A personal experience in preparing an MSCA-IF application

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Outline

- Details about my application
- Important points for writing the proposal
Brief bio

- 2008 – 2012 PhD in Biochemistry (Massey, NZ)
- 2012 – 2015 Postdoc in Chemical Engineering (Penn State, USA)
- 2016 Postdoc in Molecular Systems (Imperial/MRC LMS, UK)
- 2017 – 2019 MSCA Fellow (Imperial/MRC LMS, UK)
Motivation

- Prestige
  - Almost a requisite for a faculty position
- Generous salary
- Freedom (decisions on project, collaboration, travel)
- No age/time limit
- Networking opportunities
Timeline

- Call launched: 12 Apr 2016
- Deadline: 14 Sept 2016 (17:00 Brussels time)

My timeline

- Decided to apply
- Outlined project
- Identified and contacted collaborators
- Met collaborators
- Met with the Grants, Engagement & Communication Office
- Conference + travel
- 1st full draft
- 3 weeks of full-time writing
Timeline

Call launched: 12 Apr 2016

Deadline: 14 Sept 2016 (17:00 Brussels time)

Details about my application

- Draft review: Postdoc supervisor, Grants officer (Imperial & MRC LMS)
- Oct – Dec 2016: Proposal evaluation
- Feb 2017: Outcome
- May 2017: Signing of Grant Agreement (latest)

Fellowship timeline

• Call launched: 12 Apr 2016
• May 2016
• June 2016
• July 2016
• Aug 2016
• Sept 2016

My timeline

• Decided to apply
• Outlined project
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My application

• Horizon 2020 MSCA-IF 2016
• Title: The mutation-buffering capacity of RNA chaperones
• Goal: How mutations that affect RNA structure can be buffered by RNA chaperones
• 24 months
• Scientific Area / Panel: Life Sciences
• Descriptors:
  – “Molecular biology and interactions”
  – “Systems biology”
  – “Systems evolution, biological adaptation, phylogenetics, systematics, comparative biology”
  – “Synthetic biology, chemical biology and new bioengineering concepts”
My application

• No work involving mouse, human, etc.
  – No specific Ethics Issues to be addressed

• Project
  – 50% experimental + 50% computational

• No secondment

• No interview

• Reference letters not required
Overall experience of the writing process

- Training through 2 parts: Research & Transferable skills
  - Research
    - Objective-based
    - Skill diversification
    - Inter- / Multidisciplinary experience
  - Transferable skills
    - Managing research & project finance
    - Communication & outreach activities
    - Training on gender issues

- Research
  - Takes time (as expected)

- Transferable skills
  - Surprisingly hard and time-consuming

- The Application Guide became very tattered
Structure of the application

- Part A (online; 15 pages)
  - General information
    - Abstract
    - Exact date of doctoral degree conferment
    - Place and duration (in days) of activity/residence in the past 5 years
  - Participants & contacts
    - Administrative data of participating organisations, e.g. PIC identifiers, emails, phone numbers
  - Budget
    - Automatically calculated
  - Ethics
    - Read each question carefully, and address appropriately in Part B
  - Call-specific questions
    - Data Management Plan
    - Open Research Data Pilot

- Part B (Word doc; the actual proposal)
  - Document 1 (13 pages maximum)
  - Document 2 (no overall page limit)
Structure of the application

• Part A (online; 15 pages)
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    • Read each question carefully, and address appropriately in Part B
  – Call-specific questions
    • Data Management Plan
    • Open Research Data Pilot

• Part B (Word doc; the actual proposal)
  – Document 1 (13 pages maximum)
  – Document 2 (no overall page limit)
Part B of the application

- Document 1 (13 pages maximum)
  - Start page + List of participating organisations
  - Excellence (50%)
  - Impact (30%)
  - Implementation (20%)

- Document 2 (no overall page limit)
  - CV of the applicant (5 pages maximum)
  - Capacities of the participating organisations (1 page maximum)
  - Ethical Aspects
Part B of the application

- Document 1 (13 pages maximum)
  - Start page + List of participating organisations
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  - Ethical Aspects

ST-LIF 2016: 1,776 proposals
- 11% obtained a score of ≥93%
- Cut-off was slightly under 93%

Important points for writing the proposal
Part B – Document 1

- **Excellence (50%)**
  
  1.1 Quality and credibility of the research
  
  - Introduction & state-of-the-art
    - Explain what I would do on the 1st page (in the 3rd paragraph)
  
  - Objectives and overview of the action
    - Three main aims; two specific objectives for each aim
  
  - Research methodology
  
  - Originality and innovative aspects of the research
    - Why is my project worth funding?
  
  - Explain how the high-quality, novel research is the most likely to open up the best career possibilities for the applicant
    - Why this project would allow me to move towards research independence?
  
  - Gender dimension
Part B – Document 1

- **Excellence (50%)**
  - 1.2 Quality of the training
    - How will the applicant gain new knowledge?
      - \( R, \) Python
      - Knowledge & skills that the researcher will transfer to the host organisations
        - High-throughput mutagenesis, bacterial phenotyping
  - 1.3 Quality of the supervision
    - Qualifications and experience of the supervisor
      - How awesome the supervisor is, i.e. capabilities to guide me through this training
      - Funding history of the group
    - Hosting arrangements
      - How the group had helped me to integrate into the Department
      - Departmental mentors, Postdoc Development Centre, Human Resources
  - 1.4 Capacity of the researcher to reach a position of professional maturity/independence
    - Evidence of leadership in the past
    - First-authored publications, Hamilton Memorial Prize, Graduate Women in Science, Scientific Malaysian
Part B – Document 1

• **Impact (30%)**
  
  – 2.1 Enhancing the potential and future career prospects
    • How the planned training in data dissemination would benefit me
    • Leadership in Research workshop, Springboard Women’s Development Programme
    • Results would shape the future directions of the host and potentially my own future group.
  
  – 2.2 Quality of the proposed measures to exploit and disseminate results
    • Publishing in peer-reviewed journals, attending conferences, giving seminars
    • Intellectual property rights (IPR) strategies
  
  – 2.3 Quality of the proposed measures to communicate to different target audiences
    • Hands-on demonstrations in science festivals
    • Postdoc supervisor’s experience in outreach activities
Part B – Document 1

• Implementation (20%)
  – 3.1 Coherence and effectiveness of the work plan
    • A realistic Gantt chart
    • Work packages, Deliverables and Milestones
  – 3.2 Appropriateness of the allocation of tasks and resources
    • Why certain tasks were allocated a longer duration, and why some a shorter duration
  – 3.3 Appropriateness of the management structure and procedures, including risk management
    • Organisation and management structure
      • One-on-one meetings with Postdoc Supervisor, progress talks, formal reviews
      • Finance handled by the Imperial Joint Research Office
    • Research and/or administrative risks
      • Experimental risks and contingency plans
  – 3.4 Appropriateness of the institutional environment (infrastructure)
    • Research facilities relevant to my work, e.g. Genomics, Flow Cytometry, Microscopy, Computing
Part B – Document 2

- CV
  - Education
  - Employment
  - Research Experience
  - Publications
  - Fellowships, Awards, Prizes
  - Presentations (Invited seminars, Posters, etc.)
  - Public Outreach
  - Supervising and Mentoring Activities
  - Teaching Experience
  - Service and Leadership (ad hoc review activities, committee members, etc.)
Part B – Document 2

• Capacity of the participating organisations (one page maximum)
  – General Description
    • Imperial’s reputation and assessment
  – Role and Commitment of Supervisor
    • Postdoc supervisor’s research and funding history
  – Key research facilities, infrastructure and equipment
  – Independent research premises?
  – Previous involvement in Research and Training Programmes
    • Imperial’s involvement in national and international funding
  – Current involvement in Research and Training Programmes
    • Number of fellows who receive fellowships, e.g. MSCA-IF
  – Relevant Publications
    • Postdoc supervisor’s
Feedback for my application

• Weaknesses:
  – Excellence
    • While the chosen model system is ideal for screening and assessing functional impact of mutations, it does not monitor the acquisition of a new function; thus, links to evolutionary principles may remain indirect or limited.
    • The supervisor heads a relatively newly established group and has had little time to develop supervisory skills and experience.
  – Impact
    • Plans for using online or print media to reach wider audiences are not adequately addressed
  – Implementation
    • None (19.2%; full 20%)
Afterthoughts

• Think about what you want to get out of a fellowship
  – Affects choices in postdoc supervisor(s), project(s) and the writing of the proposal
• Read and follow the Application Guide
• Some sections require contacting various departments and facilities well in advance
• Identify colleagues who have previously been (un)successful in obtaining fellowships
  – Study their proposals, and use them as models (or not)
• Be realistic
  – Is it feasible in your hands with the available resources and within the timeframe of the fellowship?
• Don’t assume reviewers will know what you’ve done and what you can do
  – If something is important, make sure it’s stated clearly
• Consistency for all parts of the application
• Get over inhibitions about selling yourself
• Beware of the number of references
  – 26 references for Part B, as footnotes
Good luck!