My experience with MSCA IF

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My background

- Experimental particle physicist @ University of Manchester

- Flavour physics

- NA48/2, NA62, LHCb and BESIII experiments

- kaon, charm and beauty decays, CP violation, neutral meson mixing, rare decays, amplitude analysis, strong phases, gaseous detectors, calorimetry, simulation, R&D, operation, etc.

Fellow and PI

- Fellow:
  - Applied for a fellowship in 2015 (deadline September)
  - Positive reply February 2016
  - Postponed the start by a year because of a maternity leave
  - Started in August 2017
  - A week later awarded Royal Society Dorothy Hodgkin Fellowship (5 years) so I declined the MSCA IF award

- PI
  - The fellow applied in September 2018
  - Positive reply February 2019
  - Start September 2019, ongoing

The project

- Fellow:
  - Contacted by Prof Chris Parkes
  - Agreed on a proposal closely related to the activities of the Manchester group: Mixing and CP violation in $D^0 \to Kshh$ decays + Geant 4 improvements of the Ks interactions
  - Previous related experience: CP violation in $D^0 \to hh$ decays and GEANT 4 simulation of the NA62 calorimeter and GEANT 4 simulation studies of the NA62 RICH detector

- PI
  - Made contact with the fellow at BESIII
  - The fellow wanted a joint project on LHCb & BESIII projects
  - Project on CP violation and mixing in $D^0 \to Kshh$ decays with input from BESIII (different approach, developing a new method) and CP violation in $D^0 \to KsK\pi$ decays

Training

- If you are not convincing that there is a training perspective in your project even if everything else is perfect, the project will likely not be approved

- **Fellow**
  - Further GEANT 4 training + project (secondment at a company)
  - Statistical combination of results using a specific tool

- **PI**
  - Offered to the fellow: New experiment, CP violation, new method (developed by the Manchester group)

Your proposal

- Why now?

- Why you?

- Why at the place of your choice?

- What is new?

- Impact?

- Part A - online

- Your & PI contact details

- Abstract

- Acronym - choose a catchy one

- Lots of questions to answer

Part B1: The essence of your proposal

1 Excellence

1.1 Quality and credibility of the research/innovation project; level of novelty, appropriate consideration of inter/multidisciplinary and gender aspects

Introduction, goals, methods, motivation: why now, why you

What is new?

1.2 Quality and appropriateness of the training and of the two way transfer of knowledge between the researcher and the host

Training: VERY important aspect; What set of skills can they teach you and what can you teach them (how will the group benefit from your presence)

Training courses and methods developed in the group, specific research training (but also training in grant writing, equality and diversity courses, public engagement,, etc.)

1.3 Quality of the supervision and of the integration in the team/institution

This is about your supervisor and their previous research and supervision experience (also how well are they known internationally, are they a leading expert in their field, any significant responsibility roles?);

How will you be supervised, how often can you discuss your progress?

Team: are you joining a strong team? will the team make your integration smooth: weekly meetings, collaboration?

Anything like Athena Swan awards and commitment of the institute to make your integration as a woman in STEM easier?

1.4 Potential of the researcher to reach or re-enforce professional maturity/independence during the fellowship

Good track record for your career stage. Publications, positions of responsibilities, if applicable: number of citations of your previous work, any teaching and supervision activities already?

Are you an enthusiastic and hard working person open to challenges?

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2 Impact

2.1 Enhancing the future career prospects of the researcher after the fellowship

Most people are looking towards a tenure(-track) position: if your fellowship is successful how will it increase your chances ? What skills will you gain that will bring you closer to the goal? Is the field active?
Alternative paths are valuable as well if you prefer to work in the industry: Big Data, computing skills, simulation, etc.

2.2 Quality of the proposed measures to exploit and disseminate the project results

Plan for presentation of your work at conferences, plan for publication (open access publication? or do you need to pay for your publication);
How can your results be used? Any links to industry , commercialisation ? (do you need to think of patents?)

2.3 Quality of the proposed measures to communicate the project activities to different target audiences

Outreach events: festivals, exhibitions, engagement with schools and masterclasses?

Part B1: The essence of your proposal

3 Quality and Efficiency of the Implementation

3.1 Coherence and effectiveness of the work plan, including appropriateness of the allocation of tasks and resources

Very detailed plan, with tasks, milestones and deliverables (+ timeline); add a Gantt table to visualise your **research project** management plan

Don't forget to include any other points e.g.: **Publications; Outreach; PhD student collaboration and co-supervision; Teaching; Training; Conferences and workshops** to the Gantt table

3.2 Appropriateness of the management structure and procedures, including risk management

How will you manage the project, how does the research team function? Research support officers? Progress and development annual review? How will you manage your expenses?

Risk: What can go wrong? If it goes wrong is your project doomed or can you still do something about it? Do you depend on data taking, etc? Can a collaboration review delay your plans for publication?

3.3 Appropriateness of the institutional environment (infrastructure)

Why do you go to the University of your choice? If you need a lab/ clean room/ computing cluster: can they provide it?

Part B2

- CV: good structure important, no page limit
  - A good list of suggestions what to include in the guidelines

- Capacity of the host institute: lots of help from the Research support team

- Ethics: not applicable to particle physics (unless the research is conducted in a non-member country)

Proposal implementation

- Read the guidelines, check previous successful examples

- Start with formatting the documents: margins and fonts.

- Allows to keep control how much space you have

- Make a rough plan how to split the available 10 pages for B1 e.g. 1.5 pages for 1.1, …, half a page for 3.3,.. etc.

- Time: 3 full weeks

- Allow time for feedback and for the research support team

Practicalities

- Milestones and deliverables

- Gantt tables: useful to visualise your idea of the project management (colourful vs accessible for visually impaired people)

- If the space allows, add plots/ graphs

- Use formulae if you need to but explain everything

- Looking at previous successful examples can be useful

Questions?

BACKUP