
MENTORING: DOES SUPPORT EQUAL SUCCESS?

Angela Dobeles, Central Queensland University

Ian Benton, University of New South Wales

Nicole Hartley, University of Sydney

(Author names are in alphabetical order, authors contributed equally.)

Abstract

Does mentoring work? This paper discusses exploratory research examining the use of mentors by Central Queensland researching women (members of the Central Queensland University Women in Research (WiR) network) and considers the effect of mentor contact on successful researching. From this preliminary research it appears that CQU WiR researching women do benefit from the use of mentors. The main findings indicated that women researchers with a mentor submitted more conference papers and journal articles over a 12 month period than those without a mentor. Furthermore, not only did women researchers with a mentor apply for more funding over a 12 month period, they also obtained higher levels of funding than those women researchers without a mentor. Further, the androgogical benefits of this paper offers links to professional development, strategies and sources and considers what might work for new and current researchers. Future research aims at quantifying these benefits for women researchers in terms of research outcomes, professional guidance and personal support.

INTRODUCTION

Increasing pressure on academics working within universities to produce research outcomes provides a framework for this study. Changes to the modern university landscape, for example, the drastic reduction in Government funding and the changes to the Higher Education Contribution Scheme (HECS) resulting in higher charges or full-fee charges for postgraduate and undergraduate study, have created an increasingly complex and diverse employer – who expects results from employees. This paper considers the research outputs of current members of the Women in Research network and other female researchers within CQU and compares those outputs with the prevalence of mentoring activities. Research outputs were categorized in two ways, firstly in terms of research output through journals and conference papers and secondly in terms of successful applications for both external and internal research funding. The authors wish to note, that as was the case with previous research, this study is designed to encourage and support all women researchers.

BACKGROUND OF MENTORING

The history of mentoring begins with the story of Mentor from Homer's *Odyssey*. When Odysseus, king of Ithaca, went to fight in the Trojan War, he entrusted the care of his household to Mentor, who served as teacher and overseer of Odysseus' son, Telemachus. After the war, Odysseus was condemned to wander for many years in his attempt to return home. In time, Telemachus reached adulthood and went in search of his father. Telemachus was accompanied on his quest by Athena, Goddess of War and patroness of the arts and industry, who assumed the role of Mentor. Eventually, father and son were reunited and together they cast down the would-be usurpers of Odysseus' throne and of Telemachus's birthright. The word *mentor* then became synonymous with trusted advisor, teacher and wise person (Benton 2002)

Since then, mentoring has been used as a vehicle for handing down knowledge, maintaining culture, supporting talent, and securing future leadership (Darwin 2000). Mentoring flourished in the English feudal system as mentor-favoured pages and squires became knights (Shea 1997). Further, the apprenticeship model was practiced by the guilds in medieval times and patron families supported talented artists during the Renaissance and Baroque periods. History offers examples of helpful mentoring relationships such as Socrates and Plato, and Haydn and Beethoven. In these scenarios, mentoring is a form of human development where one person invests time, energy, and personal know-how in assisting the growth and ability of another person (Darwin 2000).

Defining Mentoring

Mentoring is recognized as both multi-factual and subjective by nature and as such has become a difficult construct to clearly define. For example, a mentoring relationship may be formal or informal, structured or unstructured and in place for many years or comprise a rapid exchange of knowledge when conducted over a period of weeks (Conway 1998; Wickman & Sjodin 1997). Further, practitioner definitions and interpretations of the mentoring process indicate that confusion exists about the boundaries between the functions of mentoring, coaching, training, counseling and managing (Carden 1990, Healy & Welchert 1990, Kram 1985). Some define mentoring as an on-going process for development, and they define counseling as a means of addressing specific performance problems (Brounstein 2000). Others see it the other way around (Carmin 1988). Some commentators consider both

counseling and mentoring to be elements of coaching (Stone 1999). Mentoring gets confused with coaching because one of the functions of a mentor is to coach the mentoree; but whereas mentoring uses many of the same techniques as coaching, mentoring is now more commonly associated with going beyond the tasks of coaching (Brounstein 2000). There appears to be no consensus on any simple distinction between the activities of these two roles.

Purposes of Mentoring

Identifying the purpose of the mentoring relationship has also varied with practitioners and researchers. There has been dispute as to whether (a) the development is for career only or also involves psychosocial development; (b) the mentor-mentoree relationship is reciprocal; (c) the mentor provides upward career mobility; (d) the mentoring requires differences in experience, expertise, power between mentor and mentoree; and (e) the mentor-mentoree relationship endures over time (Steinberg & Foley 1999).

Despite these differences, many early researchers saw mentoring as a specific type of career development that included aspects of teaching, coaching, training, positive role modeling, sponsoring, or counseling (Carmin 1988, Kram 1985, Watkins, Giles & Endsleg 1987). The most commonly discussed dimensions of mentoring were the career and psychosocial functions (Kram 1985). Career functions enhanced career advancement and provided sponsorship, exposure and visibility, coaching, protection, and challenging assignments. Psychosocial functions enhance a sense of competence, identity and effectiveness in a professional role. They include role modeling, acceptance and confirmation, counseling and friendship. For the purposes of this exploratory study, it is the career development dimension of mentoring that is being assessed for women researchers at CQU.

Research Issue

In brief, the research issue considers the role mentoring plays on the dimension of career advancement for researching women in Central Queensland. Thus, the research question is: *To what extent the role of mentor/s is linked with the research success of CQU women researchers.*

Given the span of meaning to researchers and practitioners within the mentoring literature, as discussed in the previous section, the authors adopt a broad distinction drawn by Alred, Garvey & Smith (1998) whereby the mentor's role shares experience, wisdom and savvy

enabling the mentoree to embark on the task being mentored; perhaps even to the point that the mentoree is capable of becoming the next mentor (Darwin 2000; Gray 1988; Woodring 2000). This distinction incorporates the phases of prescriptive, persuasive, collaborative, and confirmative whereby the mentoree is ultimately independent, creative and innovative in problem solving (Gray 1988).

The potential benefits of this conceptual research are that any links between mentoring use and successful research outcomes would provide useful insights for emerging female researchers. Further, any correlation between specific mentor implementation and successful research outcomes (e.g. successful funding applications or journal acceptances) could provide important clues to both emerging and continuing researchers for career advancement and promotion. Thus a conceptual framework to guide this study was developed as shown in Figure 1.

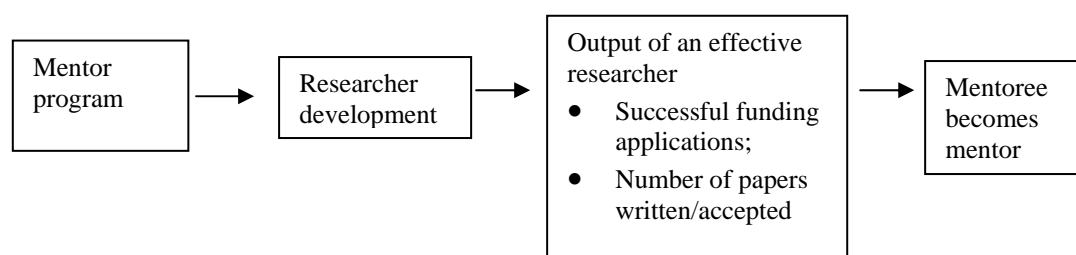


Figure 1: Conceptual framework

METHODOLOGY

An online, self-administered survey was conducted in order to explore the relationship between mentoring and research successes. This method of data gathering was deemed most appropriate as limited previous research exists that considers the research effectiveness of CQU based women researchers.

Online surveying was selected as the optimal survey method as the research was being conducted within an organization where the target population could be accessed by electronic mail; the survey contained important open-ended questions; the sample was geographically dispersed and time was a research constraint (Schonlau 2002). The establishment of a chain of evidence in the survey design provided evidence throughout the design, data collection and analysis phases so that steps may be retraced by an external investigator, thus minimizing

researcher bias (Hirschman 1986; Yin 1994) and allowing the opportunity for other researchers verify each step (Burns 1994; Reige 1997).

The survey consisted of fixed limited response and open ended questions which sought to provide a concise overview of women in research at CQU. For the purposes of the research outlined in this paper, questions related to mentoring, effective research outcomes and some general sample descriptors are the main focus.

The sampling design was a probability sample from a closed population, namely, women researchers at CQU. The sample frame was identified as women conducting research, be they a postgraduate research student, (e.g. honours, masters and PhD), academic researcher, postdoctoral fellow, general staff member or external researcher linked to the University through their research who was actively involved in research at any of CQU's regional campuses (Rockhampton, Gladstone, Mackay, Bundaberg and Emerald) at the time of the study.

A total of 73 survey responses were received. One was identified as a double response and deleted; hence 72 responses were included in the analysis of results, making the sample response rate 36 per cent. This rate is well within the accepted range of 7 per cent to 44 per cent for web based research (Malhotra, Shaw & Oppenheim 2002).

RESULTS

Preliminary descriptive statistics were utilized to identify the sample in terms of variables such as, age, marital status, employment status, employment position and years of research. Subject descriptors identified that the majority of respondents were, between the ages of 41 and 45 (24.3%); married (44.3%); employed full-time (80.9%); academics (49.1%) and have been involved in research (post-undergraduate study) between 1 to 5 years (38%). Figure 2 illustrates the distribution for responses to the question, 'Do you have a research mentor?', 55% of respondents have a research mentor whereas 45% do not have a research mentor.

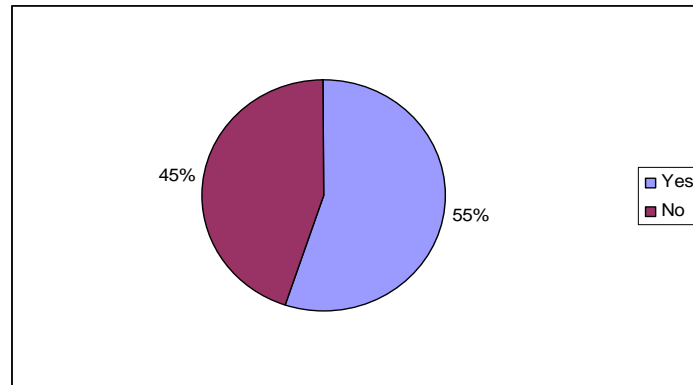


Figure 2 Percentage of women researchers with & without mentors

The following diagram provides a more comprehensive overview of the participant women researchers both with and without a research mentor. Figure 3 illustrates that those women researchers with a mentor are equally distributed across the age groups. This indicates that the use of mentoring is not an age specific occurrence.

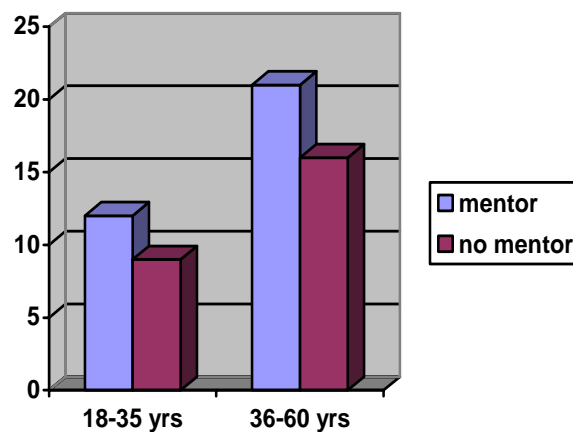


Figure 3 Age breakdown of women researchers with & without mentors

The relationship status of women researchers who have a mentor and those who do not shows an interesting finding. In summary, there are a higher proportion of women researchers who have consulted a mentor and also reported being in a relationship (either dating, de-facto or married) (Table 1 and Figure 4). This fits with past research on mentoring, where mentorees seek personal benefits such as counseling for work related matters, passive moral support and active encouragement, praise and obtaining a trustworthy business friendship (developed from Benton 2002 from authors such as Alleman 1982, Kram 1985, Noe 1988). Thus, women researchers in a personal relationship, which provides moral support may also seek out the

same benefits from a mentoring relationship to gain support for work and career matters. Perhaps, the success of their personal relationships leads them to replicate this success in business relationships? A possible study for the future.

Table 1 Relationship status of women researcher with & without mentors

Relationship Status	Mentor		Total
	Yes	No	
1 no relationship	6	11	17
2 relationship	27	14	41
Total	33	25	58

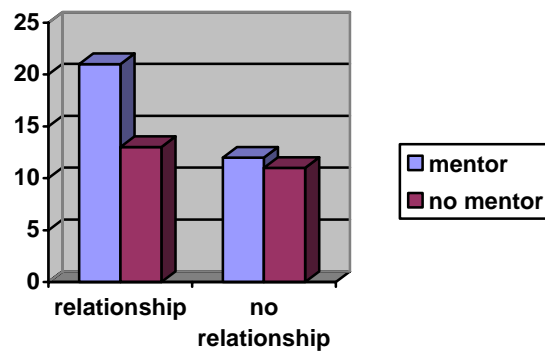


Figure 4 Relationship status of women researchers with & without mentors

Next, the differences between women researchers with mentors and those without mentors identified the main reason why the women were conducting research in their particular field. The results (refer to Figure 5) indicate that there was a greater proportion of women who conduct research for the reasons of 'lifelong learning' and 'career advancement' who had mentors.

Conversely, there was a greater proportion of women without mentors who stated that they conducted research mainly because their 'degree requires research' or because their 'job requires research'. The research suggests, therefore, that women researchers who engage in research by choice and with a distinct purpose (for example, career advancement) rather than as an obligation to fulfill a part of their job or course requirements are more likely to seek the assistance of a mentor in achieving their goals.

This fits in with research conducted by Benton (2002), who found the most common activities performed by mentors were: listening and understanding, challenging, coaching, building self-confidence, providing wise counsel, teaching by example, providing a good role model and offering encouragement. For a woman keen simply on completing a degree or doing a job for pay, these mentor attributes may not be as important as for a career researcher.

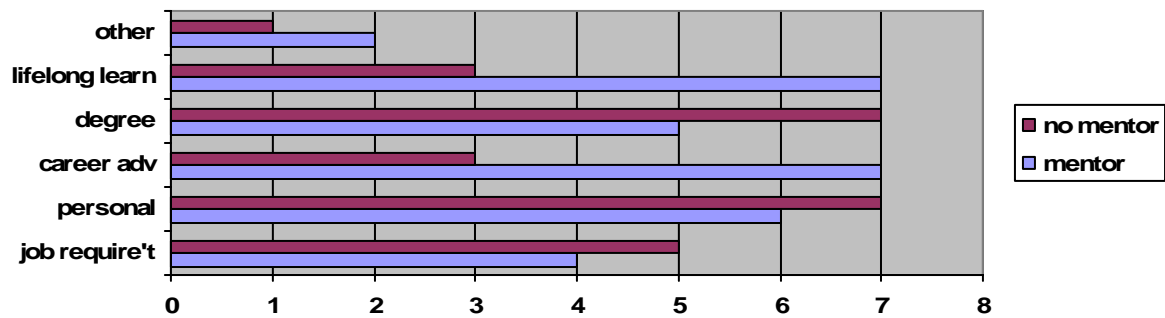


Figure 5 Reasons for conducting research of women researchers with & without mentors

MENTORING AND RESEARCH FUNDING

Next, the research considered research effectiveness in terms of successful research funding applications and amounts awarded. At this stage no exclusions between internal and external grants were made. Once again it appeared that women with a mentor outperformed those without a mentor. Women with a mentor applied for a greater number of funding sources, both in groups and as individuals (Figure 6), and in terms of the success of those funding applications (Figure 7).

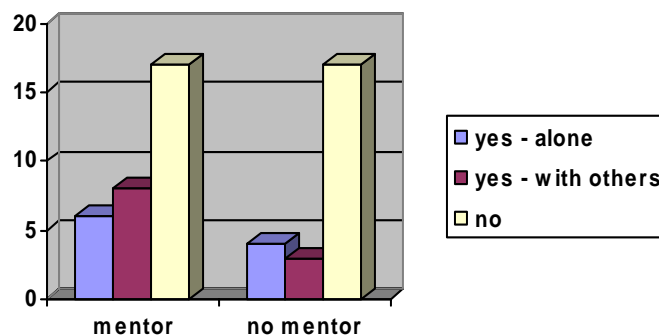


Figure 6 Research funding applications

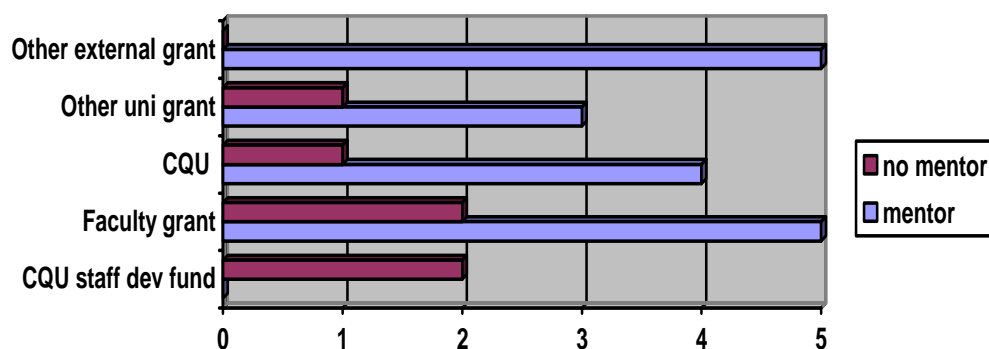


Figure 7 Successful research funding

The success of funding applications, in terms of funds received, did not make distinctions between internal or external funding sources. That is, women with mentors achieved a higher number of successful funding applications over a 12 month period, from sources identified as within CQU (CQU staff development, faculty grants, CQU research funding) and external funding sources (grant from another university or external grant association i.e. ARC).

In regards to the submission of applications for funding, although there is similarity in the number of women in research who did not apply for funding in the past 12 months (refer to Figure 8), twice as many women with a mentor applied for funding both with other researchers and alone than those without a mentor.

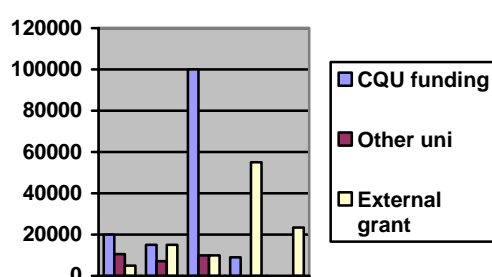


Figure 8 Research funding amounts by women researchers with a mentor (over a 12mth period)

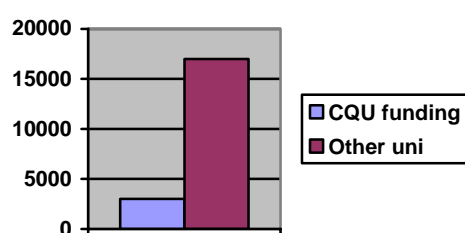


Figure 9 Research funding amounts (A\$) by women researchers without a mentor (over a 12mth period)

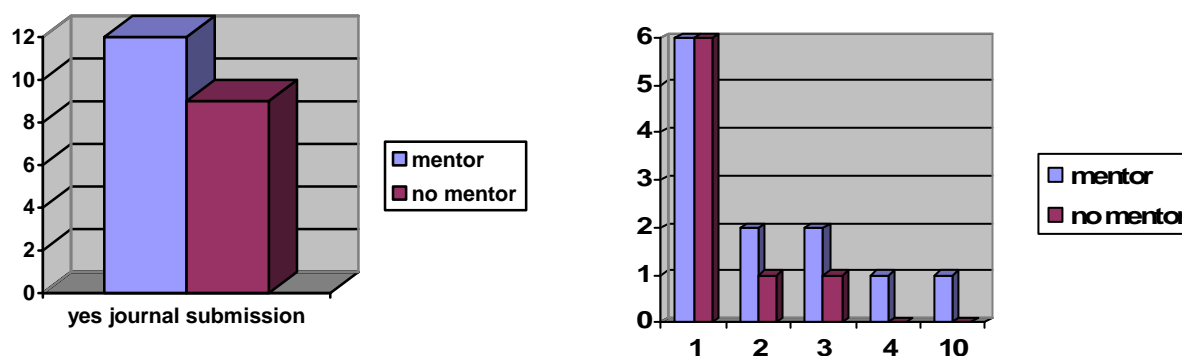
In addition to indicating whether a (or several) research funding applications had been successful, women researchers were also asked to provide funding amounts granted. A comparison of these amounts clearly illustrates that a higher percentage of the women researchers with a mentor were successful in obtaining research funding. Furthermore, the

individual amounts of research funding approved were proportionately greater for those women with a mentor than for those without (Figure 9).

MENTORING AND RESEARCH PUBLICATION

As a second source of measurement for research effectiveness, the submission of both journal articles and conference papers was utilized in this research. These submissions were correlated against the existence of a research mentor for the respondents.

In relation to journal article submissions, Figure 10a indicates that a higher percentage of women researchers with a mentor submitted articles (approx 57%) over a 12 month period. Figure 10b provides an overview of the number of journal articles submitted by women researchers both with and without a mentor with the higher number of submissions (highest being 10 submissions by one researcher) recognized as being by those researchers with a mentor.



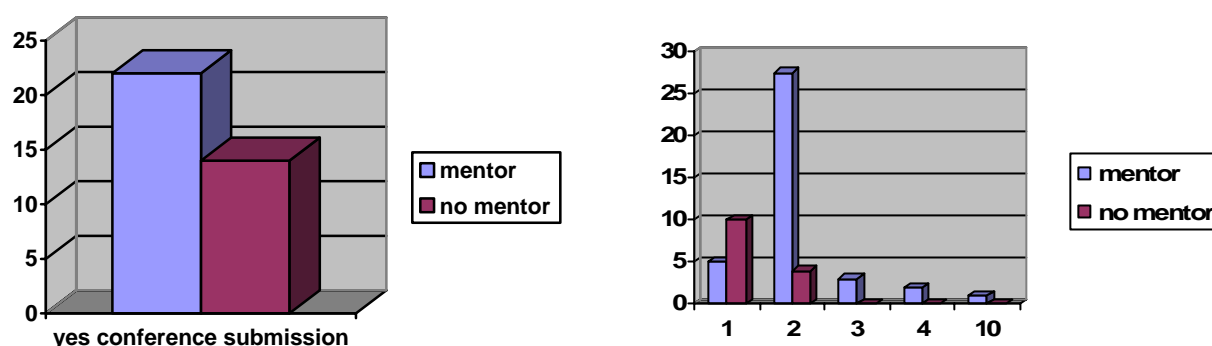
Figures 10a & 10b Journal articles submitted by women researchers

In addition to identifying the number of articles submitted by each of the respondents, the women researchers were also asked to identify the number of journal articles they would have preferred to have submitted over the 12 month period. Table 2 shows that the number of preferred journal articles is approximately the same for both women researchers with a mentor and those without a mentor although, there was a higher proportion of women researchers without a mentor (75%) stating they would have like to have submitted two articles.

Table 2 Preferred journal article submissions in 12mth period for women researchers with & without a mentor

		Mentor		Total
		Yes	No	
Journal papers	1	5	3	8
would have liked	2	3	9	12
to have submitted	3	3	0	3
	4	1	0	1
	5	0	1	1
Total		12	13	25

Figures 11a and 11b provide results pertaining to conference paper submissions of women researchers over a 12 month period. As with the percentages of journal article submissions, the results indicated that a higher proportion of women researchers with mentors (approx 67%) submitted conference papers (refer Figure 11a). Figure 11b illustrates that women researchers with a mentor submitted a greater number of conference papers (highest being 10 papers by one researcher) than by those without a mentor. In fact, no women researcher without a mentor submitted more than two conference papers over the 12 month period.



Figures 11a & 11b Conference papers submitted

As noted previously, in regards to the journal article questions, the respondents were also asked to identify the number of conference papers they would have preferred to have submitted over the 12 month period. Table 3 shows that the number of preferred conference paper submissions is equal for both women researchers with a mentor and those without a mentor however, once again there was a higher proportion of women researchers without a mentor (78%) stating they would have like to have submitted two papers.

Table 3 Preferred conference paper submissions in 12mth period for women researchers with & without a mentor

		Mentor		Total
		Yes	No	
Conference papers would like to have submitted	1	6	5	11
	2	2	7	9
	3	4	0	4
	4	1	1	2
Total		13	13	26

CONCLUSIONS & FUTURE DIRECTIONS

This conceptual study considered the use of mentors by women researchers within the Central Queensland University environment. The study highlighted that while women researchers with mentors may not differ greatly with women without mentors when it came to the number of women preparing journal and conference paper submissions, they did differ on the number of such publications being produced. Furthermore, differences were also identified between women researchers with and without mentors in terms of applications for internal and external research funding.

In order to formulate an empirically tested theoretical model of mentor effectiveness three future research directions have been identified:

- This paper concentrated on the career development outcomes for women with mentors compared with those that did not have mentors, namely, career progression, research outputs and funding applications. Future research could consider potential outcomes in specific detail, for example, learning and personal development. Perhaps these types of outcomes were the motivation behind some women obtaining mentors?
- What is the gender of the mentor? Differences between male and female mentors for women researchers, do we work better with men or women?
- Consultation with other university bodies/organizations to broaden the women in research sample population. Comparison with organizations where formal mentoring programs are in place. This study focused on a range of women from differing departments, rather than a group of women working within the same mentoring program. Does a formal, organization sponsored program make a difference to the women researchers it is seeking to help? Or do we work best when we find our own mentor, or chose not to find a mentor?

Meanwhile, for those of us currently researching, we can take a brief look at our current researcher practices. Is our current research standard where we want it? And if not, are we part of a mentor or research group? While the path to becoming an effective researcher may be a long one, we hope it will be an enjoyable one.

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