled the appointment of a full-time research assistant for three years. Various other grants followed and it was no surprise that Tony's developing academic reputation and standing was rewarded in 1990 by his promotion to Reader.

Unfortunately for Tony, with such lofty status came greater administrative responsibility and in 1994 he took over from Phil Kivell as Head of the Geography Department. Tony continued as HOD, Geography until 1997 when the department was briefly re-branded as Environmental Social Sciences under a new management – only to find himself again at the helm of Geography, albeit somewhat more informally, during the current era of Physical and Geographical Sciences. Both periods of stewardship coincided with somewhat challenging times for Geography and Tony was called upon to oversee various significant structural changes and a number of new staff appointments. This called for capable leadership and the fact that Geography has the shape and vitality that it now enjoys is testimony to the safe pair of hands that Tony showed at the time – sadly something that had not been



evident during his goalkeeping tenure for the Geography 5-a-side football team in the 1980's!

Tony Phillips has always been able to combine his academic interests with others, arguably, less cerebral. His, some would say, perverse following of the (mis)fortunes of Port Vale FC has been an enduring feature of a sporting dalliance which has also included over the years croquet, cricket, badminton and latterly, darts – all undertaken with somewhat less than modest degrees of success!

His interests in matters agricultural have shown unflinching regard for both the grain and the vine and his favoured field venues have always been those most suited to opportunistic sampling! But as well, Tony has also always provided his colleagues with the best of company,

particularly on fieldcourses, but also on a day-to-day basis where his generally jovial demeanour and down-to-earth conversation has been a much appreciated characteristic of his personality.

Tony's lifetime contributions to Historical Geography will undoubtedly be missed, not least by his students who will remember him for the quality of his teaching and approachability - and for his determined resistance to the evils of powerpoint! His distinguished service to Keele is warmly acknowledged by his colleagues and friends in Earth Sciences and Geography, and elsewhere, and we wish him all the very best in his retirement.

Keith Mason

Michael Montenari Elected Fellow of the Linnaean Society

Dr Michael Montenari, Earth Sciences and Geography, School of Physical and Geographical Sciences, has been made an Elected Fellow of the Linnaean Society of London. This is considered to be one of the highest international accolades a scientist can receive in the fields of Evolution and Biodiversity research.

Dr Montenari receives this honour in recognition of his outstanding contributions to our understanding of the Evolution of Early Life on Earth (“Deep-Life-Hypothesis”) and his research on the Evolution of ancient ecosystems.

The Linnaean Society of London is the world’s oldest and most distinguished biological society. Founded in 1788, the Society takes its name from the famous Swedish naturalist Carolus Linnaeus (1707–1778), who made his contribution by founding such important scientific disciplines as Ecology, Taxonomy and the Binominal Nomenclature. The Linnaean Society promotes and fosters the study of all aspects of the biological and palaeobiological sciences, with particular emphasis on Evolution, Taxonomy and Biodiversity.

Clean Coal Technologies Mission

Professor Peter Styles was invited by the Foreign Office to be a member of a UK/Australia Clean Coal Technologies Mission in Sydney, Melbourne and Brisbane.

The Australian Government announced the new Global Carbon Capture and Storage Institute (GCCSI) in September last year and former British Prime Minister, Gordon Brown, indicated his full support to the GCCSI and collaboration with Australia on clean coal technologies. The UK and Australia Clean Coal Technologies networking mission is a week-long event that includes visits to research facilities, workshops and networking events with Australian Universities and businesses, with the aim to build on this joint partnership.

Professor Styles also participated in an EU funded workshop in Delhi on Underground Coal Gasification technologies, which preceded the Australia Visit, and he spent a few days working with research collaborators from the Queensland Centre for Advanced Technologies after the FCO trip.

Software ‘Gifts’ worth £4 million for Geoscience Teaching and Research

Professor Graham Williams negotiated software ‘gifts’ worth more than £4 million for Keele from two globally-leading software companies.

‘Kingdom Suite’ is a market leading seismic interpretation software suite developed and marketed by Seismic Micro Technology Inc. of Houston Texas. The software is actively used in exploration and production operations by virtually all the world’s major petroleum exploration companies. The ‘gift’ takes the form of a 25 seat license for three years with a market value of US \$2.99 million.

‘Move’ software has been developed by Midland Valley Exploration of Glasgow, Scotland. It is described as a structural geology modelling ‘toolkit’ and is used by major oil and mining companies in exploration and production activities. The ‘gift’ is a 10 seat license for three years and it is commercially valued at around

UK £2 million.

Both suites of software will be used in Geosciences teaching in order to provide students with invaluable exposure to real-world software applications using real industry data. Also, the software suites will be used and pushed to their limits in existing and future geology/geophysics research projects.

Professor Williams said: “Having access to these leading software packages gives us a genuine advantage when generating research grant applications as they can be counted as ‘gifts in kind’, which add impact to the application when addressing the value for money, the beneficiaries and sustainability of the research.

“Both Seismic Micro Technology and Midland Valley Exploration are sincerely thanked for their generous software gifts to Keele.”

Top Award for Student

Congratulations to Emma Naden, who has been awarded the Ivor Tupper Fund of the Geologists’ Association. The fund is designed to give financial assistance (£2000) to a deserving undergraduate in their second, third or fourth year at university, studying Geology, Earth Science or Geography with a focus on Quaternary Science. The award is made by the Council of the Geologists’ Association to the student they feel best demonstrates both a genuine commitment to the discipline and academic excellence. Emma is currently in the final year of a Dual Honours undergraduate degree in Applied Environmental Science and Geology.

Fallout from volcano affects foreign fieldcourses

The ash from Icelandic volcano Eyjafjallajökull, which erupted on 14 April, led to an unprecedented closure of all airspace over the UK and northern Europe. This had serious impact on our foreign fieldcourses with students and staff stuck in Almeria and Singapore and unable to return. In addition, physical geography students were unable to go out to Almeria. For those unable to start their fieldwork it was necessary to hastily arrange alternatives in the UK.

New Degree Programmes

September 2009 saw the start of a new single honours degree programme in Geoscience and Environment and Sustainability and a new MSc in Environmental Sustainability and Green Technology. These three programmes complement the existing portfolio of Geo and Environmental courses within the School of Physical and Geographical Sciences.



Allan Darlington died very suddenly in January. He was appointed to the then Department of Physics at Keele in 1989, after a successful career running his own business.

In 2000 he was appointed as the Technical Services Coordinator in the recently formed School of Chemistry and Physics and in 2005 he became the Technical Manager in the newly formed

Open Access Educational Resources

A range of open access educational resources produced by a team at Keele as part of the 'C-Change in GEES: Open licensing of climate change and sustainability resources in the Geography, Earth and Environmental Sciences' HEA/JISC funded project run by the Geography, Earth and Environmental Sciences subject centre was launched in May.

The Keele team of academics (Drs Ralf Gertisser, Stefan Krause, Deirdre McKay, Jamie Pringle, Katie Szkornik and Richard Waller) from the School of Physical and Geographical Sciences, led by Dr Zoe Robinson, has been a lead partner in the

Students learn about 'greening' the workplace

A new first year module entitled 'Greening Business: Employability and Sustainability' has been developed by Zoe Robinson supported by funding from the Higher Education Academy Geography, Earth and Environmental Sciences subject centre. This module, available to all first year and foundation year students aims to give student the opportunity to gain understanding and practical skills to help to improve environmental and sustainability practices within organisations and their future workplaces. Students test their skills and knowledge by carrying out projects based on the sustainability practices of different aspects of Keele's activities, for example looking at purchasing policies of cleaning products, developing green transport plans and carrying out environmental baseline reviews of buildings on campus. These materials have been developed through funding from the HEA Education for Sustainable Development project into an open access web resource (www.esci.keele.ac.uk/greeningbusiness) aimed at supporting other educational practitioners to develop similar courses.

School of Physical and Geographical Sciences, making a major contribution to the development of both Schools.

In addition to being a lovely, generous, kind person, Allan was a truly outstanding colleague, exceptionally committed, hugely dynamic, very able both intellectually and practically and incredibly passionate and enthusiastic about his work and science generally.

He made an immense contribution to Keele at many levels, including motivating colleagues, inspiring students and schoolchildren, overseeing many major refurbishment projects, most latterly the very impressive new Lennard-Jones chemical sciences laboratory and in recent years was truly in his element contributing to the hugely popular and highly successful Entrepreneurship module and other University enterprise activities.

Many staff have lost a very good friend as well as an outstanding colleague. Our deepest sympathies are extended to his wife, Judith, their four sons, and the rest of his family.

GEES subject centre-led consortium project, part of the national HEA/JISC Open Educational Resource project aimed at exploring the open licensing of educational resources.

They received £25,000 through the project to 'repurpose' existing teaching resources relating to the broad themes of climate change and sustainability to make them suitable as open access resources. The Project Support Officer, Stephen Whitfield, worked with staff to produce over 100 high-quality educational resources accessible through the Keele Repository, JorumOpen and through the project website.

C-change in GEES

C-change in GEES: Open licensing of climate change and sustainability resources in the Geography, Earth and Environmental Sciences

A group of academics from Earth Sciences and Geography (Ralf Gertisser, Stefan Krause, Deirdre MacKay, Jamie Pringle, Katie Szkornik and Richard Waller) took part in a project at Keele led by Zoe Robinson as part of the HEA Geography, Earth and Environmental Sciences subject centre consortium project 'C-Change in GEES: Open licensing of climate change and sustainability resources in the Geography, Earth and Environmental Sciences funded by the HEA/JISC Open Educational Resource programme.

The Project Officer Stephen Whitfield worked with the academics to make their teaching resources open access, involving ensuring full copyright clearance for all of the resources. Over 100 high-quality educational resources have now been made freely accessible through the Keele Repository, JorumOpen and through the project website (www.esci.keele.ac.uk/c-change).

Science for Sustainability

The Science for Sustainability group (Zoe Robinson, Mark Ormerod and Nicola Ruston) has continued to grow from strength to strength.

Over the past 12 months the group has delivered over 50 hands-on innovative workshops for schools on a range of sustainability themes from carbon footprinting, waste and energy minimization to alternative energy sources, and delivered teacher training workshops to help teachers to embed sustainability within their curriculum teaching, and have participated in numerous public events such as the Staffordshire County Show.

In addition the group has formed strong links with Staffordshire County Council, East Staffordshire and Newcastle Borough Councils, and are working with these organisations to deliver sustainability-focused events for schools and the wider public.

Royal Society Working Group

Professor Peter Styles, Head of the Applied and Environmental Geophysics Group in the School of Physical and Geographical Sciences, has been invited to join a Royal Society Working Group for a new science policy project on nuclear non-proliferation, chaired by Professor Roger Cashmore, FRS, Principal of Brasenose College, University of Oxford, and Past Director of CERN, reporting to the Foreign and Commonwealth Office, which met for the first time this week.

Recently, the Prime Minister launched The Road to 2010 - Addressing the nuclear question in the twenty first century, which sets out the UK's strategy in the run up to the Review Conference of the Nuclear Non-Proliferation Treaty in Vienna in May.

With the rapid global increase in the development of peaceful uses of nuclear energy there is a perceived potential for nuclear materials to be acquired clandestinely and converted into fissile material for nuclear weapons by states or terrorist groups.

The committee will assess how proliferation resistance can be implemented, and how this might be applied to the nuclear fuel cycle, and will explore not only the potential and limitations of technology to improve proliferation resistance, but also economic and political arrangements, such as multilateral approaches to the fuel cycle.

Inspirational Geography Exhibition

The Teaching Innovation Award received by the Geography module "Inspirational Landscapes", taught by Peter Knight, Pete Adey and Daniel Allen, has led to a great deal of widely publicised new work including a presentation at the annual conference of the Royal Geographical Society, an exhibition in the Newcastle-under-Lyme Museum and Art Gallery, and publicity on a wide range of web sites such as the Arts Council "art news" site, the Borough Council site and the influential Fitzrovia Noir arts blog.

The Innovation Award funded the participation of artist Miriam Burke in the development and delivery of course materials that expose students to a new way of seeing the geographical environment. Stemming from this project an exhibition entitled "Know this place for the first time" runs in Newcastle gallery throughout the Spring. The Arts Council describes the exhibition as follows: "this exhibition is run in conjunction with 'Inspirational Landscapes', a geography module at Keele University which explores relationships between the physical geographical environment and human creativity in both science and popular culture. It examines the ways in which the physical landscape has been an inspiration to both artists and scientists and the contrasting representations of landscape in science and

in cultural media such as literature, film and music. Using both scientific data and artistic processes, this exhibition presents a cross disciplinary exploration of the effects that a changing climate has on our familiar landscape."

As part of the exhibition, Peter Knight and Miriam Burke will be delivering some participatory workshops, including a rock-drawing workshop and a talk about the local glacial landscape. Several of the artworks on display were created in Keele's Low Temperature Facility in the Woodlands Geosciences Laboratories as part of the development work for teaching Inspirational Landscapes. These include "snowballs" that preserve a memory of real Keele snow in superglue on glass, created by a process that involved keeping the superglue fluid at low temperatures while impressing it with snowflakes. Another item that will feature in the exhibition, the drawing "Snow Melting on Wheelie Bins", will subsequently be displayed in the William Smith Building, on long-term loan from the artist.

A paper on the collaboration between Miriam, and the Keele Geographers was presented at the "Art and Geographical Knowledge" session organised by the Social and Cultural Research Group at the Royal Geographical Society conference

Avis Retires

Avis Swancott came to Keele in August 1991 and for two years worked in Computer Science and Lyndsey Hall.

In October 1993 she moved to Earth Sciences and Geography and remained here until, in December 2009 at the age of 70, she decided that it was time to retire.

Avis always enjoyed her day trips with friends and hopes to enjoy many more. She also plans to join a gym and to spend time with her family who live locally and with her son in Sheffield.

We wish her well in the future.



in 2009. The paper described how our project enhanced the student experience in three ways: bridging the divide between physical geography and human geography; communicating science to artists and art to scientists by means of an interdisciplinary collaboration; and exposing students to a viewpoint of a professional practice that stretches beyond the conventional syllabus.

Peter Knight

Welcome to ...

Claire Holdsworth



Clare joins us after over 15 years at the Universities of Liverpool and Manchester working in the Departments of Geography and the Centre for Census and Survey Research, respectively.

Her academic background is interdisciplinary: she read Human

Sciences at Oxford, followed by an MA in Demography at the London School of Economics and a PhD in Geography at Liverpool. Her research interests focus on three main themes: family practices and mobilities; higher education and social justice; and family health in relation to substance (mis)use.

Outside of Keele she is actively involved in supporting social science research, through membership of learned societies, editorial boards and undertaking various tasks for the ESRC. and is a member of the ESRC's Methods and Infrastructure Committee, Board of Examiners for the Open Studentship Competition and Peer Review College for Postdoctoral Fellowships.

Stacie Forrester

Stacie joined the School of Physical and Geographical Sciences in April 2010 working as a Project Support Officer as part of the 'innovation Keele'-funded Sustainable Business and Training Services project led by Zoe Robinson and Mark Ormerod. Stacie studied Biological Sciences at Lancaster University before completing an MSc in Ecology, Evolution and Conservation at Imperial College London in 2009.

Stacie first came to Keele in September 2009 as a Project Green student where

she completed an internship at Flat Vision Products Ltd through Keele's Sustainable Business Programme gaining valuable experience in developing and implementing Environmental Management Systems and offering advice and guidance regarding sustainable business practices.

Nicola Ruston

Nicola joined the School of Physical and Geographical Sciences in January 2010 replacing Lucy Gallagher as the Environmental Education Officer working in the Science for Sustainability group with Zoe Robinson and Mark Ormerod. Before working at Keele .

Nicola completed a BSc in Animal Conservation Science at the University of Central Lancashire in 2008. She then went on to spend a year and a half as an education project officer at Chester Zoo, during which time she spent two months researching coral bleaching and the economic and social benefits of marine protected areas in Mauritius. Many of the overseas projects Nicola has been involved in over the past four years have been centered around community and youth involvement and ways in which we can encourage pro-environmental behaviour.

Star Trek comes to ES&G!

Fans of Star Trek will no doubt be familiar with Mr Spock's tricorder which could analyse anything - even life forms! Well, we can't do the latter but can do quite a lot following our acquisition of a Niton hand-held X-Ray Fluorescence (XRF) analyser.



This equipment has been used for a long while in the scrap metal industry but it also has a strong use in many geological and environmental fields. In the "out of the box" mode it will give a qualitative or semi-quantitative analysis of whole rocks, soils or most things we deal with. More accurate results can be obtained by crushing and pressing the samples into a briquette first. It can be used both in the lab, using a purpose-built stand, and in the field providing an exciting range of possible projects both for research and in teaching. The results obtained so far are very encouraging and, while not as accurate as a traditional model (costing in excess of £250K), they are surprisingly good.

Welcome to our new Research Students



Lizzie Derbyshire



Helen Doherty



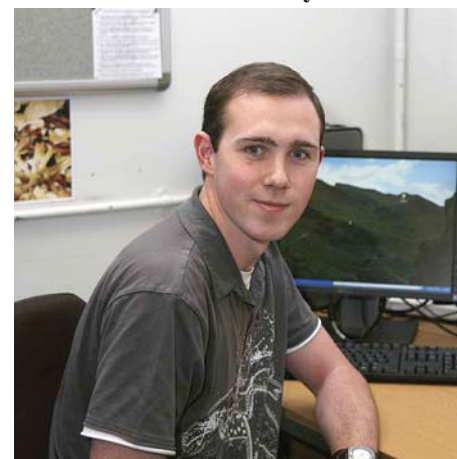
Tim Ferriday



Austin Haffenden



James Hansen



Michael Kelly



Steven Rogers - Teaching Fellow



Rosie Smithells

Lizzie Derbyshire : Tracing Mantle Processes Through Geological Time: A Record of the Geodynamic Evolution of British and Irish Crust.

Helen Doherty : The Evolution of the Northern Gondwana Passive Margin: a chronostratigraphical perspective.

Tim Ferriday : The Silurian Black (Hot) Shales of the Cantabrian Arc, Northern Spain: Biostratigraphy, Chemostratigraphy, Palaeoenvironmental Reconstruction and an Insight into the Palaeogeography of the Rheic Ocean's Southern Passive Margin.

Austin Haffenden : Integrated advanced spatial modelling of forest development.

James Hansen : Forensic Geophysics: Locating the hidden

Michael Kelly : Lateral variations and linkages in thrust geometry in fold and thrust belts.

Steven Rogers : A palaeoecological, microfacies and carbon-isotopic analysis of the Late Carboniferous Mud-Mounds of the Cantabrian Mountains (Spain) and a comparison with their Devonian and Carboniferous counterparts of Morocco, Algeria and Ireland.

Rosie Smithells : A comparison of the geodynamic and rheological evolution of the northern and Southern Rockall Basin using a 3D modelling approach. supervised by Stuart Egan, Stuart Clarke and Geoffrey Kimbell (British Geological Survey). She completed an undergraduate Masters degree at Imperial College (University of London).

From this ...



to this



Plans for the refurbishment of the Mineralogy Laboratory finally came to fruition over the summer of 2009. It was a major undertaking which entailed refurbishment of the garage to house the old workshop which used to be adjacent to the lab. This also provided additional storage space for very large specimens while at the same time making the Stratigraphy Collection accessible!

The former workshop site was then modified to house the specimens that used to line the corridor wall of the lab (see left photo) thus releasing space to allow us to install new benching to accommodate 48 students. Heavy-duty racking at both ends of the lab has enabled us to house the large specimens that used to sit on the window sills.

All agree that this major refurbishment has been a success and that it greatly enhances our facilities, both for students and on Open Days.

Mission to Australia

Professor Peter Styles, Professor of Applied and Environmental Geophysics, took part in a 12-day visit to Australia as a member of the Foreign Office Clean Coal Technologies Mission to Australia.

The group visited the CO2CRC Otway Basin Carbon Storage project at Melbourne, CSIRO at Brisbane and Newcastle, the Universities of Melbourne, Newcastle, Queensland and Sydney and had discussions with the Victoria and Queensland Regional Governments, where Professor Styles gave an overview of Geophysical Monitoring of Underground Gas Storage with applications for CO2 sequestration.

Professor Styles also visited the Bloodwood Creek Underground Coal Gasification project in Central Queensland and had research discussions with the Queensland Centre for Advanced Technologies.

Australian Prime Minister, Kevin Rudd, has launched a Global Carbon Capture and Storage Initiative for which Prime Minister Gordon Brown has declared UK support. The group formed to reinforce this partnership includes representatives from the Energy Technologies Institute (Director of Strategy ETI), EPSRC (Energy Technology Portfolio Manager), CLEANCOALENERGY Ltd and a number of universities: Imperial College, Nottingham, Bristol and Keele.

Subsequently, Professor Styles was invited to speak on Emergent Technologies for Monitoring the Security of Carbon Sequestration at the International Energy Association Meeting on Greenhouse Gas in Japan.

Nigel Cassidy Awarded International Research Prize

Dr Nigel Cassidy has been awarded the 2009 Ludger Mintrop Award from the European Association of Geoscientists and Engineers. The annual, peer-evaluated Award is presented to the author of the best paper published in the Association's international "Near Surface Geophysics" Journal and recognises research that is of an exceptionally high scientific standard and represents a significant contribution to the discipline.

Dr Cassidy's paper, titled "Frequency-dependent attenuation and velocity characteristics of nano-to-micro scale lossy, magnetite-rich materials", has provided new insights into the geophysical properties of naturally occurring magnetic minerals and has significant implications for a wide range of geophysical exploration applications - from Martian exploration through to precious metal mining.

Dr Cassidy said: "The award came as a complete surprise to me and I'm delighted to be its recipient. I've always found this area of research fascinating and it's nice to be rewarded for something you really enjoy doing." The Award was presented to Dr Cassidy at the Association's annual award ceremony in Amsterdam on the 8 June.

Awards for Excellence to ES&G staff

Richard Waller and Katie Szkornik have both received Keele Awards for Excellence in Learning and Teaching.

Anyone who knows Richard will know of his tremendous commitment to teaching excellence and new teaching developments and innovations, being the recipient of two Keele Teaching Innovation Awards in the last two years, and his excellence in all aspects of teaching, probably most notably in the field, and that the award is greatly deserved. Rich is the fourth member of staff within the School to win one of these awards in the last four years.

Those who know Katie will know of her tremendous commitment to teaching excellence and enhancing the student

experience, and her excellence in all aspects of teaching and learning, and this award recognises this. Katie is the fifth member of staff within the School to win one of these awards in the last four years.

Numerous staff within the School were amongst those nominated by students, which, combined with the 17 Teaching Innovation Awards staff in the School have won (out of 32 awarded), is a reflection of the very high quality of learning and teaching within the School (also reflected in our very high scores in the National Student Survey) and the number of genuinely excellent new teaching innovations and developments constantly being developed within the School.

Zoe nominated for National Teaching Fellowship

Zoe Robinson is one of two Keele staff to have been nominated by the institution for a National Teaching Fellowship this year.

This is the third such nomination from the School in the last three years, following Dave McGarvey and Peter Knight, which is again a testament to her teaching excellence, already recognised by an increasingly long list internal and external awards and significant grants.

Project Green: Sustainability skills and work experience for graduates

Project Green is Keele's new sustainability skills flagship project supported by funding from the HEFCE Economic Challenge Investment Fund aimed at helping unemployed graduates into work.

Project Green provides students with a bursary to undertake a 4 to 7 week internship with a local organisation to work on a sustainability-related project, for example helping implement an Environmental Management System or carbon footprinting

part of an organisation's operations. The project is run jointly through Research and Enterprise Services and the School of Physical and Geographical Sciences. As part of Project Green graduates undertake two modules run by Zoe Robinson which includes two days of preparatory training in sustainability issues within organisations and a poster presentation day of their projects.

Following successful completion of

these two modules graduates can choose a further two appropriate modules at Keele to complete a Postgraduate Certificate in Sustainable Business Management. The project has helped over 30 students gain further employment in an environmental-related fields and helped local organisations make significant cost savings and identify further business opportunities in the sustainability sector. Project Green has been shortlisted for a highly prestigious Green Gown award.

The Graveyard Shift!

Staff and students from the School of Physical and Geographical Sciences / Research Institute for the Environment, Physical Sciences and Applied Mathematics, have been helping Stoke-on-Trent Council archaeologists on an emergency rescue dig at a graveyard in the north of the city in October 2009.

Developers were building a community hall on part of an old graveyard, with initial groundwork revealing several unmarked graves and burial vaults. Near-surface geophysical surveys, led by Dr Jamie Pringle, were undertaken to help the archaeologists locate and recover the burials.

Undergraduate forensic science and postgraduate earth science students also gained invaluable experience on a real forensic case.



Grants and Awards

Stuart Egan

2009: Stuart Egan and Stuart Clarke were awarded £33463 in funding from the British Geological Survey/NERC for a PhD studentship entitled 'A comparison of the geological, geodynamic and rheological evolution of the northern and southern Rockall Basin using a 3D modelling approach'

2009: Stuart Clarke and Stuart Egan were awarded a Keele Teaching Innovation Award for £1,950 for a project entitled 'Development of digital field mapping techniques within a student-led e-learning system'.

Katie Szkornik

2009. £15,000 Royal Society Research Grant for project entitled: "Holocene sea-level change in the Dyfi Estuary, west Wales, UK.

2009. £500. UK Resource Centre for Women in Science, Engineering and Technology Travel Bursary towards attendance at the 6th International Geoscience Programme Project 495, Conway, South Carolina, USA. 25th – 31st October 2009.

2009. £200. Quaternary Research Association Conference Fund towards attendance at the 6th International Geoscience Programme Project 495, Conway, South Carolina, USA. 25th – 31st October 2009.

2008. £690. Royal Society Conference Grant towards attendance at the 5th and the INQUA Commission on Coastal and Marine Processes Joint Meeting, Faro, Portugal. 27th October - 1st November 2008

Zoe Robinson and Sherilyn MacGregor (School of Politics, International Relations and Philosophy) received £ 4,950 from the Higher Education Academy Education for Sustainable Development project for a project 'Making the transition to interdisciplinarity: Effective strategies for early student support'

Zoe Robinson received £25,000 from the HEA Geography, Earth and Environmental Sciences subject centre consortium project bid 'C-Change in GEES: Open licensing of climate change and sustainability resources in the Geography, Earth and Environmental Sciences as part of the HEA/JISC-funded Open Educational Resource programme.

Zoe Robinson and **Mark Ormerod** received an EPSRC Partnerships for Public Engagement grant for £ 93,745 for a project entitled 'Fuelling the Future: Sustainable

energy approaches for sustainable communities'

Zoe Robinson received £2,100 from the Higher Education Academy Education for Sustainable Development project for a project entitled 'Greening Business: Employability and Sustainability. An on-line resource for delivering linked sustainability-employability skills within the curriculum'

Zoe Robinson and Mark Ormerod were awarded £11,000 from the innovation Keele fund for a project entitled 'Sustainable business consultancy and CPD training service'

Zoe Robinson and Sherilyn MacGregor were awarded a £1,300 Keele Teaching Innovation award for a project 'Reflecting on Environment and Sustainability: The role of reflective portfolios for enhancing course development and student learning'

Stefan Krause and **Zoe Robinson** were awarded a £7,880 Keele Teaching Innovation Award for a project entitled 'Promoting research-induced teaching through problem-based learning in an Environmental Science Experimental Field Observatory'

Ralf Gertisser received a Nuffield Undergraduate Research Bursary of £1440 for a project entitled "Hazard assessment and numerical modelling of tephra fallout from explosive volcanic eruptions of Santorini volcano, Greece" (Diane Lawrence), and a Mineralogical Society Senior Bursary Award towards attendance at the 6th "Cities on Volcanoes" conference on Tenerife, Spain.

Ralf Gertisser and **Brian O'Driscoll** received a Keele University Teaching Innovation Project Award of £1900 in 2009/10 for a project entitled "Using Dynamic Digital Maps and Real Rocks to Enhance Student Engagement in Petrology".

Conference Presentations

Szkornik, K., Gehrels, W.R., Bradley, S.L., Milne, G.A., Pedersen, J.B.T., Bartholdy, J. and Charman, D.J. 2009. A 9000 year record of relative sea-level change in western Denmark: Glacial isostatic modelling, driving mechanisms and regional comparisons. International Geoscience Programme Project 495 6th International Meeting, Myrtle Beach, South Carolina, USA, 25th – 30th October 2009.

Szkornik, K., Gehrels, W.R., Juggins, S. and Charman, D.J. 2009. Assessing

the accuracy of diatom-based transfer functions in Holocene sea-level studies: An example from Ho Bugt, western Denmark. International Geoscience Programme Project 495 and the INQUA Commission on Coastal and Marine Processes Joint Meeting, Egmond aan Zee, the Netherlands, 21st – 24th June 2009.

Pringle, J.K., **Jervis, J.R.** & Tuckwell, G.T. 2009. Comparison of time-lapse GPR and resistivity over simulated clandestine graves. Extended abstract for a presentation at the 15th European Meeting of Environmental & Engineering Geophysics of the Near Surface Geoscience Division of the EAGE, Dublin, 7th -9th September.

Cassella, J.P., **Pringle, J.K.** & **Jervis, J.R.** 2009. Analysis of simulated clandestine grave contents to assist search teams in the detection of clandestine burials. Proceedings of the 5th National FORREST Conference 2009, Liverpool John Moores University, 30th June – 1st July.

Millington, T.M., **Nuzzo, L.**, **Cassidy, N.J.**, **Pringle, J.K.**, Crocco, L. & Soldovieri, F. 2009. 3D modelling and inversion of complex, near-surface GPR targets. Proceedings of the 5th International Workshop of Advanced Ground Penetrating Radar (IWAGPR), Granada, Spain, 27-29th May.

Pringle, J.K. & Cassella, J.P. 2009. Updates and Advances in the location of clandestine burials of murder victims. Invited presentation for the Royal College of Pathologists, Carlton House Terrace, London, 4th March.

Zoe Robinson and **Mark Ormerod** gave three workshops at the Association of Science Education annual conference at Nottingham University in January 2010 on 'Greening your school: Sustainable solutions and curriculum connections', 'Teaching science through sustainability: Clean and renewable energy contexts for core science concepts,' 'Climate change education: Integrating science and sustainability.'

Zoe Robinson gave an invited talk entitled 'Communicating the science of climate change or communicating science through climate change' at the Teach Climate Action conference, at Queen Mary's, University of London in June 2009.

Zoe Robinson gave a workshop on 'Greening Business: Giving graduates the skills to make environmental improvements in the workplace' at the 3rd International Education for Sustainable Development: Graduates as Global Citizens conference in Bournemouth, in September, 2009

European Geosciences Union General Assembly in Vienna, Austria (April 2009)

Zoe Robinson gave an invited talk on 'Effective and responsible teaching of climate change in Earth Science-related disciplines', a talk on 'An innovative approach to undergraduate climate change education: Sustainability in the workplace' and presented a poster on 'Sulphur isotope hydrology in Skeiðarársandur, Iceland: Identification of sources and implications for weathering processes'

Together with Val Troll (University of Uppsala) and Lilli Freda (INGV Rome), **Ralf Gertisser** convened a session on "Magma generation and differentiation: Field, analytical, experimental and numerical investigation of magmatic and volcanic systems" at the European Geosciences Union (EGU) General Assembly in Vienna, Austria (2010).

Publications

Akca, E., Arocena, J., **Kelling, G.**, Nagano, T., Cambel, H., Buyuk, G., & Kapur, S. (2009). Firing Temperatures and Raw Material Sources of Ancient Hittite Ceramics of Asia Minor. *Trans. Indian Ceram. Soc.*, vol. 68, pp. 35-40.

Akca, E., Kapur, S., **Kelling, G.**, Ozdol, S., Hodder, I., Poblome, J. (2009). Clues for the production of Neolithic Catalhoyuk (central Anatolia) pottery. *Sci. Research & Essays*, vol. 4, No. 6, pp.612-625.

Cook, S.J., **Robinson, Z.P.**, Fairchild, I.J., Knight, P.G., Waller, R.I. and Boomer, I. (2009) The role of glaciohydraulic supercooling in the formation of stratified facies basal ice: Svínafellsjökull and Skaftafellsjökull, southeast Iceland. *Boreas*. 39 (1), 24-38.

Charbonnier, S. & Gertisser, R. (2009): Numerical simulations of block-and-ash flows using the TITAN2D flow model: examples from Merapi Volcano, Indonesia. *Bulletin of Volcanology*, 71: 953-959.

Cronin, B.T., Gurbuz, K., Gul, M., Celik, H., Hurst, A. & **Kelling, G.** (2008). Evolution of multiphase, winged, coarse-grained deep-water canyons: Alikayasi Canyon, Turkey. *Amer Assoc. Petrol. Geol. Studies in Geology*, 56, pp. 357-362.

Doyle, P., Babits, L. & **Pringle, J.K.** 2009. Yellow sands and penguins: the soil of "The Great Escape". In; Landa, E.R. & Feller, C. (eds.), *Soils and Culture*. Springer Science & Business Media. ISBN 9048129591.

Egan, S.S., Mosar, J., Brunet, M. and Kangarli, T. 2009. Subsidence and Uplift Mechanisms Within The South Caspian Basin: Insights From The Onshore And

Offshore Azerbaijan Region. In: Brunet, M.-F., Wilmsen, M. & Granath J. W. (eds), *South Caspian to Central Iran Basins*. Geological Society, London, Special Publications 312, pp.219-240.

Gertisser, R., Self, S., Gaspar, J.L., Kelley, S.P., Pimentel, A., Eikenberg, J., Barry, T.F., Pacheco, J.M., Queiroz, G. & Vespa, M. (2010): Ignimbrite stratigraphy and chronology on Terceira Island, Azores. In: Groppelli, G. & Viereck-Goette, L. (eds.): *Stratigraphy and Geology of Volcanic Areas*. Geological Society of America Special Paper, 464: 133-154, doi: 8 10.1130/2010.2464(07).

Gertisser, R. (2010): Eyjafjallajökull volcano causes widespread disruption to European air traffic. *Geology Today*, 26 (3): 94-95.

Adamuszek, M.A., John, T., Dabrowski, M., Podladchikov, Y.Y. & **Gertisser, R.** (2009): Assimilation and diffusion during xenolith-magma interaction: a case study of the Variscan Karkonosze Granite, Bohemian Massif. *Mineralogy and Petrology*, 97: 203-222.

Gertisser, R., Preece, K. & Keller, J. (2009): The Plinian Lower Pumice 2 eruption, Santorini, Greece: magma evolution and volatile behaviour. *Journal of Volcanology and Geothermal Research*, 186: 387-406.

Jervis, J.R., Pringle, J.K. & Tuckwell, G.T. 2009. Time-lapse resistivity surveys over simulated clandestine burials. *Forensic Science International*, 192(1-3), 7-13.

Jervis, J.R., Pringle, J.K., Cassella, J.P. & Tuckwell, G.T. 2009. Using soil and groundwater to understand resistivity surveys over a simulated clandestine grave. In: Ritz K, Dawson L, Miller D, (editors), *Criminal and environmental soil forensics*. Springer Publishing, Dordrecht, The Netherlands, 271-284.

Jones, G.M., Cassidy, N.J., Thomas, P.A., Plante, S. & Pringle, J.K. 2009. Imaging and Monitoring Tree-Induced Subsidence Using Electrical Resistivity Tomography. *Near Surface Geophysics*, 7(3), 191-206.

Kassi, A.M., **Kelling, G.**, Kasi, A.K., Umar, M., Khan, A.S. (2009). Contrasting Late Cretaceous-Palaeocene lithostratigraphic successions across the Bibai Thrust, western Suleiman Fold-Thrust Belt, Pakistan: their significance in deciphering the early collisional history of the NW Indian Plate margin. *Jour. Asian Earth Sciences*, vol. 35, No.5, pp.435-444.

Parkes, A.A., Waller, R.I., Knight, P.G., Stimpson, I.G., Schofield, D.I. & Mason, K.T. 2009. A morphological, sedimentological and geophysical investigation of the Woore Moraine,

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Robinson, Z.P. (2009) Greening Business. In: *The Handbook of Sustainability Literacy*. Stibbe, A. (ed.) Green Books, 130-136.

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Waller, R.I., Murton, J.B. & Whiteman, C. 2009. Geological evidence for subglacial deformation of Pleistocene permafrost. *Proceedings of the Geologists' Association*, 120, 155-162.

Congratulations

Congratulations to Claire Husband, Victoria Lane, Glenda Jones, Sylvain Charbonnier and Stephen Caine who all successfully passed their PhD vivas with only minor corrections. I'm sure everyone will agree that they have been excellent students and valued members of ES&G over the past four years.

Deirdre McKay, Zoe Robinson, Ian Stimpson and Richard Waller have all been promoted to Senior Lectureships. Prof. Mark Ormerod (Head of School) commented "These promotions are greatly deserved and testament to their abilities and achievements and the tremendous commitment that they both so consistently demonstrate. Their successes are a further reflection on the calibre and the outstanding level of performance of staff in the School".

Snippets

Ralf Gertisser has joined the editorial board of "Geology Today".

He has also been invited to join the NERC Peer Review College from 1 July 2010.

Lizzie Derbyshire has been the runner-up for the Geoff Brown Prize at the annual meeting of the Volcanic and Magmatic Studies Group in Glasgow, Scotland (Jan. 2010).

Students, alumni and applicants can now follow Physical Geography on Twitter: <http://twitter.com/KeelePhysGeog>

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Earth Sciences was ranked 6th and Geography 11th in

The University began a complete change to its website this year. From having free-standing web pages which required a knowledge of the web language HTML to maintain, it has moved to a site based on a Content Management System or CMS.

The various components of the web page are stored in a database which uses a very simple interface requiring little or no knowledge of

HTML. Pages can now be produced to a similar high standard across the university. Dave Emley of ES&G was involved in the commissioning of the project from the outset and has been responsible for much of the training of staff and in the transfer of content from the old to the new system. For the first time the university has employed a full-time web developer - Chris Beard; an indication to its commitment to the web

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