

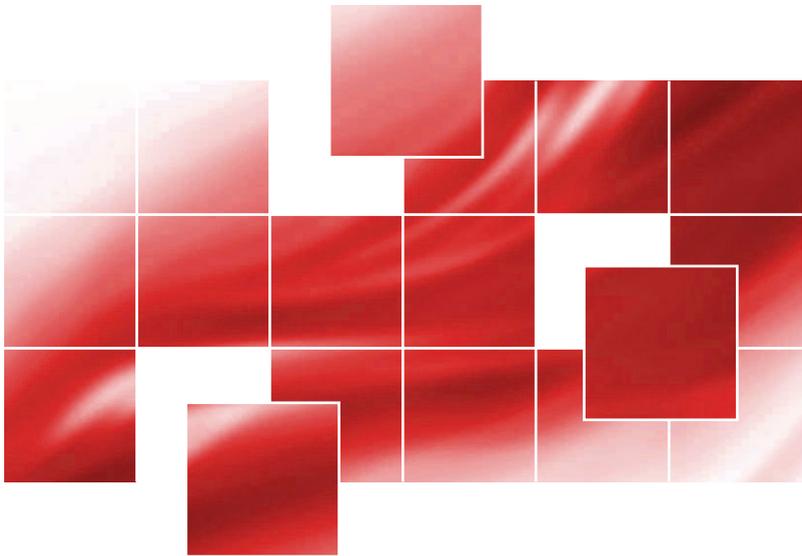


Part 1

A research manager's notebook

Being a research manager Understanding your role and maximising your impact

Notes for researchers and research managers



Contents

Introduction	2
Research Management: The skills in brief	3
An overview of the Notebooks: Parts 1 to 6	4
Seeing the bigger picture: research management and global innovation from the perspective of low- to middle-income countries	6
What is global innovation?	7
Innovation doesn't have to be Western, nor is it always benign	7
How global innovation systems relate to local research	8
But some issues are global in nature...	9
A new career for a new research context	10
Research management according to research managers	11
Southern realities	11
Southern aspirations	12
Reconciling dreams with reality	14
Turning swords into ploughshares	15
Nurturing new intellectuals	16
Addressing a serious skills shortage	16
Reversing the downward trend	18
Training initiatives for young academics	19
In Africa	19
In the Caribbean	20
Across Africa, the Caribbean and beyond	21
Summing up: why research managers are so crucial	22
Useful resources	23
Acknowledgements	24

Introduction

So you've been appointed as a research manager for a research institution. What are the most effective ways of managing research, and how can you assist researchers who may turn to you for help?

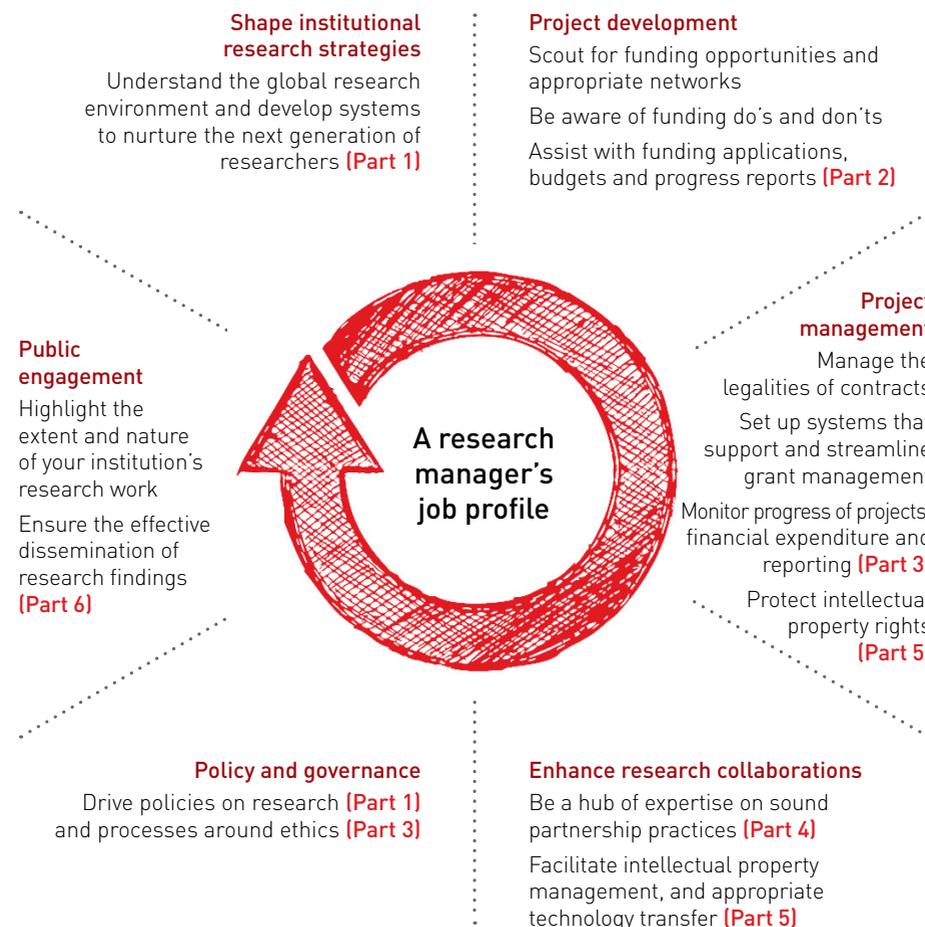
Research management as a career has evolved in response to some of the fundamental changes taking place in research institutions worldwide. As a new or emerging field, the essential skills (also known as core competencies or key performance areas) required for research management are still emerging. In many institutions, research managers are expected to fulfil highly demanding roles with very few resources.

This notebook is the first of a series of six in which research managers, based mainly in Africa and the Caribbean, share their unique insights and provide practical guidance on the challenges they have faced in different aspects of their work.

Researchers need to be supported by skilled, high-quality professional colleagues for the duration of their research.

- David Langley, Director of Research and Enterprise Development, Bristol University, UK

Research management: The skills in brief



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This diagram illustrates the core skills that research managers need, and shows which book in the series contains more information on each skill. (In designing this diagram, we also drew on the core-competency framework developed by the Association of Research Managers in the UK and the US Society for Research Administrators.)

An overview of the Notebooks: Parts 1 to 6

In this series of *A Research Manager's Notebook*, we have tried not to describe strict rules or procedures, but rather to suggest issues you should consider as you work out how best to serve your own particular institution.

In Part 1 (this notebook), we provide an overview of a research manager's role. We consider where research fits into the present system of global innovation and why research management is such an important new career. The importance of nurturing the next generation of research managers through capacity building and mentoring programmes is also touched on.

In Part 2: Open secrets about writing successful grant proposals, we look at the crucial issue of research funding. The notebook contains loads of useful information for you to use and much that you can share with researchers or any staff in your institution who are tasked with writing grant proposals.

In Part 3: Using sound project management techniques to meet the demands of a new research context, we tackle the nitty gritty of project management in the research arena. Useful tools that can be used to track research projects efficiently are listed. We also offer tips on how you can hone some of the key skills that research managers need – from negotiating contracts and establishing research-ethics policies, to ensuring accurate financial reporting.

In Part 4: Facilitating research partnerships, the focus is on the increasing importance of research partnerships and institutional collaborations. The booklet contains some useful tips on how to establish and manage successful partnerships, whether partnering with another research institution or cultivating relationships with local businesses or communities.

In Part 5: Research management and intellectual property, we try to demystify some of the issues around the management of intellectual property rights and offer some tips on how to negotiate from a position of strength when deciding who owns what. The issues of open-access publishing and the growing role of technology transfer in bringing research out of academia and into the wider world are discussed.

In Part 6: The art of communicating research, experts offer practical tips on how best to cultivate mutually beneficial relationships with science journalists, how to make the best use of your institution's communications office and how to use social media and other technologies to disseminate information so that it will be noticed in today's fast-paced world.

Of course, the complexities of research management go beyond what can be covered in any short notebook, so additional resources are listed at the end of each booklet.

For further knowledge sharing and skills development, we encourage you to join regional forums such as [SARIMA](#) (Southern Africa Research and Innovation Management Association) [CabRIMA](#) (Caribbean Research and Innovation Management Association), [WARIMA](#) (West African Research and Innovation Management Association), [CARIMA](#) (Central Africa), and [EARIMA](#) (East Africa). For any feedback you may have about the notebooks, or to share your own experiences, please email info@research-africa.net.

Seeing the bigger picture: research management and global innovation from the perspective of low- to middle-income countries

Research managers all over the world grapple with questions such as:



Research managers

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If we delve deeper into the workings of global innovation systems, particularly in relation to how they operate in low to middle-income countries (which includes Africa, the Caribbean, Latin America and much of Australasia) an intriguing picture emerges. Let's start with the basics.

What is global innovation?

Innovation can be defined as the development of new ideas, and putting these ideas to work. Often confused with invention, which is the creation of an idea, a technology or a method, innovation is a process that is associated with creative problem solving, and is designed to produce practical outcomes.

To address global challenges, humanity needs to be able to solve problems on a global scale. The eight *Millennium Development Goals*, for example, aim to address key areas of development that have been defined by people from all over the world as important. These goals are both economic and social, and range from addressing climate change to ensuring that everyone has access to clean water; from eradicating poverty to improving the status of women.

Global innovation is simply a learning space in which a network of diverse actors interact to address world-level challenges, accumulating knowledge across national borders, while developing, testing, and adopting new approaches.

- Rodrigo Arocena and Judith Sutz

Innovation doesn't have to be Western, nor is it always benign

The West has worked hard to convince the world that its values and economic model are key drivers of the best forms of progress and development, and that the innovations it supports benefit the whole world.

Of course, this is not the whole truth, nor is innovation always benign. For example, it has been argued that financial innovations were partly to blame

for the economic crisis that began in the USA and the EU in 2008, and which has caused hardship in many countries around the world.

It is important to be mindful of how we use and share our knowledge. We need to know who will benefit most from research we carry out. Wider social issues have to be considered, so that we don't simply serve the economic advancement of a small minority of the world's population.



How global innovation systems relate to local research

It is perhaps easiest to explain how global innovation systems work by examining how one country's national innovation system links into the global system. So, in South Africa, for example, the *Academy of Science of South Africa (ASSAf)* has investigated why so few students obtain PhDs at South African universities. (In 2007, just 1,274 doctorates were awarded, that is, 28 doctorates per million citizens.) In order to increase this number, ASSAf recommended, among other things, making it easier for doctoral students to study internationally, and increasing the amount of funding available for doctoral study.

The South African government supported ASSAf's proposal, acknowledging that more South Africans with doctorates should mean that more expertise can be directed at solving the country's social and economic problems.

The government also recognised that doctoral students conduct high-level research on issues such as how to grow food with few resources, how to prevent HIV and AIDS, and how to tackle the lifestyle-related illnesses that are increasingly affecting poorer communities.

These issues are national priorities for South Africans, but also present challenges for so many other countries that they can legitimately be seen as global concerns. Thus, any new knowledge or intervention that proves effective in South Africa, will feed into knowledge networks in other countries that face similar challenges.

But some issues are global in nature...

Some problems have to be tackled internationally, and here innovation follows a similar pattern. For instance, there is growing awareness of the need to address climate change on an international scale – it won't help if some countries reduce their carbon outputs and others don't.

The seemingly endless discussions among policy makers at climate-change conferences and at the United Nations are slowly starting to bear fruit. As countries agree to lower their carbon emissions, policy makers in each participating country introduce legislation that creates incentives for companies to cut carbon emissions from factories, and to increase energy efficiency in various ways.

Researchers then use government funds, or obtain funding from interested donors, and collaborate with researchers in other countries to find innovative ways to tackle these issues. Sometimes, a particular industry funds research with a view to producing a new product or process that they can sell at a profit.

Ultimately, the research findings are published in international journals and as knowledge is shared, further innovations are developed into new products or processes. Policy makers then report to the next climate change meeting on progress being made, and the cycle begins again.

A new career for a new research context

Once we understand the global innovation system, and how local innovation can contribute to global knowledge, it is clear that the effective management of research is critical to the success of both local and global innovation systems.

Furthermore, changes in how research funding works, combined with new reporting and co-ordination requirements expected by funders, have added a whole new layer of work to research projects. Winning research grants has now become crucial to the survival of research institutions. And given the incentives linked to cross-regional or international partnerships, grant management, along with the associated contracts and other legalities, can be complex and time consuming.

If academics are not to be burdened with this additional workload, skilled research managers can play a crucial role, thus enabling researchers to remain focused on the quality and scope of their research. Not everyone agrees with this view however. 'Research managers are just one more layer of hangers-on that have been inflicted on the academic enterprise', argues David Colquhoun, an honorary fellow at University College in London, who admits that he is 'baffled about why research managers have suddenly sprung into existence.' Certainly, some academics are threatened and confused by the sudden rise of research management, and see research managers as adding to their workload and 'eating into their glory'.

Research admin is a career for those that are intellectually curious, but still practical. The best thing about it as a career is working with brilliant minds (who sometimes are not that good at getting themselves organised).

- Research administrator, University of Melbourne

Research management according to research managers

In 2009, Darlene Sebalj interviewed research management administrators in Australia. She found that although respondents saw themselves as professionals, less than 25 per cent believed that their academic colleagues saw research management as a profession.

Similarly, a 2012 study done by Dr Simon Kerr at the University of Melbourne in Australia showed that of 71 respondents working in research management, nearly half had no idea that the field of research management even existed before they applied for their jobs. Interestingly, after a short time in the role, 65 per cent of those employees were fairly certain that research management and administration was the career for them. General comments ranged from dismay at the lack of respect they experience from colleagues, to a desire for formal recognition.

Limited credibility in the academic sphere means that research managers spend considerable amounts of time convincing research colleagues and managers of the benefits of research management and the services they offer.

As yet, the profession has no clear career path, and few research managers or administrators are able to obtain specialised training. Most are simply thrown into the job and left to sink or swim. For those who like to find their own path, and are able to prove their worth, the career can be wonderfully rewarding.

Southern realities

Joseph Foba-Tendo, head of research and publications at the University of Buea in Cameroon, says that in French-speaking African countries, human resource managers in public universities make no real distinction between researchers and research administrators. This has led to high staff-turnover rates and low levels of skills retention – a situation that is clearly unsustainable.

Circumstances in Cameroon mirror those in many low- to middle-income countries. Although national and regional policy frameworks recognise the importance of developing researchers, they are largely silent on the relevance of research management, and the need to enhance research administration. Many institutions have yet to put formal job descriptions or salary scales in place. Opportunities for training and accreditation are scarce, and research managers are often employed part-time. Highly skilled research administrators are rare. This lack of expertise and resources forces academics to play a dual role as research administrators and researchers. Research tends to be neglected as a result.

Although these challenges seem less daunting in countries where the need for the profession is acknowledged, the career suffers from an identity crisis all over the world. As a 'newbie', it has to fight for recognition.

Southern aspirations

Two research managers from Stellenbosch University in South Africa believe that the challenges facing researchers in the South may be a blessing in the longer term. Dr Nicola Barsdorf, head of Health Research Ethics, and Dr Tania Brodovcky, head of Research Capacity Development and Funding Opportunities, say that in this context, research administrators may be even more important than they are in 'first-world' environments. Barsdorf and Brodovcky argue that, because researchers in low- to middle-income countries have traditionally faced more challenges in finding support for their work, research management is fast being recognised as a necessary role in these universities and research institutes.

Researchers utilise our research-support infrastructure and see it as a valuable resource.
- Nicola Barsdorf, head of Health Research Ethics and Tania Brodovcky, head of Research Capacity Development, Stellenbosch University, South Africa

However, Josepha Foba Tendo from Cameroon adds a word of warning. She notes that there is a tendency to 'copy and paste' first-world research-management models into universities in developing countries, without first redefining roles to suit their new contexts.

Foba Tendo argues that institutions that have fewer resources often require higher levels of flexibility and ingenuity. But she adds that, given the constant innovation in information and communication technologies, such skills gaps can be addressed if institutions and funding agencies allocate funds to training newcomers and retraining the old hands.

We need context-specific and responsive research-management models and services.
- Josepha Foba Tendo, head of Research and Publications, University of Buea, Cameroon

Reconciling dreams with reality

To establish a reputation for excellence, research institutions in the developing world must consider:

- Creating dedicated spaces for research support and management, and develop job profiles that attract passionate and pioneering personalities;
- Providing research managers with the necessary training to enable them to add value to research environments;
- Phasing out the practice of making academics double-up as research administrators;
- Ensuring that the research-management team plays a visible role, proactively supporting grant-proposal writing and research costing by checking contracts and ensuring that legal and ethical requirements are met;
- Prioritising ICT infrastructure to ensure that they are up-to-date with calls for research proposals.

Funding agencies could improve capacity by being sensitive to institutional needs, and by supporting research management offices and regional research management associations.



Turning swords into ploughshares

Faced with varying degrees of animosity or disrespect from academic colleagues, research managers and administrators can easily become defensive and uncooperative. A more constructive approach is to become so good at your job that you become indispensable to your colleagues and your institution.

This series of notebooks aims to give you a good understanding of the skills you will need to make yourself indispensable, and to alert you to additional resources and networks that will empower you to develop and enhance the skills you already have.

If you refer to the diagram on page 3, you can see that research management involves a diverse set of responsibilities. The remainder of this booklet deals with the critical issue of nurturing new intellectuals and emerging academics, without whom there will be far less innovation and, ultimately, no research to manage and no pipeline of talented, skilled emerging research managers to take the reins.

Mentoring is to enlist the right people, equip them with the right things and then to empower them to be released to do the right things.
Mentoring is investing until there is a return.

- Bruce Willingham

Nurturing new intellectuals

Research managers are not normally responsible for ensuring that students register for master's and PhD degrees. However, because research managers gain so much insight into the research projects being carried out within their institutions, they are in a good position to make a difference when donors make research fellowships and internships available. In fact, this is an area where research managers can play a vital role.

Universities in low- and middle-income countries are not producing enough academics. Many research programmes are already stretched to capacity. And many universities are facing a crisis related to the exponential increase in student enrolments and the fact that their staff cohort are nearing retirement age.

Without our own researchers and intellectuals, the experiences and perspectives of nations on the peripheries of the world will never gain enough traction to be seriously considered by those at the centre. And without equal input from all sides, global problems will never be adequately addressed.



Addressing a serious skills shortage

Although master's and doctoral students constitute the pool from which the next generation of academics will be drawn, the number of postgraduate students in African and Caribbean institutions is far too small.

The problem is a complex one. It has evolved over many decades, and is strongly tied to the legacy of colonialism. The divisions that exist in the world between North and South, East and West, continue to hinder equitable trade, development and peace.

Since the early 1990s, student enrolment in universities all over the world has grown rapidly in response to an increasing demand for higher education. However, in the developing world, expanding access to tertiary education has not been matched by growing numbers of academic staff.

Few young graduates see an academic career at a peripheral university as an attractive option. Those who might consider an academic path often experience intense pressure to enter the job market as quickly as possible, and can't afford to fund years of postgraduate study. If they do enrol for master's and PhD courses, they are given large teaching loads and earn relatively little. Not surprisingly, most opt to work in the private sector, leaving a mere handful of staff to train future cohorts of academics.

This could be you...

With some 80,000 students enrolled in Senegal's premier Université Cheikh Anta Diop (UCAD) in Dakar, the institution is facing a major crisis. Not only is the staff-student ratio already too low, but most of its academic staff are roughly the same age. Many of its lecturers will reach retirement age at more or less the same time. By 2015, somewhere between 1,200 and 1,300 UCAD academics – a quarter of them women – will be due for retirement. Unless new appointments are made urgently, UCAD stands to lose 60 to 70 per cent of its academic staff.

Training initiatives for young academics

Here are just a few examples of projects that aim to build up the numbers of academics and researchers, and to enhance their skills and networking abilities in various ways. It is important that research managers keep in touch with new developments and regional networks like these.

In Africa

The Carnegie Corporation's Regional Initiative in Science and Education (RISE)

provides grants to increase the number of well-trained university academics to teach future scientists and engineers. The initiative uses five networks, regionally located in sub-Saharan Africa, which focus on materials science, mathematics, chemistry and biochemistry as some of their priority areas to train new faculty members and brush up the skills of existing faculty members. MSc- and PhD-level scientists and engineers are being prepared through university-based research and training networks. The networks link researchers who are isolated professionally and geographically. RISE aims to assist in generating a critical mass of promising, world-class scientists and deploying them to cultivate the fertile minds of students in Africa, thereby harnessing two resources that the continent has in great abundance: innovation and determination.

The African Doctoral Academy (ADA), based at Stellenbosch University in South Africa, nurtures current and prospective doctoral students in all fields of science with high-quality research training and support since it was started in 2011 with funding from Carnegie. The African Doctoral Academy operates in close collaboration with a number of partner universities in Africa including the universities of Botswana, Dar es Salaam, Makerere, Malawi and Nairobi. The academy trains about 200 doctoral students in research methods annually through its winter and summer schools. Between 100 and 200 doctoral supervisors also benefit through the programme from structured workshops in doctoral supervision.

This could be one of your researchers

Renowned African scholar, Mahmood Mamdhani, now divides his time between teaching at Uganda's Makerere University and at Columbia University in the USA. In 1962, he was among 24 students who received scholarships when Uganda first celebrated its independence. He was flown to the USA and obtained several degrees over ten years, including a PhD. At the end of this time, he and his fellow scholarship winners can be divided into two groups: there were those who never returned to Uganda, and those who did. However, those who did return were quickly frustrated by the fact that the conditions under which they were supposed to work were far removed from the conditions under which they had been trained.

Reversing the downward trend

As a research manager, it is important to keep up to date with opportunities for researchers to obtain funding that is aimed at their professional development.

Strengthening the cadre of top-level researchers and academics in low- to middle-income countries is urgent, and several donors have recognised this. Well co-ordinated and soundly funded programmes are being established, some of which are outlined in the next few pages.

Some funded schemes support master's and PhD candidates, but additional support for academics during their first few post-PhD years is often needed. This is a critical time, when post-doctoral students define new research questions, grow their networks, refine their skills, and become eligible for a wider selection of grants.

Even a small number of committed academics in each institution can make a massive impact on enhancing a nation's culture of learning and striving for excellence.



The DocLinks project is funded by the European Commission through their Erasmus Mundus programme, which promotes international academic partnerships. The programme promotes networking between African and European doctoral candidates and early-career researchers.

Part of the objective is to identify and remove specific barriers to communication between groups of doctoral candidates.

Doctoral supervision courses in South Africa are helping to groom a new generation of doctoral supervisors through a seven-week course piloted at Rhodes University, the University of Fort Hare and the Durban University of Technology. Structured around four themes – power relations in supervision, the importance of scholarship, supervisor practices, and supervisor processes – the course began in February 2013. A mixture of face-to-face and online tuition, the course is open to anyone working at a South African university who has (or is about to have) a PhD. There are plans to roll out the course to all of South Africa's 23 public universities, and then to institutions all over Africa.

In the Caribbean

The Eastern Caribbean Health Outcomes Research Network (ECHORN) is a novel, cross-island collaboration between Yale University, the University of Puerto Rico, the University of the Virgin Islands, and the University of the West Indies. These universities are running a community-based prospective cohort study geared towards expanding clinical research with racial/ethnic minority populations across four Eastern Caribbean sites, namely: Trinidad and Tobago, Barbados, the United States Virgin Islands, and Puerto Rico. The project aims to help improve health outcomes and to increase research capacity and infrastructure in the region. ECHORN helps train researchers to design, execute, and interpret research findings on racial or ethnic minorities, and to translate these into new policy and practice. ECHORN conducts some of its training through workshops targeting researchers in the four regions. For more information, see <http://www.echorn.org/>

The *Caribbean-Pacific Island Mobility Scheme* is funded by the European Commission to help build co-operation and mobility between higher education institutions in the Caribbean and Pacific regions. By facilitating

the movement of postgraduate students and staff between selected national universities, the scheme aims to build research capacity and encourage socio-economic development in each region.

At a practical level, this works by making a wider variety of postgraduate degrees and research opportunities available to students from each country and by enhancing the competitiveness and attractiveness of participating universities. Striving for a balanced regional spread among students who are funded, the scheme is exploring partnerships with organisations such as the Association of Caribbean Universities and Research Institutes.

Across Africa, the Caribbean and beyond

The **Intra-ACP Mobility Scheme** promotes higher education cooperation between countries in Africa, the Caribbean and the Pacific (ACP) regions. The scheme aims to promote sustainable development and poverty alleviation by increasing the availability of trained and qualified high-level professionals in affiliated countries. The scheme provides support to higher education institutions wishing to set up inter-institutional partnerships and to individual students, researchers and university staff to spend a study / research / teaching period in the context of one of these partnerships. The programme builds on the African Union's Mwalimu Nyerere Programme for Africa, and is funded through the European Commission's Development Fund.

Summing up: why research managers are so crucial

If you think you are too small to be effective, you have never been in the dark with a mosquito.



As we have seen, research environments have become increasingly complex in recent years. Highly skilled individuals who have a clear understanding of the research world and well-developed administrative skills are invaluable to research institutions.

A research manager's key roles are to make sure that their institutions' research programmes are on track, and to provide researchers with a supportive environment, smooth funding flows, assistance in identifying appropriate research partners, and administrative support.

Thus, research managers can help institutions to keep their research strategies current and appropriate, while assisting researchers to find funding, and meet their reporting and budgetary obligations.

Read *Parts 2 to 6* of this series and find out more about different aspects of the vital role you can play.

Research management is only as effective as the research manager who drives it.



Useful resources

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Globelics is an international network of scholars who apply the concept of learning, innovation, and a competence building system as their framework dedicated to the strengthening of emerging economies and societies in transition. Find them at <http://www.globelics.org/>

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Core Competency Framework diagram adapted from resources developed by the Association of Research Managers – UK Professional Development Framework and the US Society for Research Administrators.

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