Panorama DTP interview process

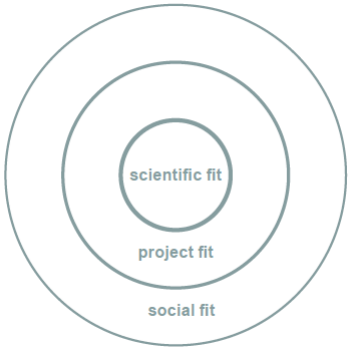
Vision

Panorama aims to select the best PhD students to study within NERC remit, in an efficient manner whilst maintaining fairness to stakeholders, a high degree of transparency and compliance with funder requirements.

Selection Criteria – Which competences make an ideal candidate for Panorama

When candidates come to interview they typically have completed an UG and potentially PGT degree but have little expertise in completing an independent research project. Predicting the success of candidates at PhD level at this stage is difficult and multi-faceted (Lovitts, 2008), and no clear correlation between taught course classification and PhD success can be made (Lovitts, 2001). Although it is difficult to define the criteria that make an ideal PhD candidate the profile can be divided into three categories (Ophey & van Andrichem, 2016) that might help with the selection of the best candidates for Panorama:

- Scientific fit: the fit of the candidate to the scientific aspects of the project. This profile category is based on the knowledge and skills of the candidate.
- Project fit: the fit of the candidates to the project they will be working on. Each project requires a different mix of skills and attitude.
  Social fit: the fit of the candidate within the working environment, the team and with the supervisor. This category is based on the attitude of the candidate towards research and discovery.



Within these criteria the scientific fit should probably be at the core of the Panorama selection process with project fit as a second layer and the last layer the social fit requiring strong supervisor input in the selection process.

The required skill set for NERC facing students within Panorama likely vary widely, but can perhaps be generalized as (Lovitts, 2008, Ophey & can Andrichem, 2016):

Scientific Knowledge	Educational and career background within the research field of the PhD project including technical and research skills. These can be assessed through previous degrees and relevant experience outside university, specific tests and the selection interview.
Analytical Thinking	Ability to divide a complex scenario into its constituent parts in order to study these parts and to come up with solution strategies.
Conceptual thinking	Ability to identify patterns and connections between facts and to identify

and selection process should aim to test for several (or all) of these skills. Due to the varied nature of the necessary skill sets for all NERC facing science within Panorama setting up a test-based assessment might be difficult.

Another important aspect of PhD research is the **attitude** of the candidate. Important criteria for successful PhD candidates are:

Perseverance	The drive and commitment to continue and finish a project.
Autonomy and Independence	The ability to work independently and unsupervised and to self-manage the research project.
Frustration and Delayed Gratification	The ability to stay motivated when things are not going well and no solution is in sight.
Working with others	Openness to receive feedback and input from others. Ability to collaborate.

Current selection tools

Shortlisting

All our candidates submit a range of documents (transcripts, a CV and personal statement) as part of the standard application process that evidence part of the **previous experience**. These documents contain evidence on their scientific knowledge (through previous degree(s)) and their previous research experience. Both can be used to assess the scientific and project fit of the candidate. We currently do not specify the content of the personal statement which in principle can be tuned to collect additional information that might help with assessment of some of the other required skills. We typically shortlist candidates for interviews based on the **submitted paperwork** and the **nomination of the supervisor,** with equal rankings of candidates being relatively common.
We currently do not provide clear guidance how different degrees and experiences should be accounted for in this process. Depending on the theme we also used different criteria dependent on the ratio of application to interview slots where we aim to have an approximate 1-to-3 ratio of available studentships to interview opportunities.

Selection interview

We use the selection interview to assess several candidate characteristics (Quality/Clarity of Responses, Awareness of scientific background, Motivation and Enthusiasm, Skills Analysis). The interview structure is largely left to the interview panel with an encouragement of open starting questions and probing afterwards. We provide an open question catalogue (attached in appendices) targeting past coursework, past/future projects, wider issues, personal/general questions, but these questions are probably not widely used in the panels. Candidates are assessed in 5 categories (Qualifications/Achievements, Quality/Clarity of Responses, Awareness of project's scientific background and requirements, Motivations & Enthusiasm, Skills Analysis) on a scale of 1 to 5 allowing half marks. Prescribing a more structured interview might lead to more useful and comparable information for each candidate.
Our current interview approach is a standard panel interview consisting of a single 30-min interview typically in front of a 4-person (occasionally 5) panel. For the 2019/20 intake interviews we scheduled 102 interviews (Atmos&Climate: 36; Earth: 35; LivingWorld: 31). For a 4-person panel interview these represented 204 person-interview hours for our standard nominal 30-minute interview. During the interviews we are trying to guarantee a certain level of consistency on a panel to allow cross-referencing of candidates and panels include a wide range of expertise within a research theme to guarantee an in-depth interview for all candidates.

The single panel interview (SIP) has advantages and disadvantages. SIPs allow the full panel to hear all answers of the candidate. It allows consistency in the questions and a good overall impression whether a

candidate can communicate to a wider range of expertise on the panel. On the other hand, a single interview gives a candidate a single opportunity to impress, and a large interview panel might be intimidating. SIPs potentially prefer candidates that come across as personable and it might be more difficult for introvert personalities to shine in such interview settings. SIPs might also lead to less independent decision making from the interview panel due to unintended bias from panel members before or after the interview. We were often not able to avoid potential supervisors interviewing candidates for their own projects due to a lack of volunteers for the interviews and the required continuity and expertise on the panel which created issues with the transparency of the process.

Some more guidance to interview and shortlisting panels might be helpful to make panel decision more comparable and transparent.

Proposed selection tools

Shortlisting

A more prescribed personal statement as part of the application could provide us with additional information on the candidate. Since applications for 2020-2021 are already open this might be difficult to put into effect for the next intake. Especially, information on the motivation of the candidate for this project and for pursuing a PhD, information on research experience (in more detail than on the CV), and a statement describing the scientific knowledge of the candidate (e.g. a statement of how the project fits into the larger research field) could be useful information for both supervisors and shortlisting panels.

Quantifying the information on the CV might be useful for shortlisting although also difficult in reality. A process where a degree in a relevant UG course will get a certain number of points depending on the classification of the degree with further points for further degrees, research or work experience etc. would be possible but will open the discussion on the comparability of degrees within the UK and EU. Quantifying the CV information should also be supported by feedback from the supervisor to judge the relevance of a specific qualification.

We will rely on further input from the potential supervisors for the selection of interviewees and should provide clearer guidance on how to select candidates. Supervisors should speak to candidates before the shortlisting. Two end-member approaches to shortlisting are possible. (1) Shortlisting the highest-ranked candidates independent of their chosen project and (2) chosen the highest ranked candidate for each project. (1) would put the preference on the candidate but is likely in-efficient as we might interview many candidates for the same project while only one candidate can be successful. (2) would provide equal opportunity to all members of staff of the contributing schools.

Proposal

- ***Requesting a personal statement from candidates that provides additional information, especially on motivation and scientific background, that can be used in conjunction with other submitted paperwork can be helpful during the shortlisting process.***
- ***Request a ranked list of candidates from supervisors with equal ranking not being allowed. More guidance on ranking candidates to be provided.***
- ***The shortlisting process should use a variation of (2) with filling interview slots with the top candidates for each project and then filling remaining interview slots with remaining top candidates aiming for a 1:3 ratio of places to interviews for each partner school which aims to equalize the opportunity for each staff member. Candidate excellence should still be the main selection criteria and clearly less-qualified candidates should not be selected. The minimum requirements of the contributing universities also apply.***

Selection interview structure and interview content

A new interview process should not increase the workload related to our selection process. For the 2019/20 intake the interviews represented 204 person-interview hours across all panels. We have to guarantee consistency across all panels and have to avoid potential supervisors interviewing candidates for their own project. Panels should be able to provide unbiased, independent assessments of the candidate. Interviews should test the criteria we consider as vital for a successful PhD. The interviews have to be fair and have to offer the opportunity for candidates from all backgrounds and personalities to present their best. A single interview panel might not be the best choice for this.

Proposal

- ***Change our selection interviews to use multiple mini interviews (MMI) consisting of 3 interviews of 20 minutes each in front of a 2-person panel.***
- ***Each panel will be tasked with interviewing a candidate for a specific trait that is considered important for PhD study as we decide (e.g. scientific knowledge, analytic and conceptual thinking, creativity). One panel requires more detailed expertise in the research area discussing the scientific and project knowledge while the other two panels can explore other required skills such as motivation, creativity or analytic/conceptual thinking and will require less subject knowledge.***
- ***Interview panels could focus on (1) Scientific Knowledge and Analytical/Conceptual thinking; (2) Creativity and Curiosity; (3) Perseverance, Autonomy and Frustration. Communication and language can be judged by all panels.***
- ***This interview structure will not represent an increase of workload compared to our current interview process but will provide more flexibility with the interview schedule to avoid perceived bias of the interview panel and potentially more independent marks. The proposed 3 two-person panels and 20-minute interviews lead to the same 204 person-hour workload for the full interview process. This process could lead to 6 independent marks for each candidate in different required skill areas which combined can provide an overall image of the candidate.***
- ***Interviews should use the common STAR technique which is better suited to predict future behaviour from past experience.***
- ***An exercise-based test could be added to this process, but our interviewers lack the necessary training and the broad scope of Panorama might make designing such a test difficult.***
- ***An overemphasis on previous coursework in candidate selection should be avoided due to the problems described above (Lovitts, 2001) and a level of about 20% of the final classification seems reasonable.***
- ***A wider marking scale (1-10 with no half-marks) could provide more opportunity to differentiate between candidates compared to currently used scale.***

[SR 08/11/2019]

Interview Techniques

To assess skills and attitude of a candidate the STAR technique (Situation, Task, Action, Results) is a well-recognized approach. This technique is based on the assumption that past behaviour is a better indication of future behaviour than purely hypothetical situation a candidate might be confronted with. STAR should provide some insight how a candidate has demonstrated the skills required for a PhD in a previous situation. The candidate is free to give examples from own experience. During the interview the candidate should be asked about:

- A situation in the recent past where he/she demonstrated a required skill
- A defined role or task
- Actual behaviour
- With a probable and clear result

Situation
- Can you explain the situation?
- Who were involved?

Task
- What was your specific task or role?
- What was the (formal) goal?
- What did you want to achieve

Action
- What did you say?
- What did you do?
- What was your contribution?

Result and reflect
- What was the end result?
- What effect did you have?
- What would you change in the future?
- What did you learn?

The STAR interview technique can be used to probe for examples for the relevant skills (e.g. perseverance, creativity, conceptual and analytical thinking, …) together with traditional questions to test knowledge of the subject area and the fit to the required skill set for the project.

References:

Lovitts, B. E. (2001). Leaving the ivory tower: The causes and consequences of departure from doctoral study. Lanham, MD: Rowman and Littlefield.
Lovitts, B.E. (2008). The Transition to Independent Research: Who Makes It, Who Doesn't, and Why. The Journal of Higher Education, 79, 296-325.
Ophey, L.M. and M. van Andrichem [2016], PhD selection guide – How to get the right PhD candidate, Delft University, The Netherlands.

Appendix 1 – DTP interview questions

PANORAMA NERC DTP
PHD INTERVIEWS

Please select from the questions below and, if adding additional questions, make sure that all candidates are asked the same/similar questions to ensure fairness and comparability. Ask OPEN questions to encourage the candidate to talk, then PROBE and INVESTIGATE incomplete answers or generalisations.

INTRODUCTION: Welcome to Leeds introduce Panel, identify project applied for.

All students have been asked to prepare an answer to the kick-off question:

Describe your current or recent undergraduate or Masters research project.

A Past Coursework

What attracted you to this particular coursework?	What were the key courses that interested you and why?
What would you change in your present coursework?	Do you have experience of working individually and as a member of a team? Which is preferable to you and why?
Can you give examples of working under pressure or to deadlines?	

B Past Project(s) Future Project

What did you do for your honours project?	Why did you apply to Leeds?
Did you innovate or discover anything new during your project?	What attracted you to this project?
If starting your project new, what aspects would you change?	What do you consider to be the essential qualities to study for a PhD?
What skills did you learn that would be useful for the PhD?	What do you see as the supervisor's role?
What are your strengths/weaknesses?	

C Wider Issues (*adapt according to project and the candidate's background)*

What is the importance of the project area?	What are the big/exciting issues in the discipline at present?
What do you consider to be the future for this area of science?	How should university research/industry/public interact?
Are there new topics/skills which you feel you may need to learn for this project?	

D Personal

What do you enjoy doing most when not studying or working?	What responsibilities have you taken on in your working and social life?
Can you give me an example of a difficult situation which you have handled well?	Can you give an example of when you have shown capability in problem-solving and/or leadership?
Which of your achievements/abilities/skills are you most proud of?	What are your career aspirations beyond your PhD?

E General

Have you applied elsewhere?	Do you have any questions to ask us?
If you receive an offer, how soon can you make a decision?	Where can we contact you quickly over the next 5-10 days?

Appendix 2: Evaluation sheet

PhD CANDIDATE EVALUATION SHEET

Score (Higher = better)	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	COMMENTS
Qualifications/ Achievements												
Quality/Clarity of Responses												
Awareness of project's scientific background and requirements												
Motivation & Enthusiasm												
Skills Analysis (fit to project)												

Is this candidate acceptable (Y/N):	Overall Assessment	**/25**
	Panel Assessment (summed score)	**/100**

Further Comments: