# Research Infrastructures Consortium for Horizon 2020

Tony Lomax and Francesca Albertini

Experiences with Horizon Europe research infrastructures for proton therapy in Switzerland



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### http://www.rich2020.eu/



# Who we are







Tony Lomax, Head of Medical Physics, Centre

Francesca Albertini, Medical physicist and senior researcher





# Our involvement in European projects

1. Allegro (2009-2011) Project partner

ALLEGRO – Early and late health risks to normal/healthy tissues from the use of existing and emerging techniques for radiation therapy

2. Andante (2011-2016) Project partner Multidisciplinary evaluation of the cancer risk from neutrons relative to photons using stem cells and the analysis of second malignant neoplasms following paediatric radiation therapy

3. INSPIRE (2018-2022) Project partner



INfraStructure in Proton International REsearch

4. RAPTOR (2021-2025)
Leading house
PI – Francesca Albertini

REAL-TIME ADAPTIVE PARTICLE THERAPY OF CANCER



### Allegro/Andante projects (Program Fission)

Physical dose



### Neutron dose



0.50

0.05

### Positives

- Brought experts and different competences together.
- Covered more ground than trying to do everything individually
- Overall positive experience

### Challenges

- Collaboration over large distances difficult (some project partners in west coast of US)
- Coordination of research challenging due to difficulties in organizing regular meetings.



# InspireProject (Program INFRAIA)



### Positives

- Wide ranging project that brings many proton therapy experts and facilities together – very positive
- Well organized project, with well-defined work packets
- Provides an effective framework which helps to provide access to proton therapy facilities to groups outside of consortium (large and small)
- Active involvement of industry leading to resear in INSPIRE being commercialised (examples FLAS MSIC) and IBA NTCP database
- Highly visible project in the proton therapy community – good for protons, good for the EU
- Very positive experience



# InspireProject (Program INFRAIA)



### Challenges

- Proposals tend to be 'administratively' heavy
- Financing and resourcing complicated, e.g. definition of unit/actual costs not clear to many when proposal being prepared
- Logging of resources and (particularly) beam time resources (electricity, maintenance etc) complicated and challenging.





## (Program MSCA-ITN)

(To start in March 2021)



### Goal of the RAPTOR project

- Bring together clinical and industrial know-how medical imaging and computational science
- To train a new generation of medical physicist with a focus on advanced proton therapy
- To enable the shift from manual and step-wise treatment approaches to an automatic and seamless treatment
- To empower RAPTOR ESRs to become the next generation of European PT experts for the bene of healthcare, industry and academic research





### (Program MSCA-ITN)

(To start in March 2021)



### Current challenges

- Definition of strategy for PhD enrolment (balar between a fully centralized enrolment vs enab the single institute input)
- Balance between research and management budget (E.g. choice between centralized or distributed budget)
- Definition of Consortium Agreement
- Enrolment of a suitable Project manager to he with coordination and administration



# In summary

- Our experience with European Grants is in general very positive
- We found Horizon Europe Research Infrastructures as an extremely valuable resource for fostering multidisciplinary and cross-sector (academy/industry) projects
- These can provide a useful and necessary platform for bringing together 'big' and 'small' players (e.g. Transnational access part of INSPIRE project)

 Administration overheads however are high, both for 'leading house' and partner institutes. This can