

A Short Guide to Building and Managing Interdisciplinary Research Teams

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Selecting collaborators and identifying team members	1
Conceptualising the research problem	2
Distributing team responsibilities	2
Overcoming communication barriers	3
Bringing it all together	4

Selecting collaborators and identifying team members

How do you go about finding other researchers who are willing to work together in a successful interdisciplinary team? This is a key part of developing your career as an interdisciplinary researcher and involves building a network of contacts through meetings at conferences, personal recommendations from trusted colleagues, and perhaps testing the water with new collaborators through smaller joint projects before you embark on a more substantial piece of work together. There can be a tendency, as with any research collaboration, to stick with people you already know but taking some informed risks with 'new blood' can be fruitful.

Good interdisciplinary collaborators are likely to be open-minded, willing to learn from other disciplines and have a broad appreciation for the languages, research methods and cultures of different disciplines. In many ways, personality can be a more significant factor than discipline base.

Nevertheless, as with any successful team, it is important to assign the right roles to the right people and it is often essential to include disciplinary specialists within an interdisciplinary team. Above all, you should be looking for enthusiastic partners with past evidence of collaborative – and preferably interdisciplinary – research.

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We have, for example, found that successful interdisciplinary teams are led by people who themselves have a strong interdisciplinary background and exhibit the following traits³:

- an interest in a wide range of subjects
- a respect for other disciplines
- a willingness to promote the success of other disciplines
- good interpersonal and team-building skills
- proactive in engaging with other partners

While these attributes are useful for research managers in any disciplinary area, for interdisciplinary research they are absolutely essential.

Conceptualising the research problem

Another key challenge when managing an interdisciplinary research project can be to ensure that all participants contribute, and contribute to the same standard, even if their methodologies and data differ. This may require some negotiation of roles and it may take time to find a common framework for the research in order to get the right balance of contributions from the component disciplines; otherwise what you achieve may be a multi-disciplinary project rather than a truly interdisciplinary product.

The best interdisciplinary projects involve a lively process of interaction in order to explore commonalities and differences and establish relationships between disciplinary partners. When conceptualising the research problem and planning the work programme you may well need to plan for the project to take longer than a monodisciplinary collaboration; plan more group working and be prepared to facilitate this process, especially during the early framing stages.

Distributing team responsibilities

Strong leadership may be required to build bridges between the different disciplinary contributions and it is essential to develop a systematic framework and agree the common problems and goals from the outset. Although a good interdisciplinary project will be goal-oriented and demonstrate synergies between methods and disciplines, more so than a monodisciplinary project, interdisciplinary projects may need to develop and change as they proceed. This requires a degree of flexibility and means that the research team also needs to be more reflective, with more frequent and open discussion of the project's evolution, and the approach more reflexive than is required for a monodisciplinary project.

For larger interdisciplinary research projects and particularly for interdisciplinary research programmes or centres, a member of staff with designated co-ordination, dissemination and knowledge exchange responsibilities can be an invaluable addition to the research team.

³ Bruce A., Lyall C., Tait J. and Williams, R. (2004) "Interdisciplinary Integration in the Fifth Framework Programme", *Futures*, 36/4, 457-470.

When distributing team responsibilities the project leader will need to:

- identify expertise and assign it appropriately without necessarily expecting everyone to participate fully in all tasks
- be open to new methods
- consider how analyses may be structured to integrate different sorts of findings, from different disciplines' methods and data
- recognise that team responsibilities may go beyond standard/traditional areas of expertise
- consider the role and contribution of "users" or other stakeholders in the team.

Overcoming communication barriers

While the methods and styles of communication for an interdisciplinary team may not be essentially any different from those required by a collaboration with a monodisciplinary focus, it may take longer to develop a common language within the team and to understand that different disciplines do have different traditions and styles of working: for example, it has been said that social scientists have a more discursive writing style, whereas natural scientists write more succinctly.

It may be necessary to air preconceptions amongst the partners about different disciplinary paradigms: a good way to achieve this can be to encourage team members to read the literature from the team's contributing disciplines and discuss their reactions to it at project meetings or structured workshops.

In order to facilitate successful team-working within an interdisciplinary team it is essential to ensure that your work programme includes plenty of such meetings and networking events, particularly at the start of the project and at certain project milestones when decisions need to be made. You might want to think about combining these with social events to help the team coalesce. Depending on the nature of your collaborative project strategies to foster communication within the team may include:

- frequent face-to-face meetings/networking events
- regular video-conferencing to tackle geographical separation when team members are located in different institutions
- joint fieldwork
- social events
- finding a way of applying rewards and incentives to teams rather than individuals
- considering using existing techniques and computational tools for integrating data
- writing together to encourage integration across disciplines.

Interdisciplinary collaboration often presents intellectual challenges so it is important to work with people whom you trust and who share your over-arching interdisciplinary goals. It has been said that successful interdisciplinary collaborations require great friendship among the partners but, inevitably, there will be clashes within the project team. These clashes of opinion may simply represent gaps in knowledge and theory which can be explored to produce new ways of thinking about a research problem and perhaps new avenues for

future research. Leading a team will nonetheless require tact and the ability to refresh members' commitment to shared goals.

Bringing it all together

You may want to consider at the research planning stage about how work – and credit – can be apportioned fairly when it comes time to publish results. Different disciplines have different traditions in, for example, the sensitive issue of authorship which can sometimes be particularly disadvantageous to the junior researchers within an interdisciplinary team. These are issues that should be planned for and discussed among team members early on as part of a deliberate publications strategy. It is very likely that you will wish to develop a portfolio of publications with different outputs targeted at different types of journals (e.g. various monodisciplinary journals as well as one or more interdisciplinary journals) or other media. Different members of the team could take lead responsibility for different publications depending on their disciplinary standing and their role within the team. Depending on the nature of your interdisciplinary collaboration you may also wish to explore the nature of the data – whether it is predominantly qualitative or predominantly quantitative – and factor this into any decisions about the focus of planned publications and their target readership.

Finally, before you reach the end of the project, you may also want to consider what factors will influence the likelihood of the team staying together and perhaps evolving (by adding or subtracting members) or whether it should be allowed to disperse and die a graceful death.

Discussions with postgraduate and postdoctoral researchers who attended the RELU Interdisciplinary Masterclass, University of York, 12-13 September 2007 informed the preparation of this note.

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