

18. Team Building, Grant Seeking and Project Administration

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The various research techniques introduced in earlier modules need to be viewed in the broader context of how they will be supported and applied. Doing research is a little like running a business. No matter how good the ideas are and how technically proficient one might be at doing the job, the success of the business depends largely on the structures that are put into place to get the job done. To draw an analogy, doing research in isolation is the business equivalent of running a small manufacturing business as a sole trader. To expand the business beyond this one needs to work with or employ other people (i.e. build or join a team) and capital is needed to do this (i.e. research grants), and this capital needs to be used efficiently and effectively and in accordance with the guidelines of those people (c.f. banks) that provided it (i.e. project management). The researcher then needs to produce a product and sell this product into the market place to generate a return to the business (i.e. completing research and publishing it). This module discusses the issues of research team building, obtaining funds and subsequent project management. In the following module, issues associated with documenting and disseminating the research findings are discussed.

1. WORKING IN RESEARCH TEAMS

Nowadays, it is increasingly difficult for an individual working largely on their own to carry out high level, high impact original research. Much of the successful research effort arises from highly focussed and cohesive research teams. Hence it is appropriate to consider how teams are formed and maintained, and the strengths and weaknesses of team research.

Team building and maintenance

Research teams are often formally brought together for particular tasks, e.g. public inquiries. The interest in this module is with more informal teams, driven by mutual interest. Teams sometimes emerge spontaneously, where common interests become apparent. Research funding arrangements also favour team building. For example, the cooperative research centre (CRC) funding arrangements of the Federal government in Australia have been responsible for providing long-term funding to bring together teams of up to about 200 researchers, in different institutions and different states, to focus research in related themes. An example is the Rainforest CRC in Queensland, which has programs on rainforest ecology, entomology, threatened and threatening species, water quality,

tourism, reforestation and other areas. The ACIAR model is also a valuable contribution to team building. Large grants which continue for a number of years, and provide funding for travel of researchers to meetings and field sites, and for research officers, are critical for teamwork. Success in obtaining large grants is critical to success in team formation and continuation.

In that the research grant scene is difficult to break into, and favours researchers with an established track record, it is often an advisable strategy for more junior faculty members to team up with experienced researchers.

While a university research team will normally be coordinated by established academics, research officers or research assistants¹ and postgraduate students (which can be overlapping roles) play an important role in these teams. They can bring a large amount of energy, initiative and dedication, and in practical terms are a cost-effective way of adding value to research funding. The involvement of high-calibre postgraduate students can make a major difference to research output. Often potential postgraduates have little

¹ Higher education workers or HEWs in the Australian University vernacular.

experience in designing research projects and are looking for guidance on what types of projects are feasible. One strategy for obtaining postgraduate students to work in areas of interest in our Rainforest CRC programs has been to develop a portfolio or potential research projects, and to provide this to people who make inquiries about postgraduate study. Joining an established team also provides advantages for a postgraduate student. Importantly it gives them access to team members with a range of skills and backgrounds. If researchers have interesting projects available, and some funds available to support the research, then this can be attractive to postgraduate students looking for a suitable thesis project. If the postgraduate students have a scholarship, and some top-up funding can be provided in the form of research assistant pay, this further improves the arrangement and hence the ability to attract capable people.

Whether teams continue to exist depends critically on effort put in by individual members, continuation of a mutual research interest, and success in obtaining grants and securing publications.

Advantages of working in teams

Working in a research team can have a number of advantages:

Specialisation. A team benefits from having members with specialist skills, e.g. team members can specialise in technical areas (such as silviculture), in developing research ideas, in grant seeking and budget preparation, survey methods and statistical analysis, computing skills, text generation and editing, report writing ability, promotion of research activities and findings and so on. It is unlikely that a single individual will be sufficiently multi-talented to cover all relevant areas at a high level of competency.

Critical mass. Some advantages exist from having a number of people available to take part in research activities. This allows progress to continue when other work pressures create unavoidable diversions for some of the team. The variety of skills becomes apparent to funding bodies and to agencies seeking consultancy services.

There is a greater probability that someone in the team (as distinct from an individual working alone) will be aware of highly relevant literature and of experts who should be contacted. There is a greater probability that calls for grant applications will be detected and that proposals can be put together to meet deadlines. A critical mass of people can also lead to a critical mass of funding, whereby one or more full-time research officer can be employed, and this can have major benefits in terms of research continuity, record keeping, communication with client groups, and outreach (extension) activities.

Synergies. Perhaps the greatest advantage of research teams is the synergies which result between members. Members can 'bounce research ideas' off each other, comment on each other's work and writings, challenge unsound thinking (an important validation of research), and provoke deeper thinking on a topic. These synergies can lead to more thorough analysis and writing-up, and to identification of further promising areas of research.

Strategic alliances. Some members of a team may be members of other professional organisations and research units, expanding the range of research contacts. Some may be members of journal editorial boards, or have good contacts with journal editors, or be members of departmental or external committees which judge research fund applications, and so on.

Grant success. The combined research capability and track record of a research group tends to be more impressive than that of individuals, which can be important for attracting interesting work and research funding.

Publication success. Working as a team which includes researchers with a strong publication 'track record' can lead to higher success rates in publication of journal articles and book chapters.

Disadvantages of working in teams

There are some disadvantages in working in teams. Teams are made up of individuals with a range of personal characteristics and

idiosyncrasies. Successful teams that work well together are invariably composed of people who get on well together and enjoy working collaboratively. However, even in the most successful of teams there will be personal conflict and tension at times. To make teams work, group members must be willing to compromise and be able to put in place mechanisms to deal with negative characteristics of other team members, i.e. be tolerant. If this is not done, many of the benefits of teams can be lost and much time and energy is wasted in conflict situations.

Mentoring of junior team members

In research teams, there is a requirement of more established researchers to provide encouragement, support and training for more junior members. This can be viewed as in part a social responsibility in academia. However, it is also important from a self-interest viewpoint, of having capable and productive colleagues with a favourable attitude to project work who are likely to remain with a project rather than seek alternative work. Some practical mentoring steps include:

- making research resources available wherever possible, e.g. funds for fieldwork.
- being reasonably accessible to discuss research activities.
- providing a sympathetic listener and counselor when personal problems arise.
- committing team members to seminar or conference presentations.
- providing referee support and review comments on grant (and scholarship) applications.
- including team members in joint applications for research funding.
- directing members to useful contacts or relevant reading.
- providing comments on draft papers

– within days not weeks – and making suggestions for publication outlets

- including members as authors in research papers. More established researchers often have better access to publication outlets. Developing confidence to prepare and submit papers can take some time and training.
- providing positive reinforcement wherever possible, e.g. making a point of commenting on successful achievements, such as papers published. (In some cases, it will be possible to provide financial incentives.)
- should the opportunity arise, providing funding support for key events, such as an international conference.
- providing positive confidential referee reports when these are needed.

Where younger project workers are postgraduate students, the supervision and mentoring roles tend to overlap. Supervisors and mentors can leave a lasting impression on those that they work with. However, there is a wide range of performance by higher degree supervisors, from totally inert to totally 'switched on'. In team situations it is thus critical to ensure that strong supervision and ready help is provided to students. Postgraduates share information readily with other existing and potential postgraduates. If sound supervision is provided, then the word of mouth advertising by existing and past students can be a highly effective means of encouraging new postgraduates to join the team. The opposite also applies.

2. STRATEGIES FOR OBTAINING RESEARCH GRANTS

Adequate funding is a critical ingredient to achieving research objectives. Even with sufficient time, skills and commitment, it is difficult to carry out sound research without sufficient money for fieldwork travel and equipment, research assistance, computer

equipment, postage and printing, purchase of research books, and so on. Attending conferences can be critical for keeping abreast with what is happening in a research field, and conferences are invariably expensive to attend. While one's employment agency generally has some accessible research funds, the extent of paper work for a modest grant can be discouraging, and there may be limited flexibility in how the funds can be used. These are best thought of as 'seed funds', to assist in developing research concepts and proposals. All this leads to the conclusion that obtaining external research grants is critical to a healthy research program.

Grant seeking involves identifying opportunities for funding, developing research proposals, and frequently making modifications or preparing rejoinders in response to feedback from the funding body or appraisers of the application.

In some cases, preparing research proposals can take several weeks of work – for literature search, drafting the proposal, collecting cost data and preparing the budget, and so on - possibly as much time as it takes to write a research paper. Hence grant seeking needs to be approached strategically, and not entered into light-heartedly. It is wise to make an estimate of the probability of success before launching into development of a research proposal, but bearing in mind that a proposal rejected by one agency may be reworked for another. Given the amount of effort that can go into developing a convincing research proposal, it has been commented that one has to do the research before obtaining the grant. Following on from this (tongue in cheek) view, when a grant is received, it is used to carry out the research needed to apply for the next grant!

Choosing the research area

It is obviously preferable to choose a research area with which the team has expertise and is comfortable, to take advantage of their comparative advantage. Sometimes, a tradeoff arises between choosing areas of greatest interest and areas for which funding is most readily obtainable. Sometimes, involvement in projects that are well funded but not quite in

the area of interest of the researchers can be advantageous; a researcher or team with small amounts of funding has limited flexibility in what projects then can choose. Many grants have some degree of flexibility in what can be done with the funds once they are awarded, which may allow opportunity to explore issues of particular interest. Sometimes, modifications to project objectives will be agreed upon, depending on what lines of research turn out to be feasible.

Identifying funding sources and prospects for success

A surprisingly large number of potential research funding sources exist – including local, national and international bodies – and new ones continue to arise. This suggests that it is necessary to be vigilant about identifying what grant are potentially accessible, and to establish a database of grant sources and application deadlines. Most funding bodies have one or two calls a year, with specific submission dates.

A key strategy is to get to know the more promising agencies which are sources in relation to one's research interests, and to understand their priority funding areas. (This is sometimes disclosed on a Web site.) It is also helpful to know other idiosyncrasies of the funding body, e.g. the type of emphasis they like in project proposals, and what they like and dislike. Some funding agencies are particularly keen to see any related research highlighted in the proposal; some like inter-agency grant arrangements; some place great emphasis on having a technology transfer component in the research; some have a highly applied focus (e.g. 'getting trees in the ground'). Some do not like to see involvement of postgraduate students in the proposed research activities, taking the view that such a proposal is a disguised form of application for a student scholarship.

Choosing which grants to apply for is an economic problem, of cost of developing the proposal versus expected payoff in research dollars. It is worth bearing in mind that large grants are not necessarily more difficult to obtain than small ones, and that the amount of effort involved in obtaining

small grants is sometimes a questionable use of time.

It is helpful to know what sizes of grants are supported. Sometimes successful applicants will be given the full amount they request, and sometimes amounts will be scaled down, which creates problems when a specific set of objectives and activities is proposed. For some of the more prestigious grants, the probability of success is discouragingly low. For example, only about 20% of applications for Australian Research Council grants are successful.

Being known to the agency can be a critical factor in grant success. Some agencies have a rather narrow researcher base, and like to continue funding people who have a record of achieving their research objectives. Successful researchers often receive invitations to apply for grants.

It would appear that funding agencies are highly risk averse with respect to whom they grant funds. In one case, a funding agency commented that if they received a particularly interesting application from an unknown researcher, they would invite someone well known by the agency to carry out the proposed research! This reinforces the view that it is difficult to break into the research funding circle, and that success in obtaining grants favours further success. One way to break into this circle is to prepare joint applications with more established researchers. The fact that a credible research team is being put up in the proposal is also important in having the agency look favourably on the request.

The probability of grant success can be increased greatly by including established researchers in the application. Usually, grant success is related (directly or indirectly) to track record. For example, the Australian Research Council (ARC) council recently placed 50% weight in scoring applications on the proposal and 50% on the track record of the applicants.

Preparing the proposal

Funding applications tend to take a relatively standard layout. Some of the things which are often included are: background and literature review, research

questions, aims and objectives, research method, significance of the research, technical outputs and practical outcomes, technology transfer method, timetable, Gantt chart indicating predecessor activities and milestones, budget, justification for budget items, references, ethical clearance statement, statement of employer's support, and applicants' track records.

The typical weak spots in applications are: lack of a theoretical or conceptual model underlying the proposed research; the proposed research method is too vague and lacking in detail; and the justification for budget is weak (e.g. it says how the money will be spent rather than why it is required). Once a proposal has been prepared, it is useful to review the text in these areas of often-encountered weaknesses.

Some expenditure areas tend to be well accepted while other raise suspicions of the appraisers. The more acceptable expenditure areas: research assistance, fieldwork equipment and travel, interview surveys, purchase of research books, maintenance (phone, fax, photocopying, postage), and project workshops. Agencies funding international projects are generally supportive of project workshops (planning, training, end-of-project). Requests for funding of conferences (particularly overseas ones) and notebook computers are likely to be viewed critically. Sometimes the travel budget is considered excessive. Some agencies give applicant the opportunity to place priorities on the various budget items, as A, B, etc. In such cases, it is wise to place the lower priorities on the items which are generally less favourably viewed. Where expenditure items have to be prioritised, amounts granted may be less than the total amount applied for.

A useful recent development is that many funding bodies have a staged application procedure. An initial expression of research interest of not more than about two pages in length may be called. If the proposed work is judged competent and fits within the priority areas of the funding bodies, then the applicant is invited to submit an expanded application. In some cases, there may be three or four stages to the application, the downside of which is that it may take about two years for the project to finally obtain

approval.

It often happens that grant applications are 'recycled'. That is, if an application is rejected by one funding body, it is reworked and submitted in response to the call for applications by another agency. This means that a further payback can be obtained from the sunk costs of development of an unsuccessful research proposal, and helps justify the large effort expended in chasing prestigious but low probability grants. In the case of large grants (e.g. ACIAR grants) several weeks may be required on the proposal and even the budget may take a number of weeks to prepare. This should be considered as part of the research process, not as dead time. That is, the project proposal should be considered as a working document, which is part of the research process, and which can if necessary be recycled for another funding opportunity, or form the basis of a publication. Persistence in grant seeking often pays off.

A mistake which is sometimes made in preparing the project budget is to ask for too little funds, in the hope that this will increase the probability of securing a grant. This means that if the application is successful, the researcher is stuck with trying to achieve promised outputs with inadequate resources. We were caught in this way in a recent study of tribal villages in India, but fortunately managed to obtain supplementary funding from another source.

It is a valuable step to obtain a peer review of a grant proposal. Some organisations arrange this as a matter of course. Someone who has not been involved in the preparation of the proposal is more likely to detect omissions, unclear statements and statements which could be misunderstood or cause a negative reaction. It is not uncommon for people promise too much, i.e. to propose to undertake more than they could reasonably achieve with the funds and time available.

Ethical clearance is increasingly being required for grant applications, even to undertake surveys (e.g. of households or farmers).

Responding to requests for more information or modifications

Funding bodies vary in their decision processes. In some cases, a detailed proposal is prepared, and an accept/reject decision is made, with no interaction with the applicant. At the other extreme, an officer from the funding body interacts repeatedly with the applicant to steer the project document and budget through the various approval stages. ACIAR is excellent in providing support for applicants in this regard. In most cases, some amount of questioning of the proposal arise, with opportunity for revisions or clarifications. When proposals are sent to external reviewers, there may be an opportunity for the applicants to prepare a rejoinder to the appraisers' comments.

In the case of projects involving researchers from more than one agency, or from two countries, there may be negotiations on the research scope to satisfy the needs of each agency or country.

Generally, when a project and grant is approved in principle, it is necessary to obtain statements of agreement from the various parties. For example, the office of research of a university normally has to sign off for a project which involves university staff and resources. Concerns can arise about ethical considerations (clearance from an ethics committee may be required) and any restrictions which are imposed by the funding body on publication of research findings.

3. RESEARCH ADMINISTRATION

In any research project, there is a considerable amount of administration and reporting (in addition disseminating information about the research and its achievements). These tasks involve planning of research activities, management of people and funds, monitoring project progress, and reporting to officers of the host organisation and funding bodies.

Planning research activities

Poor planning can result in both wasted funds and wasted time – both of which are

important commodities for a researcher. The need to plan data collection and analysis activities has been discussed elsewhere. There is also a similar need to plan the expenditure of funds. Where travel is involved, particularly international travel, a great deal of time can be spent in making travel arrangements. If field visits and research trips are not planned well they can involve a considerable waste of time. For instance, a visit to a field site to talk to community members can be a complete waste of time if the key people being sought are away.

Personnel management

In general, team research is a cooperative and collegial activity, rather than a management-and-line-worker process. This is particularly the case when the team members have confidence in each other's abilities and dedication. Team management then involves taking a close interest in colleagues' activities, and providing encouragement and support where possible, rather than attempting to make directives. Research tends to be most productive when there is an open and inquiring atmosphere and people have the opportunity to explore ideas. Coordination then takes place through planning meetings and informal discussion.

Managing the budget

This can be one of the most difficult areas in management of research projects. In one sense, the funds for a project are fully allocated at the time of funding approval, hence the task is to ensure that the funds are used in the way contracted between the researchers and the funding body. Fortunately, more flexibility than this usually exists, and modifications to project objectives as well as unforeseen circumstances alter the way in which funds are used.

Where requests for supplementary funding by team participants are made, it is desirable to meet these to the extent possible given the project commitments and finance constraint.

Making claims for research expenses, and acquittal for funds advanced or disbursed

can be an onerous task for researchers, but is a necessary part of public accountability.

Project reporting

Invariably, there is a requirement for an end-of-project report to the funding body. For projects with a duration of more than one year, there is usually annual reporting of expenditure and of performance in relation to milestones. When field trips are made, there may be a requirement for individual trip reports. (This is a requirement of ACIAR, for example.) If project workshops are conducted, there will be an expectation of some form of workshop proceedings or report. There may be an expectation of production of a technical monograph at the end of the project. In general, the funding body will want to ensure that the money is well spent, and produces useful findings or 'makes a difference' to a target group of stakeholders, and provides favourable publicity for the activities of the funding body.

Project monitoring and staying on track in terms of budget, outputs and timetable

Experience indicates that there is often 'slippage' in projects relative to research intentions. While some delays and expenditure over-runs can be tolerated, the project objectives and milestones need to be kept in sight. There will be adverse impacts on researchers if a project does not achieve its objectives, such as: questions asked by funding bodies about annual reports; imposition of a project review by an independent expert group; early termination of a project; more difficulty in obtaining further funding.

Dealing with project reviews

Successful performance in reviews is important for securing further funding. Reviews sometimes arise because the funding body is not happy about the way a project is progressing, so need to be handled with care. There is a need to provide details of all achievements of the project (e.g. research technical outputs and publications, technology transfer, capacity building) of difficulties encountered, and of

modifications of objectives.

4. CONCLUDING COMMENTS

There are no guaranteed strategies for research success, but experience indicates a number of lessons on what measures are likely to assist. Success is a matter of both opportunities and effort. It has been said that 'genius is 10% inspiration and 90% perspiration'. Success in research requires commitment and persistence. In that much interesting research findings and ideas fail to appear in print, if one critical tip can be given, it is to become a habitual writer.

5. DISCUSSION QUESTIONS

1. What are the promising sources of research funds for your organisation?
2. Which journals would you target for research outputs?
3. To what extent are you involved in

mentoring colleagues, and through what measures?

4. Do you undertake research in a teamwork situation? If so, what special skills do individuals in your team possess?
5. Consider the following text passage. Suppose you are given the task of providing editorial comments to the author. What aspects of the passage would you suggest be reworded?

ESTABLISHMENT

'Brown (1988) notes that plantation establishment was not good; there were significant seedling losses, due to the hot temperatures.

Therefore, although the seedlings were very cheap, the plantation was not expected to be profitable.'