Integrated Training in Dry Eye Disease Drug Development (IT-DED³)

PhD student - Early Stage Researcher (ESR11)
Development of novel diagnostic tools for dry-eye disease using optical coherence tomography (OCT)

About IT-DED³

The European Network for **I**ntegrated **T**raining in **D**ry **E**ye **D**isease **D**rug **D**evelopment (IT-DED³) aims to deliver multidisciplinary and entrepreneurial researchers trained to develop new therapies for patients suffering from Dry Eye Diseases (DED). DED is a chronic, multifactorial disease of the ocular surface and is a major and increasing healthcare problem due to its high prevalence and economic burden because of the ageing population and frequent computer/tablet/smartphone usage.

Both the research and training programme of IT-DED³ will deliver researchers with an enhanced career perspective and employability, who know how to use their entrepreneurial skills to move drug development projects in DED and other fields to the next technology readiness level.

About the host organisation

University Hospital Cologne (UHC) meets the challenge of creating societal value in specialized individual medicine and in increasing public health in the region as well as beyond. 59 clinics and institutes are covering an almost complete range of specialized disciplines. About half of the medical services –according to the case mix- relate to high-end- medicine. Over 55.000 inpatients (case mix volume over 92.000) and over 252.000 outpatients are treated annually. The rapid shift of medicine due to new insights in the molecular basis of life increases opportunities to translational medicine in oncology, neurology and endocrinology. Research and treatment are closely linked. Due to demographic trends UHC offers treatment to a large group of mainly elderly and multi-morbid patients with complex diseases. The interconnection of clinicians and scientists in CECAD Research Center, the Centre for Molecular Medicine Cologne, Centre for Genomics, the Max Planck Institutes, and many others more promote innovative diagnostic methods and treatments for patients with age related neurodegenerative or metabolic diseases.

Tasks description

The candidate will apply and further develop optical coherence tomography (OCT) to improve the diagnostic ability of the method in dry eye disease related questions, such as anterior segment OCT-angiography and OCT-meibography. Algorithms for the acquisition and processing of corresponding OCT data will be developed, verified and applied. The successfully developed software approaches will be implemented in a graphical user interface. Normal and pathologic data will be gathered in preclinical and clinical studies and analysed to determine diagnostic imaging markers. Innovative treatment approaches will be tested based on the newly realized diagnostic imaging.

Profile and requirements

- ✓ Applicants can be of any nationality.
- ✓ The successful candidate must hold a MSc or equivalent in the field of physics or computer science or equivalent with a strong focus on imaging and image processing.
- ✓ Furthermore the candidate should have experience in programming and handling multi-dimensional image data (e.g. C++, Python, MATLAB, MeVisLab) and interest in clinical issues.
- ✓ The candidate must have willingness to participate in animal experiments.
- ✓ Applicants must have an ability to understand and express themselves in both written and spoken English to a level that is sufficiently high for them to derive the full benefit from the network training.

- ✓ Applicants must be eligible to enrol on a PhD programme at the host institution (or at a designated university in case the host institution is a non-academic organisation).
- ✓ 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, at the date of recruitment by the host organisation, be 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 (either in the country in which the degree was obtained or in the country in which the researcher is recruited, even if a doctorate was never started or envisaged).

Benefits

- ✓ You will be employed by the host organisation for 36 months.
- ✓ A competitive salary plus allowances. Moreover, funding is available for technical and personal skills training and participation in international research events.
- ✓ You will benefit from the designed training programme offered by the host organisation and the IT-DED[3] consortium.
- ✓ You will participate in international secondments to other organisations within the IT-DED[3] network and in outreach activities targeted at a wide audience.

Please, find additional information in the *Information package for Marie Skłodowska-Curie fellows*

Application

Interested candidates are invited to apply for this position by filing in the form on our website (www.itded3.eu), via this link: www.uantwerpen.be/en/projects/dry-eye-disease-drug-development/job-openings/submit-your-applicat/

Additional information

For additional information about the research project and this individual position, please contact:

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