

Researcher Training in EU and Funding Opportunities

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Overview



- **Interdisciplinary R&D** – driving cutting-edge science and innovation
- **Researcher training** – boosting skills and maximizing employability
- **Communication** – maximizing reach and impact

Own Background



- Beam Diagnostics 2008 - 2012
 - **21 Fellows, 32 partners** www.liv.ac.uk/ditanet



- Laser Applications 2011 - 2015
 - **19 Fellows, 38 Partners** www.la3net.nu



- Accelerator Optimization 2011 - 2015
 - **23 Fellows, 35 Partners** www.opac-project.eu



- Medical Applications 2016 - 2020
 - **15 Fellows, 33 Partners** www.oma-project.eu



- Antimatter R&D 2017 - 2021
 - **16 Fellows, 35 Partners** www.ava-project.eu



- EuPRAXIA-DN *since 2023*
 - **12 Fellows, 23 Partners** www.eupraxia-dn.org

MSCA Networks

Centre for Doctoral Training



- Data Intensive Science 2017 - present
 - **~80 PhD students, 2 universities + industry**
 - www.livdat.org and www.livinno.org



Personal background



- **Coordinator** of six MSCA research networks across life sciences, physics and engineering, overseeing training of ~100 Marie Curie Fellows
- **Director** of two Centers for Doctoral Training in Data Intensive Science with ~40 PhD students per center
- **Head of Physics Department** (2016 – 2023), responsible for training of +150 PhD students, plus all undergraduates and numerous fixed-term staff
- Chair of **STFC's Education Training and Careers Committee** and member of **UKRI's Skills Advisory Group** (2021 – 2023), shaping researcher development in UK
- Member of **STFC Council** (since 2023), contributing to strategic research and skills planning across all areas of STFC research.

Interdisciplinary R&D



- MSCA networks are often part of something much bigger.
- For example, the **EuPRAXIA MSCA Doctoral Network** is closely connected with:
 - **EuPRAXIA Design Study** (Horizon 2020)
 - **EuPRAXIA Preparatory Phase** (Horizon Europe Infra)
 - **EuPRAXIA facility** (ESFRI roadmap, national and international funding)
 - **EuAPS** (Nationally funded, Italy)
 - **PACRI** project (Horizon Europe)
 - and more...

Doctoral Networks are stimulating collaboration and ideal to pave the way for follow-on projects.

European Competence Framework



Researcher Training



- Major issue: We live in one of the most dynamic times where the required skills for researchers are changing at record speed.
- **Key skills** now required are not even mentioned in any of the major competence frameworks, e.g. digital literacy, prompt engineering, opportunities and challenges related to tools such as ChatGPT, looking after each other.
- **Consortia** are powerful way to go beyond framework and define future best practice.
- **Role of industry?** We need to re-think researcher training...in particular the opportunities from placements, see LIV.INNO.

Researcher Training



- Joint organization leads to improved efficiency and better experience.

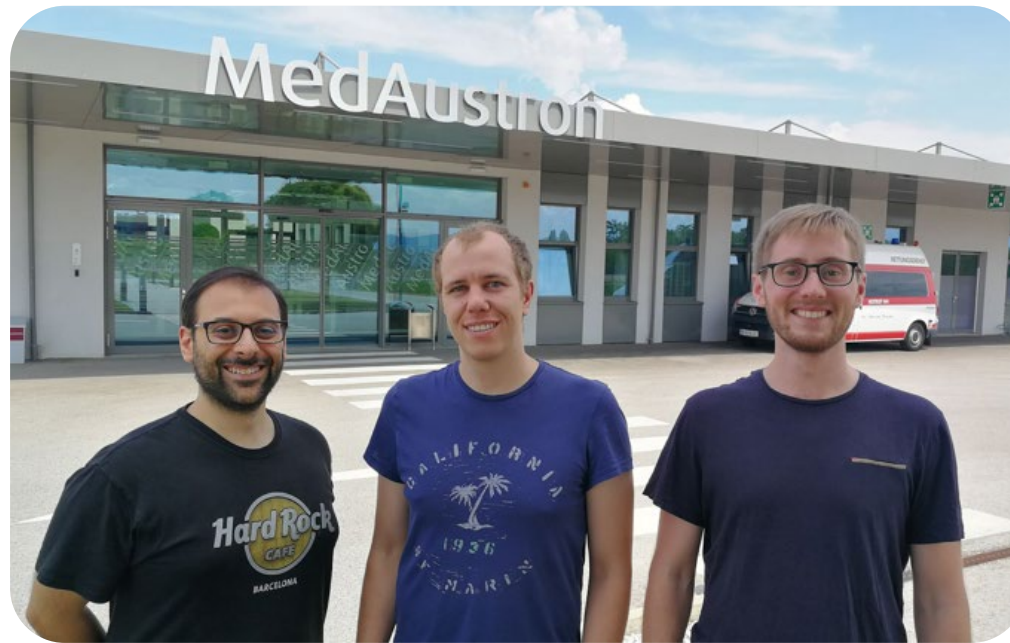


- Employability aspects are more attractive for businesses as they get access to larger pool of Fellows – *and vice versa*.
- Close links allow to identify best practice and share experiences.

Researcher Training



Fellows get insight into other cutting-edge research areas; this is an excellent opportunity for them to make contacts – and identify future job opportunities



Case study: Miha Cerv (center) held Fellowship in AVA, now working on medical accelerators (OMA); links were created through joint events.

Outreach & Communication



- Press releases, Newsletters, Symposia, Open Days, etc – all have more and wider impact if organized between several projects.
- Enhanced visibility and better use of (always limited) resources are immediate benefits.
- Examples:
 - <https://marie-curie-day-2017.org/>
 - <https://indi.to/AccSciSoc>
 - <https://tinyurl.com/PhysicsofStarWars>

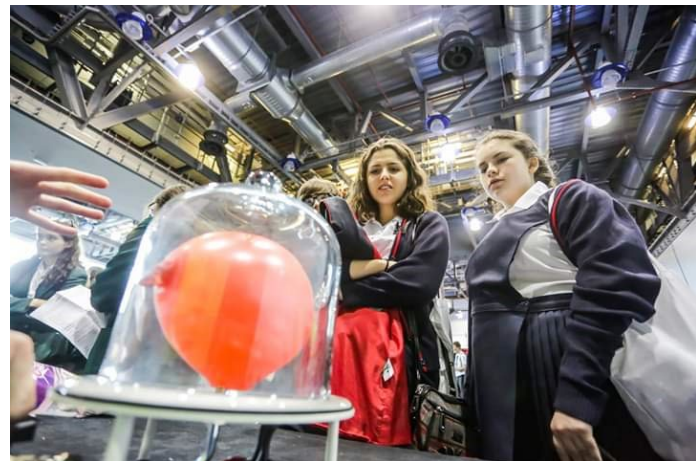
Marie Curie Day 2017



- Introduction by Marie Curie (actor);
- Talks by research leaders, online connection across three sites with other partners connected;
- Hands-on activities for Schools;
- Poster sessions for the general public.



Accelerators for Science and Society



<https://indi.to/AccSciSoc>



Funding Opportunities



- **MSCA**: Doctoral Networks and Individual Fellowships
- **Erasmus Mundus**
- **COST Action** for workshops and meetings, knowledge transfer
- National and bi/multi-literal graduate schools and centers for doctoral training
- EuPRAXIA is a great platform for this – and we need to do more to train the next generation of experts!

Summary



- Successful researcher training programs are based on **cohorts** and connect universities, research centers and industry.
- **Cross-sector experience** broadens skills, drives innovation and improves employability.
- **Interdisciplinary training events** support knowledge transfer and pave the way for collaborative R&D.
- **Successful training model** has been promoted through international workshops and L&T conferences.
- Significant **impact** generated in our research community and engaged Millions around the world with our research.

More needs to be done! What are we waiting for?