

## RenalToolBox – Project Description

<b>ESR Number:</b>	ESR7	<b>Host:</b>	iThera
<b>Project Title:</b>	Innovative MSOT strategies for evaluating the beneficial effects of regenerative medicine therapies on different aspects of renal function.		
<b>Research Field:</b>	Biological/Biomedical Sciences		
<b>Contact Person:</b>	Prof Patricia Murray		
<b>Academic Supervisor(s):</b>	Prof Patricia Murray, Dr Bettina Wilm, Dr Raphaël Lévy		
<b>Industry Supervisor(s):</b>	Dr Tim Devling, Dr Neal Burton		
<b>Group's website:</b>	www.renaltoolbox.org, www.ithera-medical.com		
<b>Full Address:</b>	iThera Medical GmbH Zielstattstrasse 13 81379 Munich Germany		
<b>Expected Start Date:</b>	01 April 2019		
<b>Description:</b>			
<p>The RenalToolBox is an EU-funded ITN that aims to develop novel tools and technologies to assess the safety and efficacy of cell-based regenerative medicine therapies for kidney disease. You will join a team of 15 Early Career Researchers (ESR) working across 10 different institutions towards this goal.</p> <p>In this position you will be employed by iThera Medical, a German-based SME that has developed a novel in-vivo imaging technology called multispectral optoacoustic tomography (MSOT). A key advantage of MSOT is that it enables multiple imaging probes/tracers to be detected simultaneously. In this project, you will work with proprietary, and novel near-infrared tracers for monitoring different aspects of renal function that have been developed by our collaborators in Cyanagen and the University of Heidelberg. A key part of the project will be to develop methods for analysing the imaging data generated by MSOT. The overall goal of your project will be to apply MSOT to accurately assess different aspects of renal function following kidney injury, and to quantify the extent to which renal function improves following the administration of mesenchymal stromal cell (MSC)-based therapies. You will be co-supervised by academics within the University of Liverpool, where you will validate the MSOT data using established techniques such as radioisotope renography (MAG3 scan) using single positron emission computed tomography (SPECT).</p> <p>You will develop skills in the following areas:</p> <ul style="list-style-type: none"> <li>- MSOT and nuclear imaging (in collaboration with the University of Liverpool)</li> <li>- Use of mouse models of disease to determine risks (safety) and benefits (efficacy) of MSCs as therapies for kidney injury (in collaboration with the University of Liverpool)</li> <li>- Image analysis methods for accurately assessing different aspects of renal function simultaneously.</li> </ul>			

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The post holder will be employed on a fixed term (36-month contract) and enrolled as a PhD student at the University of Liverpool. The candidate will be expected to spend periods of time with other partners in the consortium.

More information about this consortium and the project can be found in [www.renaltoolbox.org](http://www.renaltoolbox.org).

### Required Skills / Qualifications:

#### Essential:

- BSc degree in a relevant subject (biomedical sciences, bioengineering, physiology or other related subjects)
- Excellent oral and written communication skills with well-developed interpersonal skills.
- Ability to work effectively and collaboratively within a multidisciplinary team.
- Enthusiastic, self-motivated individual, willing to take part in personal skills training, international travel and public outreach activities.
- Demonstrated commitment to high-quality research.

#### Desirable:

- A Master's degree in biomedical sciences or a similar discipline.
- Good understanding of renal physiology.
- Research experience involving quantitative analysis of imaging data.
- Experience with preclinical imaging (photoacoustic and/or nuclear imaging).

The candidate is also required to fulfil the research experience and transnational mobility requirements outlined in <https://renaltoolbox.org/job-positions/>

### Other requirements:

N/A