DIGEST

A further function of the new Global Research Network will be to keep members fully up to date with the activities of other organisations working in the field. We are happy to publish information regarding the activities of existing national and regional associations.

In future editions, too, we hope to include a concise review section covering books, reports and articles of relevance to practitioners in the field. Material for consideration may be submitted to our central address. The deadline for contributions to the next edition will be 12th July.

RECENT PUBLICATIONS
ACU Librarian, Nick Mulhern, summarises:

Reports
Science and Innovation Policy: Key Challenges and Opportunities (Meeting of the OECD Committee for Scientific and Technological Policy at Ministerial Level, 29-30/1/04) OECD, 2004 (www.oecd.org)
A report based on the OECD's work in science and technology analysing current challenges, and potential, for government support and co-ordination of research policy. Though focused on OECD countries, its review of the trends and pressures on S&T policy provides useful data for patterns of R&D globally, particularly public investment in research. (The OECD Committee's communiqué, adopted at the January meeting, is also available at www.oecd.org.)

Turning Science Into Business: Patenting And Licensing At Public Research Organisations OECD, 9264100229, OECD, 2003 (www.oecd.org)
The first international survey on such patenting/licensing in OECD countries. Includes statistics on patenting agreements and income as well as policy support. Case studies also incorporated.

Statistics
Third European Report on Science & Technology Indicators (Towards a Knowledge-Based Economy)
European Commission, Directorate-General for Research 92-894-1795-1, European Commission, 2003 (www.cordis.lu/indicators/third_report.htm)

OECD Science, Technology and Industry Scoreboard 2003
OECD, 9264103643, OECD, 2003 (www.oecd.org)
Further international science & technology/R&D statistics are available on the Unesco Institute for Statistics website (www.uis.unesco.org)

WHO, WHEN AND WHERE

13-14 May 2004
Collaboration, Competition and Concentration
The annual conference of RAGNET (Research Administrators Group Network) will be held in York, UK. A pre-conference seminar on Electronic Research Administration will be held on 12th May.
www.ragnet.ac.uk/

24-26 June 2004
Research Management and Administration in a Changing World
The 10th annual conference of EARMA (European Association of Research Managers and Administrators) will be held in Bucharest, Romania.
www.earma2004.ro/menu.html

15-17 September 2004
Enabling the Research Environment: Delivering enhanced outcomes and impact
The annual conference of ARMS (Australasian Research Management Society) will be held in Freemantle, Western Australia.
www.promaco.com.au/conference/2004/arms/

23-27 September 2004
Research Excellence: It's all about teamwork
The annual meeting of SRA International (Society of Research Administrators International) will be held in Salt Lake City, Utah, USA.
www.srainternational.org

The Research Global Network is managed by the Association of Commonwealth Universities. The editors welcome feedback and items for inclusion in future editions. Please contact:

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Editors: John Kirkland, Julie Stackhouse
Designer: William Sandeford

RESEARCH OPPORTUNITIES

May 2004
ISSUE 7

NEWS FROM THE RESEARCH MANAGEMENT PROGRAMME OF THE ASSOCIATION OF COMMONWEALTH UNIVERSITIES

IN THIS ISSUE

A NEW OPPORTUNITY …

Last year, the UK government commissioned an independent review of interactions between industry and universities. The recently produced report commented that research and development organisations are generally taking a more global outlook than ever before.

The same comment could be applied to all aspects of research management. In response to this, and our survey of readers last year, we are delighted to announce the launch of a new **Global Research Management Network**, from this September. With this issue you will find enclosed a letter inviting your institution to become a member.

The new network will include a re-styled magazine – *Research Global* – published on a more regular basis. It will also include much more – a free journal, benchmarking programmes, electronic newsletters and events. This issue contains a flavour of the type of issues that will be covered.

Above all, the aim is to get those involved in the field – whether in universities, funding bodies, industry or government – talking to each other, and learning from good practice elsewhere. We believe it will be the first network to achieve this on a genuinely global level. Membership will be open to Commonwealth and non-Commonwealth countries, and there are concessionary rates for both developing country subscribers and those from ACU member institutions.

I very much hope that you will want to join us in this exciting new venture. If so, simply complete the form enclosed, or e-mail us at resman@acu.ac.uk. We look forward to increasing our contact even further!

John Kirkland
Deputy Secretary-General (Development)

SARIS - empowering the South African researcher

A GLOBAL PERSPECTIVE

Nowhere are the benefits of international collaboration in the area of research management more clearly demonstrated than in the programme for the first global conference in the field, sponsored jointly by ACU and the Southern African Research and Innovation Management Association (SARIMA).

The conference, held in Cape Town on 5-7 May, has attracted speakers and participants from five continents. Its central theme – *Research as an Agent for Transformation and Development* – has struck a chord with universities, policy makers and funding bodies alike. The theme is explored along the following tracks: the contribution of research to economic and social development; the funders' perspective; research as a career; and developing the research management profession.

This issue precedes the conference itself – but the first four articles are examples of the type of papers discussed. On this page, Roy Page-Shipp outlines a project to increase the effectiveness of South African research, which has implications for many other regions. Next, Rita Bowry gives a funder perspective, from the Canadian based International Development Research Centre, followed by a North American university perspective on technology transfer from Bruce Clayman, Vice President Research, Simon Fraser University (Canada). Finally Cliff Studman, who joined the University of Botswana four years ago after spending most of his career in New Zealand, describes his experience of drafting and implementing policy at the institutional level.

Of course, the articles can only give a small sample of the type of issues being discussed at the conference and we will include more papers, plus full conference reports, in the next issue.

More and more research resources are becoming available through the Internet, but poor connectivity and expensive access rights present significant obstacles to many South African researchers. SARIS is a project aimed at creating a more concerted effort by Team South Africa to ensure that all researchers have effective and sustainable access. One of the project objectives is to gather information and ideas for innovative approaches from as wide a range of sources as possible. ***Roy Page-Shipp*** *outlines the project and asks for your views.*

Background

The Internet as a means of communication and interaction between researchers is growing in importance and impact, with new modes of publication and interaction growing apace. The practice of self-publishing and e-archiving, on the one hand, contrasts with the increasing sophistication of commercial access platforms. Ubiquitous desktop computers promote online self help in information access for some researchers, while others, especially those who need to consult pre-digital print material, need the intermediation of an information service. The use of online modelling and analytical tools in globally shared research projects has increased enormously in the past few years, and this rate is likely to escalate. But the researcher with a slow and unreliable Internet connection, and who cannot afford licences and connection fees, finds him/herself on the wrong side of the widening digital divide. South Africa, with its oft-described 'Dual Economy', presents extremes on both sides of this picture.

Despite the worthy efforts of library consortia, there is no activity aimed at ensuring that Team South Africa is making best use of the influence and resources, both national and global, which could be applied to lower or remove these hurdles.

SARIS – the South African Research Information Service – is intended to create the means of resolving this complex of problems by means of an integrated solution. The present phase of the project, funded by the Ford Foundation, is exploratory. The project team is consulting widely to ensure a broad grasp of the problem, as well as to make contact with a wide spectrum of innovators in this area. By May 2004 we expect to have formulated a number of viable options that can be tested in consultation with our stakeholders, the research and information communities of South Africa, to identify an approach most likely to succeed.

It seems likely that the preferred solution will have wider application in the SADC region or possibly even wider in sub-Saharan Africa, and this may well be a later extension of the service.

The SARIS team. From left to right: Heila Pienaar, Monica Hammes, Martie van Deventer and Roy Page-Shipp

'Out-of-the-box' thinking required
Problems of this nature seldom respond well to a 'try harder' approach and the project team has been inspired by refreshingly creative initiatives from significant role-players in the system. An example is the following statement by the then Minister of Arts, Culture, Science and Technology, Dr Ben Ngubane, to a World Summit on Sustainable Development Workshop in 2002: 'One of the key elements of sustainable science and technology systems is access to public knowledge resources, especially scientific journals and texts. It is sometimes difficult for people in the developed world to understand how large the expenditures are for these resources for universities and research institutes in the developing world.' The Minister went on to suggest that licence fees for developing countries, which are usually US Dollar or Euro-denominated, should be calculated according to the ratio of the GDP per capita of the receiving country, versus that of the supplying country!

The mould-breaking confrontation of publisher dominance by the research leadership in several major US universities has set the tone for a new relationship. In South Africa such negotiations have traditionally been conducted by the library management, who are professionally conditioned to ensure supply, not to threaten it in the interests of achieving a better deal! The project team is eager to hear of any similar innovative developments.

Focusing on the researcher!
A researcher focus for the study was chosen at an early stage and the appropriateness of this approach has been underlined by many of our consultations. Some of the insights we have gained give rise to challenging questions:

- A researcher supported by a competent and well-resourced information services team is fortunate indeed. His/her counterpart working in an institution with an inadequately staffed information team can be doubly disadvantaged because this team can effectively block his/her attempts at self-help.

- An access licence provides generous access, no licence can mean virtually no access at all. This 'feast or famine' phenomenon affects NGO researchers in small organisations and other unattached researchers particularly severely.

- Internet access is becoming ubiquitous – even if via a public library or village community centre. Should this be the platform for SARIS?

- Comprehensive support schemes for researchers can require huge resources, whereas individual researchers can typically obtain small sums to meet their needs. Is the key to sustainability to be found in a system that uses the resources of the major players effectively, while providing an affordable access route for the unattached researcher?

The publishing corollary
In principle, the Internet provides the solitary researcher with much quicker access to peer reactions and inputs than the formal literature does. If his or her endeavours are of importance to a relatively small constituency, he or she may not achieve exposure in a journal with a global readership. The time-and-place context that is crucial to understanding social science findings, for instance, is especially well-served by the immediacy of self publication. SARIS should find ways to make it easy for scientists to self-publish, either by creating a facility or improving access to an established one

A work in progress
SARIS is a project in search of an innovative suite of solutions to some of the major problems facing researchers in South Africa. The Project Team would welcome ideas and experiences from readers of Research Opportunities.

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Funder focus...

*How far can scholarships and fellowships contribute to raising research capacity in developing countries? In the latest in our series focusing on the work of donor organisations, **Rita Bowry** discusses the experience of the International Development Research Centre.*

Canada's International Development Research Centre (IDRC) provides support to researchers in developing countries in Latin America, Africa, the Middle East and Asia. It was created under the basic premise that a country can develop only when its citizens have acquired the capacity to address their own development problems.

Its distinguishing policy is that within its programme priorities, research institutions and researchers in developing countries make key decisions regarding which areas of research to pursue. This approach to research goes from problem identification, through research design and training, to the implementation of research itself, and finally to the dissemination of results with evaluation and input to policy changes.

This paper examines how IDRC's training activities have strengthened individual career development and institutions' research capacity by helping to create a pool of specialists prepared to seek solutions to the challenges of development at the local, national, regional, and global levels.

Over the last 33 years, IDRC's support for training and awards has undergone several structural and programming changes. In the first decade (the seventies) the Centre spent about CAD20 million, or 10% of its programme appropriations, on training. Up to one third of projects had training opportunities built into their activities. By the end of the 1980s, IDRC had spent about CAD80 million, which was approximately 13% of total programme funding. 65% of the Centre's training dollars were spent on informal training activities (i.e. short courses, seminars, group training, network and community-based training). Formal degrees accounted for the remaining funds with most support going to Master's degrees. PhDs, Bachelor's degrees and various diploma and certificate programmes were also funded.

These funds were used for subject-related skills the researcher needed to complete the research and for enhancing basic research skills, such as data collection and analysis. Funds were also allocated to training related to institutional capacity, a large part of which was to strengthen the capacity of institutions to deliver training programmes.

In the eighties, a bigger Canadian component was added to assist Canadian graduate students to undertake their thesis research in the field of international development. Doctoral research awards helped to promote the growth of Canadian capacity in research corresponding to IDRC's research priorities. Consideration is now being given to supporting field research, in a developing country, of developing country doctoral students studying in Canadian universities.

Rural university training; research on beans. Photo courtesy of IDRC.

The third decade (the nineties) saw a reduction in the Centre's budget and less full degree-level training being supported. Support was increased for the internship awards programmes which provided exposure to research for international development to Canadians and developing country individuals through training in research management and grant administration under the guidance of IDRC staff based in Ottawa and its six regional offices in Latin America, Africa, the Middle East and Asia. Professional development awards and internship awards continue to be given to individuals to develop their expertise in gender and development research management in areas linked to IDRC's programme of work. Individuals are able to contribute their knowledge and skills and at the same time they are able to refine expertise and widen experience in their chosen research area through a research and travel allowance.

Over the last four years, IDRC has invested over CAD 26 million in training through awards projects, small grants and in specific training components within research projects and programmes. This has supported field research in developing countries by Canadians and developing country nationals at Master's, PhD and post-doctoral levels.

Efforts to create capacity in novel areas of research are being pioneered by IDRC through its Centre training and awards program. For example, awards to carry out research in community forestry in sustainably managed agroecosytems, ecosystem approaches to human health, interdisciplinary health research and urban agriculture encourage multi-disciplinary and problem-solving approaches. Post-doctoral awards for research in urban agriculture bring together knowledge of disciplines such as health, environment, economics, technology development and agriculture.

In recognition of the challenges posed in defining international development in a world that continues to change dramatically, IDRC offers the 'Canadian Window on International Development Awards' for doctoral research that explores the relationship between Canadian aid, trade, immigration, security issues and diplomatic policy, and international development and the alleviation of global poverty. Other awards are granted for doctoral or master's research into a problem that is common to 'First Nations' or Inuit communities in Canada and a developing region of the world.

Kampala; herbalist with the Director, Natural Chemotherapeutics Research Laboratory; sacks of dried plant material in foreground. Photo courtesy of IDRC.

Small research grants provide increased responsiveness to the needs of researchers and communities for reliable knowledge to address their development challenges and capacity strengthening. Their flexibility and malleability enable IDRC programmes to adapt their strategies to the reality on the ground. They are used to train young, emerging or established researchers, promote exchanges with researchers, connect IDRC's programme partners, support 'explorations of new research areas', produce high quality research results, and put stakeholders and researchers together. These small grants facilitate the returning academic to continue with hands-on research particularly when funds are limited.

IDRC also grants sabbatical awards to Canadians and developing country nationals working on development issues and supports visiting researchers in an effort to promote sharing of knowledge and to foster South-South, North-South and North-North cooperation.

By providing support for particular individuals at critical times in their personal and professional development, awards contribute to the growth of a generation of competent practitioners in international development who understand the importance of research for development.

IDRC puts great emphasis on forming networks of researchers working on similar problems in different countries and linking researchers to decision makers and policy makers at all levels of research. Training workshops and seminars strengthen capacity through exchange of research experience and results, the creation of peer groups, and the assembly of a critical mass of researchers and resources when it might be beyond the means of any one institution or country to do so.

During recent consultations, developing country experts recognised that there might be a tension between the objectives of capacity building and research quality; however, others suggested that if the tensions were managed creatively, they could contribute to both objectives simultaneously.

IDRC is presently conducting its own strategic review of operations and making plans for the second half of this decade. In evaluating the effectiveness of past and future programmes, instructions and encouragement are drawn from its affiliation with many researchers and institutions in the developing world. IDRC's training programme continues to respond to the unfulfilled human potential in the developing world through effective personal and institutional capacity strengthening activities in the search for greater global equity.

Researcher planting shade vegetation on the bulldozed habitat of wild rodents, which act as reservoir animals, capable of transmitting leishmaniasis. Photo courtesy of IDRC.

Further information on the activities of the IDRC can be found at www.idrc.ca

Technology transfer...

*Research investment is key to successful technology transfer. **Bruce Clayman** analyses the results of the latest annual survey of North American institutions.*

The Association of University Technology Managers (AUTM) has conducted annual surveys of the commercialisation of intellectual property developed at US and Canadian universities since 1991. Almost every North American university active in technology transfer responds to the surveys, so the data provide quantitative, objective information on technology transfer from the academic sector.

Analysis of those data allows some interesting conclusions:
• The amount of technology that is transferred from universities to the private sector is a linear function of research expenditures, with similar – in some cases identical – constants of proportionality in the US and Canada; results from the UK and Australia are consistent with this finding.
• Ownership of intellectual property by universities, rather than by the creator, does not result in greater technology transfer productivity.

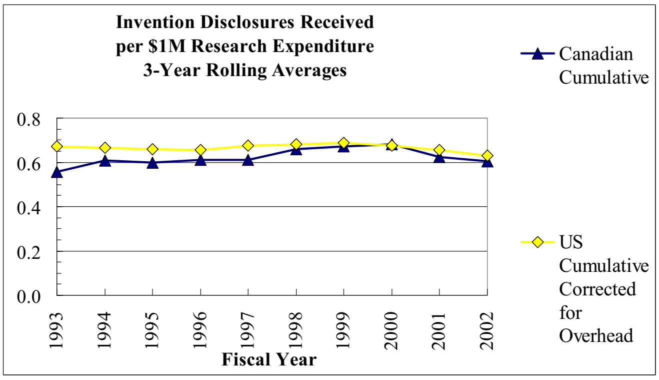
Three performance indicators from the AUTM report were analyzed on a per annum basis:
• invention disclosures received,
• license income received (including sale of equity), and
• start-up companies formed.

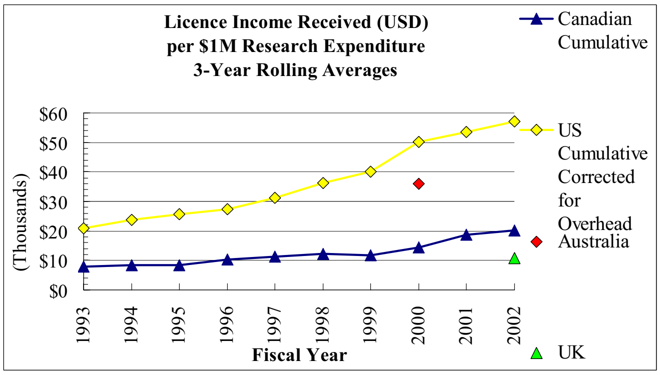
Results from the 2002 fiscal year (July 1, 2002 – June 30, 2003) survey of 20 Canadian universities and 174 US universities and other research institutions were analyzed. The full report from which this article is excerpted can be found at: http://www.sfu.ca/vpresearch/vprreports.htm, along with other technology transfer reports.

The raw data show tremendous variations year-to-year and among institutions. But the effects of variation due to institutional size and/or levels of research activity is reduced by normalising the data by total research expenditures. This involves dividing the output indicator – for example, number of invention disclosures received at a particular institution – by that institution's total research expenditures to arrive at invention disclosures received per dollar of total research expenditure. To reduce the effects of year-to-year variability, we take three-year rolling averages.

For valid comparisons between the US and Canada, the almost total absence in Canada of payments toward the indirect costs of research ('overhead') must be taken into account when calculating research expenditures. The rates charged by universities in the US for indirect costs range from 15% to 115%, with an average value of 52.3% of total direct costs, according to a recent study by the Association of Universities and Colleges of Canada.

Once this factor is taken into account, the plots of the results data are revealing. Note that data points for the UK and Australia taken from other recent studies are included for comparison where available. These are not corrected for overhead payment – to the extent that overhead payments have been included, the normalised measures would be correspondingly increased.



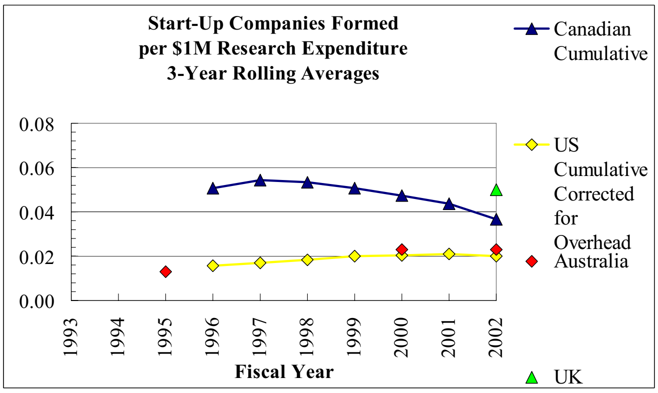


The rate at which invention disclosures occur per dollar of research expenditure is virtually constant over time and is essentially the same in the US and Canada. This implies that researchers in both countries are equally 'productive' of good ideas, and that good ideas result from research in proportion to the amount of funding invested in research.

There is a clear difference in the subsequent performance of institutions in the two countries: more licence income is received in the US and more start-up companies are formed in Canada.

The greater licence income received in the US is likely due to far greater industrial receptor capacity: sales of the rights to technology to large, established firms by means of licence deals are far easier to accomplish in the US, where there are many, than they are in Canada, where there are few.

This lack of receptor capacity in Canada leads to greater reliance on technology transfer via start-up companies.



Comparison of output measures between Canadian universities with different IP ownership policies

Measures per $1M of Research Expenditures			
Owner of the IP	Invention Disclosures Received	Licence Income Received	Start-Ups Formed
University	0.701	$12,101	0.020
Creator of the IP	0.493	$12,327	0.023

But start-ups are a riskier means of commercialising a new technology. In addition to the well-documented difficulties in attracting venture capital start-ups are well known to have endemic cash-flow and managerial problems, which threaten the successful exploitation of intellectual property that they own or acquire. Venture capital is now becoming somewhat more accessible, but at nowhere near the levels of four or five years ago.

There is a trend downward in the rate of start-up formation per USD 1M research expenditure in Canada, tending toward the rate seen in the US. This could be due to increasing maturity of Canadian industrial receptor capacity and/or the shortage of venture capital for start-ups. It could also be a result of the lag time between the large infusion of research funding in Canada in the last few years (a 96 percent increase from FY 1999 to FY 2002) and the production of commercializable Intellectual Property.

An alternate explanation for the lower license income in Canada is the difference in rules governing ownership of intellectual property. In the US, the Bayh-Dole Act effectively mandates that all universities assume ownership of inventions created by their researchers, whereas in Canada – lacking similar legislation – there are a variety of institutional policies.

This interpretation can be tested. Eight of the universities in our Canadian sample claim ownership of all intellectual property created by their faculty members and eight others cede ownership to the inventor. The other four have some form of joint ownership.

Collectively, these sixteen universities account for 90 percent of the research expenditures by the 20 universities in our sample. The two sets of universities account for roughly equal amounts of research expenditures. The cumulative values of the three measures used in this report were calculated for these two sets of eight universities and shown in the Table opposite. It is clear that there is no pattern of above-average performance by the universities that claim ownership of intellectual property.

As long as there is an active, well-supported and well-staffed technology transfer office, ownership of intellectual property does not appear to be an issue with respect to success in the commercialization of university research.

To test this view, we looked for correlations between measures of the institutional level of commitment to technology transfer and the output measures. Relevant output measures were plotted against the length of time that the 20 Canadian institutions under consideration have been actively engaged in technology transfer and against the staffing in their technology transfer offices, using information from the FY 2002 Survey. Although not uniformly the case, institutions with larger staff and more experience at technology transfer tend to have stronger records of success.

In addition to the positive effects of more staff members with more experience seeking, evaluating, and exploiting technologies, an intangible aspect is the creation of a strong 'institutional culture' of innovation. This culture derives from both the explicit and implicit messages about the importance of innovation generated by institutional support for the activity and from role models presented by colleagues who have successfully commercialised their intellectual property.

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Developing a research policy...

Growing research in a university which has primarily been a teaching institution requires a strong policy framework. ***Cliff Studman*** *shares his experience of the process of developing a research policy at the University of Botswana.*

When the new Office of Research and Development at the University of Botswana was formed in 2001, the new Director was given the mission and opportunity of growing the research culture, with strong support from the University administration. Among the first priorities was the development of a research policy. This article is about how to develop a policy from scratch, based on our experiences. The writer will confess from the outset that he has an engineering science background, so this is about how to create something that is practical, pragmatic and effective.

Beginning the task

The first priority was to review the situation. A simple SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis helped to identify opportunities and problems. This required one-on-one meetings with Deans, administrators and leading researchers to find out their views. We then presented a draft of the SWOT analysis to Faculty Boards, and got further inputs and refinements. It soon became apparent that there were a number of opportunities, but some very specific constraints. The University was committed to its vision statement of being a centre of academic excellence in Africa and the world. It was relatively well resourced by Government, and already had several successful researchers on the staff, with good equipment. On the other hand, there was a need to motivate staff, and a dearth of graduate research students. Internal research funds were under-utilised, even though some staff complained that they were short of research funds. The University had traditionally maintained a strong emphasis on undergraduate programmes to meet the needs of a rapidly developing country, and has only recently begun to encourage the research activities of its teaching staff in a deliberate fashion.

What is the policy for?

The next challenge was to decide the purpose of the policy. It quickly became apparent that, around the world, research policies varied dramatically in style, size and content. There seemed to be no clear idea of what a policy should look like. Instead one should ask what the purpose of a research policy is. At the University of Botswana, its purpose was to set out the principles that would guide the actions to grow the quality and quantity of research. Something useful was needed, that would help us achieve our aims.

What should a policy look like?

Defining the style proved to be more challenging. After several drafts a pragmatic approach was adopted. In

Cliff Studman in his office at the University of Botswana

essence the policy style was designed so that it would be acceptable to the university senior administration! Like many countries in this part of the world, decisions are made after due process involving free and lengthy debates in several university committees, all involving a significant number of interested parties, coupled with effective veto powers by senior management. As a result the final policy that emerged was a short, punchy document, couched in phrases of what the University will do, (a senior management requirement) with very little explanation of how the policy will be implemented. A further consideration is that any document that finally passes such a process is unlikely to be changed easily, so it had to be worded so that changes to the way in which the policy was implemented could be made without having to alter the policy. This was achieved by referring to a separate document containing guidelines on the implementation of policy. The policy states that the Office of Research and Development has the responsibility for managing and updating this document, thus avoiding the need to refer to the University Council.

On the other hand it is important to ensure that the policy contains key decisions and principles needed to give it strength. The use of overhead charges at the University of Botswana is unusual, and is very specifically set out in the policy. This has proved to be extremely useful in practice, especially in discussions with the financial services department. The policy also gives authority to the Office of Research and Development to address any matter that is hindering research, and to find ways to overcome the problem.

In common with most universities, the approval process is not fast. In all it took two years to get the policy approved. In the meantime should one do nothing? Fortunately the University of Botswana was sufficiently flexible in its approach to enable changes to be introduced before the policy itself was approved. The Office was therefore able to introduce some policy measures, by using drafts as working documents.

OPPORTUNITIES

What should a policy contain?

Clearly the policy is about principles. The policy specifies the goals that the University wishes to achieve in the research arena. Given the emphasis on developing a research culture, the University of Botswana research policy has sections on building research capacity, external funding, and graduate research, together with statements on ethical values, intellectual property, commercialisation of research, publicity for research activities and consultancies. It often refers simply to other documents that go into more detail on these matters. It defines the committees and bodies that will be needed to implement the policy, and also gives validity to the research handbook as the mechanism for implementing the policy. Key policy decisions are stated, so that there is no ambiguity. Finally there has to be a mechanism for policy review.

ACU staff visit the University of Botswana

Why have a Research Policy?

Most importantly for the Research Manager, the policy gives him or her the authority of the University Senate and Council to introduce new initiatives to encourage research, or to use as the basis for making decisions. Thus the policy should be seen as a tool to arm the Research Manager in the battle for resources, to provide a justification for decisions, and as a guide and reminder of the overarching aims and directions to take.

Implementation

A further pitfall one must avoid is to assume that once the policy is approved it will automatically be understood and put in practice by the University. The reality is that the Research Manager continuously has to emphasise the policy to staff, and ensure that it is applied. For example, despite regular emails to the entire University, and presentations to Faculty Boards, a survey of academic staff six months after policy approval suggested that 40% of the staff did not know it existed!

Managers must also concede that academic staff will treat any policy document with some scepticism. Its real use is to guide and assist administrators to know what needs to be done. It is up to Research Managers to show that the policy is important, through education, training and pro-activity in developing practices that ensure the policy is implemented.

Finally it is important that the Research Manager makes a point of rereading the policy from time to time. It is surprising how often one can get so immersed in the daily challenges, that one can lose sight of the big picture.

Has the policy worked?

Naturally it is too early to say whether or not the policy has been an outstanding success. Certainly the Office of Research and Development has been able to bring about significant changes: internal research funds are now heavily contested, the university has increased the research budget, and staff are increasingly seeking external funding. An award scheme has been set up, and the policy provides significant returns to staff for obtaining research funding. Staff attitudes also appear to be changing: the policy was introduced in the same year that the University changed over to a semesterised teaching system, resulting in a significant increase in teaching load (hopefully temporarily). Despite this our initial survey showed that 40% of staff felt that there had been a positive change in the attitude of their colleagues towards research, while only 20% disagreed. In conclusion the value of a policy lies in its ability to bring about its goals. The University of Botswana Research Policy has provided a launching pad for the Office of Research and Development's activities in encouraging research, as well as giving a crucial reference point for decision taking.

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Third stream activities...

The latest survey of the UK shows third stream activities are growing across a diverse sector. ***Julie Stackhouse*** *discusses the key findings and methods of the survey.*

The third annual survey of third stream activities in the UK finds overall a continuing improvement in relations between higher education and business. The report of the 2003 Higher Education - Business Interaction survey, commissioned by the Higher Education funding councils in the UK, was released in January 2004. Based on responses from all higher education institutions in England, Scotland, Wales and Northern Ireland (over 100 institutions), the survey covers a widely varied population. Quantitative measures of activity along with measures of policy, process and strategy give a very rich picture of interaction. The data collected covers the 2001-2002 academic year. Results are broken down both by geographical region and by research profile.* Key findings are:

Institutional Strategy and Economic Development

This section of the survey looks specifically at how HEIs perceive and plan their contribution to economic development. Providing 'access to education' was seen by HEIs across the sector as the primary way in which they contribute to economic development. For high research profile (HRP) institutions this was overtaken by 'research collaboration with industry'. Other functions popularly mentioned were 'technology transfer' and 'meeting regional skills needs'.

Strategic planning for business support is increasing and there was a slight shift in the sectors on which HEIs focus, with the public sector overtaking ICT as the top priority. Most institutions selected priority sectors on the basis of 'best fit' with the institution's expertise and in response to demand. Lower research profile (LRP) institutions tended to be slightly more responsive to regional development agency priorities and were also more likely to seek out 'gaps in the market'.

Collaborative research with business

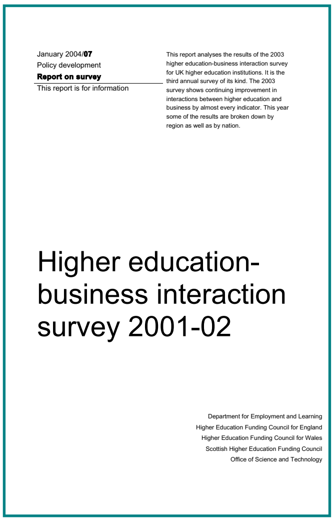
The survey looks at collaborative research with business in terms of co-funding of research projects, contract research and other forms of collaboration. Co-funded research varied widely by geographical region, with institutions in London carrying out least. This kind of research was also most important for LRP institutions making up over 50% of their research income. (It's difficult to tell whether region or research profile is the more determinant factor here).

The number of contracts with business has risen this year, although the participation of SMEs has fallen slightly. LRPs are more likely to contract with SMEs while HRPs tend to have much bigger contracts (in terms of value) than the other groups. This type of research is most important for HRP institutions: making up over 3% of their total institutional income as opposed to less than 1% for LRP institutions.

Other collaboration has also increased: There were 14% more CASE awards (joint funded scholarships) and 11% more knowledge transfer partnerships than reported in the previous survey.

Intellectual Property

There has been an increase in the number of disclosures (15%) but this is entirely concentrated in HRP institutions with a small drop for the others. There is also a slight increase in the number of institutions monitoring disclosures although 30% of respondents still did not do so. There was an overall increase in patent activity but this was entirely in number of patents filed with a slight decrease in the number of patents granted. Patents granted reflects the institutions' activity of some years ago and it would be necessary to monitor this trend over a number of years to determine, for example, whether this may be due to increasingly optimistic filings. The number of licences granted has fallen overall but this is due to a decrease in software licences only and therefore may reflect macro-economic trends. The number of non-software licenses granted has increased slightly.



January 2004/**07**
Policy development
Report on survey
This report is for information

This report analyses the results of the 2003 higher education-business interaction survey for UK higher education institutions. It is the third annual survey of its kind. The 2003 survey shows continuing improvement in interactions between higher education and business by almost every indicator. This year some of the results are broken down by region as well as by nation.

Higher education-business interaction survey 2001-02

Department for Employment and Learning
Higher Education Funding Council for England
Higher Education Funding Council for Wales
Scottish Higher Education Funding Council
Office of Science and Technology

The overall trend in IP activities is positive but unevenly distributed: Overall revenue from IP has increased significantly from approximately GBP 18 million to around GBP 34 million while the costs of IP protection only rose from approximately GBP 11 million to around GBP 13 million. Nevertheless 62 HEIs made a net loss in the year in question. The authors note an increasing trend for HEIs to develop in-house capability to seek out licensing opportunities for IP. They point out that with this uneven spread of activities, including the fact that around one third of the sector do not file patents at all, 'it may be expected that HEIs will collaborate to form a substantial enough IP base'.

Consultancy

The survey finds an increase in both the scale of consultancy activities and in the capacity to manage these. Income from consultancy is up by 18%, 74% of institutions now have a department or a company to manage links and 19% more commercialisation and industrial liaison staff were employed than in the previous year. The authors caution that this is a difficult area for data collection and that some of this increase

**Research profile is calculated by taking the total of funding council recurrent research funding and OST research grant as a proportion of the HEI's total income. HEIs were then placed in order and divided into three groups of equal number: Higher, Medium and Lower (HEFCE 2003/11).*

may be due to increased or improved reporting. They also point out that the increase in capacity is concentrated amongst the HRP institutions and there are still critical shortages in some areas.

Spin-offs

Other than graduate start-ups, numbers of spin-off companies established were slightly lower this year but figures for staffing and turnover were substantially higher. The authors caution that a higher number of institutions returned data for these than previously and that this is also one of the hardest areas to capture and validate data. They found little change in levels of support for spin-offs although they point out that a higher level of incubators in this survey may indicate increasing demand.

Training and Personnel links

The report finds more involvement of employers in curriculum development and also an increase in provision and income from courses for businesses. In contrast to the other areas examined, these activities do not seem to be led by the HRP institutions; Medium research profile (MRP) institutions show the highest level of activity.

Support for economic development activity

This area of the survey enquired into sources of funding received by HEIs for regional economic development, the role this income was seen to play and also how HEIs described their engagement with community programmes. For 2001-2002 the total amount of regeneration funding received by HEIs increased by 7%. While European sources continued to contribute the biggest part of this funding, these have decreased slightly and regional development agencies and 'third stream' are mentioned more frequently. Across all institutions this funding was most popularly seen as being used for 'building strategic links with industry'. The authors found regional variations, with the North East, West Midlands and Scotland being very strong in this area. In terms of partnership with the community 69% of institutions (a higher proportion than last year) rated themselves in the top two categories for the benchmark question asked, indicating a strong involvement in community programmes.

International comparisons

International comparisons are drawn with the AUTM survey of North American institutions. It appears that the UK institutions generate more spin-off companies per GBP. In the US one spin-off was created per GBP46.7 million of research expenditure and in the UK this was one-spin off per GBP15 million. Comparing licensing income as a percentage of research expenditure the North American institutions performed better at 2.8% compared with 1.1% in the UK. Bruce Clayman notes that within North America the US is similarly placed with relation to Canada (see page 6). It should be noted that while this survey covers the whole of the UK HE sector the AUTM survey samples only North American institutions who are active in technology transfer. Differences in both areas are smaller than in the previous survey.

Methods

This survey forms part of a continually improving process of data collection. Reflecting the authors efforts to keep the questions consistent year on year whilst refining these, and also perhaps reflecting improved procedures by the HEIs, this survey has resulted in more complete and more reliable information. The survey design attempts, where possible, to use data collected by the institution for their own purposes and to minimise the additional costs and effort of completing the return. This is also monitored as part of the survey.

Some data are more robust and easier to collect than others and this is noted by the authors appropriately. For example, while there are a few inconsistencies in the IP return their confidence in this data is 'medium to high' while the data on co-funded research projects is less robust. Problems with data are often definitional and also reflect how the sector records data for its own purposes. The authors stress the need to formalise third stream terminology.

In addition to the quantitative data on activities the use of benchmarking questions, where the institution may position itself on a spectrum illustrated by benchmarking statements, is useful in giving a broader picture of policy and each institution's perception of its activities.

Summary

In summary the survey presents a picture of improving interaction between higher education and business, with increases in consultancy activities, contracts with business, provision of courses and in disclosures and filing of patents. Strategic planning and the development of institutional capacity to organise third stream activity are also increasing. However the survey shows a picture of significant diversity amongst the HEIs; not all institutions will be equally engaged across the spectrum of these activities and there may be a case for collaboration.

Full details of the survey including list of questions and respondents may be found at www.hefce.ac.uk/pubs/

Benchmarking research management...

*The concept of benchmarking as a management tool is widely recognised - but how can it be applied to research management? **Paul Waugaman**, a consultant with considerable experience of benchmarking North American institutions, offers some pointers.*

Benchmarking and research management

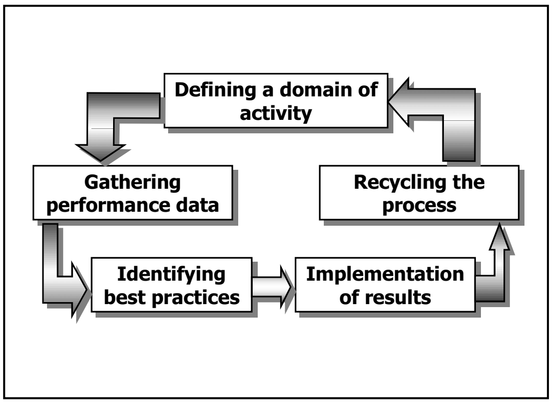
Benchmarking is a useful tool, adopted by educational organisations from the production- and profit-oriented private sector, and more lately, from the more cost-sensitive not-for-profit institutions. In its most general context, the tools of benchmarking allow executives and managers to compare their operations and methods with those of similar organisations, and evolve methods and organisations that do assigned tasks faster, better, and cheaper. We have adopted the following operational definition of benchmarking from an early writing on the subject: Benchmarking is the 'systematic comparison of elements of the performance of an organization against that of other organizations, with the aim of mutual improvement.' *

Benchmarking is often viewed as threatening when imposed from higher levels in an organization, but can be seen as a valuable tool by the manager or executive. When properly used, a benchmarking exercise is an exercise in organizational measurement. The results can address how well an organization is doing its job much better than how a single individual is doing his or her job within an organization. This is especially important for research management, which is a complex function requiring cooperation, coordination, mutual trust and respect between the participants.

The Benchmarking Cycle

Ideally, benchmarking begins with defining the domain of activity to be studied, developing common, and well-understood activities to measure, gathering and analysing data, reviewing and evaluating the data, identifying the practices that high-performing organisations use, making changes, and recycling the process.

In research management, it is common to bypass the steps concerned with gathering performance data, and to go straight to identifying best practices. This is easy to do because collecting performance data is difficult and time-consuming. In the US, we have discovered that it is difficult to achieve consensus amongst participants on exactly what fairly straightforward terms such as 'new proposal' or 'competing proposal' mean for counting purposes. We also found that many institutions do not keep workload information in their research management offices, and assembling data for benchmarking was just too time-consuming. In general, in most academic enterprises, the research management function is driven by forces that are not immediately interested in workload and process data



but by results measured in the satisfaction of the function's 'customers', however they are defined.

Benchmarking in research management often begins by setting standards of organisation and practice for a given domain. This is benchmarking at a more basic level than measuring performance and comparing results. 'Good practice' benchmarks may be developed and set at a national level, or at a multi-national regional level by groups like the Association of Commonwealth Universities, the Society of Research Administrators, or by governmental agencies. They have little credibility unless the participants buy into the process of building consensus. These organisational benchmarks are then helpful to the institution in programme planning and development (the institution knows what it is important to have in the function); and to oversight bodies which evaluate the institutions individually or as a group.

In the technology transfer function, for example, the presence of an institutional policy that encourages faculty inventions, establishes faculty and institutional rights and responsibilities, and identifies the institutional official responsible for the program mebecomes an organisational benchmark. The process of achieving consensus amongst the participants on the importance of a policy is an important and necessary step in establishing a benchmark acceptable to all.

In our benchmarking studies in the US, we have started from a different level, assuming a consensus amongst participants on the importance of certain measures of the level of effort and success. Our problems with participation have developed when participants did not share the value of certain measures enough to participate in data collection.

For example, when looking at technology transfer practice and performance, we found that different institutions with different goals and objectives for technology transfer will value certain measures more than others. If the important goal is to maximise revenue, the most important success measure is license income. If the most important goal is to support and enhance regional economic development, the most important success measure may be the number of local start-up businesses formed.

**McNair, C.J., Liebfriend, K.H.J. "Benchmarking" New York: Harper Business, 1992*

Benefits of Benchmarking for Participants

A good benchmarking project will:

Provide participating institutions access to useful comparative information for programme development, evaluation, and improvement. Each participant will take away ideas to make his or her research management function better. At the very least, good practices in place will be affirmed.

Allow participants to use readily available data assembled for internal reporting or other purposes. If comparative information is gathered, it needs to be easily assembled and comparable to data gathered on other participating institutions. This is important if performance or available resources is to be measured.

Allow participation at a low cost. Cost needs to be considered in terms of money costs (supporting a massive data collection effort may not be worth it if participants must share in the cost) and time costs. In our studies in the US a major problem has been the staff time necessary to assemble data in offices that have too much to do and deadlines that must be met.

Make requests for information easy to complete and submit. This ties to the time issue above. Insofar as possible, information or data should be gathered as simply as possible. We have found value in using questionnaires and reporting forms on the Web, and obtaining practice data through carefully structured telephone interviews which make it easy for the participant. This may take more time in planning and development but makes for a better product.

Provide rapid feed-back. The sooner the information collected is available to participants the better. In some of our studies of sponsored research administration, the web-based data system gives the participant an immediate report comparing his/her institution's performance with data from a prior sample.

Possible measures of interest across national/regional lines

Looking at research management from the perspective of the US exclusively can be hazardous. We have refined research management in response to our national policies and practices for financing and conducting research, and linking research closely with the educational preparation of scientists and engineers. Competitiveness plays a major role in the allocation of funds to individual researchers. However, I believe there are domains of activity that are common enough to support benchmarking of organisational practices as defined above. Each domain described below has performance and practice aspects.

Encouraging faculty/staff participation in externally-sponsored activity

Performance measures might include:
- Number of proposals submitted per 100 faculty/staff members.
- Proposal 'success rate,' the percentage of submitted proposals that get funded.
- The percentage of faculty/staff participating in sponsored activity.

Practice measures might include:
- Does the institution provide assistance to faculty in writing proposals?
- Does the institution provide training for faculty in research methods or 'grantsmanship' that might help them be more competitive?
- Does the institution provide funds to help a faculty member start up a research lab or project?

Improving institutional competitiveness in externally-sponsored activity

Performance measures might include:
- Research management staff per 100 faculty/staff members.
- Growth in sponsored research expenditures over five years.

Practice measures might include:
- Are there formal recognition activities for successful faculty participation in sponsored activities?

Managing funds and resources for externally-sponsored activity

Performance measures might include:
- Number of active sponsored research awards per research management staff member.
- Sponsored research funding (in Pounds, Euros, Dollars) per research management staff member.

Practice measures might include:
- Does the institution have a system of policies and procedures in place as a means of ensuring uniformity of treatment in all situations?

These are the kind of domains and measures that might be of interest to a group of institutions across a range of countries and economic and social settings, but sharing a common interest in conducting quality research.

There are reports on a number of benchmarking studies available through the Web or by request. If readers are interested, I would be happy to provide some of them.

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ACU/ HEFCE benchmarking project

A new benchmarking initiative to compare research management practices in 15 international universities gets under way in the next few months. ***John Kirkland*** *describes the background.*

In a recent issue of this magazine, ACU member universities were asked to register their interest in possible benchmarking activities. The response was overwhelming. It has taken a little time to convert this into a formal programme but the exercise on which we are about to embark represents a valuable first step.

With sponsorship from the Higher Education Funding Council in England (HEFCE), we have been able to invite 15 universities to join our international research management benchmarking group. Between now and late 2005, the group will systematically benchmark their policies, structures and procedures in the field. The exercise will use a model developed over several years by the successful Commonwealth universities benchmarking programme at the ACU. The Director of that programme, Svava Bjarnason, will co-direct the project.

The universities have been selected to represent a structured diversity of approaches within the field. In other words, we have actively sought out a range of sizes and systems. The fact that we are benchmarking process, rather than outcomes, makes this approach practical. On the other hand, of course, we need to recruit institutions that have a significant interest in the field, and have actively developed polices.

This is all the more so since the commitment expected from participating institutions is substantial. Although sponsorship from HEFCE covers most of the organisational costs, institutional representatives are supporting their own travel to meetings, personal accommodation and making a nominal cash contribution. Much more important is their time commitment, in providing detailed information about their current practice before each meeting. This is vital, since statements will be examined by the central resource team in advance of each session, to ensure that discussions are structured from a high level of knowledge, and that appropriate comparisons are brought out.

The group will physically meet twice. In September, discussions will centre around 'pre-award' questions, such as seeking funding, presenting applications and costing issues. In April 2005, they will consider 'post award' issues such as project management and technology transfer. A list of questions for the first session can be found in the box on this page. Both meetings will be timed to coincide with the meetings of national research management associations in Australia and the United Kingdom respectively, which participants will have the option of attending. As mentioned above, the group will be restricted to 15 for this exercise, to ensure maximum interaction. Although the final list has not been announced at the time of writing, the likely composition will be four from the United Kingdom, three from Australia, two from Canada, and one each from New Zealand, South Africa and India. A particular benefit of external sponsorship has been the ability to involve a small number of non-Commonwealth institutions, and participants are being sought from China, Japan and the United States.

Benefits from the project will be at two levels. For the participants, it will provide access to a fund of specific ideas, police and practices which they will be able to set against their current practice, and lead to the production of a comprehensive list of good practice statements. Much of this detailed information will, of course, be kept in confidence. Generic findings will, however, be of much wider applicability and these will be disseminated throughout our research management network at the end of the project.

The first session will focus on developing the research base and ask the following:

- How are internal resources allocated to stimulate research activity?
- What training exists for research staff on key management issues?
- How does the institution encourage development of industrial, international and other external links?
- Does the institution have adequate information on its own research strengths?
- How does the institution disseminate information about research funding opportunities?
- How does the institution centrally promote its research capacity?
- What mechanisms exist for the university to respond to individual enquiries about its activities?
- What incentives exist for staff to develop their research activity?
- What support exists for staff in making proposals to external agencies?
- How does the university ascertain the feedback from key customers on its research performance and delivery?

For further information on the project, or to discuss other possible initiatives in the field of research management benchmarking, please contact John Kirkland at j.kirkland@acu.ac.uk

OPPORTUNITIES

The extent to which university generated ideas are exploited by business has been the subject of several government initiatives in the United Kingdom in recent years. In 2003, an independent review was commissioned under the chairmanship of Richard Lambert, former editor of the Financial Times, to consider the current situation. ***John Kirkland*** *reviews the recently published findings.*

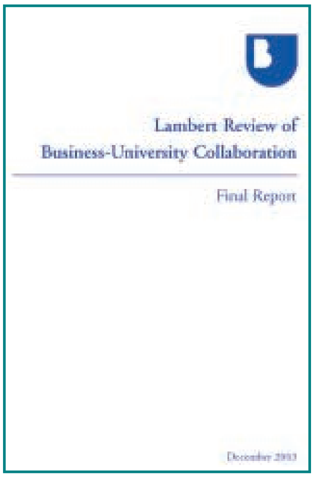
Two broad trends are seen as shaping the way that companies undertake research around the world. First is the increased tendency towards outsourcing and external collaboration, rather than in-house work. Second is the move towards a more global outlook, in which companies seek the most appropriate partner across national boundaries.

According to Lambert, British universities are well placed to respond to this new environment. Indeed, the critical problem is no longer thought to be one of how to increase the supply of commercial ideas from universities into business, but one of how to raise the level of demand for such innovation within business itself. The report notes that, with significant exceptions, the research intensity of British business is low by international standards, and declining.

The Report recognises that further improvement will require joint efforts. Universities will need to get better at identifying their own competitive strengths in research, and focusing on these. Government will need to continue and expand its support, and business needs to look at its own structures for taking in and exploiting innovative ideas. Amongst specific recommendations were:

- the building of better networks across research-intensive business, and better promotion of existing tax credits for research;
- the adoption of model contracts, to be used on a voluntary basis, covering such areas as intellectual property ownership in collaborative projects, which would simply speed up project negotiations;
- greater consideration to the regional role of universities, and possible collaboration between universities at regional level in intellectual property exploitation;
- the development of a ‘league table’ of the world’s best research-intensive universities, both to provide a ‘reality check’ for academics and to help policy makers to evaluate their strategies;
- less emphasis on university ‘spin-outs’, many of which have not proved sustainable, and more on direct licensing of technology to commercial users.

In a general sympathetic attitude to the stance of universities on many issues, the report accepts that institutions are struggling with an ‘uncoordinated and often unnecessarily burdensome system of accountability and regulation’, which should be reduced where possible. It also accepts that, where an element of public funding is involved, the starting point for negotiations should be for universities to own the resulting intellectual property, whilst stopping short of a legislative framework along the lines of the Bayh-Dole Act in the United States. On the other hand, it warns that universities often have an inflated view of the value of their intellectual property rights, and that the quality of individual technology transfer offices varies. This last point is further used to demonstrate the possible advantages of collaboration at regional level.


Lambert Review of Business-University Collaboration

Final Report

December 2003

In both the higher education sector and government, the report will be welcomed as justification for the substantial investment devoted to this area in recent years, and cited as evidence for continuing this element. In doing so, it points to several practical issues of interest not only to UK policy makers, but also to those interested in the field globally.

More information on the Lambert report can be found at
www.hm_treasury.gov.uk/consultation_and_legislation/lambert

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Students and Intellectual Property...

Most universities have clear policies for ownership of intellectual property by their staff. Opinion on student generated innovations, however, differs widely. ***Phil Clare*** *examines the pros and cons of universities claiming rights in the field.*

Universities are greatly concerned with the management of intellectual property. It is an asset we can exploit, and a bargaining tool we use when discussing the price of our research contracts. It presents us with opportunities, but it also carries with it risks – risks of infringement, and risks associated with obligations in the contracts we sign. We sell, trade and promise our IP daily, but in order to do so, we must ensure that it is ours in the first place.

Generally speaking, ownership of intellectual property rests with the one who created it, unless there is a contract to the contrary. The single statutory exception to this is in the case where the creator's employer is taken to own their creation (although strictly speaking there is a contract – the contract of employment). The UK Patents Act 1977 states that:

'…an invention made by an employee shall… belong to his employer if it was made during the course of the normal duties of the employee or in the course of duties… specifically assigned to him…'

Similar provisions apply to other types of intellectual property rights, and other legal jurisdictions have statutes or case law which achieve the same effect. This provides a basis for universities to claim ownership of IP created by their staff (leaving aside any discussions of waivers for copyright in academic works, or what actually constitutes the 'normal duties' of a university lecturer), but what of students? Students are usually not employees of their institution; therefore there is no basis for universities to claim ownership of their IP, unless there is a contract to the contrary.

Is this really a significant problem? I would argue that it is. The contribution of students to the creation of intellectual property is substantial and varied. Postgraduates in particular may contribute to the delivery of research funded by external agencies, or their project may be a small but important contribution to the collective outputs of a research team which, taken together, could be a potentially valuable bundle of IP. In both of these instances, the consequences of failure to ensure that the IP is owned by the university could be far-reaching. If the university has agreed to assign or license rights arising from the project to the research funder then it is, implicitly or explicitly, warranting that it actually owns those rights. A student who wished to assert ownership of their results in such circumstances would place the university in a very difficult position.

The Sidewinder Guitar Re-stringing Tool - designed by Bournemouth University Product Design graduate Glyn Hauser.

Even when there is no prior agreement with an external partner, failure to tie up ownership by the university at the project stage could be an obstacle to future exploitation of the IP of a research group. A single student who made a minor contribution to the results underpinning a patent would be in a position to hold the university to ransom once it became apparent that there was value in the IP, perhaps holding out for a disproportionate share of any reward, and delaying patent filing or licensing negotiations. Neither is IP solely the product of science and engineering students in large research teams. Undergraduates and postgraduates in the creative industries are being encouraged to market and license the products they develop as part of their studies. Intellectual property of all types is generated widely across the student body, just as it is by the faculty, although perhaps it is not so often of value.

How then should universities ensure that they own the student IP that they need? A recent study of UK universities found that in spite of a high level of consistency in all other policy areas related to intellectual property, institutions were divided in the approach taken to solving this problem. A narrow majority of universities with any policy at all for student IP claim ownership of it. This ownership is generally effected by means of a contract based on the wording of university student regulations and registration forms. Either an explicit reference is made on the registration form, noting that IP is assigned to the university, or the registration form binds the student to abide by the university regulations, which include the stipulations on IP. A potential route for legal challenge to this practice in the UK derives from the Unfair Contract Terms Act 1977 as modified by the Unfair Contract Terms in Consumer Contracts Regulations (SI 1999/2083), which applies to contract terms which have not been individually negotiated. Regulation 5 provides that a term is unfair if, contrary to the requirements of good faith, it causes a significant imbalance in the parties' rights and obligations, to the detriment of the consumer. Courts might be expected to rule against blanket assignments of IP by students on this basis. For a university to rely upon such a mechanism to protect their interests, therefore, is a high risk strategy.

It has been argued that universities have both a responsibility to assist students in exploiting their IP, and greater resources and influence with which to do so, and that consequently, assignment of the IP and its management by the university is likely to be in the student's self interest. In many cases, this will undoubtedly be the case but, given the variability in the resources of both universities and students, it is unlikely to be so universally. In addition, with the growth of organisations offering support to anyone wishing to exploit an invention or start a new

The evolution of the drinks blender continues, thanks to Bournemouth Product Design graduate Joanna Edwards.

business, the onus is increasingly on the university to demonstrate that it is offering a better deal than is available elsewhere. Arguably, a blanket claim of IP ownership also creates an obligation for the university to actively and responsibly manage all IP generated by all students in the institution. This might be beyond the resources or inclinations of the university, and could open it to criticism should it appear to fail to exploit student-generated IP properly.

Whatever an institution's policy on ownership of student IP, prudence dictates that in any case where there is a possibility that a student might generate IP the university wishes, or needs, to own, then an individually negotiated contract should be put in place. Indeed, it is the practice of many universities who claim to own all student IP to ensure that they also conclude contracts with individuals, just to be on the safe side. Good practice dictates that such contracts should also include a commitment to confidentiality, and should be concluded before the start of any project.

By contrast, however, many universities now explicitly state in their policy documents that they do not claim to own all student-generated IP, and that, where appropriate, they will seek the co-operation and agreement of students in exploiting the IP that they generate. This recognises that only a minority of the IP generated by the student body will be of interest to the university, and establishes a collaborative philosophy of working with our increasingly well-informed students.

It might be argued that the belt and braces approach of both making a blanket claim and negotiating individual contracts is the safest way for a university to proceed. I would argue that this is not necessarily the case. The existence of a blanket claim might lead university managers into believing that it can be relied upon. Far better that the recognition of its inadequacy leads to an effort to include students within the active management of IP within the institution. A more important consideration, though, is the education of the student. Reliance upon a weak policy is undermined by any increase in student awareness of IP law and practice, which might enable them to challenge the policy. It may also send the message that the university does not wish to engage with students over IP, but to make unilateral decisions, at best on their behalf, and at worst, without taking their interests into account at all. Increasingly it is being recognised that the teaching of intellectual property issues has a real value to students, undergraduate and postgraduate, whatever their discipline. Entrepreneurship programmes and inclusion of IP teaching in the undergraduate curriculum are producing students with more awareness than ever before of the commercial potential of their intellectual creations. If their institutions generate some additional return for helping them, then well and good, but the benefits of developing the skills of our students are arguably even more important, and part of our core mission. We are equipping the entrepreneurs of tomorrow with the tools of their trade, and sending graduates to work in industry with the IP skills that otherwise they would have had to learn on the job. The more support we offer, perhaps, the more we are justified in asking for an interest in the IP our students generate.

We are talking about students, not employees, after all. I would argue that it is more important that we enrich their education by developing their understanding of intellectual property than press home a doubtful claim to ownership. Let us protect our own interests, by all means, but in an explicit collaboration, reflected in our policies, as well as in our practice.

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Dr Phil Clare is Deputy Chair (External Affairs) of RAGnet, and Research and Commercialisation Manager and a member of the Centre for Intellectual Property Policy and Management (CIPPM) at Bournemouth University.

O P P O R T U N I T I E S

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Study of interactions between ICT SMEs and R&D organisations (first published 08/04/04)

A new Australian Government study is underway to examine the innovation-based linkages existing between ICT SMEs and publicly funded R&D organisations, reports R&D Info. The study, commissioned by the Department of Communication, Information, Technology and the Arts (DoCITA) is being undertaken by public policy and management consulting firm, Howard Partners. R&D Info said the analysis will investigate if there has been any improvement in interactions over time using benchmark studies such as 'The IT Engine Room: SMEs in Australia's IT&T Industry.'

Kerry attacks Bush science policy (first published 13/04/04)

Democratic presidential hopeful Sen. John Kerry is taking advantage of the bad press President Bush has received in the wake of complaints about his science policy. 'The White House hasn't told the truth to America about Weapons of Mass Destruction in Iraq, the true cost of the Medicare Bill, the deficit or the true cost of the Iraq War. Now they're twisting the facts about public health,' the Kerry campaign asserts in an April 7 statement. The statement references claims of the administration's manipulation of science cited in the recent report by the Union of Concerned Scientists, including 'misleading the public about the health risks of mercury,' and altering information on controversial research findings posted on federal agency websites.

An April 8 editorial in Roll Call contends that Kerry is blaming Bush 'too much for "sending American jobs overseas," but nowhere near enough for risking US technological leadership by underfunding basic scientific research.' Not only should Kerry be 'raising more hell about this, but Congress, instead of slathering pork into the pending highway bill, ought to spend a few billion dollars to increase Bush's budgets for the National Science Foundation, science programs at the Departments of Energy and Defense, the National Institutes of Health, and the National Institute of Standards and Technology,' Morton Kondracke maintains. He suggests that there is 'a golden political opportunity here for Kerry to pounce on Bush's sad record and be the "science candidate" in 2004.' Specifically, the editorial advises Kerry to mention the president's research record during every speech and build 'a full research platform of his own.'

Knowledge transfer not all about spin-outs (first published 10/03/04)

Policy-makers should not concentrate on stimulating universities to create spin-outs alone in their efforts to boost the economy, according to the conclusions of a conference on the state of knowledge exchange in the UK.

Discussing the very significant emphasis by policy-makers on university spin-outs and the prevailing view that stimulating universities to do more to create companies will be a very important way of boosting the UK economy at a Cambridge-MIT Institute conference on 27 February, Alan Hughes, director of the University of Cambridge's Centre for Business Research, argued for perspective. Supporting existing companies – 'golden oldies' – is just as important as supporting the 'new kids on the block', Hughes told delegates.

The whole range of knowledge transfer – consulting work undertaken by academics for companies, academics writing scientific papers and collaborating with others on research projects – should be supported and not just spin-out companies, said Hughes. In particular, more needs to be done to stimulate businesses to absorb research coming out of universities, he said.

Intellectual property guide for Framework 6 (first published 07/04/04)

The European Commission's directorate-general of research has produced a guide to intellectual property issues arising from Framework 6 projects. The document highlights various issues and pitfalls that participants may encounter while conducting research and development, and provides information on provisions that need to be made before embarking on collaborative ventures. See: http://www.cordis.lu/fp6/find-doc.htm#ipr

Reverse brain drain (first published 05/04/04)

India's defence research laboratories are experiencing a 'reverse brain drain' with India-born experts in the US competing to return to the country's Defence Research and Development Organisation, the news service Rediff reports. 'This trend has been seen in the last two years. About 10 people from the US have been joining DRDO each year and the trend is growing,' DRDO Chief Controller W. Selvamurthy told reporters in Bangalore. He added, 'We may have selected about 10 people each year but only after screening several applicants. DRDO has an ad-hoc scheme where we hire NRIs within three months of them applying for jobs.' DRDO employs about 30,000 individuals, of whom 7,000 are scientists and 11,000 are technical staff.

International awards (first published 05/04/04)

A program targeting developing countries to offer short-term scientific training in the US and facilitate the international exchange of researchers, policymakers and university faculty was launched by Agriculture Secretary Ann Veneman on March 25. Recipients of the Norman E. Borlaug International Science and Technology Fellows Program – named after the Nobel Peace Prize winner credited with saving millions of lives through his work with global food production – will be placed at colleges and universities, USDA and other federal agencies, international research centres and nonprofit institutions and private firms.

'Science and technology can help raise agricultural productivity, improve food processing and marketing and address global hunger and poverty,' Veneman said. In his speech at the Ministerial Conference on Agricultural Science and Technology in Sacramento last summer, Borlaug told government leaders that they should commit to efforts to accelerate the transfer of agricultural and food technologies to the developing world. 'The Department of Agriculture is responding to Dr. Borlaug's challenge and shares his commitment,' Veneman said. 'This new programme is the latest of several initiatives to build on the momentum from that conference.' The programme will be open to participants worldwide but will focus on African, South American and Asian nations. Approximately 100 fellows from developing countries will be selected for the first round of awards.

Australian fund for EU researcher visits launched (first published 02/04/04)

Researchers from Europe will have the chance to spend between four and six months in Australia under a new fellowship scheme, the Australian government has announced. The Endeavour Postgraduate and Postdoctoral Research Fellowships will provide funding of up to AUD25,000 per scholar in any field of study, to conduct research at Australian universities. Through attracting European researchers, these fellowships are intended to stimulate research in Australian higher education, build closer relationships between leading institutions, and continue to strengthen bilateral relationships between Australia and the participating countries. Applications for the Fellowships close on 28 May with the successful candidates undertaking their research in Australia between August 2004 and June 2005.

Harvard plans India R&D centre (first published 02/04/04)

The world's most sought-after business school, Harvard, has decided to open a new research centre in India, to help develop case studies to train future global managers. While a final decision is yet to be reached, The Times of India learnt that the centre will be located either in India's business capital Mumbai, or IT capital Bangalore. When the centre opens, it will be Harvard Business School's fourth international research centre. The first was opened in Hong Kong, the second in Buenos Aires and the third in Tokyo just two years ago.

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Funding opportunities

In each edition of Research Opportunities, turn to this section to find current funding opportunities relevant to most or all Commonwealth researchers. The information is sourced from COS Funding Opportunities, a leading database of information about currently available funding containing more than 23,500 funding programmes representing over 400,000 individual funding opportunities worth over USD50 billion. Please note: If your institution does not have a subscription to these services, please follow the Source Link rather than the COS Record Link for the opportunities that interest you. For subscription information, please send an e-mail to ***Simon Lister****, uk@cos.com.*

Title: West African Research Center Travel Grant
Sponsor: West African Research Center (WARC) - West African Research Center/ Centre de Recherche Ouest Africa
Deadline: September 15, 2004; March 15, 2005 (anticipated)
Amount: Bursaries up to USD2,500 are available.
Eligibility: West African scholars and graduate students may apply.
Citizenship: Africa
Requirements: Graduate Student; PhD/MD/Other Professional

Summary: The West African Research Center in Dakar, Senegal, offers travel bursaries to West African scholars and graduate students. These funds may be used to: attend and read papers at academic conferences relevant to the applicant's field of research; visit libraries or archives that contain resources necessary to the applicant's current academic work; or travel to a research site.

Source Link: http://www.warc-croa.org/grants.htm
COS Link: http://fundingopps.cos.com/cgi-bin/getRec?id=56129

Title: Grants for Scientific Meetings in Developing Countries
Sponsor: Third World Academy of Sciences (TWAS); Meetings and Lectures
Deadline: June 1, 2004; December 1, 2004 (anticipated)
The closing dates for receipt of completed requests are June 1 for meetings to be held during January through June of the following year, and December 1 for meetings to be held during July through December of the following year.
Amount: USD 4,000 - Support is normally provided in the form of travel grants for principal speakers from abroad or participants from developing countries other than the country where the meeting is held.
Eligibility: Financial assistance is available to the organizers of conferences, workshops, symposia, and special meetings held in less developed countries.
Citizenship: Less Developed Countries (LDC)
Activity Location: Less Developed Countries (LDC)
Requirements: PhD/MD/Other Professional

Summary: The Third World Academy of Sciences (TWAS), with generous funds from the Italian government through the Direzione Generale per la Cooperazione allo Sviluppo, encourages the organisation of high-level international and regional scientific activities in developing countries by offering financial assistance to the organisers of conferences, workshops, symposia, and special meetings held in those countries. Grants are offered for meetings in the following natural sciences fields: Agriculture, Biology, Chemistry, Engineering, Geology, Medical Sciences

Source Link:
http://www.ictp.trieste.it/%7Etwas/SM_Form.html
COS Link: http://fundingopps.cos.com/cgi-bin/getRec?id=14365

Title: Research Grants Programme
Sponsor: Third World Academy of Sciences (TWAS); Capacity Building for Research
Deadline: July 1, 2004; December 1, 2004 (anticipated)
Upper Amount: USD 10,000 (amount requested must not exceed this)
Eligibility: Applicants should be nationals of developing countries with an advanced academic degree and some research experience, and hold positions at universities or research institutes in developing countries.
Citizenship: Less Developed Countries (LDC)
Activity Location: Less Developed Countries (LDC)
Requirements: PhD/MD/Other Professional

Summary: The Third World Academy of Sciences (TWAS) offers a Research Grants programme in basic sciences to enable creative researchers in the South working in the fields of basic sciences to purchase the research facilities they need to be productive.

The Research Grants programme provides support for research projects in the following basic sciences fields: Biology, Chemistry, Mathematics, Physics.

Research grants are awarded by the academy for high-level and promising scientific research projects to be carried out in developing countries by the individual scientists named. The purpose of these grants is to: reinforce and promote scientific research in basic sciences in the Third World; strengthen the endogenous capacity in science, and reduce the exodus of scientific talents from the South.

A grant may be used to purchase scientific apparatus, consumable materials, specialized literature, and other items needed for the project that are not obtainable locally. Personal computers are normally not covered under this scheme, except in very exceptional cases where the need is fully justified.

Source Link:
http://www.ictp.trieste.it/%7Etwas/RG_Form.html
COS Link: http://fundingopps.cos.com/cgi-bin/getRec?id=14372

Title: Research Grants
Sponsor: Trans-Antarctic Association
Deadline: January 31, 2005 (anticipated)
Amount: Cash grants up to a maximum of GBP1,500 may be awarded in support of field work, equipment, publication, or travel. Normally about GBP15,000 are available for distribution each year, one third of the available funds being awarded to New Zealand applicants and the remainder being awarded to applicants from Australia, South Africa, and the United Kingdom.
Eligibility: The award is open to individuals and organizations within Australia, New Zealand, South Africa, and the United Kingdom.
Citizenship: Australia; New Zealand; South Africa; United Kingdom
Activity Location: Antarctica
Requirements: Graduate Student; PhD/MD/Other Professional

Summary: The Trans-Antarctic Association is a charity which exists to promote, organise, encourage, or support expeditions to the Antarctic. Grants are awarded annually in support of Antarctic research and exploration. Grants may be awarded in support of field work, equipment, publication, or travel.

Source Link: http://www.transantarctic.org.uk/
COS Link: http://fundingopps.cos.com/cgi-bin/getRec?id=22995

Title: South Africa-Netherlands Research Programme on Alternatives in Development (SANPAD)
Sponsor: University of Natal, Durban
Deadline: March 15, 2005 (anticipated)
Amount: SANPAD's contribution will not exceed ZAR400,000.
Researchers from previously disadvantaged groups may apply for grants for, and assistance with, the proposal preparation.
Eligibility: Project leaders must be South African academics with demonstrable research expertise, who are in full-time employment at South African universities and technikons.
Citizenship: Netherlands; South Africa
Activity Location: South Africa
Requirements: PhD/MD/Other Professional

Summary: The South Africa-Netherlands Research Programme on Alternatives in Development (SANPAD) is a programme funded by the government of the Netherlands for the advancement of development-related research in South Africa. The programme aims to support high-quality research through co-operation between South African and Dutch researchers and to build research capacity in those parts of the research community which have been disadvantaged in the past. It also stimulates co-operation between different research institutions in South Africa.

SANPAD invites South African researchers to submit proposals for projects within the following themes: New approaches to Economic Empowerment; Social Development for Empowerment; Natural Resources and their Management; Culture, Identity and a New Society and Governance for Democracy.

Applications should include a clear indication of research capacity building (graduate student training) among students from disadvantaged backgrounds; be development oriented, policy relevant, and socially beneficial; preferably be multidisciplinary; and include a Dutch collaborator (the secretariat can provide some assistance with this).

The address for courier service is SANPAD, University of Natal, corner of Cato Manor and Francois Road, Durban 4001, South Africa.

Source Link:
http://www.sanpad.org.za/grant_funding.htm
COS Link: http://fundingopps.cos.com/cgi-bin/getRec?id=58445

Title: Collaborative Research Initiative Grants
Sponsor: Wellcome Trust
Deadline: Continuous. Preliminary applications may be made at any time. Applicants should allow six months between submission of a full application and the proposed starting date. Full applications are considered four times a year.
Amount: The award amount is unspecifed. Support is provided for up to three years and will cover the costs of research in the home laboratory. As well as project

running costs and equipment, this support may include the costs of travel and subsistence for short visits (two to four weeks) between the groups.
Eligibility: Applications are invited for researchers in countries of sub-Saharan Africa, other than South Africa. This scheme is also open to members of the academic staff of the historically black universities (HBUs) in South Africa who have already developed collaborative links with another South African academic institution that has a strong and appropriate research base.
Citizenship: Africa
Activity Location: Africa
Requirements: PhD/MD/Other Professional

Summary: The purpose of the Wellcome Trust's Support for Collaborative Research in South Africa scheme is to encourage collaborative research between groups in South Africa and those in the rest of sub-Saharan Africa in order to develop research capacity in these countries. Proposals must address medical or veterinary issues relevant to sub-Saharan Africa.

Collaborative Research Initiative Grants enable established research workers in countries of sub-Saharan Africa to develop a research programme in their home laboratory, in conjunction with a collaborating laboratory in South Africa.

Source Link:
http://www.wellcome.ac.uk/en/1/biosfgintintfunsaf.html
COS Link: http://fundingopps.cos.com/cgi-bin/getRec?id=34645

Title: Mandela Fellowships
Sponsor: Harvard University; DuBois Institute for Afro-American Research, W.E.B.; Special Africanist Fellowships
Deadline: January 15, 2005 (anticipated)
Eligibility: Visiting fellows must be scholars based at the University of Cape Town.
Citizenship: South Africa
Activity Location: Massachusetts
Requirements: PhD/MD/Other Professional

Summary: With funds from the Andrew W. Mellon Foundation, the W.E.B. Du Bois Institute, and the University of Cape Town have established the Mandela Fellowship. This programme serves as a means for scholars in South Africa to be released from the pressing demands of higher education and have the time and space needed for research and engagement within a larger community of scholars.

Source Link:
http://www.fas.harvard.edu/~du_bois/FELLOWS_PROGRAM/Program_Description/program_description.html
COS Link: http://fundingopps.cos.com/cgi-bin/getRec?id=56402

Title: Grants
Sponsor: Aga Khan Development Network (AKDF); Aga Khan Foundation (AKF)
Deadline: Continuous. There are no formal application procedures. Before developing full proposals, enquiries should be made to the foundation office in the country where the proposal originates or where the project would be executed. The foundation will only respond to serious requests that correspond to the concerns expressed in the AKDN website and propose activities that further the foundation's understanding of development issues, problems, and effective solutions. Unrelated solicitations will not be entertained.
Amount: The Aga Khan Foundation receives more than 1,000 requests for support each year. Only five or ten are fully funded.
Citizenship: Less Developed Countries (LDC)
Activity Location: Less Developed Countries (LDC)

Summary: The Aga Khan Foundation (AKF) is a non-denominational, international development agency established to develop and promote creative solutions to problems that impede social development, primarily in Asia and East Africa. Created as a private, nonprofit foundation under Swiss law, the foundation has branches and independent affiliates in 12 countries.

The foundation focuses on a small number of specific development problems by forming intellectual and financial partnerships with organisations sharing its objectives. Most foundation grants are made to grassroots organisations testing innovative approaches in the field.

The AKF funds projects that within a cluster of inter-related programmes seeking to resolve generic problems in health, education, rural development, or the enhancement of non-governmental organisation capacity.

Funded programmes are expected to: respond to the felt needs of local populations, and to the needs of women and children that are often unexpressed; be innovative in nature, limited in time, and have potential for financial and organisational sustainability; mobilise indigenous resources, including voluntary efforts; be action-oriented and likely to provide early and replicable results in diverse cultural settings; include a significant capacity-building component; have an adequate and dependable management structure or plans for developing one; and include monitoring and

evaluation mechanisms.
The foundation does not fund construction. Travel and study awards are made only to foundation-sponsored project staff directly involved in programme implementation and the sharing of lessons learned through such activities.

With few exceptions, the foundation funds programmes in countries where it has offices and local professional staff to monitor implementation. At present, these are Bangladesh, India, Pakistan, Tajikistan, Kenya, Tanzania, Uganda, Madagascar, Syria, Iran, the Gulf countries, France, Portugal, the United Kingdom, the United States, and Canada.

Source Link:
http://www.akdn.org/agency/akf_inquiries.html
COS Link: http://fundingopps.cos.com/cgi-bin/getRec?id=62019

Title: Grant Aid Program
Sponsor: Japan International Cooperation Agency (JICA)
Deadline: Continuous. There are no set deadlines.
Eligibility: Countries eligible for receiving grant aid are selected from among those that qualify for interest-free financing from the International Development Association (IDA).
Citizenship: Less Developed Countries (LDC)
Activity Location: Less Developed Countries (LDC)
Requirements: Nonprofit

Summary: Grant aid involves the provision of funds to the governments of developing countries without any obligation to return them. Support is offered with the provision of facilities and materials by the government of the recipient country in order to assist with economic and social development in that country.

The Japan International Cooperation Agency (JICA) is responsible for administering grant aid in the following categories:
1. General project grants, including children's health grants, forestation grants, rehabilitation grants, grants for support for human resource centres, grants for clearance of antipersonnel mines, debt relief grants, non-project grant aid for structural adjustment support, grant aid for overseas students, and grant aid for grassroots projects
2. Fisheries grants
3. Food aid
4. Aid for increased food production

Grant aid is made available mainly for human resources development such as education and research, health and medical care, daily water supply (service water and drainage development), agriculture and farming villages, public infrastructure such as roads, bridges, and airports, and environmental conservation projects.

Funded projects must involve basic fields required for development in developing countries, and countries should be unable to implement them with their own funds and borrowing capacity. Projects entailing commercial profit, high-tech projects out of line with the technical levels of the recipient country, and those that run the risk of being channelled to military ends are ineligible.

Source Link:
http://www.jica.go.jp/english/activities/schemes/06gra.html
COS Link: http://fundingopps.cos.com/cgi-bin/getRec?id=62307

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