Research Review: Research Outputs
2015/16

Introduction

Glyndŵr University’s research is intended to contribute to economic, social and cultural development. Whether local or international, small scale or large, the emphasis is always on problem-solving and making a contribution to real needs.

This report gives an indication of the wide range of research and related activity undertaken by University staff.

The outputs of research range from papers published in academic journals to conference presentations, books, exhibitions and reports. The contents are grouped by University Research Centre:

- Applied Science, Computing and Engineering
- Creative Arts
- Management
- Social and Life Sciences

This report also provides details of research student completions, and formal research grants and contracts active in 2015/16.

For more information about the research undertaken at Glyndŵr University please visit:

http://www.glyndwr.ac.uk/en/Ourresearch/

or call the Research Services office on 01978 293573.

You can view our online repository of research outputs at:

Glyndŵr University Research Online

GURO gives free access to the outputs of the research and scholarship of the academic and research staff of the University, where not otherwise prevented by copyright restrictions. The University positively encourages external organisations and individuals to make use of its research results and to cooperate in its research efforts.

Stewart Milne
Head of Research Services
Applied Science, Computing and Engineering

Books and Book Chapters

Journal Articles


Conference Presentations and Papers in Conference Proceedings


Bhuvanasundaram, S., Vagapov, Y., Anuchin, A. and Belloc, C. 'Performance analysis of Z-source inverter operating under Random PWM', 50th International Universities Power Engineering Conference, 1-4 September 2015, Staffordshire University, UK


Brandelis, L., Sprake, D., Vagapoz, Y. and Tun, H. (2016), 'Analysis of electrical energy storage technologies for future electric grids', Proceedings of 2016 IEEE North West Russia Section Young Researchers in Electrical and Electronic Engineering Conference, pp.513-518, 02-03 February 2016, St Petersburg, Russia. doi: 10.1109/EIConRusNW.2016.7448235


Dzhigan, O., Danielyan, N. and Oram, D. (2015), 'Philosophy of social network engineering', Proceedings of Sixth International Conference on Internet Technologies & Applications (ITA15), pp.374-376, 8-11 September 2015, Glyndŵr University, Wrexham, UK


Excelf, P.S. (2015), 'Visions of the Future of Computing and Communications Technology', International Conference on Recent Advances in Computer Systems, 30 November- 1 December 2015, University of Ha'il, Saudi Arabia,


Htun, Y.Z., Romanuk, V.A. and Grout, V. (2016), 'Phase noise minimization of microwave frequency synthesizers by circuit', Proceedings of 2016 IEEE North West Russia Section Young Researchers in Electrical and Electronic Engineering Conference, pp.411-413, 02-03 February 2016, St Petersburg, Russia


Lupin, S., Aung, S.M., Than, B.H. and Grout, V. (2015), 'Algorithmic aspects of transport system survivability analysis', Proceedings of Sixth International Conference on Internet Technologies & Applications (ITA15), pp.73-33, 8-11 September 2015, Glyndŵr University, Wrexham, UK


Wang, S., Osanlou, A. and Excell, P. (2015), 'Recovery of excavation scene of yuan blue and white porcelain through digital holography', 10th International Symposium of Display Holography, 28 June - 3 July 2015, St Petersburg, Russia


Visual, Digital, Audio Media


Cunningham, S. (2015), 'LSD No. 1' (1:10), Fixed stereo electroacoustic, Concert of Electroacoustic Miniatures, XXII Festival Internacional de Arte Sonoro y Música Electroacústica 'Punto de Encuentro', 28 November 2015, Medialab-Prado, Madrid, Spain


Cunningham, S. (2016), 'Noise without Noise' (5:59), Fixed stereo electroacoustic, New York City Electroacoustic Music Festival, 5+8225-7 June 2016, National Sawdust Arts Centre, New York City, NY, USA. Available at: www.nycemf.org/2016-festival

Published Patent Applications

Creative Arts

Books and Book Chapters

Conference Presentations and Papers in Conference Proceedings
Baker, D. (2016), 'Deep time and the Anthropocene in d.g.nanouk okpik's Corpse Whale', Strata Symposium, 15 January 2016, Aberystwyth University, UK
Davies, S. (2016), 'Towards HAL-ography', Stanley Kubrick: a retrospective, 11-13 May 2016, De Montford University, Leicester, UK
Liggett, S. (2016), 'Positioning ones-self in the research process: eliminating pseudo-science, a split personality and narcissism in combined arts and science research projects at Wrexham Glyndr University', Research Practice: Practice Research, Fine Art Research Practice Symposium, 15 July 2016, University of Cumbria, UK
McClenaghen, J. (2016), 'Teaching painters on general fine art courses: Against production', Teaching Painting, 29-30 October 2015, Whitworth Art Gallery, Manchester, UK

Exhibitions and Performances
Berry, D. (2015), The Three Rooms in Valerie’s Head, performance graphic novel, 17 October 2015, Lakes International Comic Art Festival, Brewery Arts Centre, Kendal
Jones, P. (2015), Carbon meets silicon, Group exhibition, 8-11 September 2015, Oriel Sychar, Glyndŵr University, Wrexham, UK


McClenaghen, J. (2015), *Carbon meets silicon*, Group exhibition, 8-11 September 2015, Oriel Sycharth, Glyndŵr University, Wrexham, UK


Thompson, E. (2015), *Carbon meets silicon*, Group exhibition, 8-11 September 2015, Oriel Sycharth, Glyndŵr University, Wrexham, UK


**Broadcasts**


**Digital and Audio Media**

Management

Books and Book Chapters


Journal Articles


Conference Presentations and Papers in Conference Proceedings
Binsardi, B., Green, J. and Dey, B. (2016), 'The impact of digitalisation on an industry's market structure and innovation', 3rd B2B Marketing Colloquium, 23-24 June 2016, University Paris 1 Sorbonne, France and Bournemouth University

Preece, D. and Binsardi, B. (2016), 'The use of Q methodology in marketing research', Academy of Marketing 2016 Conference, 4-7 July 2016, University of Northumbria, Newcastle-upon-Tyne, UK
Social and Life Sciences

Books and Book Chapters


Journal Articles


Roberts, D., Mason, J., Williams, E., Roberts, N. and Macpherson, R. (2016), 'Promoting empathy through immersive learning', Journal of Nursing Education and Practice, Vol.6, No.6, 8 pages. doi: 10.5430/jnep.v6n6p1


Conference Presentations and Papers in Conference Proceedings

Holley-Moore, G., Beach, B., Wadd, S., Elliot, L., Madoc-Jones, I. and Donnelly, M. (2016), 'Drink wise, age well: alcohol use and the over 50s in the UK', British Society of Gerontology Society Conference, University of Stirling, 6-8 July 2016


Madoc-Jones, I., (2015), 'Leveraging Diversity in the Criminal Justice System', European Society of Criminology, 4-8 September 2015, Porto, Portugal


Reports
Hughes, C. and Thomas, M. (2016), "You can trust me... Young people going missing and at risk of, or abused through, child sexual exploitation in North Wales'. Ilford: Barnardo's, 2016.
# Research Student Completions 2015/16

## PhD

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>De Prez, P.</td>
<td>Challenge as a factor in the motivation of individuals in teams</td>
</tr>
<tr>
<td>Durkee-Lloyd, J.</td>
<td>Psychological type and work-related psychological health: The case of the Canadian Baptist clergy</td>
</tr>
<tr>
<td>Evans, M.</td>
<td>Synthesis of biosurfactants based on fructans using green chemistry</td>
</tr>
<tr>
<td>Folorunsha, O.</td>
<td>Towards a Model for Information Technology Development for Developing Nations</td>
</tr>
<tr>
<td>Han, L.</td>
<td>Synthesis, characterisation and physicochemical properties of hydrophobically modified polysaccharides</td>
</tr>
<tr>
<td>Hyland, P.</td>
<td>The Dark Triad and involvement in on and off-line bullying: Implications of coping for mental health</td>
</tr>
<tr>
<td>Miraz, M.</td>
<td>Cross-Cultural Usability Issues in Web Interaction, with Applications to Mobile Learning</td>
</tr>
<tr>
<td>Robinet, A.</td>
<td>A usability framework for the design of accessible interfaces to promote digital inclusion</td>
</tr>
<tr>
<td>Rogers, K.</td>
<td>An Investigation into LED Multiplexing for Etendue-Restrictive Optical Systems</td>
</tr>
<tr>
<td>Schneider, R.</td>
<td>An Analysis of Aluminium Sheet Metal Alloys on their Formability Behaviour at Cryogenic Temperatures</td>
</tr>
<tr>
<td>Wilson, W.</td>
<td>The Art of Persuasion: Evangelical Persuasion in the Sermons of Wesley, Edwards and Whitefield, 1734-1745</td>
</tr>
</tbody>
</table>

## DMin

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aisthorpe, S.</td>
<td>Listening to and learning from Christians in the Highlands and Islands</td>
</tr>
<tr>
<td>Bayliss, G.</td>
<td>Improving the accessibility of the liturgies of the Church of England: a work engaging the use of Readability Formulae</td>
</tr>
<tr>
<td>Turton, D.</td>
<td>Pastoral care of parochial clergy</td>
</tr>
<tr>
<td>Ratter, H.</td>
<td>The relevance and value of the Glowinkowski Predisposition Indicator (GPI) for modelling Church growth: a study in Chester Diocese</td>
</tr>
</tbody>
</table>

## DPH

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preece, D.</td>
<td>A Framework for the Development of High Performance Teams</td>
</tr>
</tbody>
</table>

## MPhil

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menzl, M.</td>
<td>The advancement of punch cutting tools using ceramics</td>
</tr>
</tbody>
</table>
## Research Grants and Contracts active in 2015/16

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Total Value (£)</th>
<th>Project</th>
<th>Principal Investigator</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADDACTION (Big Lottery)</td>
<td>219,298</td>
<td>Drink Wise, Age Well</td>
<td>Dr Iolo Madoc Jones Social &amp; Life Sciences</td>
</tr>
<tr>
<td>Barnardo’s Cymru</td>
<td>8,888</td>
<td>Child Exploitation</td>
<td>Dr Caroline Hughes Social &amp; Life Sciences</td>
</tr>
<tr>
<td>Barnardo’s</td>
<td>56,661</td>
<td>The ASPIRE project</td>
<td>Prof Deborah Roberts Social &amp; Life Sciences</td>
</tr>
<tr>
<td>BBSRC</td>
<td>91,932</td>
<td>BBSRC studentship</td>
<td>Prof Peter Williams Applied Science, Computing &amp; Engineering</td>
</tr>
<tr>
<td>BBSRC FoodWasteNet</td>
<td>40,378</td>
<td>BBSRC FoodWasteNet</td>
<td>Prof Peter Williams Applied Science, Computing &amp; Engineering</td>
</tr>
<tr>
<td>BCUHB</td>
<td>16,000</td>
<td>Pathway to Portfolio</td>
<td>Dr Nikki Lloyd Jones Social &amp; Life Sciences</td>
</tr>
<tr>
<td>British Council</td>
<td>63,033</td>
<td>Newton Fund Institutional Links (Turkey)</td>
<td>Prof Stuart Irvine Applied Science, Computing &amp; Engineering</td>
</tr>
<tr>
<td>EPSRC</td>
<td>74,640</td>
<td>High Value Manufacturing Catapult Fellowship: Addressing the industrialisation challenges in rapid microwave and radio frequency processing of polymer matric composites</td>
<td>Prof Richard Day Applied Science, Computing &amp; Engineering</td>
</tr>
<tr>
<td>EPSRC</td>
<td>25,666</td>
<td>High Value Manufacturing Catapult Fellowship: Research into microwave processing of materials</td>
<td>Prof Richard Day Applied Science, Computing &amp; Engineering</td>
</tr>
<tr>
<td>EPSRC</td>
<td>331,895</td>
<td>High –power, low-weight, flexible thin film photovoltaics for space application</td>
<td>Prof Stuart Irvine Applied Science, Computing &amp; Engineering</td>
</tr>
<tr>
<td>EPSRC</td>
<td>245,905</td>
<td>Towards Sinter Free Printing of Photovoltaic Cell Interconnects</td>
<td>Prof Stuart Irvine Applied Science, Computing &amp; Engineering</td>
</tr>
<tr>
<td>EPSRC (Swansea University)</td>
<td>445,093</td>
<td>Sustainable Product Engineering Centre for Innovative Functional Industrial Coatings (SPECIFIC)</td>
<td>Prof Stuart Irvine Applied Science, Computing &amp; Engineering</td>
</tr>
<tr>
<td>EU FP7</td>
<td>58,050</td>
<td>FISICA (Far Infrared Space Interferometer Critical Assessment)</td>
<td>Prof David Walker Applied Science, Computing &amp; Engineering</td>
</tr>
<tr>
<td>Forces in Mind Trust</td>
<td>210,859</td>
<td>Leaving the Armed Forces and Living in Wales</td>
<td>Dr Nikki Lloyd Jones Social &amp; Life Sciences</td>
</tr>
<tr>
<td>GlaxoSmithKline</td>
<td>38,450</td>
<td>Characterisation and Study of the factors affecting the stability of dermatological formulations</td>
<td>Prof Peter Williams Applied Science, Computing &amp; Engineering</td>
</tr>
<tr>
<td>Home Office / North Wales Police</td>
<td>20,000</td>
<td>Evaluation of CSE Initiative</td>
<td>Dr Caroline Hughes Social &amp; Life Sciences</td>
</tr>
<tr>
<td>Organisation</td>
<td>Budget</td>
<td>Project Description</td>
<td>Contact Person</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>--------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>Innovate UK</td>
<td>17,901</td>
<td>TSB Game-changing Technologies: Feasibility study - Consolidation of property data for the life cycle of a composite product</td>
<td>Prof Alison McMillan Applied Science, Computing &amp; Engineering</td>
</tr>
<tr>
<td>National Offender Management Service Wales</td>
<td>15,979</td>
<td>STOMP Domestic Abuse Perpetration</td>
<td>Dr Iolo Madoc-Jones Social &amp; Life Sciences</td>
</tr>
<tr>
<td>North Wales Fire and Rescue Service</td>
<td>20,400</td>
<td>Fitness Study</td>
<td>Dr Sue Taylor Social &amp; Life Sciences</td>
</tr>
<tr>
<td>STFC</td>
<td>72,079</td>
<td>Novel Mathematical Methods for Advanced Tool-paths to Enhance High-value Optical Fabrication</td>
<td>Dr Guoyo Yu Applied Science, Computing &amp; Engineering</td>
</tr>
<tr>
<td>Technology Strategy Board</td>
<td>198,356</td>
<td>Developing an integrated system to enable a robot arm to speak with a Zeeko Machine to automate currently manual operations</td>
<td>Prof David Walker Applied Science, Computing &amp; Engineering</td>
</tr>
</tbody>
</table>

**Knowledge Transfer Partnerships**

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Budget</th>
<th>Description</th>
<th>Contact Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>P&amp;A Fencing and Sheds Ltd</td>
<td>93,801</td>
<td>To implement a sustainable growth strategy by undertaking an extensive business process re-engineering project. Resulting in streamlining operations, reducing time and resources, and increasing profits.</td>
<td>Dr Jan Green North Wales Business School</td>
</tr>
<tr>
<td>UPLEC Industries</td>
<td>80,400</td>
<td>To develop an innovative way for patients to access physiotherapy rehabilitation in the home and improve their interaction with physios, consultants and healthcare workers</td>
<td>Prof Rich Picking Applied Science, Computing &amp; Engineering</td>
</tr>
</tbody>
</table>