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Cultivating hidden assets: The developmental needs of university career researchers

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***Abstract:** While career researchers are key members of the university workforce, their developmental needs are sometimes neglected due to their work conditions and contexts. This paper explores the nature of career researcher work, suggesting that three key roles relate to strategic research, project management and the development of effective research teams are core elements of researcher roles. It outlines the key contributions, which may be made by early career researchers and project and research leaders. Using this framework, some issues relating to career researcher developmental needs are explored.*

***Keywords:** Researcher development; research leadership; project management.*

Introduction

Australian universities rely on two major areas of activity to execute their core business: teaching and research. Increasingly, universities are aligning their priorities to federal government requirements. This has stimulated many changes in the ways in which both teaching and research are supported and encouraged in Universities. Most universities, for example, support teaching development to enhance positive student outcomes by providing substantial introductory teaching development programmes. The Australian University Teaching Committee Awards for University Teaching has also targeted increased attention on the development of teaching teams, teaching leaders and a strong teaching culture. Similarly, the introduction of funding linked to teaching performance indices will also drive further attention toward the developmental needs of university teachers. So it could be reasonably argued that universities are aware of, and tangibly support, the development of effective teaching practices. Conversely, the developmental needs of researchers are less well recognized and supported in most universities.

Researchers in universities

Universities generally employ two broad categories of researchers with each operating from different imperatives and structures. Researching academics straddle the two key roles of both teaching and research. While they are encouraged to build research networks and to work collaboratively, there is some tension between gaining recognition as an individual researcher, and contributing to the development of team-based research. It is likely that many academics continue to work as individual authors, or in very small research teams due to the reward structures and the pragmatic reality of their particular work context. For example, promotion

often remains focused on the individual's achievements, with many universities expecting to see first authorship of papers, and a strong track record in a particular niche area of research. Some universities also direct publication rewards toward the individual authors, with more funds returned to those who collaborate with fewer people. Thus, for academic appointees, there is a strong drive toward nurturing "boutique" research niches which are both sustainable and personally rewarding. Researcher developmental support is typically allied to the roles academic researchers play. For example, research grant applications and the research supervision process are normally well-supported through clearly-articulated supportive developmental processes. These include documentary guidance, workshops, peer review opportunities and close scrutiny by various university committees and related staff. Thus, it could be argued that academic researchers receive sufficient support to manage both aspects of their careers.

Career researchers, on the other hand, face a very different work context and set of expectations (Garnett & Goodall, 2003). These full-time researchers are frequently employed through grant funds obtained by research leaders with strong track records. These researchers operate in fluid circumstances, with very strong pressure to continuously generate new sources of funding in order to preserve their employment futures. They must publish widely, and often do so with many other members of the research team. Gaining recognition for research outcomes is also challenging, given the lag between research and its publication.

The nature of current federal grant funding processes means that many universities are being increasingly squeezed to provide infrastructure funding to support their research groups. This is an increasingly stressful pressure for researchers in universities, as they seek to work more effectively with less resourcing. The nature of research funding also means that there needs to be strong management of the research project, so that it is completed successfully within the agreed timeframe. Project sponsors require certain outcomes to be demonstrated if further funding is to be supported. University researchers are also increasingly directing their attention toward the commercial sector to access further funding sources, but with further challenges then being encountered. For example, many researchers are discovering that intellectual property protection is a critical issue. Commercial partners also have different expectations of the research project. They want outcomes and timely completion. They are not interested in waiting extra years while the researcher explores an interesting issue or navigates around unexpected problems. Thus, the management and execution of research is a very complex activity in Australian universities.

Generally, career researchers are hidden assets, which are under-nurtured and unrecognized in terms of their needs. Perhaps one reason for this inadequate support is the lack of identification of the developmental needs of career researchers, and thus, an inability to adequately address this through supportive programs. This paper therefore seeks to explore some core roles of career researchers, and to provide an initial framework, which could assist in articulating and discussing career researcher developmental needs. The framework has been developed as a consequence of working with career researchers in a range of contexts, with both individual research teams and representatives of many teams.

Career researcher roles

Career researchers primarily operate in a research project context. They seek grants to undertake projects, work on project teams, publish about the projects, and seek to build new projects

stemming from those already completed. Sponsorship is sought from various agencies, and new researchers are recruited to work and build expertise in particular project niches. Few career researchers are sole operators. Unlike many academic researchers, their focus is on collaborative researching and the sustained preservation of a team of expert members. Many career researchers also work across institutional boundaries, with increasing numbers representing a variety of organisational stakeholders and agencies. Thus, they may not necessarily be answerable to a single employer. In many cases, while attached and associated with a university, career researchers may not be employed directly through the university. Medical researchers, for example, may primarily work in medical contexts in hospitals, and be paid through these agencies.

Career researchers contribute across three broad contexts to the research outcomes: first and foremost, they are researchers who are selected for, and maintain, a strong *strategic research* niche. Their recognized role is to conduct, publish on, and seek funding for, the articulated research. In many cases, the focus of the research is dictated by national or university priorities, and aims to build and strengthen a competitive area of strength. To achieve this, career researchers also need to develop extensive skills in *research project management*, and *research team development*.

Strategic research requires the development of a range of competencies. While researchers need to have highly developed research skills, they also need to be politically attuned to the research environment more broadly. Various issues need to be understood and incorporated into the research strategies, which are enacted. First and foremost, the researcher needs to have a strong grasp of career development issues. On a personal level, there is a need to publish, gain grants with one's name as a recipient, and to ensure the research niche is supported by the organization and other sponsors over a sustained period, so that ongoing employment is ensured. To achieve this, the researcher needs to have a firm grasp of the political and organisational priorities, build strong institutional, national and international networks, and actively seek new opportunities and avenues to further the research agenda. Whilst working to build the niche area, the researcher also needs to build a reputation for ethical, quality research which will be respected and valued by the wider international community. Skills in communication, dissemination and lobbying for funds are all critical for career researchers. Increasingly, issues relating to intellectual property also need to be managed, along with ethics-related concerns. As commercial partnerships grow, skills in relationship building are also critical. The goal, after all, is to build long term collaborations, not one-shot wonders.

Strategic research tends to be project driven. Funds are awarded from competitive grant rounds, and must be managed effectively to achieve the intended outcomes. The research must be carefully time managed, and must be coordinated across a number of project members and groups. Many projects fail to reach their promised conclusion because they are poorly managed. *Effective project management* requires clear delineation of project scope, goals, strategies, timelines, resourcing and responsibilities. This necessitates extensive planning and discussion with various stakeholders, and close monitoring of progressive execution of the project. The funding agency has various requirements for both reporting and accountability, which must also be met, and requires ongoing management of this resourcing.

A key challenge associated with research project management is that it may be less easily controlled than normal projects. Traditional projects operate from clearly formalized and regulated requirements, which are readily predicted (Webster, 1999). This ensures achievable time frames and clearly designated roles. Research projects, on the other hand, are often fraught with significant challenges. The exploratory research may lead to different paths and issues, which need to be identified, addressed and analysed. Time management is particularly challenging for research projects, particularly if the project members see the exploration as more important than the achieved outcomes. Research projects may also be harder to scope and define, as they seek to achieve potential, rather than tangible outcomes. A major challenge for research project teams is to confine the research to the defined scope of the project, rather than allowing expansion to explore new and interesting findings. Research project teams may also find that they have promised more than they can deliver with the available funding. This is particularly likely without adequate infrastructure funding. Thus, project management, while little recognized, is a core element of the career researcher role.

A further priority of the research team is to build long-term viability through the development and retention of committed, engaged and effective members. While the role a researcher plays in the team will vary from team member to team leader, each member plays a significant part in ensuring the team effectiveness. Various team competencies need to be developed by each member, including collaboration (Beyerlain, Freedman, McGee & Moran, 2003), communication, decision-making, mediation and negotiation, and role clarification skills (Wheelan, 1999). As members assume increasing responsibility for the team, further roles are assumed, including building effective team cultures and member capabilities, supporting new team members, identifying and nurturing talent, recruiting and inducting new members, and planning for succession. Of key importance is aligning the team so that all members have a common understanding of the purpose and scope of the project. The creation of a collegial and supportive culture is critical to the long-term well-being of the team, and a key role of the team leader. Further challenges also occur when the team operates in a virtual context, with external members requiring engagement with the team through electronic means. In these circumstances, leaders need further skills in maintaining both connection and alignment across the various parties.

This brief overview highlights the complexity of the career researcher role. Members are challenged in operating at strategic, operational and cultural levels simultaneously, to ensure they sustain the group to build both short and long –term outcomes. The nature of the research team composition also must be considered, as members build expertise and progress toward more advanced roles in each of these three core areas. Table 1 explores some of the specific capabilities, which researchers might need to develop in order to fulfil their duties as they progressively develop their expertise, credibility and leadership roles. These capabilities are explored more fully in the following sections.

Stages of career researcher development

It can be argued that there are three stages of career researcher development. Early career researchers are defined by the Australian Research Council as those who have completed their doctoral research degrees in the last five years. With a good grounding in research methodology, and advanced writing skills, these members offer high potential. However, they will often have

worked in isolation from other researchers as they developed their research theses, and may have worked in a very specialized research niche. Other early career researchers may have been fortunate enough to have been recruited to research within a strategic niche area, and may therefore be quite conversant with the ongoing research area. Research supervision, grant writing and publications will be major new roles assumed by these research members. In addition, they may, for the first time, commence working as members of research teams, and may be required to undertake significant responsibilities in managing research project components. Part of their challenge lies with gaining a greater understanding of the political context in which the research operates.

Established researchers can be defined as those who have worked as researchers for five or more years, and who often have responsibility for the operationalisation of key projects. They need to have a strong understanding of the political research context, and to operate very strategically in building networks and alliances both within and beyond the institution. A sound knowledge of the university and research sponsor expectations, processes and principles needs to be developed by these mid-level researchers, so that they can clearly articulate the need for certain practices and the reasons for these. Further, these more senior researchers need to be cognizant with ethical and intellectual property issues, and to ensure that all protocols are reflected in the team's operations. These researchers will often hold primary responsibility for managing the research projects and financial outcomes. They need extensive skills in project and contracts management, and in quality control of the project outcomes. Allied with these roles is the promotion and development of the team. As team leaders, they ensure members are nurtured and further developed, and that the culture of the unit is such that members are pleased to belong, and keen to contribute (Simonsen, 1997). The importance of recognizing contributions is particularly critical to the team, as it encourages members to remain and share knowledge with the group.

Research leaders may operate as team leaders, or may work at a more strategic level. As innovators, shapers and creators of research ventures, they are well placed to gain international recognition for the team's efforts, and to lobby for additional funding. This is a significant responsibility, which can strengthen or undermine the team. Members of the team who feel they are being used as "fodder" to further a leader's own career, will quickly move on to other work opportunities. Effective leaders recognize the need to nurture and foster their members, and to encourage their leadership and representation of their specific projects in the external research community (Dubrin, 2004; Simonsen, 1997). The building of a collective understanding of the project priorities and importance is very much part of the leadership role, along with the representation of the group in political settings. Various teams may also need to be monitored and coordinated as they work toward more specific goals, while also contributing to the larger collaborative strategic research framework.

As researchers gain experience, they should move toward higher-level capabilities in these three dimensions, and build a stronger role as leaders and innovators in the area. Table 1 reflects this broad overview, outlining the various roles which career researchers may encounter as they move from their initial contributions as early career researchers to research leaders.

Developing career researcher capabilities

Clarifying the roles of career researchers is the first step in enabling better support for these important members of the university community. However, it is only the first stage of actually ensuring effective development. There are several major factors, which need to be managed to activate a real commitment toward researcher development. These can be grouped as political, institutional and project issues.

Politically, career researchers are vulnerable. The limited competitive funding context in which research grants operate in Australia has reduced the level of support offered to grant recipients. There is little room to request funds for developmental opportunities as part of research grant applications, with many projects operating at very minimalist resourcing capacity. The continual need to seek new funding to support ongoing research often leads to career and employment gaps for researchers, which can also result in a loss of team members, and a reluctance to encourage development if there is no guarantee of continuation following a set time period.

Institutionally, career researchers also experience some significant developmental challenges. With their employment funded through research grants, they may experience a variety of conditions as they work on different projects. Similarly, because they are paid through a range of sponsorship channels, many researchers may not receive information on university initiatives, or institutional support mechanisms. Institutionally, the recognition and support of career researcher developmental needs may also be marginal. Certainly, there is very little recognition of their needs in the research literature or in developmental programmes offered to university staff. Few universities offer specialized developmental support for their career researchers, or even recognize that their needs are different to those of other researching academics.

At a project level, many impediments to development may also arise. The attitude of the leader toward team member development is critical. The need to meet specific deadlines can lead to a focus on outcomes, rather than processes during a project's life, with the developmental needs of team members consequently disregarded. Members may also find attendance at developmental programs challenging, due to travel and other project commitments, particularly where the attendance is not sponsored by the team leader, or is perceived to be a luxury, rather than a necessity. Similarly, their sporadic employment context can reduce their sense of career development, as they move from contract to contract, so that they are personally less aware of the need to build long-term capabilities and enhancements. Leadership of research teams should encompass career counseling and the provision of opportunities for development. There needs to be much stronger recognition of the impact of leadership strategies (Goleman, 2000; Van der Sluis & Poell, 2003). In reality, this is often omitted in the very demanding context of strategic research projects.

Conclusion

This paper argues that career researcher developmental needs are more complex and diverse than those likely to be supported through traditional developmental programmes. A recent review of G08 staff development support for career researchers, for example, revealed that most provide a simple research induction only, with few extending this to more expansive offerings. Over the last two years, the University of Western Australia has developed an early career researcher

developmental program; however, it is primarily focused on enabling generic career capabilities and network building across the participants. Career researchers need much more support if they are to be encouraged to reach their full potential.

Career researchers are key contributors to university research. Unfortunately, they can often feel neglected and ignored in terms of their long-term aspirations and developmental needs. It is timely for universities to consider how these professionals can be developed and supported as they attempt to build careers under challenging conditions. This paper, including the Career Researcher Developmental Framework presented in Table 1, reflects an initial attempt to describe some of the core career researcher needs, so that they may be better supported in a university setting. Further, it articulates the roles career researchers may fulfill, so that they are also more conversant with the support they might expect of their team and research leaders. (It should, however, be noted that there are many additional areas which could be included, such as those associated with building a research knowledge management context (Kermally, 2002). This paper simply explores the core framework).

The nature of developmental support for career researchers still requires extensive investigation, in order to clearly identify the best mechanisms through which support and ongoing development may be offered. While the cost of providing such opportunities may appear significant to universities, the cost of *not* supporting career researchers are much higher. Reputation, ongoing collaborative research relationships, and the retention of experienced, committed and loyal researchers are major concerns of every university. The contribution of researcher development in achieving these strategic outcomes is unfortunately, insufficiently recognized and addressed in Australia to date. This needs to be redressed urgently.

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Table 1: Career Researcher Developmental Framework

Stage of Development	Strategic Research	Project Management	Research Team Development
Early Career Researcher	<ul style="list-style-type: none"> ◇ Contribute to research projects ◇ Grant writing ◇ Research publishing ◇ Conference presentations ◇ Develop an understanding of the university research context and the wider political environment ◇ Reflect ethical obligations 	<ul style="list-style-type: none"> ◇ Clarify project scope and roles ◇ Perform required project tasks and feed back suggestions and ideas ◇ Contribute to planning and the design of objectives and strategies ◇ Monitor and address safety and health issues ◇ Maintain accurate project records and data ◇ Complete tasks to meet project timelines and reporting deadlines 	<ul style="list-style-type: none"> ◇ Assist in building a collaborative and collegial team ◇ Communicate effectively with team members ◇ Contribute to decision making ◇ Monitor and positively contribute to the team culture. ◇ Supervise PhD and technical staff to encourage participation and learning. ◇ Collaborate with other members on projects
In addition, the established Researcher / Team Leader will:	<ul style="list-style-type: none"> ◇ Identify and plan for new grant rounds. ◇ Nurture and guide new researchers ◇ Develop a strong knowledge of systemic and national research context. Share this with other team members. ◇ Encourage research collaboration both 	<ul style="list-style-type: none"> ◇ Plan research projects ◇ Manage contracts ◇ Manage the projects, including timelines and outcomes. ◇ Monitor the project member effectiveness and outcomes. ◇ Supervise and provide feedback to project team members. 	<ul style="list-style-type: none"> ◇ Encourage a collegial and constructive team culture. ◇ Enable opportunities for knowledge sharing and networking within the team. ◇ Support and mentor new researchers, and monitor the level of support provided by

	<p>locally and further afield.</p> <ul style="list-style-type: none"> ◇ Encourage recognition of the early career researcher contributions. ◇ Maintain relationships with partners and 	<ul style="list-style-type: none"> ◇ Prepare progress reports and promote these to the team and external stakeholders. ◇ Provide feedback to team members on individual and team performance 	<p>other members.</p> <ul style="list-style-type: none"> ◇ Provide guidance on career development and developmental opportunities to team members. ◇ Communicate the team vision, strategies and targets to team members, including virtual team members.
Research Leaders should also:	<ul style="list-style-type: none"> ◇ Encourage, generate and promote innovation ◇ Manage and nurture national and international collaborative networks ◇ Create opportunities for cross-fertilization of ideas with other key leaders. ◇ Ensure the projects remain aligned with the sponsor requirements and the university strategic priorities. ◇ Seek opportunities for new collaborative ventures. 	<ul style="list-style-type: none"> ◇ Coordinate multiple projects ◇ Monitor project leader reports and feedback on progress and outcomes ◇ Develop project briefs, performance requirements and overall structures 	<ul style="list-style-type: none"> ◇ Build team capacity ◇ Succession plan ◇ Recruit and guide new members ◇ Monitor team processes ◇ Provide direction, guidance and excitement