



PostGraduate Institute
for measurement science

Doctoral Research Supervision Charter

Guidance and best
practice for supervisors
in a non-academic
setting

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Foreword

The student-supervisor relationship is fundamental to the success of a PhD project. This Charter, therefore, provides guidance on how to make this relationship as fulfilling and productive as possible to enable a positive experience for the PhD student and beneficial outcome for the project. The Charter sets out clear expectations for both supervisors and students, providing guidance and resources for non-academic supervisors.

It is of great importance that Postgraduate Researchers have the opportunity to showcase their research talent and build useful networks. Similarly, supervisors should know how, and be provided with opportunities, to share best practice with their peers and the researchers they supervise. The guidance provided here is specifically developed to enable this and to create a positive culture for researchers, at all levels, and to carry out research, training, and supervision to a world leading standard.

It is expected that other research-intensive institutions or Public Sector Research Establishments may benefit from this Charter. As such there are no specific institutional references or links within this Charter. Instead, it is recommended that other institutions create their own 2-page cover sheet with relevant internal resource links and references.

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1. Introduction

Vision for this Charter

This Charter aims to help supervisors to nurture early-stage researchers, enabling Postgraduate Researchers (PGRs) to enjoy the best experience and environment possible in which to carry out their research.

The Charter is structured around 3 main principles: Effective communication, an inclusive and supportive environment, and supporting professional development. The expectations for supervisors form the main body of the text and are categorised using these three principles. Expectations for students are outlined at the start but are not covered in greater detail in the Charter, though the two overlap significantly. A separate document detailing only the supervisor expectations will be used as a 'standalone' resource, to be put up in offices, meeting rooms, and labs to remind both parties of supervisory responsibilities.

Who is this Charter for?

This Charter has been written for use by supervisors in a non-academic setting, and students with a non-academic partner in their PhD project. Supervisors within these sectors play a vital role in bringing third party knowledge to the relationship, along with offering excellent opportunities in professional and career development. However, for the Charter to be as useful as possible, PGR students should also read, familiarise themselves with, and use the expectations set for their non-academic supervisor. Students and supervisors should know about and give the same weight to the principles set out in the Charter. This will help ensure that all parties within the student-supervisor unit understand their responsibilities and roles at the start.

It is expected that other research-intensive institutions or Public Sector Research Establishments may benefit from this Charter. As such there are no specific institutional references or links within this Charter. Instead, it is recommended that other institutions create their own 2-page cover sheet with relevant internal resource links and references.

Charter development

This Charter outlines specific expectations of supervisors in a non-academic setting. These have been developed using the Quality Assurance Agency (QAA) [Quality Code](#) national expectations as well as the Good supervisory practice [framework](#) published by the UK Council for Graduate Education (UKCGE). Individual Higher Education Institutions (HEI) may have published their own individual expectations, which you should familiarise yourself with. As it is now the national norm to supervise in teams, these are expectations that will have to be met by the complete supervisory team.

PGR expectations have been developed in line with the QAA Doctoral Degree Characteristics [Statement](#). These characteristics have been developed in parallel across Europe, such as those found in the European [Charter](#) for Researchers. The support and guidance of the supervisory team is fundamental to these characteristics being developed.

Expectations of supervisors

Communication	Working Environment	Professional Development
1. Be accessible and in regular contact with PGRs	4. Engage with the PGR recruitment process	7. Provide professional guidance and advice
2. Agree ways of working with co-supervisors at the start of the studentship	5. Familiarise the PGR with relevant procedures & facilities	8. Participate in Continued Professional Development (CPD) to enhance one's own supervisory practice
3. Monitor progress and provide feedback	6. Provide pastoral support	9. Encourage PGR to participate in conferences and build their profile
		10. Introduce PGR to professional networks

Expectations of PGRs

Communication	Working Environment	Professional Development
1. Be accessible and in regular contact with supervisors	4. Participate fully in supervisory meetings	7. Identify own training needs
2. Agree ways of working with supervisors at the start of the studentship	5. Behave in a professional manner	8. Identify professional networks
3. Seek guidance, feedback and advice	6. Follow Health & Safety Requirements	9. Consider the impact of the research
		10. Attend conferences and build profile

2. Principle 1

Clear, Regular and Open Communication

Expectation 1: Being accessible and in regular contact with the PGR

Summary

An open and honest relationship with clear lines of communication between the PGR and supervisors is fundamental to the success and enjoyment of the studentship. This section covers the initial meeting, meeting principles and the student contract.

A meeting should be organised as soon as possible after initial registration to agree roles and responsibilities, and to provide information of the environment in which they will be working. This first meeting should cover the following items:

- Location and adequacy of working space
- The importance of research ethics, and health & safety
- Supervisory arrangements whilst on site
- The responsibilities of each of the supervisors in the team and the PGR.
- The feedback and establishment of the best way for you to provide this
- The practical arrangements for meetings
- Authorship of publications, IP, and other outputs originating from the doctoral research, and the signing of any appropriate agreements.
- The PGR's training needs
- Clear targets, including training, to be covered at least in the first six months

Following this initial meeting, it is important for all participants to distinguish between supervision meetings and all the other encounters that supervisors and PGRs might have. The purpose of supervisory meetings is both to review progress and to provide impetus to take the research forward. Supervision meetings should have and include:

Meeting principles	Topics
An agreed specific date	Progress of laboratory experiments
An advance agenda	Critical reading of literature
A set of anticipated outcomes	Academic writing
Should take place in a relatively private and quiet venue	Training and development needs
Written summary provided by the researcher afterwards.	Any potential problems that may arise or have arisen (ensure these are recorded in the minutes)

Setting the student-supervisory contract

An informal but written contract/agreement can help to remind the whole team about what their obligations are and what they can expect from each other. Revising it at regular intervals, such as 6 monthly, allows for changes as needed. It is a good idea to include a timeline of materials the PGR will work on, with more detail being added to the next interval each time.

Expectation 2: Agreeing ways of working with co-supervisors at the start of the studentship

Summary

The third-party supervisor will be part of a wider supervisory team. Team supervision brings many benefits in terms of sharing knowledge, opportunities and facilities. Clear, frequent and honest communication underpins the success of team supervision.

Effort must be made by each party to communicate effectively with the others, negotiating respective roles, and establishing procedures to keep all up-to-date with progress, alert to problems, and included in celebrations. Such open and honest communication takes time and effort, especially if supervisors are physically distant from each other and, almost inevitably, if policy and procedures differ between the institutions. Nevertheless, if the PGRs and supervisors are to gain maximum benefit from co-supervision it is imperative that effort is made to negotiate and agree roles, responsibilities, and complementary procedures, early on.

Managing expectations is central to good co-supervisory relationships. Useful questions to cover at the start of the supervisor team relationship are covered below:

- Whose responsibility is it to initiate and organize meetings?
- How and by whom will the outcomes of joint meetings be recorded and disseminated?
- What happens if one supervisor is away for more than a few weeks?
- Who will read drafts of material and when? What is a reasonable turnaround time on drafts? How many drafts is it reasonable for a member of a supervisory team to read?
- Who is responsible for ensuring the student achieves milestones? Whose role is it to ensure that the student knows, and follows, policies related to research ethics and integrity?

Once these questions have been addressed, confirming the key responsibilities in an informal contract is a good way to remind both parties throughout the studentship, as referenced in expectation 1.

Expectation 3: Monitoring progress and providing feedback

Summary

High-quality, timely and empowering feedback enables candidates to progress their research projects. Supervisors are also expected to engage and be aware of the review schedule of the PhD, and to support the PGR in staying on track. This section covers monitoring progress and feedback.

Monitoring progress and reviews

All doctoral programmes will have a regular review schedule, these may be six monthly or annual, and may include review by an academic outside of the supervisory team. These reviews are usually strictly monitored by HEIs and failure to complete them on time can have negative consequences for the PGR's progress. Therefore, it will be important that you and your PGR are aware of the review requirements from the beginning of the doctorate. You and your PGR should, within the first month of the doctorate, create a schedule for their doctoral research highlighting these progress reviews and other major milestones. Both of you should maintain a copy of this and jointly add important milestones and amendments as necessary.

An overview of the viva process can be found in [Appendix 1.1](#). Further information on the review process can be found in [Appendix 1.2](#).

The purposes of formal reviews are to:

- Provide researchers with feedback on their progress;
- Ensure that they are on course to complete by the end of their funding period;
- Discuss their training and development needs and ensure that they actively developing a wide range of research and transferable skills;
- Address any weaknesses in their research;
- Discuss any concerns you may have; and
- Embed reflective practice into the research process.

The outcomes of reviews usually align with 'satisfactory' gradations. It is important that the reviewing panel (which may include the supervisory team) provide constructive feedback. The overall outcome is then submitted to the HEI and monitored by the department from there on in.

Creating SMART objectives

Having good, clear objectives is extremely helpful for measuring progress. However, due to the unpredictable nature of research, it is important the objectives have the flexibility to accommodate the unexpected.

Adapting the SMART (Specific, Measurable, Achievable, Realistic and Timely) model to create achievable objectives is useful. Materials to help PGR's set these objectives can be found in the resource list in the box below. Third-party organisations may also have their own objective setting templates to follow.

It is also important to consider objectives that cover more than the experimental aspects of the work. PGRs should have specific objectives about their reading and writing tasks, as well as related to their own professional development. This demonstrates that all aspects of the doctoral process are equally valued.

Resources

- [SMART goals](#) (MindTools Webpage)

Dealing with unsatisfactory progress

Despite the challenges of rating the PGR as progressing unsatisfactorily, it is extremely important that supervisors rate the outcome of reviews honestly and inform the PGR, to ensure timely action is taken. Critically, you should use supervision meetings to discuss any issues prior to formal reviews. Stating that progress is unsatisfactory may lead to the HEI initiating a formal process, whereby the PGR must show progress within the next specified time (e.g. 3 months) to maintain registration. This may seem harsh, but sometimes it is necessary, and, indeed, preferable for everyone to avoid a failure at the end of the programme of study.

It will be important to make sure your PGR has support over this period, both pastoral and academic. Most of the time PGRs are able to meet the necessary objectives and this can be a positive turning point. However, if the PGR is not able to successfully progress in their doctorate, your role instead will be to help counsel them towards considering other opportunities. The doctorate is a very specific type of educational experience; many very talented people are not suited to this type of study.

Feedback

Feedback should aim to empower the PGR to become an autonomous and reflective practitioner. Feedback should be timely, constructive and effective. Timing is important, with rapid, direct feedback only necessary in limited circumstance such as inappropriate or thoughtless behaviour in a laboratory. Feedback should typically be thoughtful and incremental, explicitly dealing with specific issues. It is more helpful for researchers, for instance, to know that their argument is sound but that they should consider providing more evidence than that the whole piece is 'fine' overall. Similarly, noting that writing is rambling is less helpful than indicating which sentences are over-long and which information is redundant. Feedback should stimulate the recipient by asking key questions, leading to reflection on practice, so that the researcher develops an ability to self-evaluate. In addition to feedback on written work, supervisors should provide feedback on wider research skills such as giving presentations. Further information on providing PGRs opportunities to present their work can be found under expectation 9.

Resources

- [AID Feedback Model](#) (Action, Impact, Development): Webpage

3. Principle 2

Supportive, Safe and Inclusive Working Environment

Expectation 4: Engaging with the PGR recruitment process

Summary

Supervisors have a responsibility to actively commit to the inclusive, equitable and transparent recruitment of researchers. This section covers involvement, interviews and widening access to doctoral study.

Selection of the right candidate is a critical step for all involved in the research process. The assessment process should consider the knowledge, key intellectual and practical skills, and experience that a candidate should either have or be able to gain readily from opportunities provided. Such projects also demand personal characteristics such as motivation, stamina, flexibility, and preparedness for the task ahead.

Therefore, it is important that collaborative supervisors have, at least, some connection with the process and ideally have the opportunity to be more fully involved. This involvement can consist of setting candidate attributes, deciding acceptable evidence that can support attribute claims, interviewing candidates and negotiating the final decision with the wider supervisory team. The recruitment process should include at least two selectors who have received training and guidance in the selection process.

Interviews

Interviews are the most effective way to select appropriate candidates. If traditional, face-to-face interviews are impractical then virtual arrangements can be made with the candidate. Interviews enable the candidate to ask questions and assess appropriateness of fit for themselves.

Interviews also allows the assessor to use scenarios, case studies or activities with kit to judge knowledge, skills, personal qualities and readiness for a research degree.

In short, choosing the best candidate involves clear, fair and consistently applied admissions procedures, involving at least two members of staff, preferably including the supervisors, who should have negotiated the selection criteria. Evidence of the presence of chosen attributes is best sought through a detailed interview process.

Equality, Diversity & Inclusivity in recruitment

The whole supervisory team have a responsibility to make the recruitment process as transparent and inclusive as possible. It is important to engage fully with relevant institutional equality, diversity & inclusion policies to make the PGR recruitment process as inclusive as possible.

A diverse body of talented PGRs bring enormous benefits to the business and research group; the associated diversity of ideas, approaches and lived experiences often results in creative and original solutions to challenging problems. Supervisors should strive to ensure recruitment processes are effective in reaching out to groups who are current underrepresented in their field of research and in doctoral education more generally. If the original applicant pool is not diverse, it doesn't matter how many initiatives are in place for interview and recruitment procedures.

Resources

- Stuart J. Conway, et. al. Journal of Medicinal Chemistry 2022 '[Increasing Diversity in Admissions to Postgraduate Study](#)'
- Attracting and Increasing Student Diversity: [Advance HE Webpages](#)

Expectation 5: Familiarising the PGR with relevant procedures and facilities

Summary

The PGR should be familiar with all the relevant institutional procedures (including health and safety) and facilities. The supervisor should ideally introduce the PGR to these in the first 30 days of their moving to the site.

It is important to introduce and familiarise the PGR with site-specific information, whether that is people, facilities or procedures. This is particularly important in the first 30 days of the PGR starting on site. Whether they are a new PGR, just starting their doctorate, or they have come to you for a placement, this can be a marked transition from working at their HEI. These aspects can be challenging and sometimes daunting for a PGR. Therefore, as a supervisor, you should help ensure the process runs as smoothly as possible.

It may be useful to put together a 30-day checklist for your PGR, which will help them become acquainted with their new environment and meet new people. Examples include:

- Planning relevant tours of facilities
- Opportunities to socialise with fellow PGRs
- Arranged meetings with key people
- Schedule of specific activities happening on site during the first month
- Pairing any new starter with a buddy, if possible.

An initial induction is needed to ensure that practicalities are sorted out quickly, important people identified, and the project is given impetus. However, there is a lot for a PGR to learn and this is best spread out in an organised way over the first few weeks. While access to induction materials is important, establishing relationships and allowing the PGR to settle into the customs and practice of their new environment is critical to any research study or working venture.

Ensuring the PGR is a valued member of the team

When the PGR is on site, they will be a member of the wider working community, and as such, should feel like a valued member of the team. It is the supervisor's role, particularly at the start, to highlight the benefits of working on site such as advertising seminar series, networks and social meetings. Again, regular and open lines of communication from both sides will help in checking whether the PGR is feeling settled in their new environment.

Being aware of differing needs and backgrounds of the PGR you are supervising is imperative to creating a supportive and inclusive environment.

Expectation 6: Pastoral support provision

Summary

The doctoral journey is a challenging one, with many ups and downs. It is part of the supervisor's role to make PGRs aware of welfare resources and provide effective pastoral support. The supervisor should also be able to signpost other resources for support where necessary.

A strong relationship encourages open communication and gives space at every meeting for the PGR to talk about anything that is bothering them and could potentially affect their research. Supervisors should ensure that the PGR knows there are other people that they can speak to, if they feel unable to talk to supervisors. Often, PGRs may value their supervisors' opinion of them so much that they struggle to go to them with problems for fear that this will create a perception of personal weakness.

The doctoral journey can often feel isolating and can result in PGRs feeling disengaged with research. The PGR should feel that they are part of a 'network' whether that is the PGR cohort, research group or wider institutional community.

Supervisors should promote a healthy working environment, role-modelling a work-life balance for the PGR. They should report and address incidents of discrimination, bullying and harassment. Additionally, in line with the [Researcher Development Concordat](#), supervisors should consider fully flexible working requests and other appropriate arrangements to support researchers, in accordance with institutional policies.

Sometimes problems are not related to the doctorate at all. Because of this, supervisors should be aware of various services you can signpost your PGR to, and to understand how you can use university policies to best effect. Most HEIs will have student hardships funds and advice centres. If PGRs are showing signs of mental health issues, PGRs should be encouraged to seek professional counselling support through networks provided on site. If your PGR is facing a problem that is preventing them from focusing on their doctorate, you should investigate the HEI's regulations regarding temporary withdrawal and discuss possibilities with the HEI supervisor. Temporary withdrawal will allow the PGR to stop the clock on their doctorate for the specific time needed to get their life and research career back on track.

Appendix 2.1 contains a table referring to common behaviours that PGRs may exhibit throughout their doctoral studies, and actions you might take in response, to support the PGRs wellbeing.

Some of the most useful resources will be from your own organisation, often found on the intranet. These will often have names of mental health first aiders and support you can point your PGR towards.

Resources

- [The Wellbeing Thesis](#): A website dedicated to supporting PGRs throughout their research journey
- [The Student Space](#): Free confidential support by phone, webchat, email or text.
- [The Samaritans](#): 24/7 listening service.

4. Principle 3

Signposting and provision of development opportunities

Expectation 7: Providing guidance and advice

Summary

Supervisors should provide support, signpost training and opportunities in terms of researcher and career development. This section covers research integrity, research skills development and career development.

Research integrity

Research integrity means conducting research in such a way that allows others to have confidence and trust in the methods and the findings of the research. Integrity applies both to the researcher themselves and the scientific integrity of the research conducted. Honesty, rigour, transparency and open communication are central to a healthy research culture. As an experienced researcher, supervisors have a responsibility to role model these values, signpost resources and to report abuses of research integrity.

The research community is motivated by these values, however, the pressure to publish can make it difficult to uphold these principles. Supervisors should use resources available, especially provided through the UK Research Integrity Office (UKRIO), familiarise themselves with their institutions ethics policy and ensure they know how to appropriately report allegations of research misconduct.

The values of rigour, transparency, accountability and respect apply to all aspects of research and the PGR lifecycle including project proposal, publications and peer review. Ultimately though researchers must be able to exercise freedom in their academic choices, and must also accept responsibility for the decisions that they make. Thus, the primary responsibility for ensuring that they act in accordance with these principles in all aspects of their research work, including peer review, lies with the individual.

Resources

- [Concordat to support research integrity, UKRI, 2019](#)
- [What researchers think about the culture they work in: Wellcome Trust, 2020](#)

Research related skill development

Formal research demands a huge range of skills. The [Vitae Researcher Development Framework](#) offers a visualisation and tool that supports monitoring of research skill development. The framework covers four domains (Knowledge and intellectual abilities, personal effectiveness, research governance and organisation, and engagement, influence and impact) as figure 1 shows below.



Figure 1. Researcher development framework.

It is likely that most PGRs will need to develop a range of skills/attributes and that they will require the support of supervisors to identify and locate learning opportunities. These opportunities may not always be formal, but may instead consist of practice-with-feedback on equipment, giving presentations, using statistical tests, working with different groups of people, or writing up research in the fashion required within a thesis.

Many HEI departments or schools also provide discipline-based research and technical skills courses. However, the practice of these skills will often need to be encouraged and/or facilitated by supervisors in their various contexts.

Career development

Collaborative supervisors have a role to play in helping researchers develop skills required in an employment context. Most HEIs have provision for the training of what are termed 'generic or transferable skills', in recognition of their value beyond the doctorate and into the world of work, through variously titled units for researcher development. These are useful for your PGR to attend.

However, the PGR can also benefit hugely from informal career development discussions with their industry supervisors. It can also be useful to hold an annual career development review, whereby supervisors provide the space for the PGR to discuss post-PhD options and identify any training that may help with achieving these.

Furthermore, a significant part of professional development is providing the PGR with opportunities to expand their connections and network, as detailed further in expectation 10. During your PGRs' doctoral journeys, there will arise a variety of different opportunities from which they can choose. These may cover opportunities to get involved in public engagement, outreach or other research programmes. Whilst all these will be beneficial for the PGRs professional development you may find that both they and you find it challenging to decide how much time away from their research is possible to maintain good progress, and which opportunities would be best for them to be involved with. Appendix 2.2 provides further details in how to consider these commitments.

Resources

- [Vitae Researcher Development Framework](#)
- [Concordat](#) to support the career development of researchers
- [Chartered Scientist \(CSci\) options](#), Science Council.

Expectation 8: Participating in continuing professional development opportunities relating to supervision

Summary

Supervisors should be given the time and opportunity to engage in professional development, to supervise PGRs in the most effective way they can.

Supervisors, if given the opportunity, should engage in professional development opportunities to enhance their own personal effectiveness in terms of supervision. This may be attending formal training such as on supporting early career researchers, providing pastoral support and giving feedback. It may also be through more informal means, particularly through peer-to-peer learning from other supervisors. Team supervision also offers a chance for supervisors to share experience and learn from each other, enhancing each other's professional development. It is worth looking into your own institution to determine if there are any existing materials on supervision training.

Expectation 9: Encouraging PGRs to participate in conferences and to build their profile

Summary

Conferences offer an opportunity for the PGR to network, practice communicating their research and to familiarise themselves with the bigger picture of their research. This sections covers participating in conferences and publishing papers.

Participating in conferences

Completing a doctorate involves making an original contribution to knowledge and understanding, therefore it is vital that the outcomes are made available to the disciplinary and/or professional community through dissemination, often through conferences.

Furthermore, actively engaging and participating in a range of conferences builds the PGRs confidence, eloquence around communicating their research and ability to answer probing questions from a wide audience. This is particularly useful as doctoral examiners have a habit of asking candidates for a headline that could be used in a newspaper article about their research or for a couple of sentences that would explain to taxpayers in layperson's terms why their money has been well-spent supporting that doctorate. Those PGRs who have already engaged in talking to a variety of people about the value of their research are better placed to respond effectively to examiners and later to employers who may not be interested in the research detail, and only what the effort produced.

The role of the supervisor in guiding the PGR to attend and present at conferences will become more important as they progress in their doctoral journey.

Publishing papers

There is an expectation PGRs will publish, or at the minimum, aim to publish, paper(s) relating to their research throughout the latter years of their PhD. This is often used as one of the measures of impact of a PhD project and is often included in HEI's PhD student data recording.

However, it should be noted that publishing is not a requirement to get a PhD and the process can take a substantial amount of time and effort. There are a number of other metrics to assess impact, and for those looking to enter industry after their PhD, these metrics may be more useful. If the PGR is considering staying in academia, however, it will be important that they dedicate a certain amount of time to writing and submitting to peer reviewed journals. The supervisory team will be able to provide advice on academic writing and the publishing process.

Expectation 10: Introducing the PGR to professional networks

Summary

Supervisors should help PGRs establish relationships within their professional fields, to expand their networks and access to professional development opportunities.

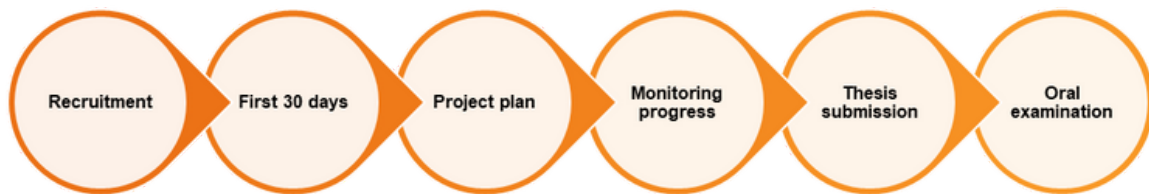
Opportunities to expand your PGR's connections and network should be encouraged whenever possible. Supervisors should help PGRs establish relationships within their professional fields, possibly by introducing them to people at conferences or joint meetings with external guests. It will also be important for PGRs to build their professional networks beyond the research field, making links with industries and business which may lead to future employment or research collaborations. Although networking is often challenging, it is a gateway to a great many future opportunities. As a supervisor you should encourage your PGR to think about building and nurturing this wider network by supporting participation in activities in which they will meet people from different backgrounds.

It is also useful for the PGR to be as fully involved in the PGR community as possible. One possible way to do this is to encourage all the PGRs to establish, organize, and run a journal club. This would enable practice of a range of research and employment skills, such as managing a group, giving presentations, and providing constructive feedback. It would also contribute to a sense of 'research community' while building professional networks for the future.

If your PGR is hesitant or nervous about networking, then suggest smaller scale events that help ease them into meeting and talking to a range of people. Good events to start with may be internal research showcases or regular seminars at your institution.

5. PhD Lifecycle Summary

From recruitment to submission



Recruitment

Engaging in the recruitment process is the first stage of the student-supervisor relationship. Recruiting the most suitable candidate will make the relationship as successful as possible. Even before this process, supervisors should aim to actively engage in widening the diversity of the PGR applicant pool. This can be done through publicising the areas of research where they can personally offer supervision, as widely as possible. It can also be supported through supervisors participating in campaigns to recruit candidates from groups that are under-represented in doctoral education. For more information, refer back to expectation 4.


First 30 days

It is useful to create a 30-day checklist for your PGR when they come on site for the first time. It can be a challenging transition from being based at a HEI to coming to an industrial setting. Additionally, it is important that the first supervisory meeting takes place as soon as possible after the PGR has enrolled. Section 1.1 has a checklist of recommended topics to cover in the first meeting.

It is good practice to pair any new starter with a buddy, ideally another PGR who can help the new starter settle in. The goal is to have any new PGR in a position whereby they feel integrated into the institution's culture within the first 30 days.

Project Plan

Most funders of doctoral studies (and particularly public bodies) require researchers to demonstrate the value or worth of their research in terms readily understood by the public and other stakeholders. The project's impact must be a significant contribution to knowledge for the award of a doctorate, preferably with value added for the wider society. Understandably, university supervisors will also be keen that the research conducted by their PGRs adds to their profile in the UK Research Excellence Framework (REF). This framework defines impact as: 'an effect on, change or benefit to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia'.



This impact requirement can be used to aid project design and management if considered and embedded right at the beginning of the doctoral programme. The project proposal should be built around a research topic for which the answers have been sought to questions about who would benefit from the research, why, and how. Plans should be clear, flexible and incorporate key milestones for the 3-4 years. They should then be reviewed regularly, at 6 month intervals.

Monitoring progress

Reviews form an important part of the PhD process, from 'light touch' organised by the supervisor, to HEI led key progress reviews. Appendix 1.2 describes the review process in detail. Throughout the doctoral journey, it is good to celebrate your PGR's success. One way to help inspire success is to create a culture that celebrates hard earned 'little' successes. Do not wait for the Nature paper, celebrate getting the first draft written, even though there is quite a lot of work still left to do on it. The first draft of the first paper any PGR has ever written is a big deal to them. Foster a group culture that values this hard work and makes PGRs feel positive about the journey. Encourage the 'showcasing' of success through articles on the intranet, institutional Newsletter, or by presenting values awards.

There is no way to eliminate the challenges or uncertainty that comes with undertaking novel research. However, a proactive approach to supervision, in which you openly communicate your approach and your expectations, and encourage your PGR to be open with you, will create an environment where creativity can flourish without fear of failure. Your job is to help guide your PGR, so that they understand unexpected results are, in fact, interesting puzzles to figure out, rather than simply weeks of lost time. Furthermore, getting those results, whatever they may be is success that should be celebrated.

Thesis submission

Part of the role of the supervisor is to read the thesis and to provide feedback in advance of submission. Once the PGR submits their thesis, they will be required to conduct a viva. Appendix 1.1 describes the viva structure in the UK. Industry supervisors have a role to play in offering to conduct mock vivas with the PGR, in order for the PGR to be as confident and articulate as possible.

At the same time as writing up and submission, PGRs may be looking for jobs and roles for after their PhD completion. Industry supervisors can offer hugely useful careers guidance and support here, signposting potential opportunities and even offering interview practice.

Conclusion

This Charter set out to provide expectations and guidance for both supervisors and students in a PhD project relationship. The expectations fall into three principles:

- Clear, regular and open communication;
- Safe, inclusive and supportive environment;
- Signposting and provision of development opportunities.

The 10 expectations for supervisors should be continuously referred to throughout the PhD project, by both students and supervisors, to ensure the relationship is as productive and fulfilling for both parties, as it can be. As described at the start, honest, clear and frequent communication is fundamental for a successful PhD project, yet creating an inclusive and safe working environment and offering professional development opportunities are vital for the PGRs wellbeing and development.

Managing expectations between PGRs and co-supervisors is easiest when a student contract has been drafted at the start. As expectation 1 outlines, this may include meeting frequency and mode, site attendance and development objectives.

We hope this Charter will be a useful resource in helping you to make the most out of the supervision process as a PGR and as a supervisor. We are always receptive to ideas to improve supervision, so if you feel there is something that could be added or amended to this document, please send your feedback to pgi@npl.co.uk.

6. Appendix

1.1 Viva Structure

Who is present?	At least two examiners, one internal to the University and one external; the candidate; the supervisor(s) may or may not be present depending on University regulations (if present they must not talk); a chair may or may not be present (if present, a chair ensure University regulations are upheld; in the absence of the chair this responsibility falls to the internal examiner).
What is the setting?	A closed-door meeting room, commonly with a table with water available for everyone. If present, it is best practice for supervisors to sit away from the table out of the eye line of the candidate.
What happens?	A question and answer session, where examiners ask questions of the candidate about their project and its relationship to established theory, academic literature, and practical application. The candidate can bring a copy of the thesis into the examination and can use this for reference. Comfort breaks are allowed and can be requested by anyone.
Potential outcomes?	After the viva, the candidate will be asked to leave the room and the examiners will decide on the outcome. It is standard for the outcome to then be told to the candidate. Each institution will have a range of possibilities, which do vary across HEIs, although typically there are options for pass, minor corrections, major corrections, or re-submissions (or some variant of these); recommendations for the award of MPhil or a fail decision are also possible. Time frames for corrections vary.

1.2 Assessment overview

In the UK it is common to have two major formal assessments throughout the course of a PhD. The first of these assessments generally takes place between 9-18 months of full time registration. The second is the final assessment of the thesis and viva examination. As a supervisor, your role will be to prepare your PGRs so that they understand the expectations at these stages and are able to best represent their research and themselves during the assessment process.

First formal assessment

HEIs should involve assessors independent of the supervisory team in the review process. The first review may be termed an Upgrade, Transfer, or Confirmation Review. Most HEIs have this review somewhere around the one-year mark, sometimes coinciding with the annual review. It is common for PGRs to be expected to write a report, undergo a viva-style examination and/or deliver a presentation. It will be important for you to understand exactly what the timeframes and requirements are for the HEI you are co-supervising in partnership with, keeping in mind these processes do change over time as well as across institutions. Examiners are usually looking for the below in reviews:

- Evidence of critical engagement with academic literature;
- Reasoned argument for the study and approach;
- Clear case for the novelty and academic/professional value of the proposed research;
- Feasibility of the proposed experimental technique(s);
- Realistic plan of work, which can be completed within the funded period;
- Evidence that research and transferable skills (including writing and analytical skills) are developing at a rate necessary to complete and defend a doctorate;
- Availability of necessary resources to complete the project;

Your job as supervisor is unlikely to end with the viva; because most thesis need at least minor corrections. This is especially true if there are major corrections (sometimes called a re-submission) required. Generally, for that outcome, your PGR will have a year to complete the additional work specified by the examiners and may then be re-examined in a further viva voce examination. This could well include the need for more laboratory work. Your supervisory support will be needed technically as well as pastorally. Being told there is significantly more work needed to obtain the doctorate is emotionally difficult for the PGR and also for their supervisors. Nevertheless, you will have to work to re-motivate your PGR. This result is not a disaster; frequently work can be completed in much less time than a year and most often the result is an awarded doctorate. It does make the journey longer but, once successfully completed, a doctorate which underwent major corrections is the same as any other doctorate. It should be celebrated as such.

2.1 Behaviours, potential underlying problems and support

What you see	Potential underlying problem	Possible Supervisory Tools & Techniques
PGR is not progressing with the project	PGR did not understand what they were supposed to do.	Get PGR to write down notes from your meeting with a plan for what they plan to do next.
	PGR is unable to do what was agreed or does not know where to start.	Break down task into smaller parts to determine where the problem is
	PGR does not want to do what was agreed.	Have an open discussion about the options available. What are the consequences of changing the plan?
PGR is feeling stressed and unmotivated	PGR may be overwhelmed with the idea that they must make a novel contribution to the field	Sit down with them and show them examples theses, discussing what the 'novel contribution' is within each.
	PGR may feel that the task is too big/never ending.	Work with the PGR to create a project plan, breaking down bigger aspects into more manageable tasks, with realistic timescales.
	Aspects of the project not working have affected the PGRs confidence in their ability/the project.	Help the PGR understand how negative results/experimental challenges can still be used in the thesis, and work with them to develop contingency plans so they feel prepared if other problems occur.

PGR has lost interest/enthusiasm for the project	Possible fatigue.	Ensure PGR is taking holidays. Time out of the laboratory for skills training or another activity/opportunity may also help. Perhaps suggest they work on a different aspect of the project for a short time.
	PGR has been too focused on the detail and lost sight of the big picture	Encourage them to give a talk or present a poster at a conference, or to become involved in a Public Engagement opportunity.
	Change in desired career plans, perhaps becoming unsure when once they thought they knew what they wanted to do.	Encourage them to get careers advice and/or attend networking events with people from different industries. Institutes such as the Institute of Physics and Royal Society of Chemistry have a variety of careers related resources as do HEIs.

2.2 When to say 'yes' to PGR's opportunities

When to say 'yes'

First, it should be reassuring for you to know that most literature on researcher training finds that PGRs involved in training and opportunities beyond their research project not only are better prepared for future employment but also maintain progress in their doctorate. There may well be a link to keenness and motivation. Therefore, as supervisors, you should, in general, be supportive of PGRs becoming involved in a variety of activities. One way to help identify what you should be encouraging them to do is to link these opportunities with their skill and career development needs. If an opportunity helps a researcher to develop skills which you and/or they have identified as being critical, this is something you should aim to support. It is also important to support your PGR's specific interest. If they enjoy public engagement, this may be a wonderful outlet for them not just to build their communication skills, but to also inspire progress and connections with their research field now and in the future.

When to say 'no'

Although it is important for your researcher to be well rounded and to participate a variety of developmental opportunities, there are times in the doctoral journey when there are tight deadlines, or when more focus on the research project may be needed. In these cases, you should discuss your concerns with your PGR to ensure the necessary progress is being made. You should also ensure that people are not taking advantage of your PGR by asking them to engage in tasks that are not helpful for their development and are potentially taking too much time away from important research work. Maintaining open and honest dialogue with your PGRs about these concerns is key.

If you are concerned that your PGR is spending too much time participating in various opportunities and activities, it may be a good idea to ask them to create a time management plan, demonstrating how they are balancing their various commitments and dedicating specific amounts of time to critical tasks.

Both for their future employability and for their current skills development, PGRs will be expected to take advantage of a wide range of opportunities and resources. Most of the time these activities support timely completion of the doctorate, and make the process more enjoyable. As a supervisor you should be involved in helping your PGRs identify useful opportunities, and at times pushing them to go beyond their comfort zone. However, you will also have to make sure that additional activities are not getting in the way of research progress, communicating any concerns to the PGR in an open and clear way.



PostGraduate Institute
for measurement science




Department for
Business, Energy
& Industrial Strategy


University of
Strathclyde

 UNIVERSITY OF
SURREY

 pgi@npl.co.uk

 [@PGImetrology](https://twitter.com/PGImetrology)

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