

New Business Support Projects

Renewable Energy Supply Chain Opportunities (RESCO)



The official launch of the RESCO project took place in Coventry on 6th October. IESR will be working alongside Warwick University and Harper Adams University College to deliver the project together with various industry affiliates.

Worth over £1 million and funded by Advantage West Midlands, the project aims to support businesses in the region looking to enter the renewable energy market. It will do this through events, networking, presence at exhibitions both in the UK and overseas, specialist research, access to universities for support and innovation and one-to-one support in identification of opportunities for each individual company. See page 7 for further details. New website at www.resco.org.uk

Staff News

John Dover has joined a new Technical Working Group set up by Network Rail on Sustainable Linesides. The aim is to develop biological solutions to management issues along the 20,000 miles of Network Rail's tracks. Typical issues include improving trackside security to prevent flytipping and trespassing, problems with easily eroded rock surfaces and animal burrowing which leads to destabilised embankments and cuttings, and inappropriate vegetation which leads to destabilisation of tracksides, problems with leaves on the lines, and signal sighting issues.

Fiona Tweed has been invited to be one of a small advisory team of outstanding academics, stakeholders and policy makers from across Europe which will offer expert guidance to the European Commission funded 7th Framework project CAPHAZ-NET (Social Capacity Building for Natural Hazards: Towards More Resilient Societies). This project aims to identify and assess existing practices and policies for social capacity building in the field of natural hazards across Europe. The project will make recommendations to enhance the resilience of European societies to the impacts of natural hazards.

IESR Website

The Institute website address is at the top of the newsletter. Further details of Institute activities and facilities are available on the website.

Renewable Energies Transfer System (RETS)



IESR is part of a Europe-wide partnership which has been developed to tackle the challenges of renewable energies for local and regional authorities in association with the expertise of existing competency centres that produce research and provide services on renewable energies. The main objective of RETS is to improve the knowledge and competencies of local and regional policymakers in renewable energies, so as to facilitate the deployment of coherent and value-added strategic renewable energies policies. This will be realised through the creation of a European community for local authorities on renewable energies, comprised of two key elements: physical tools for meeting and exchanging viewpoints and a virtual platform for collaborative exchange and transfer of good practice through an innovative online approach.



IESR's Jon Fairburn meets the Mayor of Serta at the first RETS meeting in Portugal

The RETS partnership counts 12 partners from 9 EU Member States: France, Germany, Hungary, Italy, Portugal, UK, the Netherlands, Romania, and Slovenia. It has been developed with the idea of obtaining partners with different types and levels of experiences in the deployment of renewable energies and sustainable management.

Research Student News

Congratulations to Ian Bruce-Gardner who successfully defended his PhD thesis on the structural geology of 'Lewisianoid' and Moine rocks in central Ross-shire, Scotland at his viva on 29th January 2010. Ian returned to Staffordshire to complete his PhD on a part-time basis in 2005. His thesis entitled 'Nappe Tectonics in Upper Strathconon and Upper Glen Carron: Field, Microstructural and Geochemical Evidence', was supervised by Patrick Cossey, Fiona Tweed and Tony Harris (Cardiff University). In a meticulous and very high-quality piece of work, Bruce has managed to unravel the very complex history of an area of the Central Highlands, west of the Great Glen Fault and in doing so has revealed new insights into the structural evolution of the Caledonian Orogenic Belt. A number of publications are anticipated from this important work.

IESR is funding two new research students.

Helen Grout is studying the ecological implications and control of the plant disease *Phytophthora pseudosyringae* on bilberry (*Vaccinium myrtillus*). Helen will be working on Cannock Chase, with funding from Staffordshire County Council and IESR. Helen is being supervised by John Dover and Pete Gowland.

Caroline Chiquet is studying the biodiversity and wider environmental value of green walls with John Dover and Paul Mitchell.

Honorary Professor

Roger Dennis has been confirmed in his position as Honorary Professor at Staffordshire University for a further 3 years. Roger, an expert in butterfly research and statistics, works with Professor John Dover. Despite ill-health, Roger produced many research papers in the first three years of his Honorary Professorship. The long-awaited *Ecology of Butterflies in Europe* appeared in October 2009 with contributions from both John and Roger (see Publications, below).

IESR Projects

Good Practices in Regional Innovation (GPrix)



Jon Fairburn is working with members of Staffordshire University Business School on a pan-European project worth over £1million. The project, funded under the European Union Framework 7 initiative, will research how well small and medium enterprises (SMEs) are supported in developing and implementing innovations in processes and products. This research will inform recommendations on best practice. The end result will be more effective and user-friendly support programmes for SMEs, and these should eventually benefit many firms in North Staffordshire. Sectors being targeted are traditional sectors including the automotive, textiles, leather, ceramics, mechanical/metallurgy and food sectors.



My Health Matters

Rachel Davey, Chris Gidlow and Graham Smith have been working with Gemma Hurst (Faculty of Health) on a project for Stoke Primary Care Trust examining the impact and process of a community-led intervention on reducing health inequalities. The project aims to develop and evaluate a novel community-led intervention aimed at reducing health inequalities by targeting health-related problems relating to increasing physical activity and healthy eating as defined by community members themselves. Graham Smith is using GIS mapping to produce measures of the built environment for households in each of the three study areas, using data provided by Stoke-on-Trent City Council. These measures include access to shops, food outlets, green space and physical activity facilities and barriers to physical activity such as traffic, road accidents and crime.

GIS and Clustering Analysis Packages for SMEs

Graham Smith and David Trigg of Staffordshire University's Faculty of Computing, Engineering and Technology have begun a HEIF 4 project looking at market research to assess the demand for 'off the shelf' packages of business and market analysis within SMEs and other small organisations. Potential partner businesses were invited to complete an online questionnaire with the chosen partner receiving £5000 of free consultancy as a pilot study.

ProGress (ANGst) –Engaging Residents of Deprived Communities with Local Green Space

Chris Gidlow and Jon Fairburn are leading a project funded by Natural England looking at green space in Stoke-on-Trent. The project, which aims to encourage residents in Fenton to use their local park, is well underway. They have organised events and activities that will promote more effective and inclusive use of the Foley Field Park.

The project website is at: www.staff.ac.uk/health_progress

IESR Research Grants

Researchers in IESR were given the opportunity to bid for small research grants. Successful applicants were John Dover and Paul Mitchell Biodiversity and other benefits of green walls;

Tim Harris, Graham Smith and Fiona Tweed: A morphometric investigation of active, decayed and ancient pronival ramparts.

Tim Harris, Fiona Tweed and Graham Smith: De-glaciation in Glen Etive and Glen Coe.

Visitors to IESR

Vasco Brummer and Christian Aden from Oldenburg University in Germany visited IESR in March as part of the EU Erasmus exchange.

Christian gave lectures on web-based GIS tools to members of the Faculty of Computing, Engineering and Technology. Vasco lectured on his research into renewable energy.

Cheshire Active Naturalists

Dave Skingsley is a founder member of a new natural history group, Cheshire Active Naturalists. The group was launched in March 2010. Their website can be found here:

<http://www.cheshireactivenaturalists.org.uk/>

Fungus Research

The fungus research group, Arthur Callaghan, Rob Manning and Ian Hopkins, are continuing their researches into the fungus groups *Condiobolus* and *Basidiobolus*.

Carolina Perez Martinez of the Instituto de Fitosanidad (Entomología y Acarología), Mexico, is just about to publish work which includes DNA and bacterial analysis of several of their fungal isolates.

Dr Errol Reiss, Guest Researcher at the CDC Mycotic Diseases Branch, USA, is using one of the group's pictures of specialised fungal spores in a textbook on "Fundamental Medical Mycology" to be published this year.

IESR Projects contd.

Low Carbon Industry Affiliation

After the success of the first Low Carbon Industry Affiliation project, Jon Fairburn has been successful in securing funding for a further series of workshops for local businesses. The new 3-year project will also include a conference every year.

As part of the project Agne Prochorskaite attended the IEMA Foundation Course in Environmental Auditing.

Re:think - Staffordshire and Shropshire Renewables

This project, headed by Staffordshire County Council has now come to an end. Agne Prochorskaite has compiled 30 case studies, covering both suppliers into the renewable industry and actual installation projects within the West Midlands. These will be showcased on the project website.

Funding is now being sought for a follow-on project.

De-glaciation in Glen Etive and Glen Coe

Tim Harris, Graham Smith and Fiona Tweed are involved in this new project which involves fieldwork in the Scottish Highlands and is funded by IESR. The Late Glacial History of the south-west Scottish Highlands is an on-going area of study concerning the history of deglaciation during the Loch Lomond stadial (approx. 10-12,000 years ago). Whilst the general large-scale patterns of deglaciation have been reported, small-scale studies of landforms associated with deglaciation, and their relationship to models of deglaciation is lacking. The dynamic behaviour of the last British Glaciers and their relationships to the climate are an important contributor to our understanding of climate change. This project aims to utilise high-resolution digital terrain modelling (DTM) to 1) verify field observations made during previous field research and 2) identify new potential landforms in Glen Coe. The project will also involve the field verification of landforms identified by DTM mapping.

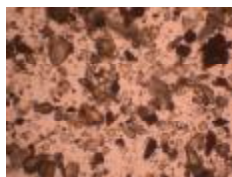
Investigation of Active, Decayed and Ancient Pronival Ramparts

Tim Harris, Graham Smith and Fiona Tweed are involved in this new project which involves fieldwork in North Wales and Iceland and is funded by IESR. Pronival ramparts are ridges of debris formed at the foot of perennial snow patches. There is a long history of study of these landforms, yet there is considerable debate and controversy concerning their formation. Morphometric studies of pronival ramparts as a landform have been hampered since active ramparts (backed by a snow patch) cannot be completely analysed (the snow patch impedes proximal slope analysis), whilst the study of palaeo-ramparts (mostly found in the British Isles), whose entire morphology is quantifiable, is hampered by a) disagreements over the interpretation of landforms as pronival ramparts *per se* and b) a lack of understanding of post-formation changes in morphology. This project will address all of the problems outlined above through study of pronival ramparts in Wales and Iceland. Analysis of variously evolved pronival ramparts could refine the climatic implications of studying these landforms. Field data gathered using a total station will enable a 3-dimensional reconstruction of landforms within ARCGIS. This data gathering will enable a more sophisticated analysis of pronival rampart morphometry than has hitherto been undertaken.

Volcanic Eruption in Iceland

IESR Honorary Research Fellow Matthew Roberts and his colleagues have been kept busy monitoring the development of the volcanic eruption in southern Iceland which has caused so much travel chaos. Matthew, who did his undergraduate degree and PhD in Geography at Staffordshire University, works with Fiona Tweed and Tim Harris on jökulhlaups (glacier outburst floods). Matthew is part of the seismic monitoring and forecast division of the Icelandic Meteorological Office in Reykjavík and has specific responsibility for monitoring ice-volcano interactions.

The eruption began on the 20th March 2010 at Fimmvörðuháls in the Eyjafjallajökull volcanic system. The eruption presented in Hawaiian style with fire fountains and some lava flows on a pass of ice-free land between Eyjafjallajökull and the neighbouring Mýrdalsjökull ice cap, beneath which lies the Katla volcano. Katla is overdue for an eruption and is far larger than Eyjafjallajökull; it is renowned for its energetic subglacial eruptions and massive jökulhlaups (glacier outburst floods). Intense seismicity and high rates of deformation were recorded in the weeks before the current eruption as magma built up in the volcano. Monitoring is undertaken via continuous GPS sites installed within 12 km from the site.



Volcano dust
magnified 100x
Photo copyright: A
and P Callaghan

The previous eruption of Eyjafjallajökull began in December 1821 and lasted intermittently for more than a year. At the time of writing, there has been little propagation of the fissure beneath ice and therefore no immediate threat of catastrophic flooding...however, this may have now changed!

Earthwatch Iceland

The Icelandic Glaciers research project, which has been running for twelve years, examines the phenomena of glacier surging and glacial outburst floods (jökulhlaups) and monitors the impacts that these events have on the glaciers and outwash plains at several locations in Iceland. Research for the project is carried out by a series of research teams consisting of international scientists and volunteers selected by the Earthwatch Institute.

This summer, the team led by Tim Harris and Fiona Tweed investigated glacial landforms and processes at the margins of the ice cap Vatnajökull in southern Iceland. The volunteers comprised people from the US, Greece, the UK and Singapore who were assisted by researchers from the University of Newcastle-upon-Tyne and Leeds University, in addition to Fiona and Tim. The experiences of the HSBC-sponsored Singaporean volunteers were documented and synthesised into a video, created by Aaron Lim, which can be found at: <http://www.youtube.com/watch?v=AjekoRteZNO>

Findings from the project are helping scientists to understand the evolution of Iceland's landscape and to predict its future development. The research is also transferable to other currently and formerly glaciated environments. Results from this summer's fieldwork will be written up for publication in international peer-reviewed journals.



Volunteers by a glacial lake, southern Iceland, 2009

Geological Research

Pat Cossey continues to collaborate with European colleagues led by Professor Jiri Kalvoda from Brno (Masaryk University) Czech Republic investigating sea level change, sequence packaging and the stratigraphy of Lower Carboniferous successions across the Tournaisian / Viséan boundary throughout Europe. A string of publications are in preparation and the first of these entitled *Correlation potential of magnetic susceptibility and outcrop gamma-ray logs at Tournaisian-Viséan boundary sections in Western Europe*, presented at the International Geological Correlation Programme Conference at Liege in Belgium in early December, is currently in press with *Geologica Belgica*.

Presentations

This section briefly reviews presentations made by IESR members at conferences, workshops and other events since March 2009.

John Dover gave a presentation at the 2nd European Congress of Conservation Biology (Conservation Biology and Beyond: from science to practice) held at the Czech University of Life Sciences, Prague September 1st-5th 2009. John's talk was entitled '*Land-use and socioeconomics: the current situation and prospects for butterflies in the hay and grazing meadows of the Picos de Europa, northern Spain.*'

Jon Fairburn was invited to speak on '*Social inequalities in environmental risks associated with housing and residential location*' at the World Health Organisation expert meeting 'Environment and Health Risks: the Influence and Effects of Social Inequalities' in Bonn, Germany, 9th-10th September 2009.

Tim Harris gave a presentation entitled '*The Quaternary of Wales*' to the Mid-Wales Geology Club on October 21st 2009.

Honorary Fellow Rachel Richards' work was showcased in three presentations.

- *Public Health Inter-professional Learning-enhanced Educational AssessmentS – PHILEAS: Application to alcohol misuse strategy development in Solihull.* National Drug and Alcohol Human Resources Team, Southwark Cathedral, 26 June 2009.
- *Public Health Inter-professional Learning-enhanced Educational AssessmentS - PHILEAS: An empirically derived training needs assessment tool developed in the West Midlands and designed to assist in the commissioning of training for an inter-professional workforce.* Interprofessional Learning and Working in Health and Social Care conference CAIPE Ireland, 2 June 2009, Tralee, County Kerry, Ireland.
- *Foresight provides the insight but interprofessional training provides the in-road,* Regional Obesity Summit, Aston Villa FC, 6 March 2009.

Allan Watson gave a presentation '*The World according to iTunes: Creative Project Ecologies and the Global Urban Networks of Digital Music Production*' at the meeting 'Global Cities Now? Current Perspectives in Global Urban Studies', organised by the Urban Geography Research Group of the RGS-IBG Annual Conference. The conference took place at the Centre for Urban Theory, Swansea University, on the 6th November 2009.

Fiona Tweed gave a presentation to the North Staffordshire Branch of the Geographical Association on November 11th 2009 entitled '*Living with volcanoes - hazards, impacts and mitigation.*'

Pat Cossey gave a presentation '*Correlation potential of magnetic susceptibility and outcrop gamma-ray logs at Tournaisian-Viséan boundary sections in Western Europe*, at the International Geological Correlation Programme Conference at Liege in Belgium 2nd-6th December 2009.

Graham Smith was invited as a guest presenter at the 'Population 24/7' workshop at the University of Southampton in January 2010. 'Population 24/7' is an ESRC funded project led by Professor David Martin of the School of Geography, University of Southampton. Graham presented IESR's work on the National Population Database (NPD) for Major Accident and Hazard Modelling commissioned by the Health and Safety Executive.

John Dover was co-convenor (along with Butterfly Conservation Chief Executive Martin Warren) of Butterfly Conservation's 6th International Symposium: 'The 2010 target and beyond for Lepidoptera' held in Reading 26th-28th March 2010 as part of Butterfly Conservation's contribution to the International Year of Biodiversity. John also gave two presentations: '*Land-use, environment, and their impact on butterfly populations in a mountainous pastoral landscape: species-level responses*' and '*Butterflies and farming: a European perspective*'. The proceedings will be published by Springer as a triple edition of the international peer-reviewed *Journal of Insect Conservation* and also simultaneously as a hardback book called "*Lepidoptera Conservation in a Changing World*".

Publications

The following publications by IESR members have appeared since July 2009.

Braubach, Matthias and Fairburn, Jon (2010) Social inequalities in environmental risk associated with housing and residential location – a review of evidence. *European Journal of Public Health*, 20:36-42.

Joyce, D.A., Dennis, R.L.H., Bryant, S.R., Shreeve, T.G., Reday, J. and Pullin, A.S. (2009) Do taxonomic divisions reflect genetic differentiation? A comparison of morphological and genetic data in *Coenonympha tullia* (Müller), Satyrinae. *Biological Journal of Linnean Society* 97: 314-327.

Tiple, A.D., Khurad, A.M., and Dennis, R.L.H. (2009) Adult butterfly feeding-nectar flower associations: constraints of taxonomic affiliation, butterfly and nectar flower morphology. *Journal of Natural History* 43: 855-884.

Dapporto, L. and Dennis, R.L.H. (2009) Conservation biogeography of large Mediterranean islands. Butterfly impoverishment, conservation priorities and inferences for an ecological island paradigm. *Ecography* 32: 169-179.

Dennis, R.L.H. (2009) Changes in butterfly distributions: a simple corrections for bias caused by sub-sampling of atlas records makes no difference to BAP status. *Entomologist's Gazette*, 60: 141-149.

Dennis, R.L.H. (2009) *Inachis io* (Linnaeus, 1758) (Lepidoptera: Nymphalidae) hibernating in the dog-house. *Entomologist's Gazette*, 60: 88.

Dennis, R.L.H., Hardy, P.B. and Kinder, P. M. (2009) A high level territorial perch in *Pararge aegeria* L. (Satyrinae) in a British woodland. *Entomologist's Gazette*. 60: 84.

Dennis, R.L.H. (2009) Where are we now and where to go? In: Josef Settele, Tim Shreeve, Martin Konvicka and Hans van Dyck (eds.) *The Ecology of Butterflies in Europe*, CUP, Cambridge.

Dennis, R.L.H., Schmitt, T. (2009) Faunal structures, palaeogeography and historical inference. In: Josef Settele, Tim Shreeve, Martin Konvicka and Hans van Dyck (eds.) *The Ecology of Butterflies in Europe*, CUP, Cambridge.

Shreeve, T.G., Dennis, R.L.H. (2009) Cross-water transfer by common butterflies. Clear examples of ignoring the highway. *Entomologist's Gazette*, 60: 107-109.

Dennis, R.L.H. and Pontin, A.J. (2009) A hill-topping swarm of *Myrmica scabrinodis* Nylander, 1846 (Formicidae) on a Pennine peak. *Entomologist's Monthly Magazine*, 145: 72.

Dover, J.W.; Dennis, R.H.L. & Atkins, L. (2009) The western jewel butterfly (*Hypochrysops halyaetus*) II: factors affecting oviposition within native *Banksia* bushland in an urban setting. *Journal of Insect Conservation*, 13, 487-503.

Settele, J.; Dover, J.; Konvicka, M & Dolek, M. (2009) Butterflies of European ecosystems: impact of land use and options for conservation management. In: Josef Settele, Tim Shreeve, Martin Konvicka and Hans van Dyck (eds.) *The Ecology of Butterflies in Europe*, CUP, Cambridge, pp.353-370.

Skingsley D.R. (2010) Investigation of mucus using Fourier transform infrared spectroscopy. *Spectroscopy Europe*, 22(1):10-13

Watson, Allan, Hoyler, Michael and Mager, Christoph (2009) Spaces and networks of musical creativity in the city. *Geography Compass*, 3(2): 856-878.

Watson, A (2009) The World according to iTunes: Creative Project Ecologies and the Global Urban Networks of Digital Music Production. *GaWC Research Bulletin* 317.

RESCO

RENEWABLE
ENERGY
SUPPLY
CHAIN
OPPORTUNITIES



Helping businesses
realise opportunities
in the renewable
energy sector

The Renewable Energy Supply Chain Opportunities (RESCO) programme has been established to provide businesses in the West Midlands with the support they need to enter or expand into the supply chain markets of low carbon and renewable energy technologies.

The five technology areas that the project will focus on are:

- i. Power Generation and Transmission
- ii. Wind and Marine Power
- iii. Biomass Technologies
- iv. Small scale Renewable Technologies
- v. Hydrogen based Technologies

RESCO will provide expert help for West Midlands businesses through;

i. Free business support - delivered by RESCO's international team of industry specialists and business development experts. Access up to date market information, contacts and technical help in these high growth technology areas.

ii. Networking and events - to highlight business opportunities, define market drivers and barriers as well as provide networking opportunities. Cross-technology networking will be encouraged to ensure that the West Midlands businesses become more cohesive and best practice can be shared.

iii. International export opportunities - Overseas trade visits in partnership with the regional UK Trade and Investments team.

Institute for Environment, Sustainability and Regeneration

Staffordshire University, College Road, Stoke-on-Trent, ST4 2DE

email IESR@staffs.ac.uk

web www.staffs.ac.uk/RESCO

tel 01782 294110



IESR Conferences

On October 21st 2009 the Institute hosted a second one-day conference, based at the Best Western Hotel, Stoke-on-Trent, on the theme "Environment, Well-Being and Healthy Lifestyle".

The conference was attended by a large number of delegates from both the public sector and private industry, from health and the environment. Sponsors included Natural England, CABE, Stoke-on-Trent Primary Care Trust and RENEW North Staffordshire. It is now planned for the conference to become an annual event.

For details see:

www.staffs.ac.uk/IESR//conference_Oct09.shtml



Siu-Ann Pang from the PCT addresses delegates at the conference

On November 11th 2009 IESR ran a conference on the theme of "Creative Industries and Creative Communities" attended by 70 delegates. Sponsors included the North Staffordshire Regeneration Partnership and the City Council. See www.staffs.ac.uk/IESR//conference_Nov09.shtml for further details.

Public Lectures in Regeneration

Following the success of the series of free public lectures in Regeneration organised by John Dover in 2008, another series is being run in 2010. The first three lectures will be as follows:

- Thursday 29th April 2010
Dan Dubowitz, specialist public arts project manager: *Cultural masterplanning: the remaking of Cities.*
- Thursday 27th May 2010
Robert Napier, Chairman of the Homes & Communities Agency (previously Chairman of English Partnerships): *Regeneration post-election – is it sustainable?*
- Thursday 24th June 2010
John Dover, Professor of Ecology at Staffordshire University: *Green Infrastructure: a survival tool for business and communities.*

All talks will take place in the Ashley Lecture Theatre LT1, Leek Road campus, Stoke-on-Trent ST4 2DF, starting at 7.30p.m. Tickets are available from c.j.dover@staffs.ac.uk

A further series of lectures is planned for the autumn.

IESR Office

The IESR Office is situated in Room S128 of the Mellor Building, College Road, Stoke-on-Trent. The office is open Monday and Wednesday-Friday (with an hour for lunch about 12.15-1.15).