



We are looking for a talented and motivated scientist (PhD student) to advance an exciting research project:



## Early Stage Researcher (ESR9)

### Development of mass spectrometry imaging tools to study drug distribution and associated tissue-specific effects

#### About INSPIRE – A European Training Network in Safety Pharmacology

The vision of INSPIRE is to advance and “inspire” Safety Pharmacology by exploring new technological capabilities to address emerging cardiovascular safety concerns. INSPIRE unites expertise from academic teams, technology-providers, pharmaceutical companies, regulators and hospitals to create a European training platform for 15 Early Stage Researchers (ESRs). Key innovative aspects of INSPIRE include: i) *in vitro* humanized cardiomyocytes (CM) assays, ii) unparalleled *in vivo* hardware/software solutions, iii) *in silico* predictions of haemodynamics, **iv) mass spectrometry imaging (MSI)** of drug exposure, v) exploration of mechanisms of late-onset cardiovascular toxicity, as observed in cardio-oncology, and vi) early integration of feedback from industry and regulators.

Overall, INSPIRE constitutes a multidisciplinary and intersectoral training programme with a balanced combination of hands-on research training, intersectoral secondments, local courses and network-wide events on scientific and transferable skills, enabling future R&I collaborations. Hence, INSPIRE will equip a future generation of scientists with a wide range of scientific knowledge and the ability to adapt to a dynamic industry.

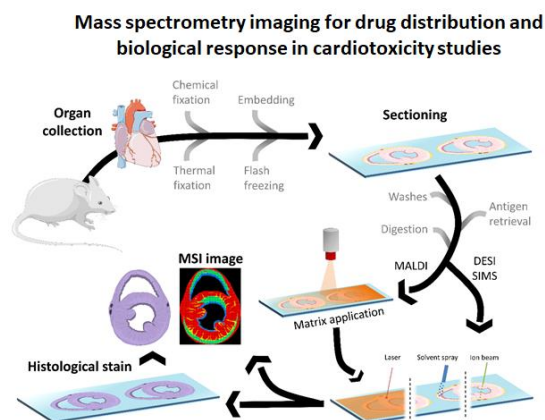
#### Description of the PhD project

##### Scientific Objectives:

- Develop multimodal MSI methods to study drug distribution associated to cardiovascular pharmacotoxicity in rodent and human cardiac/vessel biopsies.
- Correlate drug distribution and metabolization with potential toxic effects by combining MSI and high throughput LC-MS.
- Integration of multimodal MSI data with other read-outs (e.g. contractility/electrophysiology of hiPSC CM or *in vivo* ECG, LVP) for a more accurate safety pharmacology evaluation.

##### Tasks and Responsibilities:

- You perform scientific research within a collaborative international research consortium (training network).
- You deliver written reports of your research on a regular basis.
- You prepare a doctoral thesis on the topic of mass spectrometry imaging applied to the field of drug safety in relation to cardiovascular toxicity as potential tool for safety pharmacology.
- You publish scientific articles related to the research project of the assignment.
- You contribute (limited) to teaching activities.
- You support the valorization of research results into tangible deliverables.
- You participate to scientific meetings and conferences to present your research to the scientific community.
- You actively participate in outreach activities aimed to promote your scientific research to a wider audience.
- The selected candidate will get in contact with the other members of this international consortium and will benefit from the tailored training programme.





- The selected candidate will take part in the following planned secondments: 1. Academic secondment to the University of Antwerp (2 months, Belgium) for collecting *in vivo* cardiac samples for MSI. 2. Non-academic secondment to NCARDIA BV (1 month, the Netherlands) for collecting *in vitro* CM samples and to evaluate the influence of different maturation or cultivation protocols by MSI.

## About Maastricht University and the Maastricht MultiModal Molecular Imaging Institute

Maastricht University contributes to innovative health care, the education of knowledge workers for the job market and collaborative research and knowledge transfer with regional partners from business and government.

The Maastricht MultiModal Molecular Imaging institute (M4I) and its division of Imaging Mass Spectrometry, chaired by prof. Ron Heeren, is world leader in high (mass and spatial) resolution molecular imaging of biological surfaces, with concerted research on three topics: i) fundamental physics of desorption and ionization of large biomolecules, ii) development of innovative instruments and methods for the generation of ultrahigh resolution molecular images and iii) development and application of mass spectrometry based molecular imaging to molecular histology for nanomedicine.

## Profile & requirements

- ✓ Applicants must hold a MSc or equivalent in the field of Chemistry, Biochemistry, Pharmacy or similar field.
- ✓ Applicants must have a solid knowledge/background in mass spectrometry and/or mass spectrometry imaging.
- ✓ Applicants can be of any nationality, but have to comply with the “Mobility Rule (cf. infra)”.
- ✓ Applicants must have an ability to understand and express themselves in both written and spoken English.
- ✓ Applicants must be eligible to enrol on a PhD programme at Maastricht University.
- ✓ Applicants must have the necessary academic skills and background to make the success of a doctoral degree.
- ✓ **H2020 MSCA Mobility Rule:** researchers must not have resided or carried out their main activity (work, studies, etc.) in the country of the host organisation for more than 12 months in the 3 years immediately before the recruitment date. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status are not taken into account.
- ✓ **H2020 MSCA eligibility criteria:** Early Stage Researchers (ESRs) must be, at the date of recruitment, in the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree. Full-Time Equivalent Research Experience is measured from the date when the researcher obtained the degree entitling him/her to embark on a doctorate.

## Benefits

- ✓ A competitive salary plus allowances. Moreover, funding is available for technical and personal skills training and participation in international research events.
- ✓ The selected candidate will benefit from the designed training programme offered by the host organisation and the INSPIRE consortium.
- ✓ The selected candidate will participate in international secondments to other organisations within the INSPIRE network and in outreach activities targeted at a wide audience.

Please, find additional information in the [Information note for Marie Skłodowska-Curie ITN fellows](#)

## Application

Interested candidates are invited to apply for this position by filing in the application form on our website ([www.inspire-safety-pharmacology.eu](http://www.inspire-safety-pharmacology.eu)), via this link: <https://www.uantwerpen.be/en/projects/inspire-safety-pharmacology/job-openings/submit-your-applicat/> and contacting directly with Prof. Heeren and Dr. Cillero-Pastor.

## For additional information

Prof. Dr. Ron Heeren:

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