

ROYAL SOCIETY FUNDING: A PERSONAL PERSPECTIVE

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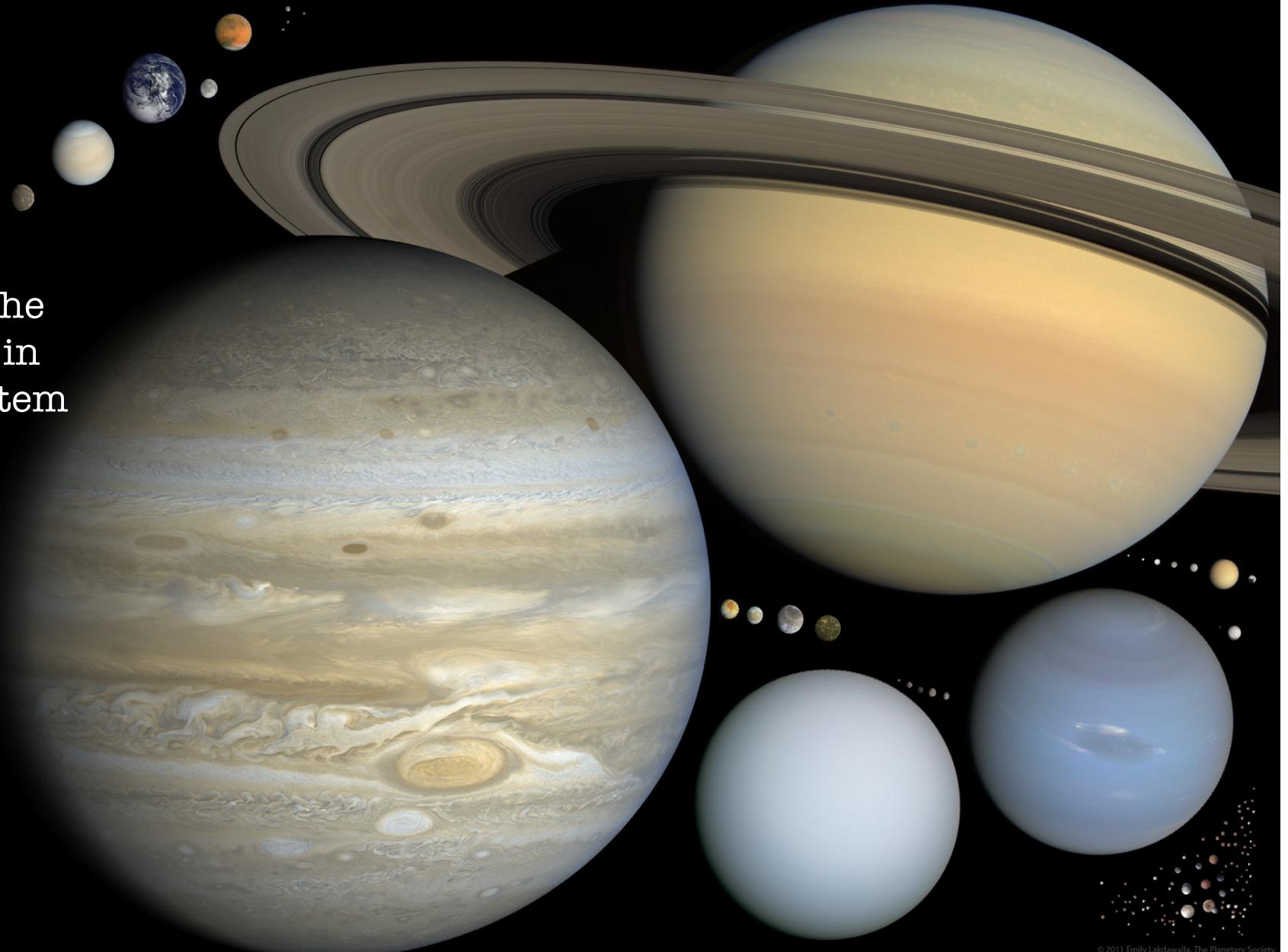
UNIVERSITY OF
LEICESTER



THE ROYAL
SOCIETY

From Leicester to the Planets

Exploring the
Mysteries of the
Giant Planets in
Our Solar System
and Beyond
(2013-2017)



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Fellowship Opportunities - Physics

- **Royal Astronomical Society**
(3 years, but only for those <5yrs since PhD).
- **European Research Council**
Starter Grant (5 years plus PDRAs, 2-7 yrs since PhD).
- **Royal Society URF** (5yrs +3 extension, 3-8 yrs since PhD)
- **STFC Ernest Rutherford** (5yrs, 2+yrs experience since PhD).

Similar fellowship proposals, but different in scope depending on intended audience.

During the Fellowship

- **Opportunities at the Royal Society:**
 - Training (mentoring, media, business and enterprise, leadership, public policy, diversity, education and outreach, etc.).
 - Scientific workshops/conference hosting.
 - Venue in London to work!
 - Networking with other RS fellows from across disciplines.
- **Additional funding:**
 - Opportunity for new URFs to propose for studentship/equipment funding.
 - I had ~£80k for a computing cluster and to support a PhD student (just graduated and now on her 1st postdoc!).
 - Eligibility to PI grants (STFC Consolidated Grant and ERC Consolidator Grant).
- Complexities of Relocation (more later).



Points for your proposal

- **Excellence of the Science:**
 - Innovative and novel rather than incremental.
 - Establish national/international leadership with world-leading methods/techniques.
 - New insights and realistic possibility of significant advances.
 - Timeliness and societal impact/significance.
- **Excellence of the candidate:**
 - Proven track record of leadership, potential to lead the field in future.
 - Exciting and independent ideas.
 - Ambassador for the Royal Society name globally.
- [Less important but still key:]
 - Appropriateness of host institution.
 - Budgetary reality.



Excellent people, ground-breaking science, future leaders.



Why are you the best person to do this?

- **Why are you the best person to address this scientific theme?**
 - Could this be done by anyone else?
 - How/why are you better?
 - Why is your effort critical to advancement in this area?
- **How has your career to date prepared you for this role?**
 - Independence of your PhD supervisor; innovative tools/approach, etc.
 - Good publication stats***
 - Examples of team leadership
 - Citizenship (e.g., panels, committees, refereeing, supervising).
- **Don't be shy!** Now is the time to blow your own trumpet, make your past achievements clear.



****Publications: good record required but RS state that applicants should not be concerned with journal impact factors, h-index and citation counts. RS has signed the San Francisco Declaration on Research Assessment (DORA) which challenges assessments based on impact factors.*

My Generic Proposal – in a nutshell

The “Knock-their-socks-off” Opening Paragraph

(Why Bother? Why Now? Why Me?)



*Essential – reviewers are human too, so ‘wow’ them, given them a broad understanding of who you are and what you hope to do – **captivate them!***

Hook them in!

Show them that this goes beyond the state of the art...

...and ensure you can get your message across to someone outside of your field.

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Statement of the Central Theme/Objective



Sub-Objectives (if multiple work packages/deliverables)



Have a central, overarching theme that can be easily explained to a layperson.

Use sub-objectives to add details/layers.

Make sure that your proposed work packages all link to this central theme.

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Details of each science goal:

Statement of the research question.

How I’m the best person to crack it?

How I’ll accomplish my aim?

What are the risks/rewards?

What the overall outcome will be?

x2-4?

*Have a timeline
(space-dependent)
to show work is
achievable.*

E.g. Objective A1: Exploration of Climate Cycles

[Months 24-48, 30% of total]

Objective A2: Structure of tropical cyclones

[Months 36-48, 30% of total]

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Host institute must be appropriate/ideal for supporting your science. Think infrastructure, equipment, complementary expertise, opportunities for leadership and expansion.

Strategies for tackling risky problems (What If?)

Justification for Resources and Institution

Re-iteration of Significance, Timeliness, International Context

Tie it all together and back to the central theme at the end. How does it fit into national/international roadmaps?

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What the overall outcome will be?

Through all of this: bring out your strengths, (expertise, leadership, experience, vision, successful track record, rising profile) to make it clear you're the best person to lead this.

Link the career summary to the proposal with sensible self-referencing.

Strategies for tackling risky problems (What If?)

Justification for Resources and Institution

Re-iteration of Significance, Timeliness, International Context

Technical Points of Application

- Discuss intentions with HoD and line manager
- **Get organised early** – RED need a week to process, but referees need even more time to write a **good reference**.
- Ask ~~senior~~ colleagues to **critique your proposal** in the months/weeks before the deadline – the more the better, and MUST include someone from outside your field. Allow time to include their suggestions.
- Read **past successful proposals** if you can – seek people out.
- Read online case studies.
- Proof-read your application over a good few times. Bear in mind e.g.
 - Is it easy to follow?
 - Are there lots of annoying typos? Have you met the page limits?
 - Are any diagrams/figures informative but not too dense?
 - Have you referenced relevant work (including your own)?



The Interview I – Before the Day

- I've done a few, and.... can range from **civilised questioning by experts** to aggressive and **rude interrogations by the ill-informed** ☺
 - RAS: Very friendly and knowledgeable, more of a chat.
 - STFC: Surprising lack of knowledge of my research area.
 - Royal Society: Large panel, intimidating, but high-level questioning.
 - ERC: Absolutely terrifying.
- **Before the day:**
 - Organise a mock interview with Leicester colleagues as a test-run and to get feedback on what works and what doesn't
 - Have a 2-minute concise 'elevator pitch' ready to roll of your tongue, if needed.
 - Practice responding to some 'typical questions.'
 - Have friends pick holes in your proposal that you might have missed.



The Interview II – On the Day

- Let your enthusiasm for your field shine through!
- **Interview Panel:**
 - Was composed of 16 Members plus two grant Managers.
 - Not all of them will be the experts in your domain.
- Don't expect body language to be friendly/encouraging, and don't read too much into it.
- *At this point: you're good enough, but are you the best? Yours to lose.*



Interview Questions (Generic)

1. Can you explain how these independent projects are all linked together, and how is the whole greater than the sum of its parts?
2. What makes this transformative and ground-breaking science?
3. What are the biggest risks associated with this work?
4. What are the world-leading tools and methodology that you'll be developing?
5. What will be the ultimate outcome of five years of funded research? In five years time, how will we know if this project has been a success?
6. What will be your next Nature paper?
7. What are your strengths and weaknesses "as a leader of young scientists"?
8. What is your role (as PI) in the project? What will you be doing personally towards the project? Is there one WP that requires your expertise/time more than any other, or is your time distributed evenly?
9. What makes your approach unique in this competitive field?
10. How will the work in Leicester compare to ongoing efforts elsewhere? What, specifically, does Leicester have to offer in this field?
11. What is your niche?
12. What will the main developments in this field be, and what will be my role?
13. What sort of group leader do you want to be?
14. What do you think was the most important discovery in this field during the last 5 years? And what was your role in that discovery?
15. What's to stop someone else doing this project better, more quickly, using the publically-available data?
16. What would happen if you get much less data than expected?
17. What is the current status of your equipment and needs?
18. Is this just an incremental advance, a logical extension of your previous work?
19. How will you balance the career aspirations and needs of your team against the needs of the project?
20. How will this project challenge our understanding of the big picture?
21. Much of the code you use is inherited – what was your specific contribution?
22. Who are your primary competitors in this field, and how do you compare to them?

Further Questions

- What is your most underappreciated paper?
- What is your niche? What makes your approach different to others?
- How will you maintain or develop independence?
- Why do want to stay at Leicester?
- What's the riskiest aspect of this work?
- How will you establish leadership?

Advice on Presentations

- Teach them, rather than tell them.
- Don't rely on cursor to point things out, need to use words.
- Turn Q&A responses into a positive to show strengths.
- Have a prepared answer on the “Do you have any questions for us?” – maybe on training opportunities?

- Don't wiggle cursor around, it's distracting.

Royal Society URF - Relocating

- **Congratulations!**
 - You've just been offered your best bargaining chip for a permanent academic position that you're ever likely to get!
 - But don't assume that this will be in your current institution.
- **URF at Oxford 2013-2015:**
 - Lots of polite noises, but nothing on paper.
 - Searched for opportunities both within and outside.
 - All very welcoming – fellowship funds allow them to 'mortgage' positions and offer multiple lectureships.
- **Decision to move research to Leicester in 2015:**
 - Very hard decision, integration with a completely new research group.
 - Leicester has been incredibly welcoming during this first 18 months.
 - STFC Consolidated Grant and ERC Consolidator Grant all came after relocation.



Bottom line: 5 years goes fast, your capital dwindles, make your intentions loud and clear as early as you can, seek assurances. Be prepared to try something new!

Summary

- Wonderful and prestigious opportunity
 - Stepping stone to launch a permanent scientific career.
- You have more potential than you're aware of
 - We all suffer imposter syndrome – don't let it stop you.
- Sell the **excellence of the science and of the candidate** (don't be shy!).
- Clarity of message is key
 - Central theme, accessible language.
- Learn from the setbacks (“roll with the punches”). **Get up, dust off, reapply.**
- *I wish you the very best of luck!*

