Multidisciplinary Collaboration

Multidisciplinary – parallel activities in two or more disciplines but each working largely independently. **Interdisciplinary** – much more integrated and interdependent, more challenging to the established structures of each discipline

Why should you become involved in multi- or interdisciplinary projects? Because the big problems, the Grand Challenges and the Global Challenges (health, energy, climate change, security, privacy, etc) need input from multiple perspectives

It's not just working with other academic disciplines but with other groups with different needs

Researchers in the School of Informatics currently work in projects on health, medicine, biology, psychology, environment, defence, energy, geosciences, built environment, art, history, engineering, chemistry, neuroscience and neurobiology. They work with PPLS, ECA, LLC, SSPS and Moray House in the College of Arts, Humanities and Social Sciences; with the Centres for Clinical Brain Sciences, Medical Informatics, Integrative Physiology and Cardiovascular Sciences in CMVM; with all of CSE.

Almost all the European projects involve partners from other disciplines in external organisations, as do many RCUK and other funder projects. These partners are not always other universities but can be industry, SMEs, charities or NGOs. *Each partner, whether another school in the University of Edinburgh or a small charity in Nairobi or a large company or a new research institute, has its own culture and administrative requirements.*

What can the **Research Support Office** (RSO) do to help? The School of Informatics has an excellent team of Portfolio Managers with extensive local knowledge, as well as **dedicated support in the RSO who can offer**:

- Co-ordination of large bids from budget creation to approval to submission
- Attend project meetings, set timelines for partners
- Proofread, section edit, pathways to impact, comment on full proposal
- Knowledge of funders (access to peer review, feedback, panel comment) and funder interfaces (Grants.gov, H2020 portal, RCUK) and funder legal requirements (US registrations, Financial Conflict of Interest)
- Liaison with partners for legal, financial and other administrative processes
- Collaboration agreements, negotiation

What can cause problems

1. Collaboration set up at short notice, where partners don't really know each other, to respond to a short-deadline call. Often best if at least some of the partners have worked together before. A longer build-up to give time to establish a relationship is useful. Find a small internal call to test the partnership before going local, European, International
2. Partner included for appearance of multidisciplinarity but not truly part of the project (often immediately evident from the budget allotted to them).
3. Lack of awareness of the local procedures of other partners. Informatics has an efficient internal approval system but others need more time to get through their administration. Timelines should be established early and with respect for the other partners
4. Multiple bid writers with no lead writer to bring the final together
5. Insufficient internal review before submission, either because reviewers not given enough information or time to properly review, or a wide enough range of reviewers is not sought
6. Making assumptions on behalf of partners based on own experience, or what things cost here, or what we did previously for something similar

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7. Failing to inform partners of funder terms and conditions leading to argument after project awarded – for example, cannot vire between some cost headings or must complete timesheets, provide quarterly reports
8. Lack of provision for lead who can integrate the various teams, lack of provision for management or administrative support during the project (often dropped early to cut cost)

Global Challenges Research Funding doesn't create new problems because the University has always worked with partners in ODA countries, but it has increased them and the time they take to deal with as there are more such projects and more scrutiny from the funders. All the points above also refer to GCRF but, depending on the experience of the ODA country partner, even more time may be required and more explanation of funding processes both pre- and post-award.

9. Due Diligence – the University is required to perform Due Diligence on partners receiving funding. We use a variation of RCUK's own Due Diligence form and, where possible, stage the completion so that partners do not have to fill in everything pre-submission. The RSO will deal with the forms but we need to know the partners early. Assuming familiarity with funder terms and conditions – standard University collaboration agreement and funder t&c include reference to various Acts of Parliament which our partners in other countries want to understand before they sign
    - FOI 2000 http://www.legislation.gov.uk/ukpga/2000/36/contents
    - Equality 2010 http://www.legislation.gov.uk/ukpga/2010/15/contents
    - Environmental Information Regulations http://www.legislation.gov.uk/uksi/2004/3391/contents/made
    - ODA rules http://www.oecd.org/dac/stats/officialdevelopmentassistancedefinitionandcoverage.htm
10. Collaboration Agreements – may incorporate specific GCRF terms and conditions and must be signed before project can start, often very short turnaround time. If partners have not completed the DD and been given template agreements beforehand that can delay sign-off

The **Industrial Strategy Challenge Fund** (http://www.rcuk.ac.uk/media/news/170116/) is cross-disciplinary with industry so all the above will apply, with the addition of early Business Development engagement to ensure the industry partnership is managed.

USEFUL RESOURCES (GENERAL)

Interdisciplinarity https://www.wiki.ed.ac.uk/display/ISSTIIInterdisciplinary/Interdisciplinary+wiki and the briefing notes at https://www.wiki.ed.ac.uk/display/ISSTIIInterdisciplinary/Interdisciplinary+Briefing+Notes
EPSRC Research Areas https://www.epsrc.ac.uk/research/ourportfolio/researchareas/ Search by Grow, Maintain, Reduce, Under Review; by themes; by strategic focus highlights; where funded. New summaries of each area including Outcomes and Ambitions and research area connections. **All proposals to EPSRC should refer to the appropriate area.**
Applying to the NIH for the first time? https://grants.nih.gov/grants/how-to-apply-application-guide.html
What's been funded, who's on review panels, who are the recipients (who could be a partner or a reviewer)? http://gow.epsrc.ac.uk/, https://www.epsrc.ac.uk/funding/assessmentprocess/college/ or https://report.nih.gov/. Most funders have similar information. Look at the background of successful applicants to see where you fit.
Who might be a partner within the University of Edinburgh? If your project is in Health, Environment, Food Security or Development check http://global.ed.ac.uk/our-work/global-academies (shows members in UoE and globally).
To get an insight into review and panels, join, for example: https://www.epsrc.ac.uk/funding/assessmentprocess/college/memberselection/ - you can self-nominate. EPSRC currently looking for **more women and more minority representation.**
Writing a good Pathway to Impact – while this refers specifically to healthcare it has generally useful advice https://www.epsrc.ac.uk/research/ourportfolio/themes/healthcaretechnologies/strategy/toolkit/
***Who to contact in the Research Support Office**: Dr Asad Nazir (asad.nazir@ed.ac.uk)*

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Additional content arising from conversations at the Research Day

- Idea of **50% PDRAs**, noting that there is at least some demand for part-time roles (separate from discussion of creating 50/50 research/teaching posts). Note that there is recognition of this from funders under the equality and diversity agenda and openness to other working arrangements. EPSRC and NERC have awarded jobshare fellowships, for example.
- **Sharing successful applications** – the RSO does try to keep an available (through EASE) dossier but not everyone wants to openly share though applications are redacted to remove sensitive information. However, there are two other avenues:
    - If you are willing to share directly, let me know. We have individuals with successful applications who are willing to talk to others already committed to applying to the same scheme about their experience, which could include interview and feedback.
    - We can approach people we know to be successful and ask if they will talk to you as you are making an application to that same funder/scheme.
- Difficulty of placing **interdisciplinary** outputs. One useful resource for examples of impact in interdisciplinary projects is http://impact.ref.ac.uk/CaseStudies/ where you can search projects by **impact** type, submitting institution etc but also narrow it to show only interdisciplinary case studies. This http://impact.ref.ac.uk/CaseStudies/CaseStudy.aspx?Id=13827 is the case study mentioned in the discussion. I use this site as a useful resource for thinking about pathways to impact when creating a proposal.
- **Responsible Innovation** https://www.epsrc.ac.uk/research/framework/ and for ICT in particular http://www.orbit-rri.org/
- **Citizen science** - this is often cited as a prime example https://en.wikipedia.org/wiki/Foldit
- **Co-creation** – often happens too late and isn't co-creation, which is both obvious to reviewers and counter-productive
- https://www.epsrc.ac.uk/research/ourportfolio/themes/ict/introduction/crossictpriorities/crossdisciplinarity/
- Making connections in order to have **non-HEI partners** - Consultancy – contact Ian Hatch (Ian.Hatch@eri.ed.ac.uk), new consultancy person for the College, looking for researchers new to consultancy. A small consultancy project can often lead to greater things such as studentships, partnering or even direct research funding, or through equipment and facilities – Business Development can use these to attract external users, leading to research relationships
- Opportunities to **meet others outside own discipline**. What could make it easier to go to another campus to network? Reluctance of KB or Central or QMRI residents to travel to another campus for interdisciplinary events such as GCRF or ISCF, leads to missed opportunity for wider networking. Provide buses? Lunch? Do not offer the same event in multiple venues?
- **BREXIT** – what can researchers do? Apart from the assurances from both EC and UK government and the evidence of considerable success in Informatics, researchers should continue to collaborate and apply as that is in itself evidence of the importance of European connections. Giving up plays to the BREXIT argument.
- EPSRC a bit put out that no-one read their strategic plan https://www.epsrc.ac.uk/about/plans/ or mission https://www.epsrc.ac.uk/about/facts/mission/
- **Equality and diversity – gender**. EPSRC speaker pleased at number of women researchers in the room, unusually high, he thought. However, when he was speaking about 10 of the women in the room were not researchers.
- **Finding funding –** few using Research Professional https://www.researchprofessional.com/0/rr/home If interested in finding out more about it, contact Gordon Marshall (gordon.marshall@ed.ac.uk)