Realising Research

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Free to dream:
universities, research, and innovation

Realising Research

This issue

Editorial

I became a research manager 30 years ago. It wasn't an easy job then. Most researchers had a profound belief that research didn't need to be 'managed'. Most sponsors didn't want to pay the full cost of doing their research. Government thought that there were pots of gold to be made from commercialising research. Everyone thought that it was my job to solve these problems. The registrar gave me three staff to help.

The ACU Research, Knowledge and Information Community

The ACU Research, Knowledge and Information Community is one in a series of new special interest groups – known as Member Communities – launched by the ACU.

Aimed at all university staff who support and encourage, but don't directly engage in, the research process, the ACU Research, Knowledge and Information Community is open to staff and students at all ACU member institutions, and is free to join. Members will receive future issues of *Realising Research*, regular newsletters, access to online articles and discussion forums, and invitations to future events.

At the heart of this new Community is the involvement of its members. We want you to take part and share your experiences and expertise. We're keen to hear about your work, the current challenges you're facing, and how your university is working to overcome them. To join, visit **www.acu.ac.uk/rki** or contact **rki@acu.ac.uk**

Those working in research management today deal with an even broader range of issues still. Topics such as open science and big data, both discussed in this issue, could not have been anticipated 30 years ago. Research management has become more proactive, too. Successful universities take the advice of Jeremy Farrar on page 4: first and foremost, universities exist to encourage and nurture new ideas – not to limit them. Good managers exist to encourage this process, not restrict it.

Most of all, research management today is not confined to a single office or structure. Strategies, rules and reporting are needed more than ever, but the wider encouragement of ideas is a task which all parts of the university must share, and in which managers, libraries, and even publishers can play a role.

Bringing this range of actors together, however, is a major policy challenge. The ACU's recent conference on Research and Innovation for Global Challenges, co-hosted by the Southern African Research and Innovation Management Association, was a major contribution to achieving this. Our Research, Knowledge and Innovation Community seeks to promote these relationships more permanently.

If you are not yet a member of the Community, I hope you will consider signing up today. If you are, please consider who else in your institution should be a member, and encourage them to join. Together, we can make sure that the management of university research is never again limited to the confines of a three-person office.

Dr John Kirkland is Deputy Secretary General of the ACU.

Free to dream: universities, research, and innovation

Earlier this year, ACU members gathered in Johannesburg, South Africa, to explore how university research can be used to meet global challenges. We talked to the event's keynote speaker – **Jeremy Farrar**, Director of the Wellcome Trust – about his work and why universities need to be a vanguard of innovation.

The Wellcome Trust has increased activity in developing countries over the last decade. What impact has this had, and does it encourage you to increase your work in these regions?

Jeremy Farrar: I think there are impacts that you can have anywhere in the world. But there's no doubt – given the burden of disease, the lack of research in certain countries, and the need – that the Wellcome Trust can really help contribute, in partnership with others, to bringing about some major change. An example would be its work, over the last 20 years, in transforming malaria globally. Malaria deaths have gone down by 3.5 million over the last seven years, and the Wellcome Trust has made a major contribution to that – with the coming of insecticide-treated bed nets, understanding malaria, artemisinin and combination therapy to treat it, and the development of vaccines. The Wellcome Trust has been involved with all of those and it is an amazing success story for global health.

So we are certainly looking to have greater impact at a global scale, rather than being seen as a UK-centric organisation. I think the question is not whether we want to spend more or less, it's a question of where can we invest, fund research, identify individuals? Where, ultimately, are we having the biggest impact? And, certainly, significant parts of that will be in low and middle income countries.

As Director of the Wellcome Trust, you've been keen to devolve as much project management as possible to local and regional sources. Could you tell us more about this?

Jeremy Farrar: The world is changing, and I feel very strongly that international collaboration being seen as predominantly a one-way flow from north to south – richer world to less rich world, developed countries to less developed countries – is no longer true. And can't be true. Partnerships are partnerships; they're two-way flows. I think the sense that decisions are made in London, Paris, Washington, Tokyo, and Geneva, and then transmitted somewhere – those days are gone. Part of that comes from my own experience of having run a large programme in Vietnam over the last 20 years, for which the decision-making centre of gravity was in Vietnam. I think, as a model, that works. The idea is to ask the right questions; questions that are likely to have the biggest impact, relevant to the right environments. Then you put the centre of gravity for the decision-making and research where the challenges are at their greatest.

The DELTAS (Developing Excellence in Leadership, Training and Science) Africa initiative – which transitions the questions that are being asked and the decision-making out of London to the African Academy of Sciences – is one example of such a shift. It's the same with the Wellcome Trust India Alliance where, again, the process, the administration, the questions that are asked, and the decisions, are all based in Delhi. I think those shifts in centres of gravity are very, very important. In terms of where the questions are asked, where the answers are given, where the decisions are made about what to fund and what not to fund – the closer you can get to where the burden is greatest and research is most needed, the better.

Can universities as organisations do anything to increase the contribution that their research makes to global challenges, or is that something that's best left to research teams?

Jeremy Farrar: I absolutely think they can. Universities have many roles in society, but much of it is about discovery and asking questions; the challenging questions – be they in the arts or the sciences – that companies, governments, and funding agencies can't answer. Universities must never lose that, and they won't.

But they have a responsibility to bring together that expertise – to use those intellects and facilities – to address questions of importance to society. I think universities are actually the prime movers in taking on those big, challenging questions. They need to be the bedrock of where those questions are asked and addressed. The great advantage of universities is that they are free to dream; free in a way that is more of a challenge for those in the commercial sector or government, where there are a lot of constraints. But universities are – or should be – some of the freest organisations globally.

We talk about research needing to demonstrate impact, but what kind of risk does this pose to more exploratory research work?

Jeremy Farrar: Yes, impact is critical. But we need to be careful how we define it. There are large areas of the humanities and sciences where you can't demonstrate – or even think – what their impact on health or society is, because it's going to happen 50 or 100 years from now. Advances 50 years from now will be coming up today through blue-sky thinking in universities – and universities must be left free to have those dreams. There is a danger to saying that everything must have impact.

Presumably it's also a matter of understanding the funders' definition of impact. What do you look for in terms of impact? Is it commercialisation, for example?

Jeremy Farrar: No, it's not *only* that, but it's not *not* that either. It's an element – it's one metric, one measure – of impact. But what we mustn't do is push universities to think short-sightedly about where their impact is going to be. There are a lot of things which take place – and should take place – within the university sector, the impact of which is difficult to predict. It's impossible to know where they're going, but they're asking fundamental questions. If you look at today's advances – let's take one of the most exciting areas of medicine at the moment: the coming of antibody therapies into cancer – that's come about because, 50 years ago, someone was doing some very blue-sky thinking, with no sense where it was going, but which was asking fundamental questions. If we don't continue to invest in that today then, 50 years from now, we will not have the drivers of impact. So we mustn't constrain universities into thinking that impact must be immediate, and we shouldn't define it too narrowly.

Your keynote speech argued that funders should be prepared to take risks. Could you elaborate on that?

Jeremy Farrar: I think the funding landscape is a very diverse and complex one. Different funders and different investors will see the world differently, so there will inevitably be some relatively conservative funders and investors which – because of either commercial, government, or financial constraints – need to see impact or translation or risk-taking within that context. But there are other organisations, such as the Wellcome Trust, which are independent and lucky enough to have their own financial structures; organisations who don't need to think in a political cycle and are independent of government. I think those organisations have a responsibility to be willing to take bigger risks. You can't expect it from commercial enterprises, who have a very fixed line about their profit margins and shareholders; and you can't necessarily expect governments to invest in really risky projects because they're often constrained by a five-year political cycle and the need for re-election, and so on.

So I think the important point here is that there isn't one model of funding which follows a single pattern. We're very fortunate here in the UK to have organisations such as the Wellcome Trust who can complement, and ask different questions to, government funding. I think that's where the philanthropic sector – the charitable sector – needs to play a bigger role: to take more risks, to be longer-term, and to invest in some of those areas where it's difficult to predict quite where they're going.

What can universities do to make themselves more attractive to funders?

Jeremy Farrar: Whoever they are – government, philanthropists, or private investors – funders are interested in supporting the best; people with the best ideas and universities with the best ideas. Those may be risky ideas or they may be very conservative ideas, but ultimately funders want to identify good people in good environments who are really driving change – whether that change is in the 20-50-year window or longer, or whether that change is tomorrow.

Universities need to be confident, to be places where ideas can generate and be supported and encouraged, and where people can be allowed to think outside the box about the right things to do and the right questions to ask. One of my concerns is that universities may be pushed by ever-increasing societal and government pressures to be impactful in the shorter-term. I think universities need to be confident enough to stay a little bit away from that. Yes, worry about impact, but also take a longer-term perspective.

You've spoken about the importance of funders supporting the right research and the right people. How do you ascertain which projects and researchers are the right choice?

Jeremy Farrar: That's a really good question, and a real challenge. Classically, it's been done through the peer-review process – peers and experts in the area looking at people, proposals and projects, and trying to identify the best ones. It's a very, very imperfect science. I think what we need to see is a balance between classic peer review and a more iterative way of approaching things. There are times when you think that something is of such critical importance that, even though there are elements of the idea which might not be perfect, you're willing to back it because there's a sufficient percentage in it which, if it worked, would transform something. There are times when you say, 'look, I don't know whether this is absolutely right, but I know that if they *could* answer this question, it would really change the field'. I think that's where we have to balance critical peer review, with an awareness that the conservatism of peer review can sometimes throw out the really exciting ideas.

Professor Jeremy Farrar is Director of the Wellcome Trust.
He spoke to **Neil Johnson**, Member Engagement Coordinator at the ACU.

Supporting access to information: academic publishers and responsible engagement

Publishers play an important role in enabling affordable, sustainable access to information in developing countries, but how can they balance their commercial needs with those of the regions and institutions with which they work? Earlier this year, a conference sought to debate a set of principles to guide publishers in this area, as **Nick Mulhern**, **Neil Johnson**, and **Teresa Hanley** report.

In 2008, the ACU and INASP (formerly the International Network for the Availability of Scientific Publications) co-founded Publishers for Development (PfD): a forum aimed at improving access to research information by bringing academic publishers together with representatives from research institutions in developing countries. PfD endorses the integral role which libraries and publishers play in improving access to vital research information and, by promoting an open dialogue, seeks to help academic publishers understand the many and varied financial and political contexts within developing countries, and encourage flexible sales models within regions and countries.

Responsible engagement

The seventh PfD conference took place in London, UK, in June 2015, with the theme 'Responsible engagement'. As with previous annual meetings, the event was an opportunity for debate between academic publishers and those working to help enable academic research – principally librarians and library consortia – in developing countries.

This year, conversation was sharply focused on the development of a set of principles, first mooted at a PfD conference in 2014 and developed by INASP over the past year, which aim to guide and encourage publishers to engage responsibly with developing countries. The principles seek to highlight the areas that need consideration when negotiating with academic institutions over the price and availability of journals and to ensure the ongoing availability of research literature. They are concerned essentially with planning ahead and, as such, aim to instil an ethic for working with institutions in developing countries, rather than prescribing contracts or regulating processes.

Debating the five principles

Five principles for responsible engagement were discussed in the build up to PfD's 2015 conference and a number of external audiences consulted on their content, before being put to conference delegates for debate.

1. Make an effort to understand the country context

The first principle urges publishers to understand local needs and national research priorities. It also reminds them to look beyond the capital cities since connectivity is often variable across countries.

These issues were taken up in presentations from Dr Joel Sam and Dr Sophia Kaane, representing library consortia in Ghana and Kenya respectively, which highlighted the value of access to e-resources, but also reminded delegates of the complexity and unpredictability of national contexts. The speakers illustrated the value of their consortia in engaging with publishers, as well as the challenge of balancing commercial publisher relationships with the needs of institutions in developing countries and the unpredictability of their resources.

Both presentations showed that contexts inevitably continue to change, therefore justifying the need to canvass perspectives from as wide a group as possible (whether formally – from ministries, for example – or from local and in-house contacts), and high-lighted the need to be sensitive to variations, including within individual countries. This reflects a point made in the event's opening address, given by the ACU's Dr John Kirkland, that higher education is a 'growth industry', especially in developing countries, and that resources are not keeping pace. The particular vulnerability of libraries to funding cuts was acknowledged elsewhere during the day.

2. Respect a country's wish to negotiate as a consortium or purchasing club

Often, there is greater long-term strength in working through the consortium than through individual institutions. Moreover, publishers which seek alternative routes or withdraw access during negotiations can damage relationships and reputations.

One of the benefits of negotiating with a library consortium or purchasing group, for both publisher and librarian, is that some continuity and consistency can be maintained, as well as better promoting usage and awareness of the online resources which are available.

3. Avoid making sudden changes

At the heart of this recommendation is the importance of good communication. If publishers are to introduce changes, it is important that they explain their plans early and give consortia time to prepare. Plans over three to five years are advised – though in discussion of this principle, some variation emerged as to the appropriate notice period for possible changes (e.g. 18 months was suggested). The overall priorities, however, are to allow time

for institutions to respond and to help maintain access, even where terms and conditions are altered.

4. Think medium to long-term on pricing

This principle asks publishers to remember that budgets won't have increased just because consortia are able and willing to deal directly. In terms of pricing, advocating medium to long-term deals further highlights concerns over communication (the coverage and terms of access and subscriptions) and predictability (accommodating price increases, especially where budgets are being reduced or new financial demands are being made). In instances where there are transitions to higher indices or price bands for particular countries or regions – with the risk of disadvantaging poorer institutions – there is a particular need for flexibility. Consortia are well placed to lead and inform such negotiations, yet still have to work within the resources available for the group as a whole.

5. Be realistic about sales expectations

This final principle proposes that where increases are needed, they should be affordable, incremental, and predictable.

Discussions around this principle focused on strategic planning, whether from the publishers' perspective (sales targets and journal use) or that of the consortia (awareness of the changing needs of library users). What this means in practice underpins the five principles as a whole: the importance of transparency and trust, and of maintaining long-term links between publishers, libraries, and universities.

The rapid growth, and in some cases privatisation, of the HE sector raises issues which collective groups – whether of libraries or the universities which host them – will increasingly face. How, for example, can the interests of a varied consortium best be represented? Should it speak for the shared or minority view? The familiar or different educational system? Or, in terms of universities, the traditional or innovative; the influential or weak? Given this environment, it is worth recognising not just the changing contexts within which universities work, but also the various and overlapping affiliations they may hold.

Practical implications

While acknowledging the value of local publishing, discussions at the conference were rooted in the context of publishers from the 'global north' supporting access for researchers, librarians, universities, and research institutes in developing countries. The publishers' perspectives, delivered by representatives from Wiley and Elsevier, suggested that the principles are not at odds with their commercial aims. But they also shared challenges from their side, such as in dealing with an increasing range of research organisations and in balancing engagement with consortia and ministries of education.

Building on these perspectives, delegates discussed the practical implications of applying the five principles to the work of publishers. Some key messages resonated throughout. These included the need for clear and sustained communication between publishers and library consortia. The benefits to all parties of long-term thinking and agreements also surfaced repeatedly. It was striking to hear the consensus in thinking and commonality of aims between research institutions in the global south and publishers in the global north.

What happens next?

The focus now is on how the principles work in practice. If they are to remain relevant and useful, it is vital that they are subject to regular and thorough debate – and revision where necessary – with input from multiple representatives from international publishers and university representatives in developing countries. This calls for active input from publishers, consortia, and research support organisations as the next steps are considered.

Meanwhile, discussions are now underway to produce a similar set of principles for university representatives from the global south who deal with academic publishers. While it is essential that publishers consider the pressures facing university libraries when forming future strategies, it is also important that universities acknowledge the pressures facing publishers. Large and small scale publishers operate within sustainable business models which can conflict with their genuine desire to support researchers in developing countries, for example.

As such, there are certain factors which university represent-atives can consider, and steps that can be taken, to encourage publishers to provide this support and to ensure it is worth the effort and expenditure. As stated by Dr Joel Sam from the Consortium of Academic and Research Libraries in Ghana: 'We appreciate that publishers are in business to make returns on their investments. For us, engaging responsibly should be a win-win situation where publishers get good returns on their investment and the research output impacts positively on the lives of the people'.

In order to guide librarians in dealing with publishers, and to ensure the principles for publishers outlined above are working in practice, feedback from universities is essential. We need you to get in touch and let us know what you think. Do the five principles for publishers meet your needs? What are the current challenges you face in dealing with academic publishers? What is the most common problem you face during negotiations? What processes have you set up to help your negotiations with publishers? Let us know your thoughts by emailing **rki@acu.ac.uk** or writing to Neil Johnson at the address on page 2. We look forward to your feedback and to keeping you updated on both sets of principles.

Nick Mulhern is Librarian at the ACU.

Neil Johnson is Member Engagement Coordinator at the ACU.

Teresa Hanley is an Independent Consultant and was a facilitator at the PfD conference in 2015.

Visit **www.pubs-for-dev.info** to find out more about Publishers for Development, or **http://blog.inasp.info** for more on access to research for development.

Showcasing research at UTech, Jamaica

Research management offices can play a significant role in highlighting the research being undertaken in their institutions and bringing it to a wider audience. Here, **Paul Ivey** and **Martin Henry** report on one such initiative at the University of Technology, Jamaica.

For some years, the University of Technology, Jamaica (UTech) has staged annual Research, Technology and Innovation Days (RTIDs) – one-day events aimed at showcasing the cutting-edge research being undertaken at the institution and the impact of this research on areas of national development. As the university positions itself to produce practical solutions to society's problems, the event aims to send an important message to partners, government, industry, and society at large: 'With your support, here's what we can do and have been doing'.

The annual event is led by UTech's research and innovation management office, and – in 2015 – showcased some 30 exhibits of research work being undertaken by the university's staff and students, as well as 16 presentations in its speakers' forum. The specific objectives of the day were:

- To showcase recent results of research and innovation activities undertaken by faculty members and students
- To demonstrate the facilities within various units and other resources available for conducting research
- To highlight existing research collaboration between the university and academic or industry partners
- To attract potential research partners from academia and industry
- To promote the university's courses of study, especially graduate research degrees

Reaching stakeholders

It is no longer sufficient or effective to communicate what universities discover and understand solely through peer-reviewed academic journals and conferences. In the case of UTech, the institution's stakeholders have been defined broadly as the people of Jamaica, given that the university is publicly funded. The exhibits and talks at RTID 2015 were therefore an important way to bring UTech's work to its wider stakeholders.

UTech is committed to conducting high-impact, inter-disciplinary, and applied research in areas relevant to economic and social problems, aligning its research activities with the national goals and priorities for development articulated in the country's long-term development plan, Vision 2030 Jamaica.

True to this aim, RTID 2015 showcased research and innovation being pursued in areas such as renewable energy, sports, climate change, architecture, orthodontics, public health nutrition, food security, forensic science, education transformation, geoinformatics, tribology, ICT, law, and health sciences. Topics for presentations included the genetic basis of cleft lip and cleft palate, shelter solutions for disaster emergency management, the impact of climate change on coffee production in Jamaica, and the development of plants endemic to Jamaica to create drugs to reduce inflammation and infection.

Showcasing successes

The guest speaker at the opening ceremony of RTID 2015 was UTech alumni, Kimroy Bailey – chosen because he exemplifies the innovative and entrepreneurial attributes that the university seeks to develop in its graduates.

Bailey's profile is impressive: following an engineering degree at UTech, he founded Kimroy Bailey Robotics and the Kimroy Bailey Foundation – registered companies pursuing the

RTID 2015: Nursing students at UTech talk to high school students

manufacturing of robots and rural youth empowerment through renewable energy. One of his major accomplishments was coming second in a global research competition for his tropical storm robotic wind turbine, which was also his final year 'capstone' project at UTech. (The capstone project is a graduation requirement for all students and a source of research-driven innovation.) Bailey's company is now preparing to launch Bailey Botics, a locally-manufactured robotics kit, capable of extinguishing a fire using a smartphone.

What RTID can tell us

The success of the event highlights a number of critical points about research and research management, particularly in the context of a small emergent university in a small developing country:

- The role of the university, particularly a university of technology, in delivering solutions to practical, economic and social problems in society, and in influencing both policy and practice.
- The important role of the university research management function in facilitating resources for research, the conduct of research, and the dissemination and uptake of research results.
- Excellent work can be done with limited resources, if strategically deployed in areas of strength.

- Taking the work of the university to market – which is essentially what RTID does and is intended to do – even if done at cost to the institution, can yield a positive cost-benefit analysis in partnerships forged with external interests and through garnering state and private sector support for the work of the university.
- A point of particular concern to UTech, and to other institutions in a similar developmental situation, is that impactful research does not necessarily lead to published papers in peer-reviewed journals.

Dr Paul Ivey is Associate Vice-President of Graduate Studies, Research, and Entrepreneurship at the University of Technology, Jamaica.

Martin Henry is Manager of Projects and Operations for the School of Graduate Studies, Research, and Entrepreneurship at the University of Technology, Jamaica.

One of the 'hits' from RTID 2015

Among the research showcased at RTID 2015 was a study conducted by researchers at UTech's College of Health Sciences: 'Do healthy foods cost more than less healthy options in Jamaica?' While several studies have evaluated whether healthier foods cost more, a full range of health criteria has rarely been explored. Rather than simply comparing high and low energy-dense foods, the study also looked at the type of fat, as well as the vitamin, mineral and fibre content, when classifying foods as healthy and less healthy.

Commonly consumed foods were ranked according to their nutritional value and potential positive or negative contribution to Jamaica's major health problems (such as obesity and chronic diseases). The costs of 158 food items were averaged from supermarkets, municipal markets, and wholesale outlets in six parishes across Jamaica. Cost differentials were then assessed in comparing healthy and less healthy foods.

The study found that among the commonly consumed foods in Jamaica, healthy options cost JMD 88 more than less healthy ones. The cheapest daily cost of a nutritionally balance diet in Jamaica varied considerably by parish but was, on average, JMD 269. For a family of three, this translates approximately to the total minimum wage per week.

One of Jamaica's daily newspapers, the *Jamaica Observer*, reported the research on page 2 of its Sunday edition – including comments from the project's lead researcher calling for a review of the minimum wage. This and other interviews were arranged by UTech's research management office and communications unit. Soon after, Jamaica's Consumer Affairs Commission made direct contact with UTech, through the research management office, to express interest in the survey findings and to propose possible partnerships in future research and in providing consumers with nutritional information. The Commission also invited the researchers to join the global voice of consumers, Consumers International, in a campaign to reduce non-communicable diseases worldwide.

Dialogue is now being held between representatives of UTech and the Consumer Affairs Commission of Jamaica to discuss the specifics of collaborative actions. Meanwhile, the study has subsequently been accepted for publication in a medical journal.

This example demonstrates one of the benefits of having a dedicated university research management office with which interested persons may engage in order to obtain information about the research work of the institution.

Gender inequality in the research environment

Louise Shelley looks at the inequalities faced by women working in research management and administration, and considers how these relate to shifts in the profession.

In June 2015, British biochemist Sir Tim Hunt gave a speech at the World Conference of Science Journalists in South Korea, in which he made a 'joke' about women in laboratories. Attendees tweeted the comment, a social media storm gathered, and many media outlets criticised his remarks.

Within days, the European Research Council and University College London requested his resignation. The fact that these two prestigious organisations so quickly and clearly distanced themselves from a sexist remark, even one apparently made in jest by a Nobel Prize winner, is testament to the strength of their commitment to equality in the sciences.

Yet more than 40 years since the Equal Pay Act was passed in in the UK – followed by the Sex Discrimination Act in 1975 – the higher education sector retains a significant gender imbalance and is largely run by men. Published research on the position of women academics frequently maps the inequality in the sector: men are promoted more quickly and receive higher salaries.

The persistent gender pay gap spans all roles: professor, senior academic, manager, clerical, technical and manual, with women paid up to 13% less than men. Meanwhile, women continue to be under-represented in senior academic leadership – only 15% of vice-chancellors in UK universities are women, and just 22% of professors. Analysis of applications made to research funding councils in the UK show that women scientists lag behind men in terms of grant success rates at almost every stage of their careers.

Discussions about gender inequality in research can generate a sense of resistance from both men and women who feel that women are sufficiently empowered to succeed on their merits. Yet there are many who feel it is still difficult for a woman to progress in a research environment compared to her male counterparts.

Gender and a changing profession

In 2008, my research into the changing roles and career experiences of research managers and administrators showed that considerable change was taking place in the research management field. Previously a strand of generalist administration, research management was undergoing a transformation into a profession of its own. Senior research managers sat on research council funding boards and led their university's research policies, while more junior research administrators collated data and became knowledgeable sources of funding information.

Entangled within these changes, however, were examples of gender inequality:

- Employment trends suggested that in cases where both men and women held a doctorate and had similar lengths of experience in research management and administration, more men were promoted than women.
- There was segregation by job title: directors and European or regional funding development managers were predominantly men, while women were more likely to hold research manager or research administrator titles.
- Senior roles were held by both women and men, but women predominated in lower-level roles.

Five years after the original research, follow-up interviews with senior research managers showed dramatic growth in the management of research and an increase in global and multi-partner collaborations, stakeholder interactions, complex negotiations with funders, and the writing of research policy and strategy. Research managers frequently commented that they wrote the strategy, but the pro-vice-chancellor for research fronted it. Senior research managers were performing roles that were once solely located in the academic field. They now shared more research capital with academics, with increasing overlap between the research management and academic fields.

Many research managers faced multiple tensions in this shared and shifting arena. In some departments, a culture persisted that reflected misrecognition of the role. This was accompanied by an expectation that academic work should be kept distant and apart from other, 'non-academic' work. Research management was undergoing a fragmented, gendered shift from service to strategy.

My research showed complex and contradictory images of research managers both within and across universities. On the one hand, some painted an optimistic picture, with evidence of gender equality. On the other, familiar patterns of difference persisted, with inequalities such as occupational segregation and a disproportionately large number of men in the top jobs.

A complex picture

Gender issues are often very slippery and hard to pin down, or seem to disappear like smoke. Some are obvious – such as the under-representation of women in senior leadership roles – whereas others manifest in small events, usually not recorded.

The challenge of addressing gender inequality in the research environment is complex. A commitment to social equity and change is required, as well an awareness of gender issues and their intersection with other diversity matters. A review of how power is exercised and the transparency of decision-making processes and committee membership representation may all be needed.

Research managers and academics are in a unique position to work together and take up these challenges. There may be opportunities to collaborate on research into their environment. If a collection of global research and data on research management and administration was available, it could inform the future development of the profession and help promote equality in the research environment.

Promoting change

Although the gender gap is slow to narrow, its variability between different universities suggests that practices are available that could speed up progress. Initiatives include women's leadership programmes, quotas and targets, affirmative action, and gender mainstreaming activities.

In the UK, universities and research institutes demonstrate their commitment to advancing gender equality by signing up for the Athena SWAN Charter. Established in 2005 by the Equality Challenge Unit, the charter was initially launched to address the lack of women academics working in science, technology, engineering, medicine, and mathematics. In 2015, it expanded to include professional and support roles, as well as all academic disciplines.

Members of the charter can apply for awards which recognise their commitment to, and progress towards, gender equality.

Bronze awards recognise that a department is working to promote gender equality, while silver awards acknowledge that it has taken action and can demonstrate the impact. Funders are increasingly aware of the importance of these awards – the National Institute for Health Research, for example, does not expect to shortlist any NHS/university partnership for future biomedical research funding if the academic department making the application has not achieved at least a silver award.

We live in exciting times, full of opportunities to help shape cultural narratives, challenge discriminatory practices, and guide our universities' strategies, structures, and processes. As research managers and administrators, we can play a key role – both collectively and individually – in ensuring that a commitment to equality in the research environment is embedded within all our work.

Dr Louise Shelley has 20 years' experience working in research management and university management, most recently at Cardiff University, UK. She was Director of the UK's Association of Research Managers and Administrators from 2009-2015.

Leading the way: university libraries and open science

Malcolm Wolski and **Joanna Richardson** consider the role and responsibility of university libraries in enabling an era of open science, and looks at one university's efforts to ensure its librarians are leading the way.

Open science is based on the premise that progress in science requires research content to be open and shareable. Through open science, progress and innovation are advanced by:

- Adopting transparency in all aspects of data collection, management, and analysis
- Making scientific data publicly available and reusable
- Ensuring that scientific communication also is transparent and publicly accessible
- Using web-based tools to enhance collaboration

Other tangible benefits of an open research approach include speeding up the discovery process through the use of citizen science, saving valuable time and resources by reducing the duplication in work, and increasing the visibility and impact of research. In a data-intensive world, the ability to reuse existing data to find new meaning is a fundamental building block for supporting collaboration and discovery.

Opportunities and challenges

The Association of European Research Libraries believes that libraries should play a leading role in enabling open science. If this is to happen, however, libraries will clearly need to redesign their services and define new support roles for their staff.

Re-skilling staff to respond to changing job roles is never an easy task – even less so if the staff involved have little or no experience in some aspects of the new roles. The ability to provide expert-level advice on data management issues, for example, requires domain-specific knowledge of data standards, as well as a range of other topics – a general understanding of digital workflows, licensing and intellectual property rights, and also publishing, if a digital object identifier (DOI) is required. The current rate of change often occurs faster than institutions can respond to in their graduate programmes.

Librarians already have a range of fundamental skills that can easily translate across to these new roles. Communication and outreach skills, for example, are vital in both traditional and emerging roles. However, the demand for *new* skills – such as those needed to support data management throughout the research lifecycle – requires additional formal training.

Such training is not the complete answer though – knowledge and skills will also, by default, be developed on the job. Coaching and mentoring to complement formal training are also essential as staff begin to work in their new roles. Networking and peer support can also play a key role in supporting staff in this new environment. In Australia, national organisations such as the

Council of Australian Librarians (CAUL) and the Australian National Data Service (ANDS) play an important role in establishing and supporting peer networks and organising webinars on specific issues.

Responding to change

For libraries attempting to respond to the changing landscape, an initial task would be to review the current workforce profile and undertake a skills gap analysis. Not every staff member needs to be an expert in every aspect of the skills required to support open science. The library may need access to only one expert in licensing and copyright, for example, while remaining staff members may only need a sound understanding of the issues involved. On the other hand, an increased understanding of the underlying IT infrastructure may be useful for all staff.

It is generally recognised that every team delivering a service needs to understand their customer base. For librarians, this will mean having a sound knowledge of the types of research being undertaken, the typical research process lifecycle involved, key data used and its characteristics, favoured publishing methods, and so on. In a large research-intensive institution, this can be quite a challenge and may require a long-term project to develop knowledge of all the university's major research domains.

If librarians are to play a leadership role and be involved in changing the behaviour of researchers, they will also need an understanding of the various research groups – in terms of attitudes towards open science, the barriers to take-up, and related information such as age demographics (the proportion of postgraduate students and early career researchers to long-serving academics, for example). Librarians will need the requisite skills in becoming agents of change and in developing action plans to drive behavioural change.

Griffith University – a case in point

At Griffith University, our experience suggests that most library staff build their knowledge and skills in research data management through a combination of on-the-job, in-house, and self-training. To date, this has been reflected in a range of activities being undertaken on an ad hoc basis. Opportunities have arisen for librarians to work both as e-research specialists and alongside other e-research specialists on projects funded by external agencies. In one example, four discipline librarians participated in a pilot project, funded by the Australian National Data Service (ANDS), to seek records and datasets for Griffith's first data repository. Another subject librarian, this time with a specialisation in environmental sciences, has worked on specific projects aimed at improving the management of climate change adaptation data and information across a number of countries in the Pacific region, as well as working with Australian river catchment management authorities to improve their data management practices.

Typically, most of our librarians prefer to attend conferences as a way of improving their research data management skills. Financial support is provided for library staff to attend a range of relevant conferences, including those covering research data content. Griffith also had the opportunity to host two staff

members working under the auspices of ANDS, who provide a conduit for Griffith staff to engage in federally funded national initiatives.

We have found participating in national activities to be a very effective way of sharing information and knowledge, and of maintaining awareness of important trends and developments. Griffith has leveraged the resources of national organisations such as ANDS and CAUL – as well as regional associations such as Queensland University Libraries Office of Cooperation – to facilitate network building and communities of practice. Activities have included awareness-raising webinars, workshops, online 'clinics' addressing specific topics (e.g. data licensing), community of practice meetings at conferences, and roundtables targeted at senior decision-makers. One particular such event was a two-day 'data intensive' workshop run by ANDS, which provided a firm foundation for the many librarians from Griffith who attended.

While these external activities are occurring, subject librarians have been developing their approach to research data services on-the-job. A more extensive training programme and a range of workplace initiatives are under development, and will include librarian involvement in supporting researchers to deposit datasets in our data storage solutions. Subject librarians already run workshops on topics related to data management as part of their standard suite of information literacy programmes. These are predominantly targeted at postgraduate students, with ad hoc events held for larger research centres.

Finally, in an effort to obtain better information about our research groups, senior library staff are working closely with the university planning and statistics unit on the development of a 'dashboard' to obtain up-to-date data. This will include the capability for a librarian to:

- Drill down from faculty to individual level to see where researchers actively publish
- Identify early career researchers
- Ascertain how far PhD students have progressed in their degrees

The dashboard, which will become available this year, will allow librarians to target support for researchers in activities such as research data management, publishing research data, and making other research outputs more openly accessible.

Open science is providing many challenges for universities to address, including changes to cultural and work practices within both the research and the library communities. However, it has also opened up opportunities for librarians to play a pivotal role in an era of open research. At Griffith University, we may not have all the answers yet, but we are committed to not standing still until we find them.

Malcolm Wolski is Director of eResearch Services and Scholarly Application Development at Griffith University, Australia.

Dr Joanna Richardson is Library Strategy Advisor at Griffith University, Australia.

Approaches to supporting research

Following the ACU's conference in Johannesburg earlier this year, members of the newly-launched RKI Community took part in a study tour of three South African universities to discuss and compare ways of supporting and enhancing research. Here, **Stephen Akintunde** and **Carlette Hlungwani** report on their experiences.

The study tour was very valuable because it revealed the possibilities that can be realised if key actors in the university research process – research management offices, libraries, and researchers – are fully integrated. Participants visited three research-active universities in South Africa – the University of Johannesburg, the University of Pretoria, and the University of Witwatersrand – to explore and discover how research is being supported.

The visits revealed a high synergy between university libraries and their research management offices. A culture of research appeared to be the norm in all three institutions. The university libraries each supported research in a variety of ways, including by providing digital platforms for documentation (such as institutional repositories) and guidance on referencing style.

The University of Johannesburg's Library and Information Centre advises researchers on the appropriate journals in which to publish their research output, undertakes bibliometric analyses, and provides research intelligence which can be used to assess the integrity of a researcher.

The Open Scholarship Project at the University of Pretoria has developed policies on article processing charges, research papers, and electronic theses and dissertations. There is also a research data management policy and a digitisation centre. Each university faculty has a research marketing officer to communicate and promote the research taking place in that subject area.

At the University of Witwatersrand, the library's approach to research support is 'holistic' and is guided by the cyclical paradigm of service – prepare, gather, create, share, and measure. The library has a writing centre and gives workshops on publication outlets, journal impact factors, and accredited journals.

Another common theme in all three universities was the encouragement of innovation which can lead to change. The Universities of Pretoria and Johannesburg both have 'innovation ambassadors' to encourage interaction between 'innovative, motivated, and committed inventors' and the research office, with a focus on discovering talent across the faculties. The University of Pretoria provides a 'Library MakerSpace' in which innovation is laid bare. It is a room in which deep thinking takes place and experiments are conducted by designing software and testing ideas through mechanical and other means. At the University of Witwatersrand, the Director of Technology Transfer, Ela Romanowska, described innovation as a process of 'shifting paradigms' in which research is translated into products and services.

Perhaps the most visible arenas for research in all the universities we visited were the free and flexible learning spaces provided for students and researchers. The library environments of the three universities were particularly conducive to learning because of the provision of individual and group learning spaces, both open and closed. The relationship between research management staff and library staff in the three universities was also complementary. Indeed, they all worked together to support research.

For delegates on the tour, it was a really exciting and engaging learning experience. I particularly enjoyed the camaraderie in the group. The lessons learned from the tour will hopefully trigger improvement in the support that research and researchers receive in other Commonwealth universities, as participants apply the principles learned during the experience.

Library staff at the University of Johannesburg gave a presentation on the support they provide to researchers

Dr Stephen Akintunde is University Librarian at the University of Jos, Nigeria.

The most important lesson for us was to form stronger links with the other offices that support research, particularly the postgraduate office and health sciences library.

My colleague and I signed up for the study tour because we saw an opportunity to learn about how other universities support research activities, to explore the different structures within other institutions, and to see how these are linked to the research offices. In addition, as research managers in a faculty of health sciences, it was important for us to find out how central research offices interact with faculty research offices without duplicating services.

The tour was spread over two days and each day came with different experiences. We were able to compare roles and structures, and concluded that the inclusion of formal reporting lines between different offices in universities can help in achieving a more coordinated working relationship. At the University of Johannesburg, for example, research, postgraduate, libraries, and innovation offices all fall under the same deputy vice-chancellor.

It was interesting to see different ways in which these universities create an enabling environment for postgraduate students to do research. The University of Pretoria has an exclusive space for postgraduate students in its main library called the 'research commons'. The area has subject specialists/librarians who offer students assistance in writing their theses. They also help students to identify the best journals to publish in.

We also learned about ways in which we can strengthen our communication with researchers. These included organising workshops in which successful grant recipients can share their experience and tips on how to submit a good funding application; ways of sending out calls for funding opportunities; seminars; and postgraduate forums to offer emerging researchers an opportunity for informal discussions with established researchers. One of the strategic objectives at our own institution is to give more support to emerging researchers and we hope these ideas can be integrated with our own similar programmes to improve the research support we provide.

It was useful to learn about the different strategies universities implement to increase their research capacity. For example, the University of Johannesburg employed more assistant lecturers and visiting professors to alleviate the teaching load, thereby enabling more senior researchers to focus on research.

It was valuable, too, to be reminded of the role libraries can play in assisting the research office – such as collecting publications in an institutional repository, for example, or compiling an annual list of publications to be submitted to the South African Department of Higher Education and Training in order to receive subsidy. Libraries also offer bibliometric information to researchers and research offices to analyse publication output, as well as guidance in the use of valuable tools for research.

The tour helped us recognise that we face some similar issues to the three universities we visited: we are all located in cities and are referred to as 'historically advantaged' institutions. We have similar challenges – an enduring one being the need to increase research funding. We could relate to the issues raised and the tour gave us an opportunity to discuss these with people in similar roles.

We also learned about institutional and research repositories that exist to address different institutional needs, such as digital collections and research output repositories. We gathered information on different approaches universities have taken: their mandates, systems, and staffing, as well as the relationships involved – between the library and research office, central research offices and faculty or contracts offices, and repository staff and authors.

The tour was thought-provoking and made us think more strategically about the ways in which we can improve our systems and support activities, and about how we interact with other offices. The most important lesson for us was to form stronger links with the other offices that support research, particularly the post-graduate office and health sciences library.

We hope that there will be more tours in future to strengthen the relationship between research support professionals for the benefit of research more broadly.

The Library MakerSpace at the University of Pretoria

Carlette Hlungwani is Manager of Research Administration at the University of Cape Town, South Africa.

Library profile: COMSATS Institute of Information Technology

Raja Muhammad Ibrahim introduces the library services at COMSATS Institute of Information Technology, Pakistan.

The library at COMSATS Institute of Information Technology is vital to its educational mission. Working in partnership with faculty, staff and students, the library provides convenient access to information resources between 8am-9pm. Housed over four floors, the air-conditioned space has capacity for more than 500 users and is designed to promote effective study and research work. Research cubicles, study carrels, and discussion rooms provide an excellent environment for individual and group study.

This is a lending library and plays a vital role in increasing the institution's research output by helping faculty and students in their research work through well-organised resources. Gathering information, organising it in such a way that it can be retrieved effectively, making it accessible, and disseminating this information to relevant users are the major functions of the library.

Resources include a print collection of more than 50,000 academic titles, as well as access to more than 23,000 peer-reviewed journals, databases, and articles through the Higher Education Commission (HEC) of Pakistan's Digital Library Programme, plus subscriptions to ten national Urdu/English newspapers and 17 national and international journals and magazines. The library's reference section also keeps copies of PhD and MS theses and project reports.

Supporting research

In order to support the institution in the creation of new knowledge, the library at COMSATS offers a number of research

support services to its user community. These training programmes and lectures are arranged throughout the year, as requested by the academic community. Areas of training include information retrieval (how to identify and locate relevant material, including locating information in the library itself, research articles on electronic databases, and searching on the internet), information authenticity and evaluation (how to identify the most reliable and appropriate source), research planning, paraphrasing and summarising, and guidance in referencing and citations.

Guiding users

The library provides information services which are customised to individual needs and which recognise diverse information requirements. These include induction sessions for undergraduate, Master's and PhD students to introduce them to the variety of resources, services, and facilities available in the library and how to get the maximum benefit from using them. Students are given demonstrations in using the library catalogue, website, and digital library.

We believe that early awareness of library resources, facilities, and services helps students perform better and get better grades. Indeed, informal surveys conducted by the library indicate that students who attended these induction sessions gained better grades than those who did not.

The library also provides workshops in digital resources in response to rapid advancement in information technology and the changing information needs of users, who are no longer satisfied with only printed materials and want to supplement printed information with more dynamic electronic resources.

New additions and new research

To keep the users aware of the latest additions to its collections, the library offers a Table of Contents (ToC) service. Here, tables of contents for journals and magazines, as well as new books, are circulated by email on a regular basis. These services are targeted at the institution's faculty and researchers, with the aim of providing the right information to the right person at the right time.

The response from the educational community to this service is very positive, as they consider it extremely useful to know about the latest trends and publications in their fields of interest and it can often generate new ideas for research.

The library also provides an Articles Alert Service through which the top 20 articles from different HEC digital library databases are circulated to faculty and researchers. This service is very effective for researchers in making them aware of the current trends in research and for their knowledge management.

Other library facilities

Video conferencing room: Equipped with latest audio video equipment and seating capacity for 58 people, this facility provides an excellent opportunity to organise and participate in remote lectures, workshops, seminars, discussions and meetings, in a cost effective manner.

Computers terminals: 120 computer workstations with internet connectivity have been made available in the library for online research and class assignments. Researchers can reserve these for continuous use during research projects. 26 special research cubicles with computer access have been placed in the library's reference section for faculty and senior students. The library also

offers wireless internet, enabling users to connect to the internet and library web resources on their laptops and mobile phones.

VPN Service Programme: To support research activities further, the library offers senior students, researchers, and faculty use of a virtual private network facility which allows them to access digital resources from their homes.

Collaborating with ORIC

COMSATS established its Office of Research, Innovation and Commercialization (ORIC) in 2011, with the aim of linking university research directly with the educational, social and economic priorities of the institution and its broader community. Its slogan is 'Creating endless opportunities by transforming research into prosperity'.

The library works with the ORIC to conduct workshops and seminars on various topics that are useful for researchers. One such recent workshop introduced researchers to Summon – a library search engine which aims to make digital resources more discoverable by providing a single search box solution to search all databases and digital resources available through the library. The workshop was attended by representatives of all departments of the institution, along with library professionals and post-graduate students.

The library also works with the ORIC to conduct research productivity award ceremonies – yearly events to encourage and celebrate researchers at the institution.

Raja Muhammad Ibrahim is Chief Librarian at COMSATS Institute of Information Technology, Pakistan.

Recent publications

Nick Mulhern, ACU Librarian, looks at recent titles.

ACRL Environmental Scan
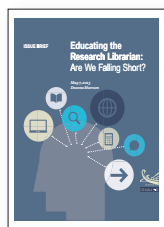(Association of College and Research Libraries; 2015)
A US-based review of the current environment and prospects for academic libraries. It considers the factors influencing higher education and the impact of these on the various aspects of a library's work – from collections and access to scholarly communication and student achievement. Research data is prominent, as 'new roles in supporting research – especially research data services – are emerging as new services within academic libraries'.

AUTM Bridges
(Association of University Technology Managers)
The Association of University Technology Managers has introduced a new quarterly online journal ('*Bridges*') and related website to better promote the importance of academic technology transfer. Coverage is included of the well-established Better World project (which presents examples worldwide of the impact of academic research), as well as arguments for a strong patent and licensing system in the US as 'the foundation of [our] innovation economy'.

Educating the Research Librarian:
Are We Falling Short?
(ITHAKA *Issue Briefs*; 2015)
An issue brief looking at library education and training in the context of changing library roles. As many libraries are now being defined less by the collections they hold than the services they offer, so the skills of those working in libraries have altered. 'The university library has become a partner organisation for the scholarly community in support of teaching, learning, and research.'

European Charter for Access to Research Infrastructures
(European Commission; 2015)
Brief principles and guidelines on the availability of research infrastructures – 'facilities, resources and services that are used by the research communities to conduct research and foster innovation in their fields' – including archives and scientific data and communication networks. The charter has no legal force but implies some priorities for those designing access policies, whether as institutions or as research funders. It also indicates how effective research infrastructures – which are identified with more open and data-driven research – could help to 'bridge the gap between developed and lesser-developed regions'.

Higher Education Business and Community Interaction Survey 2013–2014 (report on survey)
(Higher Education Funding Council for England; 2015)
An annual analysis of higher education and business/community links in the UK, including collaborative, contract, and consultancy-based research, as well as a record of the commitment made by HEIs to public and community engagement.

Income increases in this 'knowledge exchange activity' are given, as well as context on the leading areas for an HEI's economic impact and identifying IP opportunities. Such growth, given recent economic pressures, argues for 'continued public investment in higher education'.

The report is based on data collected by the Higher Education Statistics Agency, which also publishes more detailed figures – including the full survey results for every UK institution of higher education.

Innovation Policies for Inclusive Growth
(OECD; 2015)
A study of initiatives and policies encouraging innovation which can also benefit lower income and excluded groups. It considers their impact, how they can be scaled-up, and thinking on the democratisation of innovation (widening the group of successful innovators) and trickle-down dynamics. 'Under certain conditions the gains from innovation benefit everybody in society; in other cases, on the contrary, they might reinforce social exclusion.'
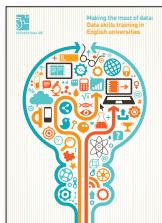
Innovation Union Scoreboard 2015
(European Commission; 2015)
Comparative data and analysis on research and innovation performance in EU member states, as a guide and incentive to improving national research systems. Globally, the EU continues to be outperformed by the US and Japan, among others, but the indicators illustrate some of the factors and policies which foster innovation within Europe.

Knowledge Transfer Partnerships: Achievements and Outcomes 2013 to 2014
(Innovate UK; 2015)
An annual review of a UK scheme, established in 1975, through which recently qualified graduates are part-funded by business to undertake innovative research projects. Over time, this has enabled continued 'collaboration between UK business and the UK knowledge base'.

Making the Most of Data: Data Skills Training in English Universities

(Universities UK; 2015)

A review of data skills needs and training, with recommendations including the approval of relevant academic courses and the strengthening of collaboration between universities, schools, industry, and policymakers ('some of the technical skills needed to analyse data are indeed found across a range of subject areas – but that the extent of training is variable and not clearly articulated').

Open Access and the Humanities: Contexts, Controversies, and the Future
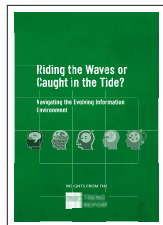
(Cambridge University Press; 2014)

A study of open access in the context of the humanities – the benefits, problems, and related arguments which have arisen – and the implications for academic publishing. It considers the 'extremely complex' economics of such publishing, licensing, monograph publications, and the innovations which are possible in open access. The coverage of the book is international, given that open access is a 'worldwide phenomenon'. (The author, Martin Paul Eve, founder and co-director of the Open Library of Humanities, has argued elsewhere for the wider availability of academic research – 'it makes no sense to me, then, to forbid others from reusing our works, as we often seek to reuse the works of others'.)

Research, Development, and Innovation in Asia Pacific Higher Education

(Palgrave; 2015)

A collection of essays on research policies at a national and institutional level (including Hong Kong and Malaysia), as well as broader trend analysis on research and innovation for the Asia Pacific.

Riding the Waves or Caught in the Tide? Navigating the Evolving Information Environment

(International Federation of Library Associations and Institutions; 2015)

A summary of five general trends which could influence the information environment – access, learning, privacy, empowerment, and the 'global information economy' – and their potential implications for libraries. With reference to education, it notes the prevalence of mobile technology, and queries how local content can be retained as 'education resources go global and open access'.

Taking Stock: Sharing Responsibility for Print Preservation

(ITHKA *Issue Briefs*; 2015)

An issue brief arguing for more considered, coordinated, and systematic print preservation policies. 'We will see soon enough how libraries and their parent universities choose to reinvest, if at all, in collaborative print management initiatives, once the short term advantages of retaining guaranteed access to the print original have passed.'

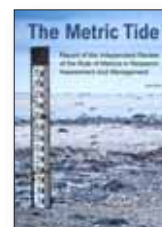### The Dowling Review of Business-University Collaborations

(UK Department for Business, Innovation and Skills; 2015)

Recommendations to help support links between UK business and researchers, based on a review of collaborative research and its incentives. Apart from simplifying the innovation system and endorsing effective brokerage schemes, it stresses the role of universities in rewarding academics for their collaborative work. ('For academics in relevant disciplines, spending time in industry should be seen as a mark of esteem that enriches their career, analogous to gaining international experience.')

The publications round-up – including links where available – is also available at **www.acu.ac.uk/rki**

The Hague Declaration on Knowledge Discovery in the Digital Age

A statement of principles to enable free access to, and use of, information, and a challenge to restrictive intellectual property law and practice ('the modern application of intellectual property law is increasingly becoming an obstacle to the creation and sharing of knowledge').

The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management

(Higher Education Funding Council for England; 2015)

A study reflecting the experience of research assessment in the UK and the role which more quantitative measures could play. Peer review remains valued, while 'the majority of those who submitted evidence…are sceptical about moves to increase the role of metrics in research management'. Specific recommendations are addressed to HE leaders, data providers and publishers, as well as researchers and research managers (who 'should champion… the use of responsible metrics within their institution'). Greater transparency and openness in research data infrastructure is also advised.

What is the Relationship between Public and Private Investment in Science, Research and Innovation?

(Economic Insight Ltd for the UK Department for Business, Innovation and Skills; 2015)

Detailed economic analysis of funding levels and sources in UK research, with recommendations on how it could be better measured and, at a policy level, implications for future budgeting. The value of public investment in research and development may be being underestimated, while the spillover effects of investment in research within HEIs is, also, 'significant'.

ACU Member Communities

The ACU has launched a series of new special interest groups – the ACU Member Communities – to connect colleagues and other stakeholders working in three key areas of university activity. The new Communities bring university staff from across the Commonwealth together to share their experiences, explore ideas, and discover potential avenues for collaboration.

The Member Communities are free to join for all staff and students of ACU member institutions, and individuals may join as many as they feel are relevant to their work.

ACU Research, Knowledge and Information Community

For all university staff who support and encourage, but don't directly engage in, the research process, including those working in libraries and information, as well as research management and administration. To find out more, visit **www.acu.ac.uk/rki** or email **rki@acu.ac.uk**

ACU Engage Community

For all university staff and stakeholders working or involved in university community engagement and outreach, including university public engagement staff, industrial liaison officers, research managers and communication officers, and those specialising in distance or open learning. To find out more, visit **www.acu.ac.uk/engage** or email **engage@acu.ac.uk**

ACU Internationalisation Community

For university staff involved in international education, including such areas as student and staff mobility, international campuses, and the internationalisation of curricula and research. To find out more, visit **www.acu.ac.uk/internationalisation** or email **internationalisation@acu.ac.uk**

Prefer to register by post?
Write to us at the address below with your full contact details, stating which community you'd like to join:

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