

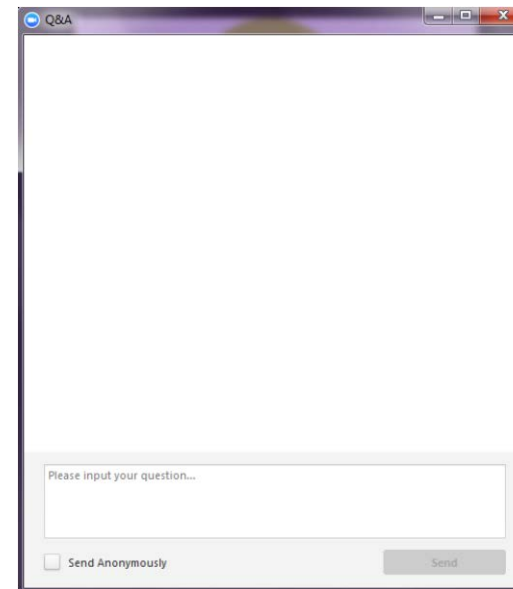
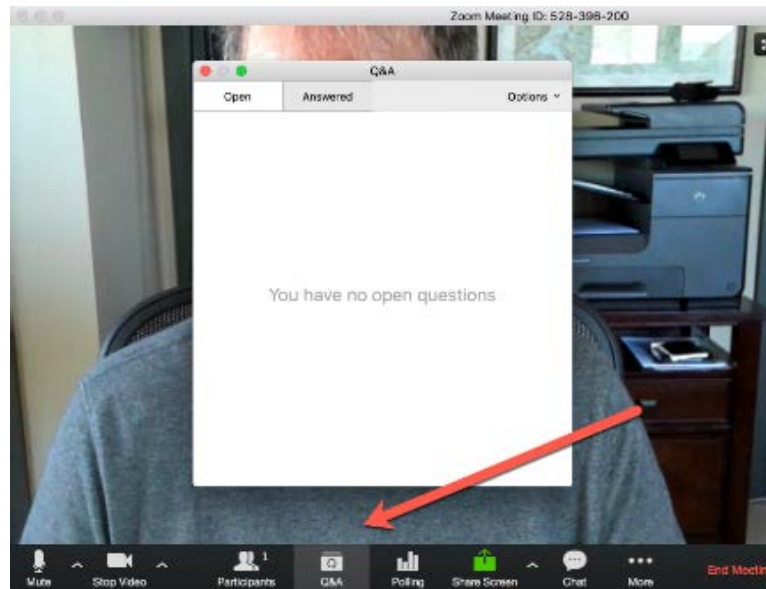


Natural  
Environment  
Research Council

# Pushing & Exploring the Frontiers Webinar

Welcome. We will be with you shortly.

Please use the Q&A feature to post questions





Natural  
Environment  
Research Council

# Pushing & Exploring the Frontiers

## Launch 2022

17 February & 9 March 2022

# With you today



Prof Susan  
Waldron  
Director, Research  
and Skills



Dr Jen Jennings  
Associate  
Director,  
Discovery and  
Highlight Science,  
Talent and Skills



Vicki Durbridge,  
Head of Discovery  
and Highlight  
Science



Beth Taylor,  
Senior  
Programme  
Manager,  
Discovery and  
Highlight Science



Dr Jenny Morris,  
Programme  
Manager,  
Discovery and  
Highlight Science



Dr Jess Lucia,  
Programme  
Manager,  
Discovery and  
Highlight Science

## Contact

[pushingfrontiers@nerc.ukri.org](mailto:pushingfrontiers@nerc.ukri.org)

[exploringfrontiers@nerc.ukri.org](mailto:exploringfrontiers@nerc.ukri.org)

# Webinar structure

- Talk structure
  - Introductions
  - Strategic drivers for the Discovery Science portfolio refresh
  - Details of the new schemes
- Next Steps
- Q&A

# Priority Area: Pushing the Frontiers of Understanding



- Continue to invest in excellence, challenging researchers to be adventurous and ambitious, to exploit new technologies and approaches, and to explore new ideas related to any environmental science topic.
- Ensure we maintain the UK's breadth of expertise so we are prepared for the unknown challenges of the future.
- Maintain and enhance the UK's position at the leading edge, ensure the most excellent science and scientists receive our funding by challenging our peer-review processes to take account of all aspects of scientific achievement.

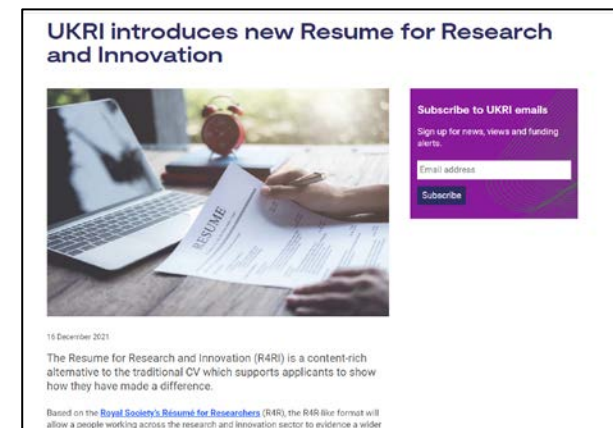
# Discovery Science portfolio: Changes

- Refreshed Discovery Science portfolio to launch 2022
- **Budget uplift** of £15m per year (to be reached by 2026)
- Large Grants – increased budget (**fund more excellence**)
- Urgency Grants – increased funding limit (**£100k**)
- Two new schemes replace Standard Grants:
  - **Pushing the Frontiers** – ambitious, high-reward research
  - **Exploring the Frontiers** – explore and test ideas; unlock scientific discovery more quickly
- Builds on principles underlying Reforming our Business (**Reduced bureaucracy**)



# Reforming our Business

- UKRI is implementing a set of major changes to how it interacts with applicants – innovators and researchers.
- **Streamlining our processes**, freeing up researchers and innovators to do what they do best – building a thriving research and innovation system, making great discoveries, enriching our society
- Challenging our peer-review processes to take account of **all aspects** of scientific achievement



# Pushing the Frontiers

## **The scheme's purpose is:**

To invest in excellence, challenging researchers to be adventurous and ambitious; to exploit new technologies and approaches; and to explore new ideas that will push the boundaries of environmental science leading to the future scientific discoveries

## **The scheme will:**

- Support outstanding researchers to pursue curiosity-driven, ambitious, high-reward research
- Enable ambitious proposals that are likely to change the future scientific landscape of a discipline
- Reduce unnecessary applicant and reviewer bureaucracy
- Run 2 calls per annum



# Exploring the Frontiers

## **The scheme's purpose is:**

To invest in excellence, challenging researchers to be adventurous and ambitious; to exploit new technologies and approaches in a more dynamic way leading to an exploration of new and exciting areas of environmental science that might initiate further exploration or lead to impactful outcomes in themselves

## **The scheme will:**

- Support outstanding researchers to initiate the pursuit of curiosity-driven, ambitious research ideas
- Support the dynamic exploration of ideas that lead to future paths of discipline-shifting discovery or lead to impact in and of themselves
- Be bureaucracy-light by design
- Run 1 call per annum, the first year a pilot to be reviewed

# Pushing the Frontiers

## Award details:

- 2 calls per year (close Jan/Jul)
- £26 million overall budget per call
- Funding **up to £1m** (at 100% FEC, of which we pay 80% FEC) per award
- No fixed duration of award – proposal dependent
- Named Co-Investigators will be allowed

## Application:

- 5 page proposed research; 2 page narrative capability to deliver
- Demand management continues to apply

# Exploring the Frontiers

## Award details:

- Pilot call in 2022 (closes June)
- £4m budget for pilot
- Funding **up to £100k** (at 100% FEC of which we pay 80% FEC) per award
- No fixed duration of award – proposal dependent
- Named Co-Investigators will be allowed

## Application:

- 2 page proposed research; 1 page narrative capability to deliver
- No demand management (review after pilot)

# Pushing the Frontiers

Examples of proposals might include but not be limited to:

- A PI (New Investigator, NI), three co-Is, and two PDRAs (across two institutes) use field work/laboratory experiments and modelling to advance understanding of how plant evolution in the terrestrial biosphere influences Earth's global climate, particularly during key evolutionary events in the Phanerozoic Eon.
- A PI & Co-I and three PDRA team (across two institutions) test and validate an emerging new paradigm of the role of turbulent mixing in driving the deep ocean's overturning circulation. The project involves three research cruises with US partners and utilising NERC ships and a capital request for equipment.
- A PI (NI), two Co-I and two PDRA team (across two institutes) tackle the Earth's inner core nucleation paradox. Using ARCHER, the team develop a new generation of core evolution models and a coherent picture of deep Earth evolution.
- A PI, two Co-I, PDRA and technician team (across three institutes) use fieldwork and analytical approaches to reveal how sterols – essential nutrients for insects derived from diet - influence development in wild bees. Their comprehensive assessment of sterol nutrients in UK plant pollen allows the team to identify sterol limitations in the landscape and generate a new understanding of landscape capacity to support pollinator populations.

Up to £1m @100% FEC (we fund 80%FEC)

No set duration, but typically 3-4 years

# Exploring the Frontiers

Examples of how the funding could be flexed to support different research approaches:

- A 12-month project with a large fieldwork element, conducted by a research team consisting of a PI, co-investigator, and field assistants (the latter introducing undergraduates to a research career).
- A 6-month+ project funding a PI, research co-investigator (who helped develop the proposal) and technician, to undertake lab-based research.
- A modelling-based project funding a PI and PDRA for ~ 9 months (or longer if a part-time PDRA is appointed).

Up to £0.1m @100% FEC  
(we fund 80%FEC)

No set duration, but typically 6-12  
months

# Exploring the Frontiers

## Examples of how the funding can support scientific excellence whilst meeting diverse needs:

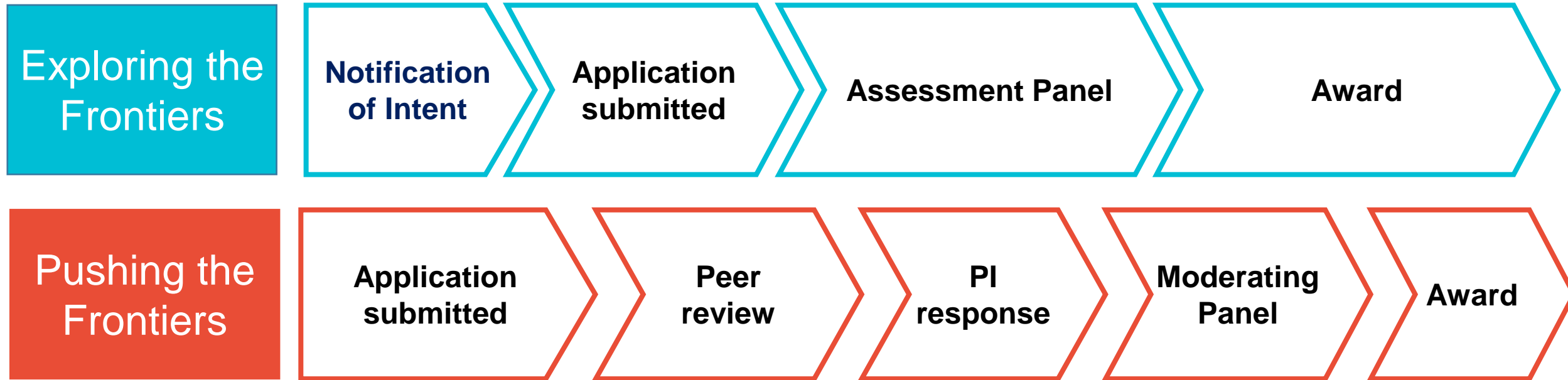
- Dr. S. takes up their first lectureship, which is 2 years fixed-term (to cover colleagues' research Fellowship success and caring leave). They welcome this call as they can bid as PI for research funding which can be completed during their tenure. Their field-based research programme would fund colleagues and field assistants and so help with network development. It would evidence leadership skills and ability to act as PI, supporting future employment after the fixed term post.
- Prof. M and their colleague, the research co-investigator (co-develops the proposal), welcome this opportunity as it can flexibly support part-time employment for the RCo-I who has recently become a new parent and finds many PDR opportunities inaccessible as have research programmes designed around a full-time appointment.
- Dr A., living now with chronic illness, returns to work part-time after absence due to illness, and welcomes the shorter and streamlined application as it offers a more accessible approach for funding to 'exploring their frontiers', and collaborate with a doctoral researcher.



Up to £0.1m @100% FEC  
(we fund 80%FEC)

No set duration, but typically 6-12  
months

# Assessment process



- Both calls are open to researchers at all career stages (normal NERC eligibility rules apply) – all proposals assessed together
- Multiple discipline-based panels – proposals allocated by office following submission
- **Exploring the Frontiers:** No external review or PI response
- Feedback provided



# Assessment Criteria

- **Two** assessment criteria: **Research Excellence** and **Capability to Deliver**
- **Research excellence** is the primary criterion and will be weighted more heavily in assessment than **Capability to Deliver** (2:1)
- The assessment process will consider the applicants' ideas and contribution, **relative to career stage**, acknowledging that not all team members will have evidence against all criteria.

# Research Excellence

## Pushing the Frontiers

- To what extent does the proposed research **address an important environmental challenge**, and involve objectives that are ambitious and beyond the state-of-the-art (e.g. novel concepts and approaches or development between or across disciplines)?
- To what extent does the proposal **push the frontiers of knowledge and have the potential to lead to** ground-breaking, high-risk, high-reward, innovative scientific discovery?
- To what extent is the outlined scientific approach feasible, bearing in mind that the proposed research is high risk/high gain?

## Exploring the Frontiers

- To what extent does the proposed research **explore new and exciting areas of environmental science**, and involve objectives that are ambitious, **adventurous** and beyond the state-of-the-art (e.g. novel concepts and approaches or development between or across disciplines)?
- To what extent does the proposal **initiate future paths towards** ground-breaking, high-risk, high-reward, innovative scientific discovery **or have the potential to lead to advancement of the discipline?**
- To what extent is the outlined scientific approach feasible, bearing in mind that the proposed research is high risk/high gain?

# Capability to Deliver

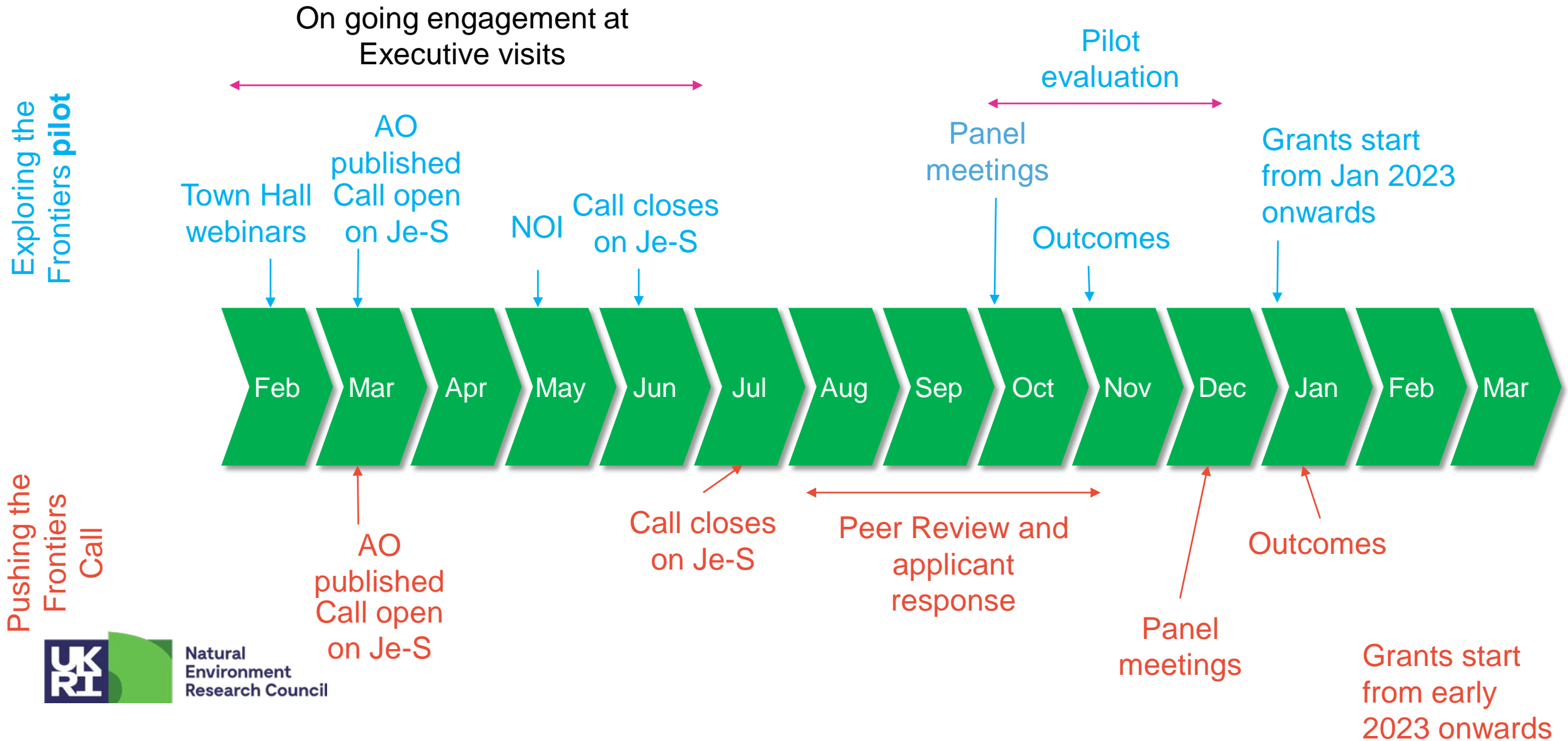
- To what extent has the team made an outstanding contribution to the generation of new understanding and demonstrated the key skills required to do this?
- Do the team demonstrate appropriate expertise and capability to successfully execute the proposed project, including evidence for capacity to support and mentor researchers involved as appropriate?
- Do the team demonstrate capability to contribute to the wider research community, for example contributions to improving research culture and advocating better research integrity?
- Do the team demonstrate capability to contribute to broader society, for example through engagement?

<https://www.ukri.org/news/ukri-launches-new-resume-for-research-and-innovation/>

# Final stages of funding consideration

- The outcome of the **Moderating (PtF)** or **Assessment (EtF)** Panel meeting will be a final score for each criterion expressed as either:
  - **3 – Outstanding** (is of excellent scientific quality / capability to deliver);
  - **2 – Good** (is of high scientific quality / capability to deliver);
  - **1 – Interesting / non-competitive** (is of insufficient quality / capability to deliver).
- The **Moderating/Assessment** Panel will make a funding frame recommendation to the Executive for final decision.
- Feedback will be provided to all applicants.

# Call timings



# Next steps

- Presentation and FAQs to be added to the website
- Mailboxes for further queries, comments and feedback:

[pushingfrontiers@nerc.ukri.org](mailto:pushingfrontiers@nerc.ukri.org)

[exploringfrontiers@nerc.ukri.org](mailto:exploringfrontiers@nerc.ukri.org)



# Q&A session

- Please **use the Zoom Q&A function** for any questions you would like answered live.
- Any questions not addressed live will be covered in the FAQ document to be published online.
- Use our mailboxes to share any other feedback on these webinars:

[pushingfrontiers@nerc.ukri.org](mailto:pushingfrontiers@nerc.ukri.org)  
[exploringfrontiers@nerc.ukri.org](mailto:exploringfrontiers@nerc.ukri.org)

# Q&A session

## Hot topics raised at the webinars:

- **New Investigators** – will there be a separate scheme?
  - No NI scheme. Success rate/panel outcome evidence suggests it's not necessary. Outcomes for those classified as NI will be closely monitored.
  
- **Demand management** – how will it be applied?
  - DM will apply to Pushing the Frontiers only, based on same calculations as used for Standard Grants (caps to be published shortly). Internal guidance processes advised for applicants to Exploring the Frontiers to ensure quality control.

# Q&A session

## Hot topics raised at the webinars:

- **Scoring/ranking process** – how will it work?
  - All proposals will receive a final score out of 3 for each of the two criteria. At panel, these will be weighted and summed (Research Excellence x 2 + Capability to Deliver) to create a combined score out of 9 *which will be used for ranking purposes only*.
  - Panels will provide ranking to NERC Executive to inform final funding decision.
  - Published panel outcome will be the final scores (out of 3) for each criterion and ranked list.

# Q&A session

## Hot topics raised at the webinars:

- **Unfunded excellence** – what approach will you take?
  - Unfunded 9s from Jan 2022 Standards round will be carried forward to first Pushing the Frontiers round.
  - They will automatically be re-graded to a score of 3 for Research Excellence and given the opportunity to submit a new Capability to Deliver section to be assessed by the Pushing the Frontiers panel.
  - NERC will monitor funding outcomes from both new schemes and will remain open to the principle of carrying forward unfunded excellence.