

IMPERIAL

Navigating fellowships in the UK

Linda Cremonesi

Understand the UK system to launch your
independent physics career

Plan for today



What are
Fellowships?



Schemes at a
glance



The
application
process



The
assessment
process



Building a
winning
application



Case study and
Q&A

What are Fellowships?

Fellowships

A fellowship is a **personal grant**, it is a way to start gaining research independence. It usually comprises of XX amount of funding for YY amount of years at a specific institution.

Two types:

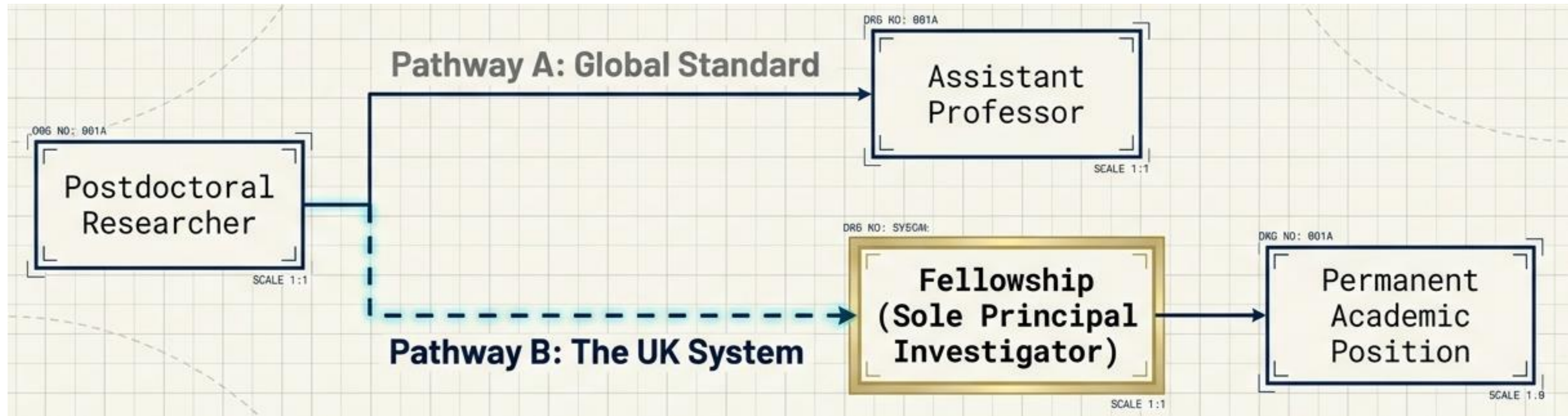
“Junior” fellowships may be suitable for someone with not many years of PDRA experience

*sometimes also called Postdoctoral Fellowships

“Senior” fellowships usually require 3-8 years of PDRA experience (although schemes differ on this criterion)

*sometimes also called Independent Fellowships

Fellowships in the UK



In many global systems, you apply straight to an Assistant Professorship.

In the UK, you can apply directly for an Assistant Professorship, but you can **also use a Senior Fellowship as a stepping stone (or bargaining chip) to a permanent position.**

Funding Mechanics

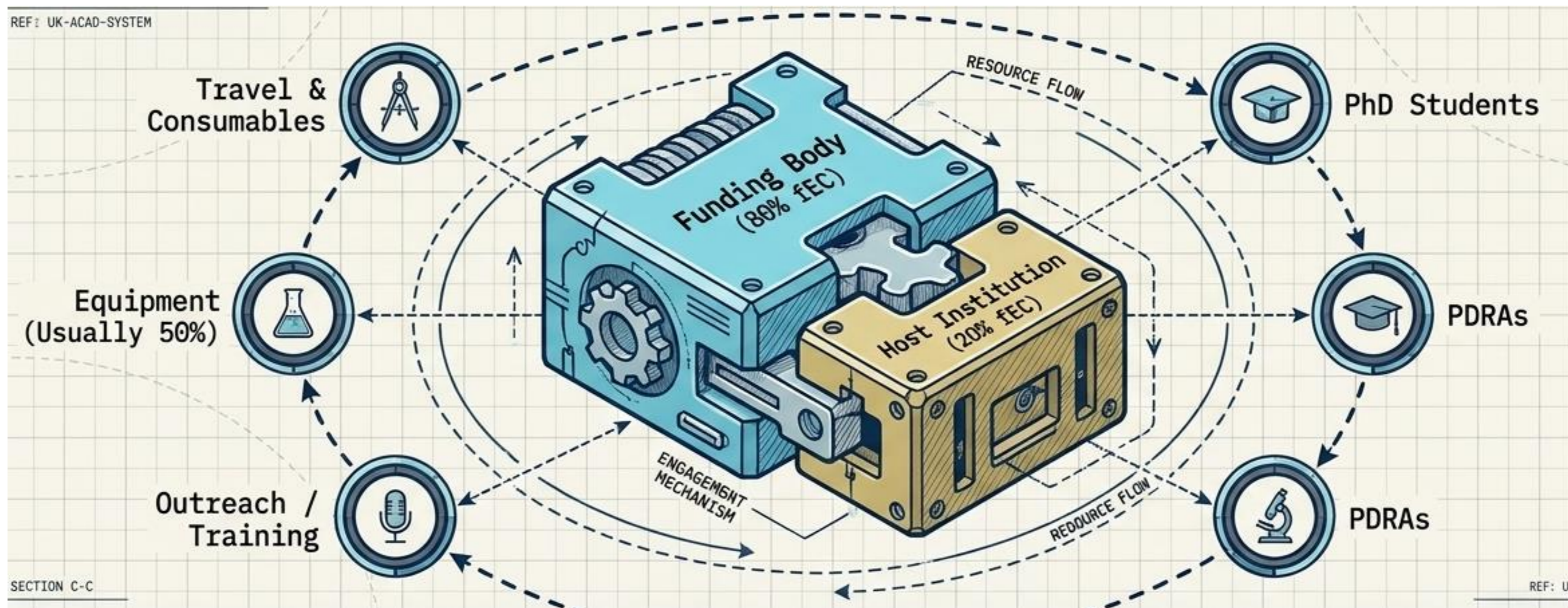
Different schemes offer different levels of support and may have different eligibility criteria.

In general, all fellowships cover the fellow salary (usually 80% fEC) for X number of years:

In the UK, universities use a system called Full Economic Costing (fEC).

The funding body covers 80% of your salary and institutional overheads;

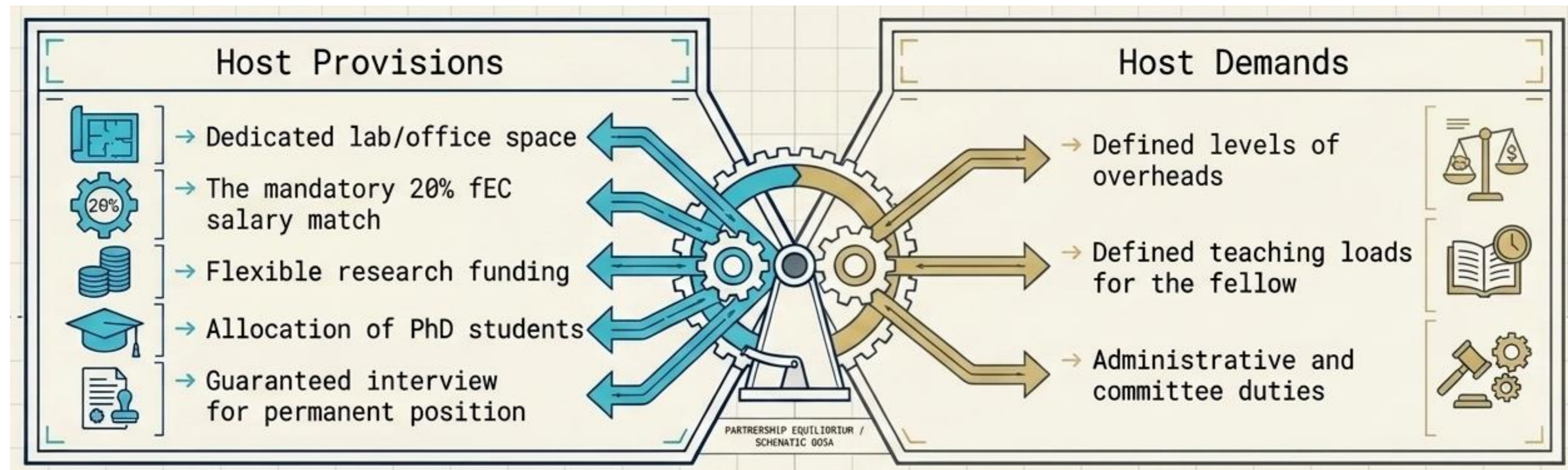
The institution will automatically cover the remaining 20% as part of their institutional commitment to you



Host institution

A fellowship application is a **partnership** between a researcher and the Host Institution.

An applicant cannot apply for a fellowship independently, they need to get the support from an institution (university or lab)



The level of support from the host institution is usually one of the assessment criteria.

Schemes at a glance

“Junior” Fellowships

Marie Skłodowska-Curie Actions (MSCA) Fellowship:

- European Fellowships (1-2 years):
 - Fund mobility within Europe (including UK) -> ie you need to move country
 - Anyone can apply
- Global Fellowships (2-3 years):
 - Fund mobility outside of Europe
 - Only nationals and long-term residents of Europe+UK can apply

Royal Society Newton International Fellowship:

- 2 years (max £280k)
- Must be based outside of the UK and non-UK citizen

Royal Society Career Development Fellowship:

- Only for UK nationals/residents of Black heritage
- 4 years, up to £690k

Leverhulme Early Career Fellowships:

- 3 years, but only paying 50% (other 50% cannot come from a grant)
- Universities will have internal schemes for the other 50% support

Royal Commission 1851 Fellowships:

- 3 years, full salary + £10k per year expenses

“Junior” Fellowships (Institution-specific)

Imperial College Research Fellowship:

- 4 years of full salary, up to £45k for research expenses

University of Edinburgh Elizabeth Gardner Fellowship:

- 4 years
- Specifically for researchers from underrepresented backgrounds

These may be available at other universities too (e.g. Oxford/Cambridge), but I couldn't figure it out which schemes are open at the moment.

“Senior” Fellowships

STFC Ernest Rutherford Fellowship (ERF):

- 5 years of funding + travel/consumables
- Host institutions have limited number of applicants they can support (pre-selection done at group and School/Department level)

Royal Society University Research Fellowship (URF):

- 5(+3) years of funding + travel/consumables
- Possible funding for 2 PhD students or one 2-year PDRA
- Host institutions can support as many applicants as they want (still a pre-selection done at group/Department level)

UKRI Future Leaders Fellowship (FLF):

- 4(+3) years of funding + travel consumables
- Can fit two 4-year PDRAs
- Host must provide path to a permanent position (pre-selection often done at Faculty and University level)

ERC starting grant

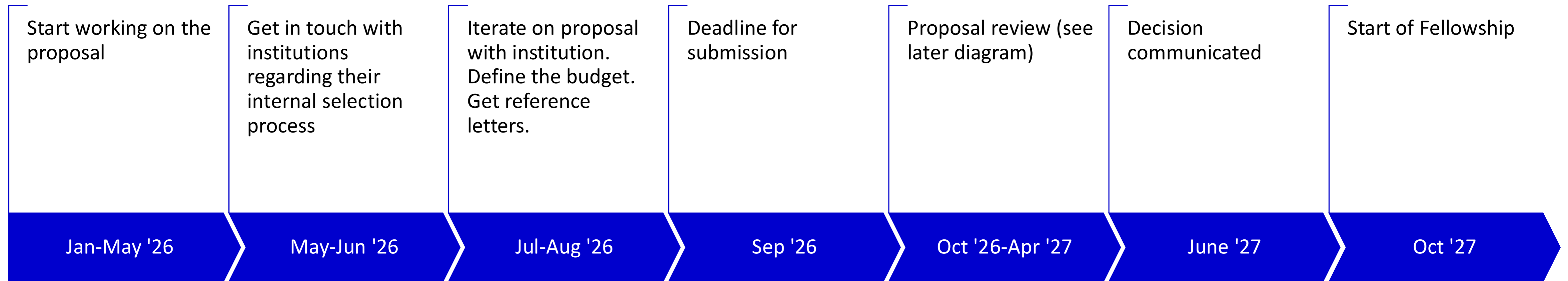
- 5 years of funding
- Can fit PDRA and PhD students

The application process

Application process

You should expect the whole fellowship application process to last 1 to 1.5 years.

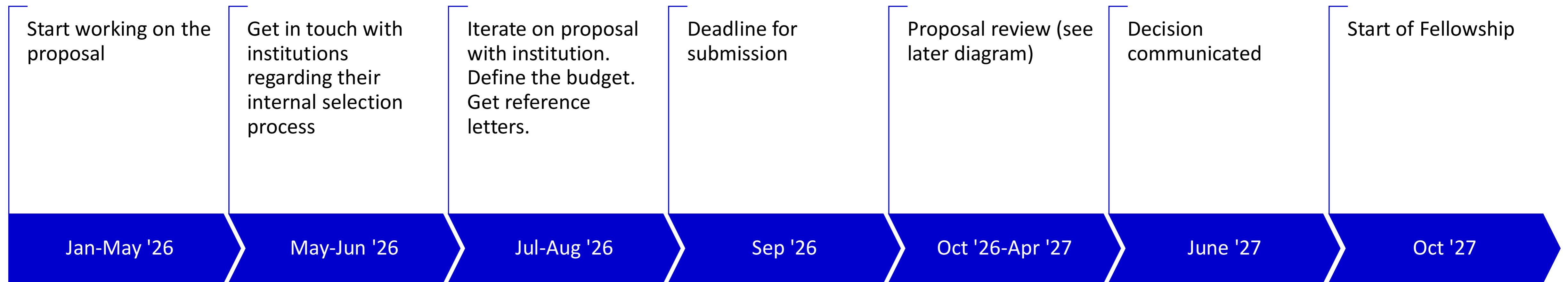
For example, PDRA X wants to Royal Society URF:



Application process

You should expect the whole fellowship application process to last 1.5 to 2 years.

For example, PDRA X wants to Royal Society URF:



**Expect to repeat this process multiple times!
Very rarely people are successful on their first try!**

Where to start

Plan ahead

- Possibly 1-2 years in advance
- Need to have time to develop your CV, the research project and iterate on the application with colleagues.

Start by gathering information:

- Look at the schemes you are interested in.
- Get examples of successful applications.

Think about how you demonstrate independence.

- Panels will look to see if you are just following the work of your supervisor / academic lead.
- Start to develop your own direction of research, or your own technique

Seek mentorship to gain an 'external' perspective on your research and career opportunities

Build your CV!

Build your CV

Evaluate your current “CV” against the scheme criteria and example successful applications

Build areas that you think would be useful for the application, e.g.

- Review papers (email journal editors to offer your services),
- Organise conference/workshops,
- Speak to your experiment leadership to explore possibility of climbing up the ladder,
- Contact groups and offer seminar talks,
- Demonstrate the ability to gain funding (even small awards count, e.g travel funds, associateships, outreach grants, or paid visitor trips to other labs CERN / Fermilab etc),
- Get involved in discussions that set the international agenda for your field, e.g. Snowmass reviews, European Strategy, community whitepapers etc,
- Consider writing a review paper on a specific topic and offer this to review journals.

Host institution

How to choose a host institution is always a difficult process

Think of places that you think could be a right fit for you and your proposal

Speak to the people working there - they are potentially becoming your colleagues!

Ask what is the institution offering to you:

Additional flexible research funding?

PhD students?

A chance to interview for a permanent academic position?

Ask also what commitments the institution usually wants from you:

Teaching load for fellows?

Admin work?

If you are awarded a fellowship with institution X, and you want to move it to institution Y, you can do it, but the process may differ for different schemes (and may not be straightforward).

The application

The application usually contains different parts:

A CV-like component

A case for support

The finance details

Other short sections

External reference

CV

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Always **contextualise your achievements**, for example:

Leadership positions, include years of tenure, appointed/elected, number of workers, outputs and impact of those

Teaching, include number of students, contact hours, level of teaching (UG, MSc, PhD)

Prizes/Awards, include value, % success rate

In your publication list consider splitting the list into the top 5 best publications (for those give a short narrative of your involvement), and then list all other publications you contributed to.

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Excellent speaker / valued member of the field, demonstrate with x number of talks in y different places

Research independence, demonstrate with small grant/awards

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Think about your whole application as a narrative - all of your past work is about acquiring the skills, expertise and knowledge just in order to perform the proposed research,

The case for support

The DO's

Be bold! What can you do that no one else in the world can do?

Start with a timeline/chart of what you want to achieve

Look at the assessment criteria and make the job of the reviewer as simple as possible

Include:

What you personally bring to the effort that other people do not. (Panels will ask themselves if the research would be conducted anyway if you did not do it.)

Quantitative estimates of intended research outputs.

Risks to the research and how you'll mitigate them.

The distinctive / novel features of your proposal and link it to your skills / experience.

How the proposal might offer the UK leadership in that particular field.

Why the fellowship is essential to your career ambitions and will position you as a leader.

Training/development for you / postdocs / PhD students.

Use simple language!

Show your proposal to as many people as possible (including people outside your direct field)

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The DON'T's!

- Don't be over ambitious in the proposal e.g. stating you'll publish 6 papers in 4 years. Make it realistic!
- Don't add peripheral activity if it is not part of the proposal.
- Don't include things in the proposal because you think it'll look good. For example don't include AI or ML for its own sake. If you do then explain why it's essential

The finance part

The finance part can be very tricky.

To develop this you will usually be paired with a senior academic and get a lot of help from the local research manager.

They will be able to guide you on what you can and cannot ask for, and they will also try to maximise the amount you can apply for in the fellowship.

Don't get too excited if you see large numbers, you are not becoming a millionaire!

Remember the budget usually needs to be approved a few days before the deadline for applications.

	Authorised FEC (£)		
	net	Indexation	Total
DI - Staff	570,319	11,792	582,111
DI - T&S	80,500	1,643	82,143
DI - Other Costs	5,000	102	5,102
DA - Estate Costs	113,599	2,319	115,918
DA - Other Directly Allocated	6,555	134	6,689
Indirect - Indirect Costs	713,385	14,564	727,949
Total Value of Award	1,489,358	30,554	1,519,912

The submission process

Online application portal:

You will complete all sections of the process using an online portal

Usually you will have to invite the Head of Department to your application so that they can upload their support letter (to confirm the host institution commitments)

Some scheme allow one reference letter - if that's the case you can invite your referee to the application to upload their reference.

Once all of the above is completed you can submit the application from your side (usually a few days before the real deadline).

In order for the application to then be fully submitted, it needs to be approved by your Host Institution (this may take a few days - pending the below).

At the same time as above, on **university internal portal**:

Applicant submits all application parts and finance to the internal university portal (at QM, worktribe)

The university has its own process to verify it and approved it (deadline usually a few days before call deadline).

It's important to understand the full process from the beginning. Different institutions may have different internal processes.

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The assessment process

Assessment criteria

These vary by scheme (make sure you know them), but they usually centre around 2 things:

Candidate:

Potential to be a leader in the field
Demonstrate leadership, research independence, large variety of experience on all aspects of research job (papers, management, giving talks, mentoring, outreach, teaching)

Proposal:

Timeliness
Innovation
Uniqueness
Feasibility of proposal
Gain for UK Research

Who reads your application?

Usually two sets of people will review your proposal:

Reviewers:

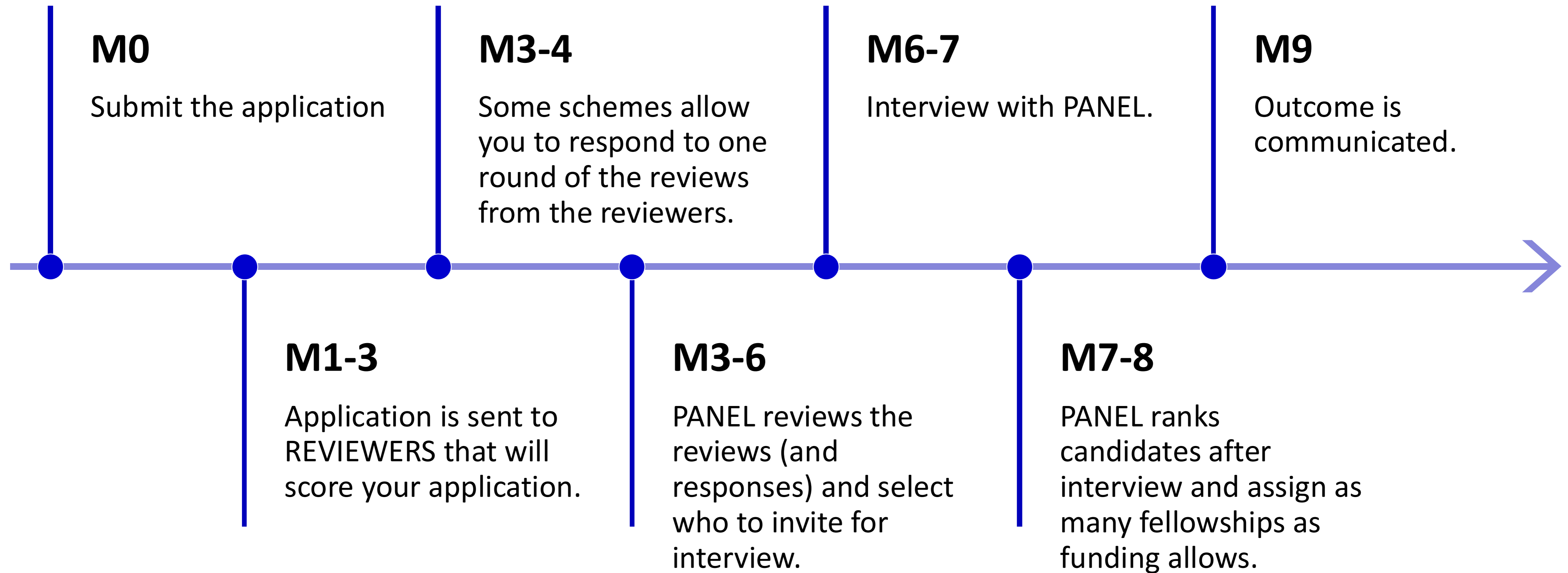
Experts in the field (they may be particle or even neutrino physicists)
They receive your anonymised application and score it against set criteria

Panel:

Often they are NOT experts in the field (there may be 1 particle physicist in the whole panel. For Royal Society, there may be 1 physicist in the whole panel).
They read the reviews (and responses if applicable), and make decisions on who gets to the next step or not.

You will need to make sure that your application satisfies both!

The review process



Two possible outcomes

Unsuccessful

- The rate of success for these schemes is very low (between 3% and 7%), so don't get too discouraged. Going through the application process is always useful, and you can try again next year.

Successful!

- Congratulations! You will be helped by the Research Manager to set the fellowship up at the institution.

My experience

My experience

2011-2015: PhD at QMUL

Sensitivity studies for HyperK (JHEP)

T2K cross-section measurement (PRD)

2015-2020: PDRA at UCL

ANITA simulation development (JINST), various analysis papers (PRDs and PRLs)

NOvA xsec papers (PRDs) and oscillation analyses (PRLs)

DUNE hardware experience

Leadership positions in ANITA, NOvA, and DUNE

Large number of seminars/talks given all over the world

Large body of outreach activities (including prizes)

Small amounts of funding for research collaborations and outreach

Teaching qualification

My first time applying (2018)

In 2018 with 3 years of PDRA experience, I applied for Royal Society URF.

I managed to get on the long list (ie first round of selections), but was not shortlisted for interview.

Feedback from Royal Society was useless (they have too many people to give feedback to, I think now they don't give feedback any more).

Later on got informal feedback from a senior colleague, and realised I made many mistakes:

- I had only showed my proposal to one person (my postdoc supervisor) before submitting it.

- The proposal itself was weak, I was bold but my proposed plan was unfeasible in the UK.

- The proposal was centred on astroparticle physics, but my more recent work was actually related to NOvA, and I hadn't really found a way to sell my whole career trajectory into an arch to the proposal.

My second time applying (2019)

In 2019 (with 4 years PDRA experience), I applied to:

- UKRI FLF with University of Bristol (Successful - Accepted)
- STFC ERF with University of Edinburgh (Successful - Declined)
- Royal Society URF with University of Bristol (Withdrew at interview)

What made my proposal succesful?

This is speculation, I'll never know for real!

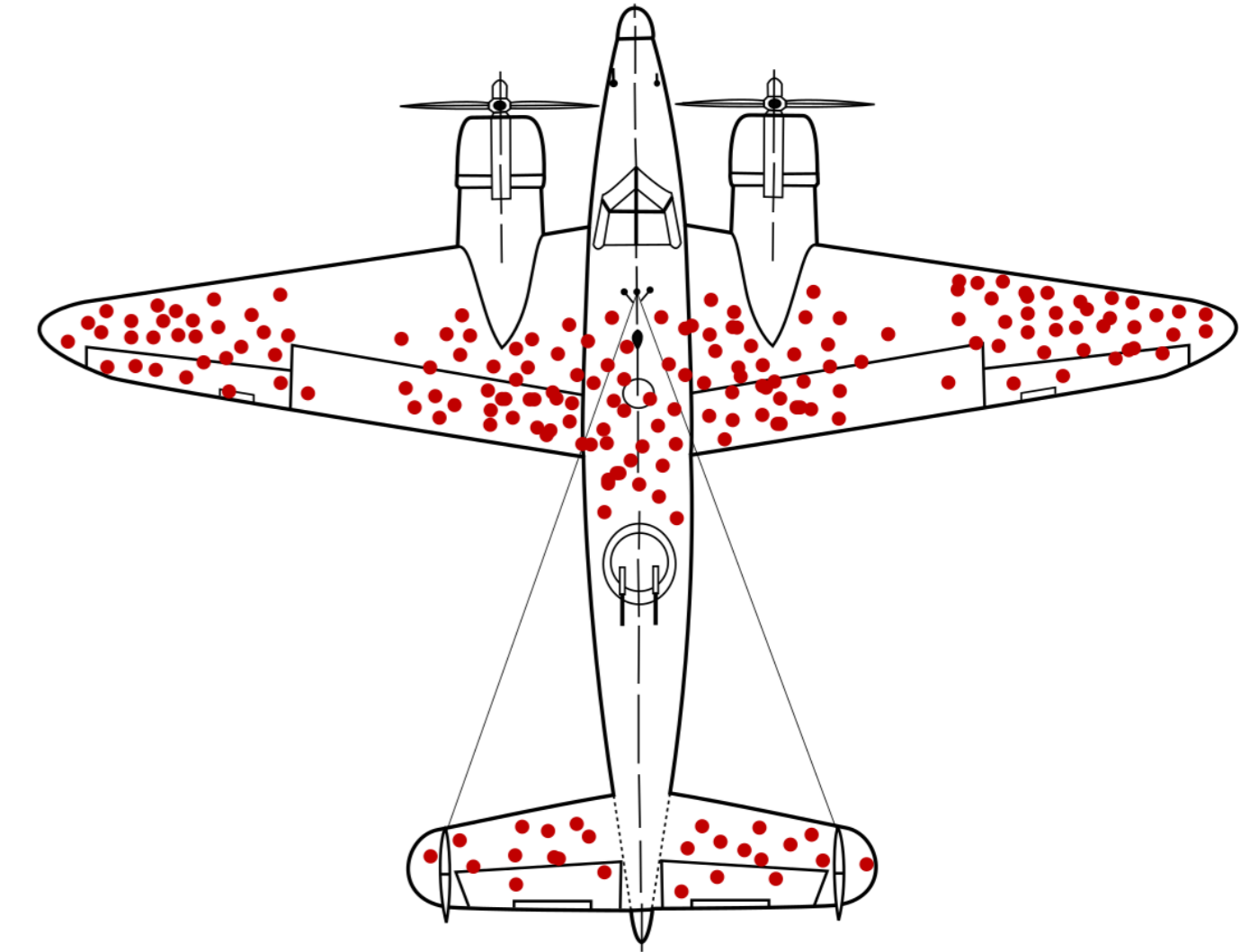
Possible things that played a role for this second round:

I had more papers under my belt both with NOvA and ANITA

I got “promoted” within NOvA (from infrastructure group conever to analysis group convener)

The proposal was much stronger (played to my strengths and unique experience having worked on both NOvA and T2K, built an arch over my whole career)

I had gotten feedback on my proposal from A LOT OF people.



Some final words

Your next chapter can start here

A fellowship is a **personal grant**, it is a way to start gaining research independence.

In the UK it can be used as a stepping stone (or bargaining chip) to a permanent position.

If you take away just three things, then remember what is important is:

The Science

Don't just follow the path of past supervisors. Be bold and propose what only you can deliver to the global physics community.

The Strategy

Leverage the ecosystem. Use internal selection panels and peer networks to stress-test your ideas early.

The Resilience

Low success rates are part of the landscape, not a reflection of your worth. Every application builds the foundation for your eventual breakthrough.

Here's your time to ask
questions!