

RESEARCH GLOBAL

Putting knowledge to work



Embedding IPR training in India

Benchmarking RM in northern Europe

Catalysing tech transfer in Africa



Research Global

(Formerly *Research Opportunities*)

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Our commu

This edition of *Research Global* continues to explore many topics that are relevant to the research administration community regardless of the individual reader's geographic location. Included also is the listing of the international Editorial Board (see box, page 3), which has recently been established. I am honoured to serve on the Editorial Board and to have the opportunity to write the editorial for this issue of *Research Global*.

The beauty of our profession is the ability, but more importantly the willingness to develop, test, communicate and share best practices with colleagues. Five institutions from northern Europe gathered to review benchmarking, using the Association of Commonwealth Universities study as a baseline. It is interesting to note that several of the conclusions are very similar to general perceptions of how other research administration activities are managed in the global arena. John Westensee and his northern European colleagues conclude and many will agree that our profession is becoming a 'discipline of its own'.

Several of the articles in this edition explore the necessity for furtherance and openness of the technology transfer process. An overview of intellectual property (IP) is a necessity. A primer is provided from the European perspective discussing the ongoing change in this arena. Constant review is essential to meet the continual evolution of the subject matter. The World Intellectual Property Organization (WIPO) seeks to boost the collaboration and availability of IP education. Counterparts in Africa are striving to serve as a vehicle for change by providing assistance to disadvantaged small-holder farmers and by forging partnerships for public and private sector knowledge transfer.

Our colleagues in India are developing a new trend that advises individuals to consider intellectual property rights (IPR) from the evolution of the concept/project. The platform presented outlines 'sustainable processes' for both the 'creation of IP-literate human resources' and the 'establishment of systems

nity of **knowledge**

and processes', which address many of the previous deficiencies that have occurred. The primary goal is a system that will provide the most cost-efficient and effective means to involve individuals in the IP process from the inception of the concept as a standard mode of operation without delay.

While change is inevitable and always demanding, research administrators have been challenged to ensure that ethics are maintained in our rush towards improvement. Edward Gabriele, in his article 'A global praxis: reflections on three international continua in research ethics', challenges our global community to consider 'what is' before proceeding to 'what might be' and develop strategies that apply to the wider community. We are understandably advised to consider that in the midst of the mass of regulatory restrictions, ethics must also continue to evolve to a higher level. The end result will hopefully lead to successful foresight of risk management in the vast arena of activities and challenges that face our contemporaries.

Collaborations amongst institutions continue to increase. The ability to communicate readily and convene with peers has greatly improved the chances of successful outcomes. In a new regular feature, 'Triple helix headlines & highlights,' Leigh Jerome provides a comprehensive summary of recent inter-disciplinary activity. Colleagues worldwide are convening to discuss worthwhile topics such as economic development, cross-sector partnerships, technology transfer, children and youth in urban communities, innovations in educational technology related to the global economy,

healthcare and intellectual property, collaboration and overcoming obstacles in drug development and a new emerging field of service science.

A timely discussion on the topic of 'Open access to scientific research' is presented by Natasha Robshaw. She is indeed correct, 'the internet has revolutionised the way we share information', the premise being that the ability to obtain information more readily and without great expense will increase the speed of discovery in scientific (and other) areas. In addition, an open access environment will provide information to those individuals who may not have the monetary means to obtain subscriptions. Should open access publishing become the preferred method, it may provide the opportunity for many individuals to participate in the development of progress, which might not have been otherwise explored due to lack of access.

We hope that this issue will entice readers to share their knowledge, resources and thoughts throughout our community of research administrators. The ability to share so easily the collection of activities which constitute the research administrator function is an advantage that should be utilised as frequently as possible. The collection of knowledge amongst our colleagues is tremendous and, as a community, we should take the opportunity to share and learn from one another. Please realise the importance of sharing your news and knowledge via *Research Global*. We welcome and appreciate your willingness to provide information and articles to be published in future issues. **RG**



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We would like to welcome the following members to our newly formed international Editorial Advisory Board:

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Network members receive *Research Global* magazine, the *International Journal of Technology Management and Sustainable Development*, regular emails, including a monthly international news briefing, and are kept informed of forthcoming international events and other opportunities. Subscription rates start at GBP55 per annum for individual membership for those based at institutions in developing countries and for current SRA International and ACU members.

See www.globalrmn.org or email resman@acu.ac.uk for further details.

Bringing African and European science together enhancing participation in EU programmes

Collaboration between European and African researchers can bring mutual benefits that also have a wide-ranging impact. **Jacqueline Olang** reports on the Science and Technology-Europe Africa Project (ST-EAP).

Why ST-EAP?

From 29 January to 6 February 2006, representatives of the Network of African Science Academies (NASAC) undertook a working visit to the Royal Netherlands Academy of Arts and Sciences (KNAW) in Amsterdam, The Netherlands. This KNAW/NASAC working visit culminated in a one-day visit to the European Commission (EC) offices in Brussels, where the EC officials and NASAC representatives brainstormed on developing collaborative initiatives through the Framework Programmes (FP). It is from these discussions that the possibility of NASAC applying for funding through the FP emerged, and subsequently a proposal on Science and Technology-Europe Africa Project (ST-EAP) was developed and submitted for funding by the EC.

Through the project two African partners, The African Academy of Sciences (AAS – www.aasciences.org) from Kenya on behalf of NASAC, and The Council for Scientific and Industrial Research (CSIR – www.csir.co.za) from South Africa, with input from European advisors, seek to leverage and optimise resources in collaboration with the European Union, in the development of the EU-Africa relationship, at both the community and the bilateral member state levels.

The synergy in operations provided by the aforementioned institutions in Africa makes them ideal partners in ST-EAP. NASAC's objective is to act as an independent African forum that brings together the merit-based academies of science in the continent to discuss the scientific aspects of problems of common concern, to make common statements on major issues relevant to Africa, and to provide mutual support to merit-based academies in Africa. The NASAC secretariat is hosted by the AAS, an autonomous, Africa-wide, professional, non-political and not-for-profit organisation with a

membership of individual scientists selected on merit through a peer-review system. The CSIR, on the other hand, was established by an Act of Parliament and is committed to supporting innovation in South Africa to improve national competitiveness in the global economy. Science and technology (S&T) services and solutions are also provided by the CSIR in support of various stakeholders, and opportunities are identified where new technologies can be further developed and exploited in the private and public sectors for commercial and social benefit.

In synchronising the activities of the NASAC, AAS, CSIR and other European partners, ST-EAP will focus on heightening awareness of European funding mechanisms and S&T cooperative instruments that support the creation of African/European consortia. In particular ST-EAP seeks to create an increased awareness of the role of the Framework Programmes in Africa through workshops, conferences, and dialogue between National Contact Points (NCPs), an Informal Group of Liaison Officers (IGLOs) and the S&T community of Africa. This will include focused presentations, a website (including partnering and funding databases) and material highlighting Africa's S&T expertise. ST-EAP will seek mechanisms to facilitate greater EU-Africa/NEPAD collaboration, and provide a greater input into future Framework Programmes and proposals for sustainability and growth of the African and EU S&T communities. This will also in turn promote the 'internationalising' of the European Research Area (ERA) by contributing to the international dimension requirements for integrating and strengthening the ERA.

The project aims to enhance the participation of African researchers in EU funding schemes in the longer term, and coordinate the input of African scientists in the future development of EU S&T and related policies. It is important that these schemes, such as the FPs,

be seen in a broader context than funding as they enable African institutions to dramatically develop their S&T base and offer tremendous opportunities for human resource development.

The project pursues the objective to strengthen the EU/Africa S&T policy dialogue, inform and prepare optimal engagement of African scientists within the Seventh Framework Programme (FP7) and other relevant S&T cooperation activities by:

- gathering and disseminating information about the EU S&T programmes open to African institutions and African academics
- identifying centres of excellence in Africa and their research priorities' needs in Africa, and reporting them to the relevant services in the EC
- identifying existing African centres/networks of excellence in FP7 thematic priority areas, and promoting networking between them and European research consortia
- designing an appropriate mechanism and associated implementation plan for enhancing the participation of African researchers in EU programmes

Greater African participation in evaluation panels for FP proposal submissions will be promoted. It will promote Africa and NEPAD's contribution to the shaping of instruments and initiatives in the EU's FP7. Targeted S&T collaborative initiatives will be developed with individual member states with existing S&T cooperation agreements and those member states that have allocated Africa priority status for cooperation development.

ST-EAP's measures of success will be based directly on assessment of the increase in awareness of the various cooperative arrangements existing between Africa and the European Community and the individual member states, and the extent to which these relationships have been leveraged through joint identification of priorities for collaboration. ST-EAP will also be evaluated on its success in bringing about increased networking and partnering in the S&T community, especially where this success is manifested in greater participation in FP7 activities.

Scientists together: Programmes

Relevance of ST-EAP

The EU intends to become the 'most competitive and dynamic, knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion'. In recognition of the significant hurdles that need to be overcome in order to achieve these objectives, the Commission has defined a 'European Research Area' (ERA) and has stressed that the ERA must be opened up to the rest of the world.

This openness will enable EU countries to benefit from international cooperation in science and technology, paving the way for closer political and economic relations, *viz.* openness to third countries will help develop scientific excellence in Europe and raise its profile in the world. EU members and institutions will be committed to working jointly towards the creation of a 'European Research Area' and its international dimension, based on the attainment of the objectives of critical mass, integration of research capacities, management simplification, and European added value.

Networking and partnering of EU and African scientists and institutions will facilitate the exchange of ideas and knowledge, lead to the creation of programmes directed at solving challenges that mutually impact on the partners, and lead to the development of scientific excellence. Economic activity of both Africa and EU participants will be enhanced through the participation of the private sector, tertiary institutions and SMEs in these relationships. In circumstances where the benefits extend to multilateral relationships, e.g. SADC, ECOWAS, NEPAD and ACP, the potential exists for even greater synergies and dynamic interactions.

Joint prioritisation and policy development by the EU, Africa and African regional organisations will contribute structurally to the ERA in that the EU will be sensitised to the global environment and its needs, enabled to respond favourably relative to its own requirements, and thus empowered to address these challenges. Through these relationships, opportunities exist for informing, keeping appraised of developments,

and educating the wider EU society, especially regarding issues of significant importance to Africa. The EU will also be better positioned to respond to societal needs, and to address issues of global importance of relevance to EU citizens, and the larger global community.

ST-EAP will advance the ERA in contributing to the attainment of critical mass within the EU through the formation of strategic S&T partnerships and networks with scientists and institutions both in developed regions and not yet so developed regions in Africa. Instruments such as technology platforms and centres of excellence exploited jointly will advance critical mass attainment, and will also address the integration of research capacities. The participation of Kenya, South Africa and other African countries in the FP thematic priorities will further advance this goal. Similarly, participation in the thematic priorities will heighten awareness related to the management of multi-party and trans-regional projects, especially where third party countries are involved, and will advocate mechanisms for management simplification of FP instruments.

Participation of third countries, especially from Africa, in the FP instruments, and especially the thematic priorities, generally realises skills, knowledge and resources previously unavailable to EU scientists and institutions, thereby ensuring European added value in the ERA. It will also expose the EU to the centres of excellence that prevail in the continent.

Through development and active promotion of the various communication instruments already outlined, ST-EAP will assist European researchers, businesses and research organisations in the EU and the countries associated with the Framework Programmes to have access to knowledge and expertise external to the EU with the potential to extend to some of the regions via structures such as the ECOWAS and NEPAD. The intended mechanisms will not replicate existing systems in Africa. ST-EAP will utilise its instruments to facilitate the formation of EU-AFRICA/NEPAD partnerships and trans-regional networks. By means of specialist

workshops, mobility instruments, best practice exchanges, conferences etc., ST-EAP will facilitate training of EU and African, and in some instances ACP, participants.

Through exposure to other S&T environments and systems, the sharing of experiences and the exchange and joint development of best practices, ST-EAP will support NEPAD's Office of Science and Technology. In particular, support towards the implementation of the 'Africa's Science and Technology Consolidated Plan of Action', cooperation development and enhancement initiatives with the EU and other third party participants in the FP, promotion of existing cooperation instruments, and stimulation of policy discussion and information dissemination within the EU and AFRICA/NEPAD will assist in the goal of support, complementarity, and conformity with external relations. The role of ST-EAP will among other things include the hosting of FP workshops and briefing sessions at major S&T tertiary education institutions in the four regions. It will introduce the concept of the provision of seed funding to support preparatory activities for African researchers in exploring FPs.

ST-EAP will indeed play a critical role in establishing synergy between the European Union's instruments for international research cooperation, such as the Framework Programmes, and those for development cooperation such as the European Development Fund. Indeed ST-EAP will enable a stronger policy dialogue between Africa and Europe on the better harnessing of science and technology for sustainable development and the achievement of the Millennium Development Goals. Implementation of the project commences in 2007. RG

Submitted on behalf of the **ST-EAP**

Consortia Partners.

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Benchmarking research management

Is research management carried out differently across geographical regions?

John Westensee reports on processes for funding and managing research in northern European universities and considers how these compare globally.

In June 2006, the Rector at the University of Aarhus in Denmark hosted a meeting with the rectors of the University of Turku in Finland, the University of Gothenburg in Sweden, the University of Bergen in Norway, the University of Kiel in Germany, and the University of Leuven in Belgium.

At the meeting, the rectors agreed to carry out two benchmarking studies – one on Research Funding and Management and one on Graduate Studies. The focus of this article is on the first benchmarking study, in which Leuven did not participate.

At the meeting last year, a working group was set up to handle the process. It was quickly decided to use the Association of Commonwealth Universities (ACU) benchmarking study carried out for the Higher Education Funding Council for England (HEFCE).¹ The report was published in May 2006 as a model in order to achieve comparable results and because of the methodology, and the universities particularly liked the descriptive approach.

In the preparation phase, the working group spent a lot of time discussing the original questionnaire and they adapted it to some degree in order to reflect the local situation. The questionnaire covered the six sections outlined as follows in this article. In the original HEFCE report, there was a Section 7 dealing with dissemination of research. This section was disregarded in this study, since this is an underdeveloped area at present at the participating universities.

By the end of January 2007, the results were in. After initial analysis, a two-day workshop took place in April 2007. No formal presentations were made. Every university was questioned for two to three hours by the other universities on all the different aspects in the six sections. The following text gives a brief overview of the overall situation within the six sections. Only the most interesting combinations of questions and answers will be touched upon. These conclusions reflect only the views of the author and this is not a common document from the working group.

Section 1: Development of institutional research strategy

The questions in this section focused on strategic, managerial issues and how the strategy setting process works. A lot of time was spent on that section during the meeting. Common features were that all universities had a research strategy in place with very specific activities and goals. A lot of effort had been put into the process, both in involving staff in defining the strategy but also in disseminating it. Key players in setting the strategy were often deans, head of departments, research committees and other formal players in the research field with input from all staff. The strategies had been implemented and worked to a certain degree. The critical factor for the strategy to work was often extra funding which in essence meant third party funding. Therefore, the institution often had to take international, national and regional agendas into account when setting a strategy. It seems contradictory to spend so much time internally in the institution in defining a strategy, when in reality a large part is decided by outside pressure in the shape of funding for specific, strategic areas, like nanotechnology, molecular medicine etc., from national and international funders (especially the European Commission). At the workshop, all institutions stated that they would probably not include research areas or focus areas in a strategy that would not have a chance of attracting third party funding. This is a bit worrying since this might stifle the possibilities for bright, new ideas that will be drivers in the future, but have not been detected on the radar by funders and politicians yet.

Section 2: External funding procedures

The focus in this section was very much on the operations of research support offices (RSOs). All universities had a RSO but their size and scope of work varied tremendously. A main task for every RSO was to disseminate information regarding funding opportunities to staff. For this purpose the RSO either subscribed to a

commercial database or developed its own systems. The experiences with commercial databases were negative in general because they were too broad in scope and too complicated for the researchers to use themselves. The University of Turku had started out developing a funding database for its own use and now it has been turned into a common resource for 26 Finnish institutions and paid for by subscription. They did not think that they lost a competitive edge by making all this information available to the national competitors. Apart from collecting information about funding opportunities, the participants generally did not spend too much effort on maintaining a relationship with potential funders, which was considered a task for the individual researchers and not for a central unit. However, this is changing due to increased competition. At some universities, the level of support to researchers consisted of much more than providing information about funding opportunities. Active participation of the RSO in all phases (information/application/negotiation/management and close-out) was common at some institutions.

Section 3: Submission and authorisation of externally funded projects

Issues discussed included who initiates projects; who authorises proposals; who coordinates major proposals; does the institution offer help to improve the academic content of proposals; and is risk assessment carried out. Not surprisingly, proposals were normally initiated at the individual level. A researcher spots a relevant funding opportunity and goes for it. In the case of major proposals for large amounts of funding, the institutions often coordinated the proposal process centrally. In these cases, academic improvement was sometimes carried out by colleagues, external peer review etc.

Interestingly, the universities did not really have clear guidelines on what types of project the institution would be willing to accept (e.g. consultancies, work for the tobacco or arms industry). A systematic risk assessment before submission, where the institution looks into issues such as budget consequences, own contribution, internal space allocation and personnel, and ethical issues, did not take place either.

nt in northern Europe

It seems as if our job is slowly turning into a discipline of its own, and the way we operate is being harmonised.

Section 4: Project management and control

In this section, it transpired that there were no formal systems in place for monitoring the progress of the research and that formal training of key researchers was rare. On financial matters, the researchers were responsible for the day-to-day operations and had to make sure that budgets are kept. The institutions did not really focus on forecasting and commitments in relation to third party funding. Likewise, it was the responsibility of the researchers to ensure that reporting and other obligations to sponsors are met.

Crucial issues such as confidentiality and intellectual property rights (IPR) recording were mainly dealt with according to national laws that are quite specific on these issues. In one university, the researchers owned the IPR themselves, but formal agreements existed in order to make this area work for the institution as well.

Section 5: Training of and incentives for research staff

Workshop participants also discussed the training and development of skills in research management and administration for academic, non-academic staff and PhD students (including HR management, research planning, project management and project application). Some training was provided for senior academics, who are normally research group leaders. Interestingly, quite a lot was also provided for non-academic staff and often we found groupings on a national level where colleagues across institutions helped each other.

Training and updating for staff in research methods and ethical rules and requirements when dealing with human and animal subjects were not really offered. This is normally an integrated part of PhD study and continuous

updating was recognised to be an important area for continuing training in future.

On the incentive side, most institutions had seed money available to initiate new projects, and compensation for researchers involved in large, time-consuming research projects normally consisted of a reduction in teaching load. These incentives were not evaluated in order to establish the effect.

Section 6: Commercial exploitation of research

This section attracted a lot of interest. The university strategies and policies on ownership, management and exploitation of IPR were to a large degree defined by national law. In one country, the results were owned by the researchers. At the other institutions, there were anywhere between well-developed to hardly-developed mechanisms in place in order to identify IPR and rules for use, protection and remuneration. Students in general owned their own intellectual property (IP), but were in some cases offered the same conditions as employees.

The Technology Transfer Offices usually had the task of maintaining the register of IPR in which it has a stake and of keeping this updated. Decisions on the appropriate form of IP exploitation and protection were taken by, for example, a patent management board consisting of professionals and institution representatives, or external consultancies handling this area on behalf of the institution.

The revenue from the exploitation of IP was divided between staff, departments and the central administration of the university according to either national law or internal agreements. In Denmark, the researcher received one third of the surplus if the university wanted to keep the rights. If the rights were given to the researcher, the university received one third of the surplus. Students were offered



John Westensee

the same deal. Clear rules for publication of research results that might have commercial value existed.

Conclusion

When we compare the results of this benchmarking study to the results of the study carried out by the ACU last year, there is a large degree of overlap in how we go about our business. There is a good sense of how you should operate in this field, which is not surprising as we often work with the same international funders of research. It seems as if our job is slowly turning into a discipline of its own, and the way we operate is being harmonised. The major difference is the degree of detail we apply in the various phases of the research enterprise. Universities in the English-speaking world seem to have much more specific written procedures than the Nordic countries. We basically work the same way, but many rules are unwritten, which of course can create problems when new, inexperienced staff enter the trade. Over the next few years, we will probably document our rules and procedures like other universities. In the present benchmarking study, we included a number of questions we knew could not be answered at present. The purpose was to 'force' the universities to start defining their operations on a much more specific level. One example is the development of a coherent system for risk management and for proper costing and pricing. The workgroup will meet regularly over the coming years in order to keep an eye on the development at our institutions. **RG**

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¹ *International Research Management: benchmarking programme*; the report can be downloaded from the HEFCE website at: http://hefce.ac.uk/pubs/rdreports/2006/rd11_06

A catalyst for agricultural technology t

It is generally acknowledged that improved agricultural technology transfer mechanisms in Africa would positively affect the continent's food production and internal knowledge transfer systems. **Richard Boadi, Francis Nang'ayo and Gospel Omanyia** highlight some of the African Agricultural Technology Foundation's efforts in this area.

For smallholder farmers in Africa, yields of major staple crops (maize, sorghum, millet, cassava, cowpea, bananas and plantains) have remained stagnant or even declined in the past 40 years. Numerous biotic and abiotic stresses have contributed to this dire trend. Local research efforts to overcome these stresses have been hampered by declining investment in agricultural research, limited access to elite genetic material and other technologies protected by intellectual property (IP) rights, and the lack of commercial interest in these crops from the private sector. The African Agricultural Technology Foundation (AATF) is a new initiative addressing the challenge of reversing the negative trend in agriculture by negotiating access to proprietary technologies and facilitating their delivery to smallholder farmers in sub-Saharan Africa (SSA).

Facilitating access to agricultural technologies by smallholder farmers

AATF was designed four years ago to respond to Africa's food security challenges through a twin-approach of negotiating, on a humanitarian basis, for access to proprietary agricultural technologies from anywhere in the world and forming public-private partnerships involving various institutions to ensure safe and sustainable delivery of products made from such technologies. AATF has, to date, negotiated for the right to use technologies that could reduce several constraints faced by smallholder farmers. The terms of the license agreements entered into by AATF are highly beneficial as they allow for fee-free and royalty-free access to proprietary technologies, thus making it possible to maintain low costs of the products developed using such technologies.

One major constraint to cowpea production being addressed by AATF is the infestation of cowpea by the pod-boring insect, *Maruca vitrata*, a serious field pest of cowpea which is

estimated to cause significant grain yield losses, in extreme cases, exceeding 70%. The cowpea gene pool offers few useful sources of durable resistance to major insects such as *Maruca*. While some sources of insect resistance have been reported in wild cowpea relatives (*Vigna* spp.) as well as in other non-*Vigna* legumes such as African yam bean (*Sphenostylis stenocarpa*), none of these can inter-cross with cowpea through conventional breeding approaches. This has limited progress in the development of insect-resistant cowpea hence the need to use new tools including genetic engineering. Following successful negotiations with the Monsanto Company that resulted in the signing of a royalty-free license agreement in May 2005, AATF obtained the right to use Monsanto's *cryIAb* gene for the development and commercialisation in all of SSA cowpea varieties resistant to insect pests (*Bt* cowpea). The license permits African farmers to export *Bt* cowpea outside Africa for feed and food uses. On the basis of a sublicense granted by AATF, the Australian Commonwealth Scientific and Industrial Research Organisation (CSIRO) has successfully transformed cowpea using the *Bt* gene. Also, under license from AATF, the International Institute for Tropical Agriculture (IITA) is doing genetic transformation work on cowpea in Nigeria. To facilitate the transfer of *Bt* gene into elite African cowpea, a plant breeder from Nigeria has been sent to CSIRO for training in transformation, *Bt*

The terms of the license agreements entered into by AATF are highly beneficial as they allow for fee-free and royalty-free access to proprietary technologies.

gene tracking in offspring lines and introgression of the *Bt* gene into advanced breeding lines. Indeed, over the coming 18 months, attention will be paid to completing the cowpea transformation process by raising a sufficiently large number from which candidate elite lines will be selected for efficacy testing in target African countries. When successfully developed and deployed in *Maruca* infested areas of Africa, adoption of *Bt* cowpea is expected to bring about a range of benefits ranging from reduced cost production arising from fewer field spray applications, reduced incidence of pesticide poisoning among farm workers to increased grain yields.

One other constraint being tackled by AATF is banana xanthomonas wilt or banana bacterial wilt (BBW), which has been fast spreading in the Great Lakes Region of SSA in the past few years. It is caused by the bacterium *Xanthomonas campestris* pv. *Musacearum*, affects all banana types and results in wilting and premature ripening of the fruit. The economic loss resulting from BBW can be crippling. Despite a heavy campaign to control the spread and effects of the disease, the banana programme in Uganda estimates that bananas valued at over USD35 million were lost due to BBW in 2005 alone. And, it is estimated that 800,000 people are currently affected by BBW in Rwanda, with the overall loss estimated at USD500,000 in just one region of the country. In Tanzania, the losses are estimated at USD350,000. To date, no known source of resistance has been found in the banana germplasm, and thus there is little chance that conventional breeding would produce material resistant to the disease. In response to this challenge, AATF and its partners have formulated a project which aims to transform banana and make available resistant varieties for use by smallholder farmers in Africa. AATF obtained a license from Academia Sinica to use the plant ferredoxin like protein (*pflp*) gene from sweet pepper for banana transformation to produce banana varieties resistant to BBW, and granted a sublicense to IITA to allow for banana transformation work, which is currently being done at the IITA station at the National Agricultural Research Organisation (NARO) in Kawanda,

Transfer to smallholder farmers in Africa



A disease-free banana farm

Uganda. This work has progressed tremendously and there are strong indications that the *pflp* gene could provide resistance against BBW. AATF estimates that it will take this initiative a minimum of five years to develop GM banana technology resistant to BBW and another three years to set up a pathway for commercial production and distribution of suckers to farmers.

Further, AATF has facilitated a partnership involving BASF and the Centro Internacional de Mejoramiento De Maize y Trigo (CIMMYT) to deliver a technology, STRIGAWAY®¹, in an attempt to control the witchweed, *Striga*. *Striga* is a parasitic weed that decimates maize, millet, sorghum, upland rice and napier grass throughout SSA and infests an estimated 20 to 40 million hectares of farmland cultivated by resource-poor farmers. Every year, *Striga* damage to crops accounts for an estimated USD7 billion in yield loss in SSA, and affects the welfare and livelihood of over 100 million people. In Kenya, it is estimated that 211,000ha of farmland are infested with *Striga* causing crop losses amounting to nearly 400,000 tons worth

USD80 million per year. The STRIGAWAY® technology combines a low-dose imazapyr (a systemic herbicide) seed coating applied to imazapyr-resistant (IR) maize seed. Small quantities of imazapyr (as little as 30 grams per ha), delivered in this manner, act at the time of *Striga* attachment to the maize root and so prevent the exertion of the phytotoxic effect of *Striga* on the maize plant, thus enabling the plant to grow to its full potential. The low-dose herbicide seed dressing used in the STRIGAWAY® technology controls *Striga*



The *Striga* parasitic weed in maize

without impacting sensitive intercrops when planted 10cm or more away from the maize hills. Recent on-farm trials demonstrate that the herbicide coating adds about USD4 per ha to the cost of maize seeds. However, in a moderately *Striga* infested field, the additional maize yield due to application of the STRIGAWAY® technology is estimated at

USD52 per ha. The technology was commercially launched in Kenya in December 2006. Following its successful impact on the *Striga* weed in Kenya, AATF is collaborating with partners and stakeholders in Tanzania and Uganda to deploy the technology in *Striga*-infested farms with about 1,500 smallholder farmers.

Conclusion

Numerous previous attempts at technology development and transfer have not always sufficiently contributed to sustainable food security and rural poverty alleviation in SSA. It has become increasingly obvious that new approaches are needed to mobilise science and technology for innovative applications in Africa. It is also increasingly obvious that developing these approaches will require the potential complementarities of public- and private-sector research and development efforts. AATF represents an innovative platform based on forging collaborations between these sectors to identify and transfer proprietary technologies that would otherwise not be available to address the problems of resource-poor smallholder farmers. While AATF is not the panacea or a 'silver bullet' and may not be the only or even the best means to achieve the goal of easing access to important technologies for humanitarian purposes, it has demonstrated during its relatively short history that it could be the catalyst for the transfer of technology to smallholder farmers. Its African focus, leadership and operational location promise a more comprehensive and realistic appreciation of the constraints to technology transfer in Africa, which will allow for the design of more feasible solutions and closer follow-up and continuity in implementation.

RG

¹ The STRIGAWAY® technology was developed by CIMMYT, in collaboration with the Kenyan Agricultural Research Institute (KARI) with funding from the Rockefeller Foundation, and is based on germplasm owned by BASF. BASF also owns the rights to the herbicide used with IR maize.

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Learning the value of intellectual property

Ruth Soetendorp highlights the growing need for IPR competence and awareness in both business and academia.

Intellectual Property (IP) is more than something to be protected; it is a strategic tool for value generation... We used to view IP as an R&D tool. Now we view it as a business tool.

The Value of Knowledge: European firms and the intellectual property challenge, an Economist Intelligence Unit white paper, sponsored by Qualcomm, 2007

It is essential that anyone who is involved in the design or manufacture of new or improved products and processes has an awareness of Intellectual Property Rights (IPR) and how they can be used to generate income and prevent competitors copying or exploiting another's ideas. A growing number of faculties are recognising that IPR competence and awareness are key attributes contributing to graduate employability and entrepreneurship. As a result there is a growing interest amongst engineering and design, science and technology academics as to how best to include IPR topics in the syllabus.

In knowledge based industries, it is important to remember that successful management of IPR means engaging in many aspects of business management: finance, regulation, ethics, taxation, contract and competition. Dr. Paul Leonard, Director of the UK Intellectual Property Institute observes 'people find it hard to get their head round the fact that owning an IPR as such costs money. It's always how you manage that IPR that determines how much income it can generate'. It is necessary to understand how IPR *law* works to obtain the right, as well as how IPR *management* works to make money from IPR.

Technology transfer offices in universities have expanded over recent decades for two reasons. Firstly, to ensure that valuable IPR generated by faculty, researchers and students is managed to obtain the best return for all concerned, including the university itself. Secondly, to raise IPR awareness and competence across the university community. To support this expansion, there has been a rapid growth in recent years of online learning resources that make it easier, and more enjoyable, to acquire a basic understanding of what IPR is and how it operates¹.

Intellectual property rights are recognised internationally by national laws that conform to international agreements. The international agreement on Trade Related aspects of Intellectual Property (the TRIPS Agreement) was introduced in 1994 by the World Trade Organization (WTO)², which requires member states to provide strong protection for IPR. Where TRIPS refers to minimum terms of protection, it is possible for different jurisdictions to interpret the requirements differently. If in doubt, it is always good advice to check the legal position with your National Intellectual Property Office.

IPR comprises a number of distinct rights that apply in different situations. Patents are granted by nation states for inventions that are novel, inventive, useful, and not from an excluded category (such as inventions that would offend against public morals or which rely on mathematical methods). Application can be made for protection in Europe or worldwide. Design rights protect the individual character of articles, including visible aspects which are new or original. They can be granted by nation states; in Europe it is possible for one application to give design protection throughout the European Union. Trademarks too can be granted to give protection in one country, throughout Europe or in countries of the rest of the world. They allow businesses to build up brand loyalty and reputation. Copyright allows the creators of original music, drama, literature, art works (and computer software) as well as

film makers, photographers and architects to have control over how their work is copied or adapted. In addition, there are separate rights to protect plant varieties and geographical indications. The international community is currently debating the extent to which there should be IPR recognition for artworks, cosmetics, pharmaceuticals and other bio innovations that are based on indigenous peoples' traditional knowledge.

Wherever IPR is generated, there is usually quasi- or 'not quite'-IPR. This comprises confidential information, trade secrets and know-how. Quasi-IPR is important because it too, if properly recognised and protected, has a commercial value that can assume great significance when negotiating an IPR exploitation deal. In order to best exploit your IPR you need to be able to put a value on it, to know what it is worth in the particular context in which you are operating, whether selling it, licensing it, or exchanging it for share value in a company. At the same time as stressing the importance of how you manage the IPR you create, you should not overlook your obligations in respect of using IPR created by someone else.

Intellectual Property is an area of fast moving regulatory change in the law, pushed along by changes in public and governmental attitudes. Currently there are international IPR policy debates on a diversity of issues, including the protection of hugely successful television reality show formats, and the ethics of patents for pharmaceuticals to cure diseases suffered disproportionately by citizens of poor or emerging economies.

The Centre for Intellectual Property Policy and Management (CIPPM) at Bournemouth University was established in 2000. It has two joint directors, Professor Martin Kretschmer and Professor Ruth Soetendorp. Membership of the centre is drawn from academics and industry,

It is necessary to understand how IPR *law* works to obtain the right, as well as how IPR *management* works to make money from IPR.

commerce and practice. CIPPM's ethos is to locate IPR thinking in the context of the disciplines with which it shares a symbiotic relationship: socio-economics, politics, management and education.

CIPPM works through its programmes of accredited learning and teaching, research activities and consultancy projects. Undergraduate and postgraduate programmes carry accreditation from the UK Law Society and the Joint Examination Board of the Chartered Institute of Patent Attorneys and Institute of Trade Mark Attorneys (CIPA/ITMA). Recent recognition of market demand for short, intense and very focussed IPR education has led to a Postgraduate Certificate in Intellectual Property (PGCert IP). In three long weekends, over three months in spring, with additional online learning support, the PGCert IP can be achieved. The award grants exemption from CIPA/ITMA foundation level examinations and, at the same time, is sound grounding for anyone looking to develop their career in IPR management. It can also be the first third of a full Master's qualification.

CIPPM works globally through involvement in the academies of the European Patent Office and the World Intellectual Property Organization, and has taught across Europe, the former Soviet Union, the United States, Japan, China, India and Australia. CIPPM takes great delight in welcoming international visitors to its academic programmes and symposia. In 2005/6 CIPPM won the prestigious Informa World Leaders Prize for Intellectual Property Education. **RG**

¹ 'IP in the research context', an online resource produced by Epigeum, the e-learning spin out of Imperial College, London:

<http://www.epigeum.co.uk/products.htm#IP>

² WTO and the TRIPS Agreement: http://www.wto.org/english/tratop_e/trips_e/trips_e.htm



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Global network of IP academies launched

A global network of academies dedicated to the teaching of intellectual property (IP) was launched at a meeting convened by the World Intellectual Property Organization (WIPO) and the National Institute of Industrial Property Office (INPI) of Brazil earlier this month in Rio de Janeiro. The global network, which includes some ten educational institutes dedicated to teaching, training and research into IP at the national level, is designed to enhance international cooperation and strengthen the delivery of IP education. This significant development will boost access to IP learning and strengthen the IP human resource base in all regions. It further reflects the growing recognition by policymakers around the world of the pivotal importance of establishing IP systems and acquiring IP expertise to promote national development strategies.

The International Symposium on Intellectual Property Academies, convened in Rio de Janeiro from 21-23 March 2007, discussed and shared experiences and strategies for promoting IP education. It also brought together representatives of various IP academies, training centres and research institutions, including the Intellectual Property Institute of Australia (IPRIA), National Institute of Industrial Property (INPI) of Brazil, State Intellectual Property Office (SIPO) of China, State Intellectual Property Office (SIPO) of Croatia, Cuban Industrial Property Office (OCPI), Mexican Institute of Industrial Property (IMPI), International Intellectual Property Training Institute (IIPPTI) of the Republic of Korea, as well as the African Regional Intellectual Property Organization (ARIPO), the European Patent Academy and the WIPO Worldwide Academy.

Participants recognised the important role played by IP academies as the primary promoters of IP education, training and research to diverse groups. The interdisciplinary nature of IP was emphasised as was

the need to promote IP education beyond law schools and the legal community – in engineering, sciences, research and development institutions, management, and finance sectors, for example.

Participants agreed that the establishment of the global network will enhance international cooperation in the field of IP education and will facilitate the development of effective strategies to address the common challenges and tasks confronting national IP academies. In a joint declaration, the meeting called on others to join in the global effort to promote IP education. The group also expressed a commitment to undertake a benchmarking exercise of its activities to demonstrate the relevance of its work for national and regional development.

The WIPO Academy was requested to establish an electronic forum to provide information about educational training and research activities and to promote the free-flow of IP educational materials. The group also agreed to carry out a study on the compatibility of e-learning management platforms, to provide translation services on IP educational materials and create an electronic publication on methods and policies on IP education and research. The group also undertook to explore the possibility of creating an International Journal on Intellectual Property and Innovation.

The global network of IP academies decided to set up a small secretariat led by the WIPO Academy together with Brazil where the initial meeting took place and China where the next meeting will be held in 2008. **RG**

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A global praxis: reflections on three international continua in research ethics

Edward Gabriele reflects on contemporary issues in research ethics confronting international institutions.

Praxis and the world of research ethics and integrity

Praxis is one of the curious vocabulary words confronting those in the social sciences and the humanities.¹ The term is an important one. In brief, it means 'action in reflection'. It is the dynamic that occurs when individuals take the time to reflect critically upon experience for the ongoing development of experience itself. In the discipline of philosophical, practical and professional ethics, praxis is the pre-eminent methodology for engaging in the first and most important question of ethics itself, namely 'What's happening?' Praxis is designed to lead to insight. To enter into the experience of insight, there is a need to take considerable time to reflect on 'what is', to consider the wider issues, and then to proceed toward 'what might be'.

In the world of research integrity and specifically in terms of the protection of human research subjects, there is an important, indeed urgent, need to engage in ongoing ethical praxis, namely to observe critically and reflectively what is occurring and to ask what is the meaning of it all. Incidents of research misconduct and failures to protect the rights and welfare of human subjects require substantive engagement imbued with greater insight in the hope of a better future. Unfortunately, in the last ten years, there have been far too many instances of non-compliance, ethical breaches, and human tragedy. The response many times has been an expected rush toward greater regulatory oversight, new administrative requirements, or stricter standard operating procedures. One would expect that such initiatives would solve any and all future problems. However, that is not the experience. Indeed, misconduct and ethical breaches continue. The continuing occurrence of such difficulties in research integrity and human subjects protections invite the professional community to consider and wonder reflectively as to what are the underlying or even more primal issues and



how they might be addressed more effectively. This need is not the domain of any one nation or culture. The need for a substantive ethical praxis in research is a global need and one that concerns every nation and culture. To bring this into high relief, it may be helpful to consider three representative continua important for the unfolding future of a global sense of research ethics and integrity.

From regulatory style to ethical substance

Few individuals need a review of the problems in research ethics and human subjects protection over the last ten years. Inadequate and uninformed consent, fabrication and falsification of research data, financial conflicts of interest and undue influence, administrative non-compliance, and failures in oversight are well known problems. Many of the difficulties in the recent past were not the result of malfeasance or improper motivation. Yes, some were; but not all. Many were due to a lack of education; in other instances, a lack of research monitoring and ethical assurance. One understandable response has been a swift, sometimes too facile, rush to enact new policies or regulations, new mechanisms of audit, greater stringency etc. In response, several years ago the United States initiated a new system whereby institutions give their assurance of compliance with ethical regulations. In addition, other initiatives in the States have led toward new phenomena such as the establishment of robust human research protection programmes, rigorous certification programmes of education and training, and stringent programmes of accreditation

in research integrity and human research quality improvement.

Such measures are laudable and have been very appropriate. However, for those who study the life of institutions, the emergence of these phenomena gives rise to various questions. What is the overall impact of these initiatives? How effective will they be in the long run not only to avoid risk but more importantly to promote growth and ethical deepening? The initiatives are too new to be studied for longitudinal efficacy. However, the real importance of these initiatives, despite how they may be judged in later decades, is that they represent a search for authenticity, for transparency, for validity, for ethical substance.

The world of research ethics today is caught in a continuum between the establishment of new styles of regulatory structures and the greater need to seek out the substance of ethical development within institutions as well as within the persons of those who lead research efforts. The ethical challenge is to prefer substance not style, and to build programmes and policies that are as much about proactive development as they are about risk management. Above all, there is a need to establish substantive programmes that have real meaning in the long run.

From power to service

To meet the challenges within research ethics and human subjects protection today, there is a need for clarity in leadership. With the advent of new programmes of assurance in the United States and around the world, new avenues of educational certification, and the rising growth of resources for objective and sound institutional accreditation, a whole new category of professional has been born in research compliance and research integrity officers. With the rise of these new leaders, there is a growingly serious call to examine the posture, philosophy, motivations, academic credentialing, professional certification, personal growth and development, and ongoing evaluation of these individuals and their contributions.

The need for a substantive ethical praxis in research is a global need and one that concerns every nation and culture.

Human beings process information in terms of behaviour in diverse ways. Scholars have pointed out that humans seek pleasure and avoid pain either by eliminating risks or by seeking advancement. In other words, as modern terminology would name it, the human animal follows pathways that can either be reactive or proactive. Within this complex continuum, there are other factors such as co-dependence, self-esteem issues, the need for control and power, and a wide variety of other human foibles that make this process even more complex than it naturally is. As some have observed conversationally, an underlying 'function creep' of power-quest or personal validation is skewing the leadership style of research integrity and human research officers.

Clearly, there is a need to ensure that institutions trust the ethical conduct of research to those who have a clear vision and the moral stamina to set boundaries. However, this clarity is not the total picture. There will always be a need for rigorous and clear oversight; yet this is not the same as creating a staff of enforcers. Human culture yearns for true democratic action, responsible freedom, collegiality, partnership, relationship, and empowerment. To become a leader in a substantive research ethics environment means that one must absolutely resign the temptation to power and aggrandisement, and choose with clear deliberateness the posture of servanthood. Many years ago, a wise and prudent leader observed that leadership is exercised in three ways: by direct order or 'fiat', by exhortation, or by example. Some situations clearly call for direct orders. All people benefit from exhortation. However, adults are led best by presence, by solidarity and by example.

From *regula* to *ethos*

When most individuals hear the word 'ethics', the inherent images that arise are those associated with legal adherence. Ethics is often interpreted to mean something about obedience to regulations. In research, it is often presumed to be about compliance. However, it is important to remember the roots of these terms. *Regula*,

in Latin, means a measuring rod. It is observable, behavioural. In English, besides the term 'ethics', we also speak of an 'ethic'. An ethic is a pattern or image such as the ethic of fair play etc. Ethic is a type of moral image that individuals are meant to live up to. This is somewhat different from but is related to ethics-as-*regula* as previously discussed. Yet neither of these terms captures adequately the origins of the term 'ethics'. *Ethos* is a Greek term meaning the fundamental character of a person or an institution. It is deeper than behaviour. An ethos is not achieved simply by behavioural, legalistic, or even moralistic adherence to the rules. It is not about an image one must live up to. Ethos is about the internal self that one is, and this is precisely what might be considered as the ultimate challenge of research ethics today.

Institutions and professional personnel often cite what is experienced as an over-regulation of research. Indeed, in the last decade the world of research has seen a monumental proliferation of policies, regulations, guidances and restrictions. This is completely understandable given circumstances. However, ethos requires something far deeper, far richer, far more exacting – but ultimately far more human than regulatory minimalism. Institutions must move from *regula* to *ethos*, from compliance to integrity, from keeping the rules to embodying the values as a culture of research. It is easier to be a community of compliance. Being a culture or community of integrity requires commitment, vision, dedication, critical assessment on the level of personal values and not just behavioural conformity. Historical problems in research integrity often are the result of a lack of education. Yet the law of averages and simple common sense tell us that there are still the problems that arise from the less than perfect sides of our nature: greed, notoriety, possessiveness, and that final lust that is power and self-aggrandisement. To be caught up in the vision of true research ethics means to take the bolder and more difficult steps toward values formation and personal change of life both for individ-

iduals and the group as a whole. But is there any other choice if we are looking for long-lasting substantive effects for research efforts around the world that truly are both human and humane?

The research enterprise as a zone of cultural contest

A number of years ago in doctoral studies, I was struck by a professor's comment that ritual is a zone of contest where a culture's values are wrestled. That image of the wrestling ring has never left me. Ritual is an organised pattern of behaviour that expresses meaning. This supple definition can be applied to an almost infinite number of situations, even the environment and activities of research ethics. Ritual involves standards, procedures, and visible behaviours. In research ethics, the competing and sometimes conflicting values of the culture of research, and those of a specific institution, are made visible and wrestled. The world of research ethics today is a zone of contest in which the 'self', perhaps the soul, of the culture of research is being wrestled and fought over.

As those who have a large investment in the benefit that research brings to the human race, we are well advised to take up the 'practice of praxis' and discover what meanings are being expressed about research in our institutions. Sometimes the view may be tense and harsh. At other times, like a birth, we can be caught up in the agony of something new coming into being. Without question, the wrestling-watch is an important and critical task if we would be faithful to the mission that is ours. That mission is never easy, many times exhausting, but always worthy though demanding – the mission to call the attention of the research culture to that which is the best, for the good of those who look to genius for life and meaning. RG

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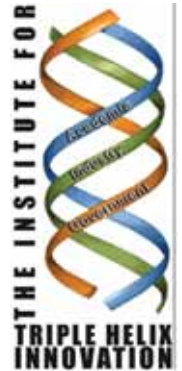
¹ The article is a summary of the author's recent Visiting Scholar Lecture in Research Ethics at the University of Bristol, UK. The opinions in this article are those of the author and do not reflect the official policies of the University of Bristol or the institutions the author serves.

Triple helix headlines and highl

The Institute for Triple Helix Innovation is designed to foster seamless, interdisciplinary collaboration between public, private and academic research sectors. By exploring critical interfaces between government, academia and industry, the Institute aims to increase access to global scientific expertise, quantify new collaborative models, promote evidence-based product development, and investigate new paradigms for innovation. In each issue of Research Global, **Leigh Jerome** will provide highlights of emergent items, products, events and research related to cross-sector, multi-disciplinary research and development.

For more information, visit: <http://www.triplehelixinstitute.org>

Contribution ideas for this column can be emailed to: info@triplehelixinstitute.org



The international Triple Helix VI Conference, organised by National University of Singapore (NUS) Enterprise, was held in Singapore on 16-19 May 2007 to analyse the interaction between university, government and industry and its influence on the economic development of specific regions. The conference theme was 'Emerging Models for the Entrepreneurial University: Regional Diversities or Global Convergence'. Over 300 participants interacted on issues related to the triple helix concept in an exchange of ideas, methodologies and outcomes, in order to innovate and influence practice and policymaking. This conference was the sixth in a series of biennial conferences that started eight years ago. For further information, please visit:

<http://www.nus.edu.sg/nec/ TripleHelix6>

A 2006 report from the University of Cambridge, UK analyses six current cross-sector partnerships in South Africa and Zambia. Cross-sector partnerships between communities, corporations, governments, donors and civil society organisations are being promoted as means for sustainable development. However, there is little solid research to indicate which partnership models have the greatest potential to eradicate poverty. The report, *Understanding Cross-Sector Partnerships for Development*, notes in its key findings that most of the partnerships studied had not developed core principles for working together or established good communication strategies. The report states that, in particular, it is vital to understand the context and incentives for part-

nerships, as this will help with solving problems that may occur. Further study of cross-sector partnerships is also urgently encouraged. Other important recommendations and potential problems are outlined at:

<http://www.id21.org/society/s8bmr2g1.html>

'The Promise and Perils of Technology Transfer', an article published in the *San Francisco Chronicle* on 7 March 2007, reports on the Association of University Technology Managers meeting in San Francisco where discussions spanned issues related to both the upside and the challenges of technology transfer. The value of tech transfer to the knowledge economy, as a stimulus for discoveries and innovation, is considered. However, the article goes on to discuss how conflicts of interest and changing university roles may pose real threats to traditional educational goals. The full article can be read at: <http://sfgate.com/cgi-bin/article.cgi?f=/c/a/2007/03/07/BUGCHOG F0D1.DTL>

The Creating Children Friendly Cities (CCFC) Conference held in Sydney, Australia in October 2006 called for an end to the 'silo mentality' and identified the urgent need for collaboration between researchers, industry, and all levels of government to respond to the needs of children and youth living in urban areas. The outcomes and direction statement were finalised in March 2007. The report outlines findings and recommendations related to cross-sector collabor-

ation to create child friendly cities. The full report can be accessed at <http://www.aracy.org.au/AM/Common/pdf/papers/CCFCFinalOutcome.pdf>

As part of its 'Learning without Barriers/ Technology without Borders' symposium series, the MIT-Microsoft iCampus Alliance is bringing together leaders from industry, government and academia to focus on how innovations in educational technology can help to prepare students in engineering, mathematics and science to face the challenges of an increasingly global economy. In the March 2007 panel discussion 'Roles of Industry, Academia, and Government in Addressing Competitiveness through Education and Technology', participants described how learning must engender innovation. The video of the panel discussion provides interesting perspectives on this issue and points viewers to other videos in the series, and can be viewed at: <http://mitworld.mit.edu/video/427>

150 experts came together for the government partnership symposium 'Enabling Medical Innovation through Intellectual Property: From Diagnosis to Therapy' at the Department of Trade and Industry (DTI) Conference Centre in London on 1 March 2007, to discuss the current intellectual property issues in the healthcare technologies of regenerative medicine and genetic diagnostics. Delegates ranged from university technology transfer offices, NHS Innovation hubs, the UK

Genetic Testing Network, industry, academia, and Department of Health, DTI and law firms. For further details, visit: <http://www.ipo.gov.uk/press/press-release/press-release-2007/press-release-20070326a.htm>

An article in the *Christian Science Monitor*, 14 March 2007, 'Why Google put a research lab in Poland', describes the benefits that outsourcing and globalisation can yield for some countries as US companies find themselves searching for employees to supplement the insufficient supply of US graduates with strong maths and science training. Western technology firms have for years come to Eastern Europe seeking computer-science talent, but now the region's universities are producing so many top programmers that many firms are changing tack – and setting up shop at the source. The full article can be read at: <http://www.csmonitor.com/2007/0313/p01s04-woeu.htm>

How important is geography to innovation and adoption? New innovations have a much higher rate of success in Silicon Valley than elsewhere in the US. Perhaps this is because one quarter of all venture capital in America goes into Silicon Valley, but other triple helix factors play a role as well. In 'When It Comes to Innovation, Geography Is Destiny', a *New York Times* article published on 11 February 2007, G. Pascal Zachary relates that the lesson to be learned from Apple, Google, eBay, Netflix and Silicon Valley in general is that where you live often trumps who you are. The full article is available at: <http://www.nytimes.com/2007/02/11/business/yourmoney/11p1ng.html?ex=1177732800&en=49124092d99309a4&ci=5070> (free registration required)

The Government-University-Industry Research Roundtable (GUIRR) is a chartered organisation under the US National

Academies of Science. Their mission is to provide a forum, three times a year, for senior members of government, university and industry to define and explore critical issues related to the national and global science and technology agenda, to frame the next critical question stemming from current debate and analysis, and to incubate activities of ongoing value to the stakeholders. More information is available at: http://www7.nationalacademies.org/guirr/About_GUIRR.html

Peculiarities and Relevance on Non-Research-Intensive Industries in the Knowledge-Based Economy, the final report of the 2002-2005 project Policy and Innovation in Low-Tech (PILOT), summarises a series of case studies on low-tech companies from eleven European countries, investigating their value chains and regional networks. The full report can be accessed at: <http://www.pilot-project.org/publications/finalreport.pdf>

A report prepared by the OECD Secretariat and the Conference Board of Canada, *Tax Incentives for Research and Development*, asserts that, given the contribution of R&D to productivity growth, economic performance and the achievement of social objectives, governments have a significant role in encouraging appropriate R&D levels and expenditures. The choice of R&D tax incentives is dependent on country-level variables such as overall innovation performance, perceived market failures in R&D, industrial structure, size of firms and the nature of corporate tax systems. The full report can be read at: <http://www.oecd.org/dataoecd/12/27/2498389.pdf>

A joint Association of American Medical Colleges (AAMC)/US Food and Drug Administration (FDA) report highlights that collaboration is the key to overcoming obstacles to drug development. Industry, academic medicine and government researchers are calling for new and increased collaborations among pharmaceutical companies, academic researchers, and regulatory agencies to strengthen the processes that move scientific breakthroughs to novel diagnostics and therapeutics that benefit the public. The report, *Drug Development Science: Obstacles and Opportunities for Collaboration*, identifies several opportunities for enhanced collaborations between industry, academia and government which would greatly increase the pool of shared knowledge, stimulate collaborative research and development across the sectors, and enable learning from failures at every stage of drug development. Further details can be found at: <http://www.aamc.org/newsroom/pressrel/2005/050815.htm>

A group of large technology companies, universities and professional associations are creating a new organisation to support and promote research into ways that technology can increase productivity and innovation in the economy's service sector. The creation of the Service Research and Innovation Initiative was officially announced on 28 March 2007. It represents the latest step made by technology companies and some universities to promote an emerging field that is being called 'service science', the aim of which is to try to improve productivity and accelerate the development of new offerings in services. More information can be found at: <http://www.nytimes.com/2007/03/28/technology/28service.html?ex=1175832000&en=b5ed137f14983062&ci=5070&emc=eta1> (free registration required) **RG**

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International round up

European Association of Research Managers and Administrators (EARMA)

Registration is now open for the 13th EARMA Annual Conference 'Building the European Research Area: The Responsibilities of Research Managers', which will take place on 29 June-1 July 2007 at the University of Warsaw.

On Friday 29 June, a pre-conference workshop will take place on the subject of the NIH (National Institutes of Health) grant application process. This is a unique opportunity for European Research Managers and Administrators to develop new skills necessary to support researchers in their home institutions interested in applying for NIH grants.

As a key instrument in the realisation of the European Research Area, the 7th Framework Programme and its objectives feature prominently in the conference programme.

The event will also look into the broad policy and other factors affecting the international mobility of researchers, international research collaboration, and the international dimension of FP7.

Professor Jerzy Buzek MEP, the European Parliament Rapporteur for the 7th Framework Programme, will open the conference, and a keynote speech from a representative of the Science and Technology Policy Division, OECD, will follow. There will be a number of speakers from DG Research, and guest speakers from North America will provide their views on various aspects of research management issues from across the Atlantic.

Full details on registration, accommodation options, fees, venue and programme can be found at <http://www.earma2007.pl>

The **UK Patent Office**, which was established in 1852, has adopted a new name. It is now the UK Intellectual Property Office (from 02/04/2007), following last year's Gowers Review of Intellectual Property (see *Research Global*, Issue 15 – March 2007). It is the 'official government body responsible for granting Intellectual Property (IP) rights in the United Kingdom'. More details are available at www.ipo.gov.uk

SRA International

The 2007 SRA International Annual Meeting will take place from 13-17 October at the Gaylord Opryland Resort and Convention Center, Nashville, Tennessee, USA.

New Knowledge Transfer website launched

A new website where users can share good practice in Knowledge Transfer has been launched at www.ktgoodpractice.org. Via the website, facilitated through the Higher Education Funding Council for England (HEFCE), Knowledge Transfer Professionals and their business and community partners have access to (and may submit) good practice recipes, illustrative case studies and participate in discussion forums which include hosted sessions.

Australasian Research Management Society (ARMS)

The ARMS national conference will be held in Adelaide from 19-21 September 2007. The conference is titled 'Fusion 2007: Collaboration with Impact'.

Visit <http://www.sapmea.asn.au/fusion2007/index.html> to register interest and receive a conference pack.

Association for University Research and Industry Links (AURIL)

The 2007 AURIL Annual Conference will take place on 11-12 October at the Clarion Hotel, Cork, Ireland.

The theme of the conference will be 'The Business Facing the University – Building the Profession'. Further details will be available on the AURIL website at www.auril.org.uk

INORMS 2008 – 'Exploring Similarities: National and International Research Management and Administration'

The next meeting of the International Network of Research Management Societies (INORMS) is planned for 15-18 June 2008. The conference is being organised by the UK's Association of Research Managers and Administrators (ARMA) and will be held in Liverpool, UK. Further details can be found on the enclosed flyer, and more information will be made available in future issues of *Research Global*, and on the INORMS website (currently under construction) at www.inorms2008.org

African Knowledge Transfer Partnerships (AKTP)

A report by **Tina Edewor**

Three countries in sub-Saharan Africa, namely Uganda, Ghana and Nigeria, are set to form their own African Knowledge Transfer Partnerships (AKTP) programme. The AKTP is modelled after the successful Knowledge Transfer Partnerships (KTP) programme in the United Kingdom, which has been running for around 30 years.

Over the years, academia in sub-Saharan Africa has been criticised for not serving the needs of their respective countries and also for not realising the need to source funding from the private sector. The AKTP aims to bridge this gap between academia, public sector organisations and private sector organisations. It will also help to improve the relevance of Higher Education Institutions' (HEIs) curricula to the needs of public and private sector employers.

The AKTP will promote joint research work in the area of science and technology, products and services development. It intends to create opportunities for fresh graduates to bridge the gap between academia and work. It should also help in facilitating wealth creation as businesses will be more competitive, productive and profitable as a result of knowledge transferred from academia to the business sector.

British Council Nigeria recently organised a series of workshops in Lagos and Abuja to promote and introduce AKTP to Nigerian HEIs and the public and private sector organisations. Among the attendees at the two workshops were Peter Upton, Country Director, British Council Nigeria, Winnie Eley, Deputy Country Director, British Council Nigeria, and Sam

Participants at the AKTP Lagos workshop



Harvey, Director, British Council Lagos.

The Lagos workshop was held on 13 February 2007. At the workshop Dr Kadir Hamzat, Commissioner for Science and Technology, Lagos, emphasised the need for HEIs and businesses to take advantage of the AKTP initiative to contribute to the development of a knowledge economy in Nigeria. At this meeting there were 15 representatives consisting of five universities, seven companies and three government agencies, which included the Small Medium Enterprise Development Association of Nigeria (SMEDAN), Standards Organisation of Nigeria and the Lagos State Chamber of Commerce and Industry.

The Abuja workshop was held on 15 February 2007. At this meeting there were representatives from eight universities and five government agencies/institutions. Dr U.B. Bindir, Director of Technology Acquisition and Assessment at the Federal Ministry of Science and

Technology, gave a keynote address and presentation on Nigeria's interest in setting up science parks. Dr Bindir acknowledged that AKTP will be an additional tool in developing science and technology in Nigeria. He also commended the British Council for the AKTP initiative. Dr Abdulkarim Obaje, Chief Project Officer, National Universities Commission (NUC), added that the NUC would be willing to support the AKTP to ensure sustainability beyond its pilot stage.

The workshops helped facilitate a wide range of discussions on the concept, benefits and sustainability of the AKTP project. The pilot phase is planned to commence in May 2007, after which there will be evaluations to assess the impact and sustainability of the project.

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European News

The **European Research Council (ERC)**, an initiative funded by the 7th Research Framework Programme (FP7) of the European Community, had its formal strategy confirmed in March 2007. It is the 'first pan-European funding agency for frontier research in all fields of knowledge, from the Humanities and Social Sciences, to the Life Sciences and to the Physical and Engineering Sciences'. Various research grants are to be awarded by the ERC to complement its aim of promoting 'leading-edge, individual investigator-initiated research and thus contribute to the creativity and competitiveness of Europe'. For further details, visit <http://erc.europa.eu>

The **Erawatch** website has been launched by the European Commission to 'support policy making in the research field in Europe, by facilitating a better knowledge and understanding of national research systems, policies and the environments in which they operate'. It is intended that Erawatch will collect information on 'national and regional research profiles, organisations, programmes and documents', and so particularly assist 'policy analysts and policy makers in developing more effective research policies'. It is advertised as offering for the 'first time, in one single place, comprehensive and timely information on the research systems of all EU Member States, countries associated with the Framework Programme as well as the US, China and Japan'. More information can be found at <http://cordis.europa.eu/erawatch>

Integrating **intellectual property rights** in technical education

For most staff and students in higher education institutions around the world, their knowledge of intellectual property rights (IPR) is something that occurs incidentally, and post-project completion. In India however, new trends are emerging as efforts are being made to incorporate IPR thinking from the start of academic projects.

Siddharth Jabade, Hemant Abhyankar and Prabuddha Ganguli discuss.

The approach

IPR provides a legal framework that facilitates innovation by granting limited protection to the innovator against illegitimate copying and unauthorised use, in return for the innovator disclosing his creation to the society. The IPR system in effect provides a platform for equitable sharing of knowledge so that others have access to the protected knowledge for further legitimate development, with a proviso that any exploitation of IPR is done with the consent of the IPR holder, with reasonable benefits and returns to him.

IPRinternalise, the present model, seamlessly integrates IPR in technical education in a well-structured IPR process providing an experience-led 'gurukul-like' framework with value added learning.¹ The problem-based 'learn as you do' system naturally induces a knowledge seeker to explore and exploit the richness of existing knowledge (prior art), contextually build on it and provide technical solutions to problems as he assesses it, and in the process inculcates the necessary IPR skills to create and protect his creations. This problem-based approach to IP for a knowledge seeker is 'stress-

and burden-free' but 'relevant and need-based' as he is drawn into it by a natural tide originating from his immediate requirements as is depicted in **Figure 1**.

The system is designed to catalyse the initial creation of an intra-institutional core group of IP-literate professionals drawn from faculty and technical staff who voluntarily opt to go through the process. This ensures continuity of the programme and assists in initiating a multiplier effect in which an institution's 'core group' train 'core groups' in other institutions. Such a peer-to-peer transfer of purpose and

benefit sharing etc. as illustrated in **Figure 2**.

The core group as illustrated in **Figure 3** is exposed to the basics of IPR in structured training programmes, taught how to identify problems, how to conduct prior art searches, how to design inventions to solve the identified technical problems, how to design inventive steps in an invention, how to read patents and interpret claims etc. The IP-literate core group then guides students on how to approach their projects, which the students are expected to complete formally as part requirement of their Bachelor's or Master's Engineering Degree Programmes.

The students are drawn into brainstorming sessions to sensitise them to their environments, to enable them to critically observe and select problems that appeal to them. They are then initiated to the IPR process by the trained IP-literate core group through global literature including patents search. The students then seek inventive solutions to the identified problems keeping in mind the relevant prior art. As the project progresses, the IP core group evaluates the results for appropriate protection by way of patents and design registrations (**Figures 3-4**).

The IP core group with support of their respective institutional management also serves to identify possible partners for commercialisation of the inventions, which are outcomes of the student projects. These provide practical opportunities to the IP core group to further their learning and skills in the process of technology transfer and commercialisation of their acquired IP.

IPRinternalise naturally induces students and faculty to view their work critically from three integrated perspectives, *viz.* novelty, inventive step and utility. It leads them to analyse their work not only based on novelty which is typical among academics, but also on the inventive step which is probably not obvious to a person skilled in the art thereby helping them to develop their ability to conceptualise a problem, identify facts and design technical

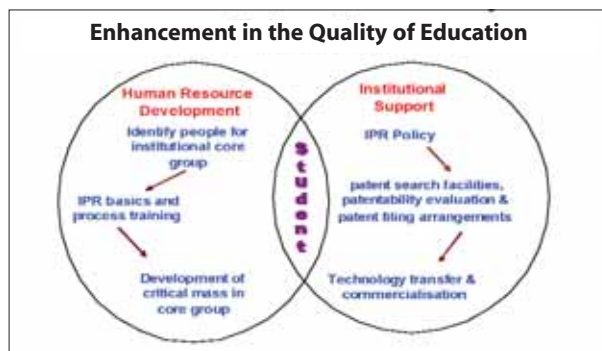


Figure 2: IPRinternalise model: Enhancing Quality of Technical Education

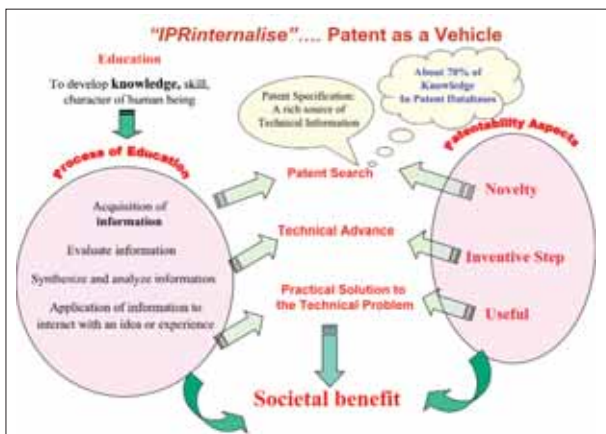


Figure 1: IPRinternalise model

experience encourages inter-institutional group learning among the trainers thereby ensuring continual skill growth within institutional networks, which establishes a critical mass of IP-trained personnel in a region. This process assumes initial support from the management of the institution in which institutional IPR policy is set up holistically addressing all aspects of IPR including ownership of inventions, rules for transfer of technology,

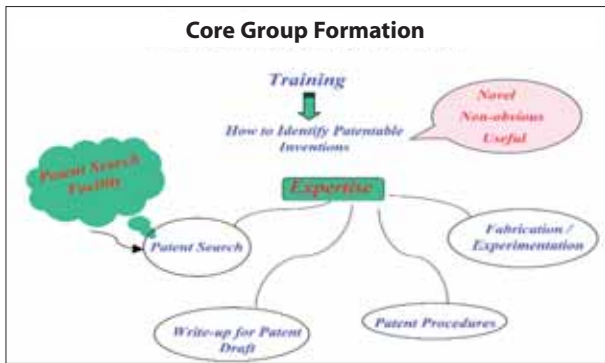


Figure 3: IPRinternalise Intra-institutional Core Group

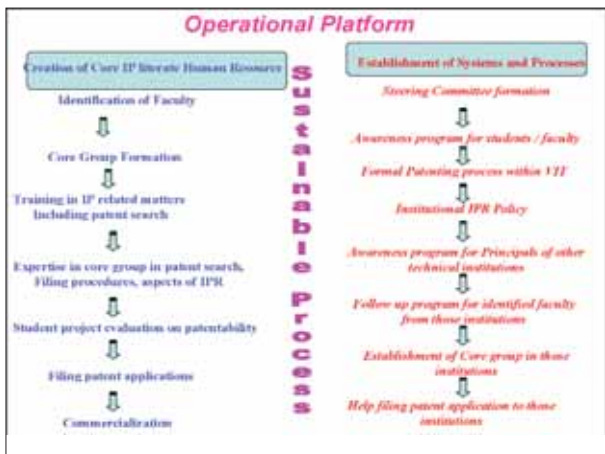


Figure 4: Operational Platform of IPRinternalise

solutions through their inventions.

Achieving a critical mass of IP trained personnel has eluded previous efforts due to lack of continuity, inappropriate selection of the people to be trained, infrastructure, funds, etc. Most capacity building programmes or ‘train the trainers’ programmes have failed as appropriate people who would carry on the process in the long-term are generally not identified to participate in such training programmes. Such a shortcoming is recognised in IPRinternalise. One of the best options is to follow a ‘policy top-down’ and ‘working bottom-up’ approach in which the senior management of institutions are exposed to the concept and benefits of the IPRinternalisation process. Such peer group-to-peer group transfer of belief and practice assists in confidence building within the management of institutions. The enlightened senior management, as believers in this process, identify appropriate personnel from their respective institutions to form their core groups for training

and implementation of the IPRinternalisation process in their institution. An intra-institutional IP core group once trained is ready to take on additional responsibility to create and train IP core groups drawn from other institutions.

The interoperable and networked Communities of Practice of IP-literate core groups is an easily scalable working model. It addresses most of the previously experienced shortcomings of IP capacity building programmes and demonstrates an elegant and cost-effective process to achieve critical mass of IP-networked institutions and simultaneously induces students to make IP a natural relevant process in their technical education and in their future professional lives.

IPRinternalisation process at the Vishwakarma Institute of Technology, Pune
Vishwakarma Institute of Technology, Pune, India (VIT Pune), is a leading centre for technical education offering courses in Bachelor’s and Master’s Degree in Engineering with a student strength of 2700, faculty strength of 213 and technical staff of 42.

VIT Pune embarked on the IPRinternalisation path in April 2005 with a familiarisation programme for the senior management, faculty and technical staff, conducted by Professor Prabuddha Ganguli. This was followed by the formation of the IP core group through voluntary participation of the faculty and technical staff of the institute.

The IP core group was subjected to intense IPR sessions by Professor Siddharth Jabade on the basics of IPR, techniques and websites for prior art search, how to read and analyse patents, how to identify problems, suggest solutions that may have an inventive step, design experiments keeping the requirements of novelty, inventive step and usefulness as key requirements for patentable inventions etc. The IP core group then teamed up with a set of students in their projects, which is a part requirement of the degree programmes. They facilitated the students to identify problems especially based on their native environments and to conduct prior art searches. They helped the students to design experiments etc. and, at an appropriate stage, evaluate the project for patentability and even file patents. During the period April 2005–April 2006, VIT Pune also developed its institutional IPR policy, which was ready for testing with the set of inventions that were already identified from the students’ projects. These are presented as case studies in Table 1.

In April 2006, Professor Hemant Abhyankar invited principals, deans and senior management of 17 colleges in the State of Maharashtra covered under the Technical Education Quality Improvement Programme (TEQIP), a programme of the Government of India, to share VIT Pune’s working experience with IPRinternalise. Subsequent to the above familiarisation programme, three of the participating institutions formed their own IP core groups.

In October 2006, VIT Pune’s IP core group conducted training programmes on IPRinternalise in which the members of the three newly formed IP core groups participated, thereby expanding the community of IP core group practices to four members. By end of 2008, the network will integrate approximately ten

IPRinternalise naturally induces students and faculty to view their work critically from three integrated perspectives, viz. novelty, inventive step and utility.

Table 1: Student Projects in the IPRinternalise Process at VIT Pune

| Name of Inventor | Title of Invention | Patent application No. | Summary |
|--|--|------------------------|---|
| Amol Kadam | Novel Milk Extracting Device | 1613/Mum/2006 | The present invention provides manually operable, simple and cost effective milk extracting device from animals obviating the use of pressure pulse generating means integrated in the vacuum line and electrical intervention, just appropriate for rural application. |
| Abhilasha Katariya, Manasi Honrao, Prof. Phakatkar | Production of Paraboloidal Surfaces | 1445/Mum/2005 | The present invention relates to a device and method for producing paraboloidal surface. The judicious selection of resin formulation and the process of the present invention results in substantially reduced time of the said surface generation without maintaining hardener rich atmosphere over the surface. |
| Prafulla Kesari, Rohit Kadam, Sumeet Chordiya | Voice-Interacting-fare indication device | 616/Mum/2006 | The present invention relates to an electronic meter/device, when fitted to a hired transportation vehicle, is capable of calibrating, displaying in regional language, and voice play backing the fare, of the distance travelled by such transporting vehicle. There is inherent cross checking of the fare displayed and read. |
| Sanket Dodia, Rahul Bhat, Prof. (Mrs.) Mhetre | Telemedicine System on Vehicle | 615/Mum/2006 | The present invention relates to a novel telemedicine communication system in ambulatory vehicle with a capability of transmitting medical data using available local wireless network to the nearest hospital for substantially reducing time delay in medical attention in rural sector. |

institutions in the State of Maharashtra. In January 2007, this experience has been shared by VIT Pune with several Technical Educational Institutions in the State of Karnataka in a workshop that was held in Bangalore under the auspices of the State Education Department, Government of Karnataka.

Learning from VIT Pune's experience with IPRinternalise

One of the significant takeaways from this experiment in terms of human resource development is providing a natural platform for the participants to naturally inculcate in them a systematic process of enquiry. Participants also learn how patent information in combination with other literature can be strategically used to avoid rediscovering the wheel and possible infringement of others' intellectual property rights. The quality of students' project reports also is enhanced with relevant and critically analysed citations, and documentations. For the

IP core group, the process provides a channel for purpose-driven team working with continual upgrading of individual and group skills that is central for sustained growth of any institution.

For the participating institutions, IPRinternalisation draws the senior management in cohesive planning through the creation of comprehensive institutional IPR policy with its transparent implementation plans. Complex issues such as technology development and transfer, networking with other academic institutions and industry get attended appropriately as outlined in the institutional IPR policy.

It is important to recognise that IPRinternalisation emphasises the process of learning. It assumes that any patents or design registrations are only a bonus over the primary objective of seeding and creating purposeful querying minds.

The process is cost effective and scalable and

generates an operative platform for institutions to work in networked communities of practices. For policy makers, governments and funding agencies, IPRinternalise is a value-added process with high returns meeting all the basic needs and goals of education. Above all IPRinternalise paves the way to building a responsible ethical creative society. RG



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Prabuddha Ganguli is CEO of VISION-IPR, Mumbai, India. Email: pgang@mtnl.net.in

¹ Education as traditionally practiced in India, within its *gurukul* system through a process of 'doing' coupled with contemplation, was based on a process of cumulative experiencing leading to seeding of creative enriched minds, until the 'syllabus based' Western influence set in.

Open access to scientific research

Natasha Robshaw gives us a summary on the merits of open access publishing.

By necessity and design, traditional publishing models have imposed limits on access to scientific research. The nature of the printed page required that physical copies of reports on research be produced and distributed. In return for coordinating this service of distribution, publishers have traditionally acquired exclusive rights to research articles, with the result that they now control access to much of our accumulated scientific knowledge.

In recent years, it has become clear that the exclusive grip that publishers have on research prevents the market for subscription journals from functioning effectively. Subscription prices have been increased far in excess of inflation by publishers who know they have a captive audience of customers who require access to the latest research.

Meanwhile, the internet has revolutionised the way we share information, allowing for the dissemination of knowledge on a far wider scale than could ever have been imagined by the inventors of the printing press. The goal of the open access movement in scientific publishing is to permit anyone in the world to find and read peer-reviewed, scientific research articles online, and to use the contents in the course of further research, teaching and personal enquiry. The movement has inspired great support throughout the scientific community, because it frees access to knowledge and as a result accelerates the pace of discovery.

Researchers benefit directly when they publish in open access journals, because open access maximises the possibility that their research will be read, will be used, and will go on to influence other researchers, including those working in the developing world and in other disciplines who would have been unlikely to have had access to that research if it had been published via a traditional outlet.

Open access journals also provide a model

that allows for the publication of more incremental advances, including negative results, as long as the science is sound. This is vitally important, since currently a significant fraction of scientific findings never make it into a formal research paper, and so are unavailable to other researchers. Even more worryingly, if journals only publish 'exciting' results, the resulting publication bias has the potential to seriously skew the literature – something which has become a major cause for concern in the field of clinical trials.

Researchers need to have access to an unbiased view of the results of all soundly-conducted studies in order to have a full and unbiased picture of the state of current knowledge. Open access is a publishing model that can finally offer scientists that possibility, while also facilitating the development of text mining techniques, along with semantic web technology which can make the scientific literature more

comprehensible to computers, and so give researchers better tools to ask questions and test hypotheses with respect to the previously published literature.

Another important benefit of open access is that it makes the results of taxpayer-funded research available to those who paid for it, and – in the case of clinical trials – to those who participated in it. This increased transparency and accountability for the research community has the potential to lead to more informed debate in the public sphere, as well as better public understanding of, and engagement with, scientific and medical research.

Although the internet reduces the costs of distribution nearly to zero, the publication proc-

ess itself still involves substantial fixed costs for each article published, to ensure that thorough peer review is carried out, and the article is prepared in a format suitable for online publication. A successful business model for open access publishing that has emerged over the last few years is that these upfront costs of publication should be covered by a publication fee, payable for each article published. Open access publishers such as BioMed Central and the Public Library of Science offer such an article processing charge model, under which researchers typically pay out of research grant funds, or alternatively, institutions and/or research funders coordinate central payment of these charges, just as they currently pay centrally for access to subscription journals.

Articles still have to make it through the same rigorous peer review that they would in order to be published in a traditional journal. But, once the article has been accepted and the cost of publication has been covered by the publication fee, an open access publisher can

then make the official version of the article immediately and freely available online.

Open access is the way of the future for scientific publishing. It offers universal access to scientific results, creates more opportunities for articles to be cited, and better supports the needs of scientists in the developing world. It makes full use of internet technologies to give scientists better ways to view and analyse data, and allows researchers to publish data that would otherwise remain unavailable to others. Sustainable business models have now emerged to allow open access publishing to continue to expand so as to ultimately make all scientific research freely available. It is now just a matter of time before this dream becomes reality.

RG



Open access is the way of the future for scientific publishing.

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Capacity building in innovation, IP and technology transfer – **for neglected health needs**

For many universities, competence in innovation management is largely driven by self-interest – to generate income and protect intellectual property rights.

Rachelle Harris and colleagues at MIHR, however, suggest that universities also have an ethical responsibility to build capacity in this area.

A current debate receiving wide notice in the technology transfer community relates to the use (or misuse) of patents by universities in facilitating the development of and affordable access to medicines and vaccines for developing countries. A range of efforts are being undertaken to develop nuanced approaches which will use intellectual property (IP) to enhance industry's commitment to the development of new drugs and vaccines for developing countries, with a particular emphasis on diseases where the primary disease burden is in the developing countries.

The statistics are stark. While one-fifth of the world's population enjoys an average life expectancy approaching 80 years and a life comparatively free of disability, two-thirds of the world's population, living in the least well-off countries of Africa, Asia and Latin America, suffer overwhelmingly from the world's burden of illness and premature death. Each year, an estimated 15 million children die from infection and malnutrition – 40,000 children per day. The toll in illness and lifelong disability is a critical impediment to economic and social stability.

At current rates of mortality, Millennium Development Goals (MDGs) will not be realised for a majority of the world's population. There is an urgent need to identify structures and means to translate knowledge to effective intervention. This will require the strategic development of new tools as well as delivery strategies that achieve effective and sustained coverage in diverse cultural and economic settings. It also may require new forms of interaction between the research, health service and macroeconomic policymakers.

Experience from non-profit product devel-

opment public-private partnerships (PDPs) shows that IP rights can be used by the public sector, for example, to help attract private sector interest, mobilise the necessary funds, and ensure affordability and access to essential new health products. If universities adopt sound licensing practices, they not only can stimulate investment in research on diseases that primarily affect the poor but also ensure that the outputs of that research (i.e. products) are affordable and widely available in developing countries.

However, the negotiation of IP agreements can be complex. There are many kinds of agreements used to protect and manage IP including those for confidentiality, material transfer, development, co-development, and distribution, for example. The development of skills in IP management, negotiation and technology transfer allows institutions to bring locally invented technologies into use and to ensure they are affordable for the most impoverished populations. Congruently, the research of the UK Government's Commission on Intellectual Property

The development of skills in IP management, negotiation and technology transfer allows institutions to bring locally invented technologies into use and to ensure they are affordable for the most impoverished populations.

Rights (CIPR), UNCTAD-ICTSD, and the World Health Organization (WHO)'s Commission on IP, Innovation and Public Health (CIPIH) have collectively reiterated the necessity of investment in human resource training and protection of IP rights as key tools for creating an enabling science and technology (S&T) policy environment to promote innovation by 'stimulat[ing] investment in the basic infrastructure and provid[ing] incentives to entrepreneurs and researchers'.¹

New tools and approaches to capacity building

The skills of IP protection, licensing and technology deal-making form the contents of the new *Intellectual Property Management in Health and Agricultural Innovation: A Handbook of Best Practices*, jointly developed by the Centre for the Management of IP in Health Research and Development (MIHR) and the Public Intellectual Property Resource in Agriculture (PIPRA) – initiatives seeded by the Rockefeller Foundation to address inequities relating to IP.

In partnership with local research institutions and government bodies, MIHR runs technology transfer workshops in developing countries and organises conferences which bring together scholars and practitioners in technology transfer to learn from each other. MIHR is also developing a 'Sister Institutions' project (involving the concept of 'twinning' technology transfer offices in developing country research institutions with counterparts in first world universities to build partnerships in technology transfer), and is working with the Association of University Technology Managers (AUTM) to raise awareness of access issues in established university technology transfer offices and to develop model licensing terms for health-related patents.

MIHR has recently jointly developed the extensive *Handbook*, a reference tool aiming to

accelerate global efforts to address diseases of poverty, improve the transfer of information and know-how from industrialised to developing economies, encourage private sector research within developing economies to enter into local demand-led R&D partnerships for health and agricultural innovation, and improve prospects for joint ventures and directed investment to address global health problems.

The newly released *Handbook* (available from May 2007) represents the first comprehensive resource on IP management directed towards the health and agricultural needs of low- and middle-income countries and provides expert guidance to assist in developing new capabilities through use within training programmes, internships and as a manual and reference tool for practitioners. It includes essential training materials, including templates and case studies, and best practice guidance that supports delivery of the MIHR capacity building programme. MIHR will use training events as a base for the introduction of the *Handbook* through both introductory presentations and through integration of its contents into relevant teaching modules.

A number of foundations have contributed financially to this effort which is addressed to technology transfer practitioners, policymakers, scientists and leaders of research establishments. It will be available at subsidised prices, and will



be distributed for free in developing countries to the extent funds allow. It will also be available for free over the web, and a more interactive web version will debut in the summer of 2007.

The *Handbook* aims in the shorter term to provide IP Officers, Technology Managers and Research Administrators such as Contracts Officers the practical tools to manage the daily tasks associated with IP management. Not only is the broad context of the global health innovation system and its components discussed, but practical insights are shared to assist decision making for institutional policy development as well as to enable development of management and operational processes. By disseminating this book to practitioners and policymakers in both developed and developing countries, MIHR hopes to achieve three major long-term goals:

- **Training: an evolution in culture and practice** among public sector research institutions in low- and middle-income countries, the recipients of substantial international research grants, to enable the application of research findings to global health needs.

- **Advocacy: an improved appreciation of the role of technology transfer managers** and licensing executives from high-income countries in ensuring win-win outcomes when negotiating licenses with developing countries, or licenses that have potential health impacts on developing country populations, to ensure equitable outcomes and improved access to medicines.

- **Research: the evolution of sustainable and coherent national policies** for technology transfer in low- and middle-income countries to spur local public-private partnerships that can contribute to the development of affordable technological innovations in health (and to create positive spillover effects such as employment creation and economic growth).

Given universities' commitment to encourage the development of new technologies via patenting, robust policies in licensing are needed to assure that the poor will have access to medicines based on the universities' technologies. Potentially, these access policies developed by universities may, if they are practical, properly implemented, and publicised, become 'norms' that will be more widely adopted by the private sector. This *IP Handbook* aims to foster the development of these norms within the public sector.

To obtain a copy of the *Handbook of Best Practices in Health and Agricultural Innovation* please visit: <http://www.iphandbook.org> **RG**

¹ Report by the Secretary General, 'Promoting the application of science and technology to meet the Development Goals contained in the Millennium Declaration'. United Nations Economic and Social Council, Commission on Science and Technology for Development, Seventh Session, Geneva. 24-28 May 2004. 6

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Recent Publications

ACU Librarian, **Nick Mulhern**, summarises.

International

How Universities Promote Economic Growth

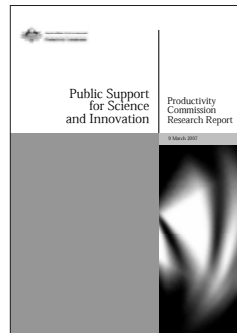
As noted in the last issue of *Research Global* (Issue 15 – March 2007) this title is now available from the World Bank. It is based on a symposium held in 2006 with the theme ‘University-Industry Linkages and Development’, co-hosted by the American University of Paris (AUP), the Social Science Research Council and the World Bank Institute. The contributed analyses are organised according to four principal levels. University-industry links (UILs) are considered in relation to national/government and regional policy, individual institutional practice, and corporate strategy. The national studies are particularly useful for outlining the discrete conditions in which links between universities and industry have developed, and the value therefore of locally-relevant initiatives. The effects of globalisation on intensifying competitive markets have been matched by the increasing impetus towards internationalisation in higher education. The different strengths and achievements of university-industry links, and the speed at which they have developed nationally, nevertheless remain distinct. In practice it is the idea and role of a university which is evolving as much a changed business environment, and one in which definitions of the ‘developing’ and ‘developed’ worlds are themselves no longer fixed. (The title is ‘part of a series of publications emerging from a study co-sponsored by the government of Japan and the World Bank to examine the future sources of economic growth in East Asia’, and is published under its Directions in Development (Human Development) series.) [Yusuf, S.; Nabeshima, K. (eds.); 978-0-8213-6751-3; World Bank; 2007 (www.worldbank.org)]



Australia

Public Support For Science And Innovation (Productivity Commission Research Report)

A major report has been published by the Australian Government's Productivity Commission, focusing on the benefits which arise from the public resources given to science and innovation and how these can be enhanced. (A draft report was issued last autumn, as noted with its objectives in *Research Global*, Issue 14 – October 2006.) This final report, now running to some 875 pages, includes rationales for public support and its resulting impacts, whether purely economic or social and environmental. Impediments to the ‘effective functioning of Australia’s innovation system’, and how that system could be improved, are analysed. Commercialisation, benchmarking, and funding levels are considered, particularly in relation to international indicators. The design of effective and supportive business environments (‘programs’), and the role of public sector research agencies is also examined. The balance of block and competitive funding is reviewed, particularly with reference to current funding methodologies. The Report’s detailed appendices are useful not only for comparative statistics on Australia’s achievement in R&D, and its productivity, but also the profile of the ‘science and innovation workforce’ on which it is based. The lessons of cost-benefit case studies which ‘attempt to estimate the value of research projects undertaken in public sector research agencies’ are summarised. Although acknowledging the direct benefits which existing public support has generated, the Commission identifies several areas for possible improvement, including ‘a sometimes excessive focus on the commercialisation stages of innovation, problems in scientific labour markets, inadequate evaluation methods and



problematic funding models’. Specifically in relation to the Cooperative Research Centres (CRC) program the Report argues: ‘there are complementary options for business collaboration with public sector research agencies and universities that could provide more nimble, less management-intensive, arrangements’.

[Australian Government Productivity Commission; 978-1-74037-225-1; Commonwealth of Australia; 2007; (www.pc.gov.au/study/science/finalreport/index.html)]

Canada

Profiling the Impacts of North-South Research Collaboration

A brief report from the Association of Universities and Colleges of Canada (AUCC) which ‘presents the key findings from AUCC’s analysis of universities’ research



collaboration for development’, exemplifying the ‘many high-level impacts that are mutually beneficial for researchers and institutions’. It is not an evaluative assessment of individual case studies, but rather an essentially descriptive report on how different types of impact (on policy, development, research capacity, innovation, etc.) were managed and achieved. [AUCC; 978-0-88876-238-0; AUCC; 2006 (www.aucc.ca)]

AUCC Submission to the Minister of Industry and the Minister of Finance on the Development of a Science & Technology Strategy for Canada

(8/02/2007) comprises a series of recommendations towards an effective S&T strategy with particular focus on the government’s recent economic plan – ‘Advantage Canada’. The report values concentration on ‘areas of research excellence’, the development of ‘new research talent’, and improved co-ordination and accountability for maximising research investment.

A Simple Guide To Intellectual Property Rights, Biodiversity And Traditional Knowledge

An introductory practical handbook to intellectual property rights (IPR) issued as one of a series covering biodiversity issues.

[Apte, T.; IIEP; 2006 (www.iied.org)]

Europe

European Innovation Scoreboard 2006: Comparative Analysis of Innovation Performance (EIS)

The latest edition of the European Innovation Scoreboard (EIS), which evaluates and compares the innovation performance within the EU, has been published (02/2007). It includes 'innovation indicators and trend analyses' for the EU's member states, in addition to Croatia, Turkey, Iceland, Norway, Switzerland, the US and Japan. The report, and related database, is available on the PRO INNO Europe website.

[Commissioned by the European Commission, DG Enterprise & Industry. Prepared by the Maastricht Economic Research Institute on Innovation and Technology (MERIT) and the Joint Research Centre (Institute for the Protection and Security of the Citizen) of the European Commission; Pro Inno Europe; 2007 (www.proinno-europe.eu/doc/EIS2006_final.pdf)]

Scientific Publication: Policy on Open Access

A report commissioned by the European Commission 'with particular reference to policy recommendations regarding open access for Framework Programme 7 (FP7)', was released recently (12/2006). It is a contribution to the continuing debate on open access (OA). Among its recommendations is the suggestion that 'researchers funded under FP7 ... lodge their publications resulting from EC-funded research in an open access repository as soon as possible after publication, to be made openly accessible within 6 months at the latest'.

[European Research Advisory Board (EURAB); 2006 (http://ec.europa.eu/research/eurab/index_en.htm)]

South Africa

Creating Knowledge Networks (Working Partnerships in Higher Education, Industry And Innovation series)

This incorporates a series of case studies

indicating patterns of research partnership and collaborative practice, specifically in three areas: ICT, biotechnology and new materials development. It is edited by Dr Glenda Kruss, chief research specialist in the HSRC's Education, Science and Skills Development Research Programme who has worked on a three-year project on

'HE-industry partnerships in high technology fields in South Africa'. In its analysis the book acknowledges the value of responsiveness to different institutional cultures, suggesting 'that universities need to identify their own strategic solutions to develop a flexible and adaptive institutional approach to networks'. The book is published as the third in the HSRC's 'Working Partnerships: Higher Education, Industry and Innovation' series.

[Kruss, G. (ed.); 978-07969-2132-1; HSRC; 2006 (www.hsrcpress.ac.za) (www.hsrc.ac.za)]

Measuring Innovation in OECD and Non-OECD Countries: Selected Seminar Papers

A collection of papers on innovation measurement from a seminar (2001) co-hosted by the SA Department of Arts, Culture, Science and Technology and the OECD.

[Blankley, W.; Scerri, M.; Molotja, N.; Saloojee, I. (eds.); 978-07969-2062-1; HSRC; 2006 (www.hsrcpress.ac.za) (www.hsrc.ac.za)]

Surveys

Canadian Licensing Survey Summary: a Survey Summary of Technology Licensing (and related) Performance for Canadian Academic and Nonprofit Institutions and Technology Investment Firms

[AUTM; 2007 (http://autm.net/pdfs/05_CanadaFINAL.pdf)]



U.S. Licensing Survey Summary: a Survey of Technology Licensing (and related) Performance for US Academic and Nonprofit Institutions and Technology Investment Firms

[AUTM; 2007 (http://autm.net/pdfs/US_LS_05Final.pdf)]

These national surveys ('the most comprehensive reports of their kind') were released 26/02/2007. Each includes both detailed statistics and representative examples on current licensing through universities and related research institutions. In addition to highlighting the practical value and achievement of academic research they enable comparison between technology transfer offices. The Canadian Survey is the second such individual summary report, and it confirms that 'the Canadian technology transfer profession has truly come of age over the past five years (see *Research Global*, Issue 14 – October 2006). The diversity of examples, increased since the first such survey last year, show 'commercialisation activity' across Canada.

Series/Projects

Thematic Review of Tertiary Education: Country Background Reports (OECD)

This published series, now comprising some 15 countries, includes reference to national R&D structures (see *Research Global*, Issue 14 – October 2006). The fourth workshop for countries participating in the review will be in September 2007, with a final synthesis report due for completion in early 2008.

(www.oecd.org/document/46/0,2340,en_2649_201185_35579950_1_1_1_1,00.html)

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New research investment for NZ pastoral industries

(first published 17 April 2007)

A partnership between the Foundation for Research, Science and Technology (FRST) and three New Zealand pastoral industry bodies is to invest more than NZD34 million in agricultural research.

FRST will provide NZD4.3m a year for four years with matched co-funding from Dairy InSight, Fonterra and Meat and Wool New Zealand.

The initiative is being signalled as a model for future research investment in key sectors of the New Zealand economy, following the Pastoral 21 initiative, which has seen dairy, meat and wool industry groups collaborating to develop strategies for on-farm pastoral research. AgResearch has already made two successful bids for funding from the partnership for research projects focusing on the environment and forage.

FRST chief executive, Murray Bain, said the foundation has worked closely with industry partners to determine the research needs of the pastoral sector and support projects that will help increase farm productivity and ensure environmental sustainability.

The foundation is currently adopting a similar partnership approach to investment in the energy sector.

India takes up position at international vaccine institute

(first published 19 April 2007)

India is to become the 35th signatory to the agreement which established the Internat-

ional Vaccine Institute (IVI), based in Seoul, South Korea.

The IVI is an independent international research, training and technical assistance centre focussing on vaccine production in developing countries. In signing the agreement, India has joined nations such as China, Brazil, Israel and Thailand, as well as the World Health Organization. The agreement is designed to promote cooperation in the area of vaccine research, and may offer India a place on the IVI's Board of Trustees. This would give India some responsibility for the formulation of international vaccine-related policy and in directing research priorities of the institute.

Southern Africa agrees traditional medicines framework

(first published 19 April 2007)

A more coordinated approach to evaluating the efficacy of traditional medicine to treat HIV/AIDS is underway in Southern Africa.

Member countries of the Southern African Network for Biosciences (SANBio) met in Lusaka, Zambia, last month to agree a budget and project plan for establishing a regional framework to collaborate on traditional medicines.

The regional framework is one of the first steps taken by the network in its quest to coordinate expertise on traditional medicines in the region. As part of its work, SANBio will work towards a regional legal framework for clinical science to ensure trials adhere to professional ethics and that intellectual property rights are protected.

HIV/AIDS is posing serious problems for Southern Africa with one-fifth of the population feared infected in some countries. But

while few traditional remedies have been evaluated for their efficacy under lab conditions, many patients seek out traditional healers as a cheaper alternative to modern doctors.

SANBio hopes its inventory of regional capacity on traditional medicine, compiled at the Lusaka workshop that took place on 15 and 16 March 2007, will help bridge the worlds of traditional and modern medicine.

UK DoH agrees to speed up start times for clinical trials

(first published 25 April 2007)

A new form for pharmaceutical firms wanting to run clinical trials in GP practices will make them easier to start and administer, the Department of Health said last week.

The form codifies the way that NHS Primary Care Trusts (PCTs) and companies negotiate the conduct of clinical trials. That standardisation should allow patients to be recruited faster and make expansion to additional GP practices more straightforward.

According to Sally Davies, director of NHS R&D, 'This marks another positive step in our aim to develop the NHS as a world class environment for research for the public interest working with industry.'

The PCT agreement follows the model Clinical Trials Agreement for hospitals introduced last year. It was developed by the Pharmaceutical Industry Competitiveness Task Force's clinical research working group in association with the NHS R&D Forum.

A spokesman for the BioIndustry Association said, 'Before, the process was quite bureaucratic and burdensome. Now there is an easy checklist, and once everything is in place the researchers can go about signing up patients and getting the trial started.'

The Department of Health stressed the agreement would not affect the safety of trials. '[The agreement] is about cutting bureaucracy, saving time and getting trials up and running faster so that patients can reap the benefits sooner,' said a spokesman.

US House of Representatives passes NSF reauthorisation

(first published 3 May 2007)

The House of Representatives approved the National Science Foundation reauthorisation bill late on 2 May 2007. It would keep NSF funding on a path to doubling in ten years by providing USD16.4 billion for research. The authorisation also improves funding rates for young researchers and stimulates higher risk research by establishing a pilot program of one-year seed grants for new investigators.

'Basic research is a driver of growth and economic development, and NSF is a major source of federal backing for basic research at universities, across all disciplines,' said Rep. Bart Gordon, D-TN, Chairman of the House Science and Technology Committee. 'NSF also has 50 years of proven success in science, technology, engineering and math education. This bill provides the funding critical to those programs that NSF supports.'

Two amendments, which were unpopular with research advocates, were defeated. One, proposed by Reps. Scott Garrett, R-NJ, and John Campbell, R-CA, would have specifically prohibited funding of nine already-funded grants in NSF's Social, Behavioral and Economics directorate, based on their 'silly' titles. The other, proposed by Rep. Dave Weldon, R-FL, would have tied any increases in the NSF budget to proportional increases at the National Aeronautics and Space Administration.

AUD28m boost for pharma R&D in Australia

(first published 8 May 2007)

Research into treatments for Alzheimer's disease, cancer and asthma has received a boost with government grants totalling AUD28 million offered to six pharmaceutical and biotech companies.

Industry minister Ian Macfarlane announced the funding offers in the third and final round of the Australian Government's Pharmaceuticals Partnerships Programme (P3).

The grants, ranging from AUD1.9 million

to AUD7.6m, will support the research and development of new drugs to fight debilitating diseases.

Since inception of the programme the government has offered AUD133.8m in funding to 18 pharmaceutical companies.

Africans get help with open access

(first published 15 May 2007)

African scientists and academics have been afforded a chance to access information about opportunities for free of charge publishing under a new Deutsche Forschungsgemeinschaft (DFG, German Research Foundation)-funded project. The central information and communications platform www.open-access.net is designed to support researchers and institutions by giving practical assistance in the concrete use of open access.

German Universities urged to get their act together on KT

(first published 15 May 2007)

Germany's universities and companies have begun to work together more effectively but still need closer cooperation to make the country more innovative and competitive, a study has concluded.

The study, by the Stifverband, Germany's association of research sponsors, provides an overview of current trends in university-industry links, the main difficulties and successes encountered by both sides, and prospects for the future.

Presenting the 148-page report in Berlin on 8 May 2007, Andreas Schlüter, president of the Stifverband, said universities need to introduce long-term strategic plans for knowledge transfer (KT). Both the national government and the Länder 'should light up the complex funding jungle', avoid duplication of funding schemes and provide universities and research institutions with better information on the opportunities available, the report says. 'SMEs must in particular receive better access to funding,' Schlüter says.

Matthias Kleiner, president of the Deutsche Forschungsgemeinschaft, said most universities do not have good policies and structures in place for KT. Responsibility tends to be delegated to one member of staff rather than made a clear institutional priority closely linked to research and teaching.

The *Innovation Factor: Cooperation* report, which also includes interviews with senior figures in academia and industry, is based on a survey carried out by the Stifverband last year. In total, 100 companies, 73 universities, 23 research institutions and 25 associations and political bodies took part in the study. **RG**

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Hereditary Disease Foundation research grants

Closing Date: 15 June 2007

Details: The Hereditary Disease Foundation invites grant applications to support research projects that will contribute to identifying and understanding the basic defect in Huntington's disease. Areas of interest include trinucleotide expansions, animal models, gene therapy, neurobiology and development of the basal ganglia, cell survival and death, and intercellular signalling in striatal neurons.

Grants are worth up to USD50,000 usually for one year with a possibility of renewal.

ResearchResearch link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=180978&orgLang=EN>

Cabinet Office of Japan Hideyo Noguchi Africa prize

Closing Date: 10 July 2007

Details: The Cabinet Office of Japan invites applications for the Hideyo Noguchi Africa prize. The aim of the prize is to honour individuals with outstanding achievements in the fields of medical research and medical services to combat infectious and other diseases in Africa. Applications are accepted in the following areas:

- Medical research. Applicants should have established original or milestone concepts for better understanding of the pathology or the human and environmental ecology of infectious diseases or other diseases prevalent to Africa or have improved clinical management, ecological management or patient therapy relevant to such diseases;
- Medical services. The activity for nomination must be aimed at fighting against infectious or other disease prevalent in Africa or improving public health in Africa. It must also have a broad or direct impact on the improvement of health and welfare of

African people, particularly the poor, and have been carried out on-site for more than five years.

The prize consists of a citation, a medal and an honorarium of JPY100 million.

ResearchResearch link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=181955&orgLang=EN>

National Research Council research associateship programmes: Pacific Disaster Center

Closing Date: 01 May, 01 August and 01 November 2007

Details: The National Research Council invites applications for its research associateship programmes at the Pacific Disaster Center. The objectives of the programmes are to provide post-doctoral scientists and engineers of unusual promise and ability opportunities for research on problems, largely of their own choice, that are compatible with the interests of the sponsoring laboratories, and to contribute thereby to the overall efforts of the federal laboratories. Awardees must hold the PhD, ScD, or other earned research doctoral degree recognised in US academic circles as equivalent to the PhD or must present acceptable evidence of having completed all the formal academic requirements for one of these degrees before tenure may begin. Applicants must have demonstrated superior ability for creative research.

Opportunities at PDC are open to all citizens of the United States and to citizens of other countries who have full command of the English language. The current annual stipend for a postdoctoral research associate ranges from USD42,975 to USD66,961 plus a cost of living allowance of 23.75%.

ResearchResearch link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=166590&orgLang=EN>

FP7 Marie Curie Action international incoming fellowships

Closing Date: 5pm Brussels, 14 August 2007

Details: The European Commission has issued a call for the Marie Curie international incoming fellowships. This call is for support for training and career development of researchers. This action aims to reinforce the scientific excellence of the member states and the associated countries through knowledge sharing with incoming top-class researchers from third countries to work on research projects in Europe, with the view to developing mutually-beneficial research cooperation between Europe and third countries. It aims to encourage these researchers to plan their period of international mobility within the framework of a coherent professional project and thus enhances the possibility of future collaborative research links with European researchers and research organisations in their future research career. The researchers shall be selected by the Commission on the basis of a proposal submitted in liaison with a host organisation in a member state or associated country. If the researcher originates from one of the international cooperation partner countries, the scheme may include provision to assist fellows to return to their country of origin, thus contributing to establish sustainable cooperation between these countries and European research organisations. The research topic will be freely chosen by the researcher in collaboration with the host organisation. Third country researchers are eligible for this action, except those treated as being from member states or associated countries because of their presence for more than three years during the previous four years in the territory of a member state or associated country. Researchers addressed under this action must be in possession of a doctoral degree or have at least four years of full-time equivalent research experience. Projects under this action will add to the research excellence in both public and private sector in member states and associated countries, thanks to the sharing and application of new knowledge transferred and developed by highly qualified researchers embedded in the European research effort. At the same time the projects will constitute nuclei for future research relations at international level,

beneficial in the frame of the development of the European knowledge-based economy and society. The total budget for this call is EUR24 million. PEOPLE-2007-4-2-III.OJ C45/6 (28/2/07) p6.

Research link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=180012&orgLang=EN>

International Tropical Timber Organization fellowships

Closing Date: 05 September 2007

Details: The International Tropical Timber Organization is inviting applications for its fellowship programme. The aim of this programme is to develop human resources and enhance professional expertise in member countries in tropical forestry, tropical timber industries and related disciplines, with a view to promoting sustainable management of tropical forests, efficient utilisation and processing of tropical timber, and better economic information on the international trade in tropical timber.

The fellowship is open to individuals who are nationals of ITTO member countries. Fellowships are awarded mainly to nationals of developing member countries. The maximum amount for a fellowship is USD10,000, which provides tuition/training/conference fees, transportation fees, daily subsistence allowance, book allowance and other allowances. For postgraduate studies, only a partial tuition fee or a small research grant can be provided.

Research link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=181613&orgLang=EN>

National Gallery of Art visiting senior fellowship programme

Closing Date: 21 September 2007

Details: The Center for Advanced Study in the Visual Arts, a part of the National Gallery of Art, announces its programme for Paul Mellon and Ailsa Mellon Bruce visiting senior fellowships. Fellows will have access to the resources represented by the collections of the gallery, the library, and the photographic archives, as well as to the Library of Congress and other specialised research libraries and collections in the Washington area.

Applications will be considered for study in the history, theory, and criticism of the visual

arts, including painting, sculpture, architecture, landscape architecture, urbanism, prints and drawings, film, photography, decorative arts, industrial design, and other arts, of any geographical area and of any period. Applications are also solicited from scholars in other disciplines, whose work examines artefacts or has implications for the analysis and criticism of physical form.

Fellowships are intended for those who have held a PhD for five years or more or who possess an equivalent record of professional accomplishment at the time of application. Fellowships are awarded without regard to the age or nationality of applicants.

There are up to 12 short-term fellowships lasting up to 60 days. Fellows receive a stipend that includes round-trip travel and local expenses. Stipends for a two-month fellowship range from USD6,000 to USD8,000, depending on relocation requirements. Visiting senior fellows may be eligible for a USD1,500 per month housing allowance. In addition, fellows will receive an allowance for photography.

Research link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=177248&orgLang=EN>

Fogarty international research collaboration: behavioural and social sciences (R03)

Closing Date: every September 21 until September 22, 2007

Details: The Fogarty International Center, along with other participating institutes and centres of the National Institutes of Health, invites applications for its international research collaboration award in behavioural and social science research. The Fogarty international research collaboration – behavioural, social sciences research award facilitates collaborative behavioural and social science research between scientists supported by the NIH and investigators in developing countries. The main objectives of this program are to:

- support collaborative research efforts between NIH-funded scientists and developing country scientists on research of high scientific merit, relevant to global health and of mutual interest and benefit;
 - help build research capabilities and foster further sustained and productive research and research collaborations at the foreign site.
- All non-Aids-related behavioural and social science

research topics supported by the NIH are eligible for inclusion under this program.

Special consideration may be given to proposed research which addresses significant global health problems, particularly those of high relevance to the foreign country or region, and to research that makes use of unique or special resources, circumstances or environment of the foreign site.

This funding opportunity will use the NIH R03 small grant mechanism. Funding of total direct costs of up to USD100,000 over three years in modules of USD25,000 (one module in year one and year three, two modules in year two) is available. Applications may be submitted by domestic and foreign for-profit or non-profit organizations and public or private institutions. PAR-06-437 (replaces PAR-05-073)

Research link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=147469&orgLang=EN>

Rolex Awards for Enterprise

Closing Date: 12 midnight GMT, 30 September 2007; applications are urged to be submitted as early as possible.

Details: Applications are invited for the 2008 Rolex Awards for Enterprise, which support projects that advance human knowledge and well-being. The following areas are eligible: science and medicine; technology and innovation; exploration and discovery; the environment; and cultural heritage. Projects must expand the knowledge of the world, improve the quality of life on the planet or contribute to the betterment of humankind. Five laureates will each receive USD100,000 and a Rolex chronometer. Up to five associate laureates may be granted second prizes of a steel-and-gold chronometer and a cash award determined at the discretion of the committee.

Research link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=134612&orgLang=EN>

OECD cooperative research programme conference sponsorship campaign

Closing Date: 30 September 2007

Details: The Organisation for Economic Cooperation and Development invites applications under its cooperative research programme con-

ference sponsorship campaign. Applications are invited under the following three themes:

- the natural resources challenge;
- sustainability in practice;
- the food chain.

The sponsorship covers a lump sum for invited speakers and scientific coordinator covering travel accommodation, meals and miscellaneous expenses for a workshop and the registration fee for invited speakers sponsored by the programme. OECD contributes EUR3,050 towards publication of conference proceedings.

ResearchResearch link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=161488&orgLang=EN>

OECD postdoctoral fellowships

Closing Date: 30 September 2007

Details: The Agricultural Directorate of the Organisation for Economic Cooperation and Development invites applications for its postdoctoral fellowships under its cooperative research programme on biological resource management for sustainable agricultural systems. Areas of research interest include:

- the natural resources challenge;
- sustainability in practice;
- the food chain.

Fellowships cover travel expenses and a subsistence allowance.

ResearchResearch link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=180555&orgLang=EN>

International Federation of University Women fellowships and grants

Closing Date: 01 October 2007

Details: The International Federation of University Women invites applications for its international fellowships and grants to women graduates for postgraduate research, study and training. IFUW are offering awards for research, study or training to be undertaken during the period 1 May 2008 through 31 December 2009. IFUW fellowships and grants are open only to women graduates who are members of IFUW's national federations and associations and to IFUW international members. Students in any branch of learning may apply. Fellowships are offered for the second and subsequent years of

a doctoral programme and for postdoctoral studies. First year doctoral students do not qualify. Grants are offered for any postgraduate programme. The awards may be used in any country other than the one in which the applicant was educated or habitually resides. Fellowships are for eight to 12 months of work. They are intended to enhance the original research or scholarship on which a postgraduate applicant is already engaged. Grants are for a minimum of two months of work. They are awarded for specialised training, independent research, or to assist in the completion of a postgraduate degree. Certain awards carry additional restrictions. All candidates must have obtained admission to the proposed place of study or research prior to applying to IFUW's competition. No assistance is given for attending conferences or for direct family support. Fellowships are worth between CHF8,000 and CHF10,000; grants are worth between CHF3,000 and CHF6,000; IFUW recognition awards are worth CHF1,000.

ResearchResearch link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=181970&orgLang=EN>

NIH women and sex/gender differences in drug and alcohol abuse/dependence (R01) PA-07-329

Closing Date: 5 June and 5 October 2007

Details: The National Institute on Drug Abuse and the National Institute on Alcohol Abuse and Alcoholism invite applications for their women and sex/gender differences in drug and alcohol abuse/dependence programme. Areas of R01 research interest include: mechanisms and origins; consequences and impact; prevention and prevention services; treatment and treatment services; and HIV/AIDS and related infectious diseases. This funding opportunity will utilise the NIH research project grant (R01) award mechanism and runs in parallel with two FOAs of identical scientific scope, PA-07-330 and PA-07-331, that solicit applications under the small research grant (R03) and exploratory/developmental (R21) award mechanisms, respectively. Domestic and foreign for-profit and non-profit organisations and public or private institutions are eligible to apply. PA-07-329 (replaces PA-03-139)

ResearchResearch link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=180724&orgLang=EN>

Academy of Motion Picture Arts and Sciences Academy film scholars programme

Closing Date: 15 October 2007

Details: The Academy of Motion Picture Arts and Sciences invites applications for its Academy film scholars programme. Two awards of USD25,000 are available annually to support innovative and significant works of film scholarship about aesthetic, cultural, educational, historical, theoretical or scientific aspects of theatrical motion pictures. Applicants should be established scholars, writers, historians and researchers with a significant record of achievement.

Applicants must propose a new work of film scholarship encompassing some aspect of theatrical motion picture art, science, commerce, history or theory. Works solely exploring television, video or other media arts themes are not eligible.

ResearchResearch link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=181773&orgLang=EN>

Houghton Trust international travel grants

Closing Date: 15 February, 15 June and 15 November annually

Details: The Houghton Trust invites applications for its international travel grants. These are for young researchers of any nationality working in the field of avian diseases. Grants will be awarded to cover a part or the whole of travel and subsistence costs for: attendance and participation in scientific meetings; short visits to laboratories for discussions or learning specific techniques; attendance at training courses. Awards are normally made for periods not exceeding 14 days. Applicants should be aged 35 or under and must not be employed by commercial enterprises.

ResearchResearch link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=174790&orgLang=EN>

Ploughshares Fund research initiatives aimed at preventing the spread and use of nuclear, biological and chemical weapons

Closing Date: 15 November 2007

Details: The Ploughshares Fund is inviting applic-

ations for its research initiatives. These are aimed at preventing the spread and use of nuclear, biological and chemical weapons and other weapons of war, and to prevent conflicts that could lead to the use of weapons of mass destruction. The fund provides grants in the following areas:

- nuclear weapons;
- nuclear materials;
- biological and chemical weapons;
- missiles and space;
- conventional weapons;
- conflict prevention.

There are no geographical limitations on grants and both individuals and organisations are eligible to apply. Requests for two year grants will be considered. The Ploughshare Fund does not fund the production of films, videotapes or books. It also does not fund the research and writing of academic dissertations.

ResearchResearch link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=177291&orgLang=EN>

International Union Against Cancer international fellowships for beginning investigators

Closing Date: 01 December 2007

Details: The American Cancer Society and the International Union Against cancer offer international fellowships to foster a bi-directional flow of knowledge, experience, expertise, and innovation between countries. These 12 month fellowships are intended for investigators and clinicians who are in the early stages of their careers. Preference will be given to research projects into the preclinical, clinical, epidemiology, psychosocial, behavioural, health services, health policy and outcomes and cancer control.

Candidates should hold be investigators and clinicians in the early stages of their academic careers and holding assistant professorships or similar positions. Fellowships have an average value of USD40,000.

ResearchResearch link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=158127&orgLang=EN>

Herb Society of America research grants

Closing Date: 31 January 2008

Details: The Herb Society of America invites

applications for its research grants. These are available to students, professionals, and individuals engaged in research on the horticultural, scientific, and social applications or use of herbs throughout history. The grants are intended to support small, self-contained research projects that can be carried out in a short period of time. Awards are for a one-year period of work. The maximum amount available is USD5,000 which may cover compensation for investigators, professional and technical assistance, research supplies and materials, and costs of computer time.

ResearchResearch link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=160838&orgLang=EN>

Global Biodiversity Information Facility Ebbe Nielsen prize

Closing Date: 01 March 2008

Details: The Global Biodiversity Information Facility invites nominations for the Ebbe Nielsen prize for innovation in combining biosystematics and biodiversity informatics research. The prize consists of EUR30,000, and allows the recipient to engage in research outside their country of residence for three to six months. The prize is offered to a promising researcher in the early stage of his or her career. Persons or institutions who wish to make nominations should do so in cooperation with the GBIF delegation from their country (if a participant in GBIF) or through the delegation of an associate participant.

ResearchResearch link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=181079&orgLang=EN>

American Astronomical Society Chretien international research grants

Closing Date: 01 April 2008

Details: The American Astronomical Society is inviting applications for the Chretien international research grants. These grants are intended to further international collaborative projects in observational astronomy. The emphasis is on long-term international visits and the development of close working relationships with astronomers in other countries.

Astronomers with a PhD or equivalent may apply; graduate students are not eligible. Up to USD20,000 will be awarded to one or more individuals or groups to be used for the support of international observational astronomy. The awards are open to astronomers throughout the world.

ResearchResearch link:

<http://www.researchresearch.com/getpage.cfm?pagename=FundingOpRecord&lang=EN&type=default&id=163963&orgLang=EN>

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Global Research Management

Research management has a genuinely global dimension. An increasing proportion of research involves international collaboration, or is funded by international funding bodies. It is vital that stakeholders approach their endeavours with a degree of common understanding. And, of course, many of the issues that researchers seek to address have global implications. It is critical that results are disseminated or exploited on a worldwide scale, and according to common standards. A global network is the only way to achieve this goal.

Why you should join the Global Research Management Network
The network, a joint ACU-SRA International initiative, combines regular information, analysis and networking opportunities to keep you informed and connected to research management activities throughout the globe. It provides a structure relevant both to practitioners in the developing and developed world and is based around five main strands of activity:

Research Global magazine

Based on the ACU's successful *Research Opportunities* magazine, *Research Global* brings news, articles and funding information to members three times per year.

Free academic journal

To help provide a more theoretical background to the research management debate, all members of the network will receive a free subscription to the *International Journal of Technology Management and Sustainable Development*. The journal provides analysis and studies from a range of countries.

Benchmarking & good practice

The network will seek new ways to compare good practice and performance in a constructive manner – helping members to identify policies for implementation in their own work.

Electronic updates

Those members registering an email address will receive a regular briefing covering news and policy items.

Events & seminars

Further details on recent and upcoming events can be found at www.globalrmn.org

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