Opto-Biomechanical Eye Research Network (OBERON)

Marie Skłodowska-Curie Innovative Training Network in Active and Healthy Ageing

Open call for 15 fully funded PhD positions

The 'Opto-Biomechanical Eye Research Network' OBERON is a Marie Skłodowska-Curie Action (MSCA) Innovative Training Network (ITN) that will involve collaboration and secondments between 8 beneficiaries and 5 partners (3 hospitals, 2 industry partners), spanning 8 European countries (United Kingdom, Belgium, Portugal, Switzerland, Spain, Poland, France and the Netherlands) in a four-year (2021-2025) programme of interdisciplinary and cross-national doctoral education.
OBERON is offering 15 PhD projects for early career researchers to undertake doctoral research training in a broad array of scientific, computational, and clinical techniques and methodologies that address fundamental questions about the optical and material properties of the eye. In addition to individual research projects, successful applicants will undertake placements, specialised courses, workshops and skills-training to enable them to become future academics and/or entrepreneurs in vision science and eye research.
Applications should be made by 18th April 2021 with an expected starting date around July 2021. Each PhD will be for 36 months full time.
OBERON aims to create a unique, biologically viable and physiologically relevant modelling platform describing the interactions between the optical and mechanical properties of the eye so that it can be adapted and used for investigation and enhancing treatment for a wide range of ocular conditions.
The list of the 15 PhD projects<http://eyemodel.eu/projects/> is given below. To apply to a specific position/project, click on the title and follow the instructions. Please, check individual ESR projects for details as well as for specific / local acceptance requirements.

List of available PhD / ESR positions:
Anglia Ruskin University, UK

- ESR 1: Optomechanics of the lens and accommodative system of the eye
- ESR 5: Modelling the accommodative system in eyes of varying refractive errors

University of Bern, Switzerland

- ESR 2: Material characterization of cornea, sclera and lens in healthy eyes with age
- ESR 12: Measuring and modelling refractive changes with localized corneal and scleral stiffness changes

Politechnika Wroclawska, Poland

- ESR 3: Measurement and analysis of eye dynamics and its contribution to image quality
- ESR 4: Measuring and modelling the inertial movements of a natural crystalline lens and its relation to the IOP magnitude

Agencia Estatal Consejo Superior de Investigaciones Científicas, Spain
ESR 6: Optical changes of presbyopic eyes in response to accommodative stimuli
ESR 7: Modelling the lenticular gradient index, curvature and stiffness and the impact on optical performance

Universiteit Antwerpen, Belgium

- ESR 8 Statistical opto-biomechanical eye model
- ESR 9 Modelling emmetropization and myopization based on genetic algorithms

Universidade do Minho, Portugal

- ESR 10: Statistical wavefront model of accommodation: analysis and synthesis
- ESR 11: Off-axis wavefront model of the young and ageing human eye

Universidad de Zaragoza, Spain

- ESR 13: Optimization of corneal mechanical properties based on corneal biomarkers
- ESR 14: Simulating patient-specific refractive surgeries

AMO Groningen B.V., The Netherlands

- ESR 15: Modelling anterior capsulotomy and its effects on intraocular lens (IOL) position after cataract surgery

Requirements

- Applicants must have a Masters degree in an area relevant to the project, such as in the fields of Physics, Optometry, Optical Engineering, Biomedical Engineering, Applied Mathematics, Computer Sciences, Vision Sciences, Ophthalmology or related areas.
- Applicants must be in the first four years (full-time equivalent research experience) of their research career and have not been awarded a doctoral degree) at the time of recruitment
- Applicants must not have resided or carried out their main activity (work, studies etc.) in the country of the recruiting beneficiary for more than 12 months in the three years immediately before the recruitment date. Additional information and requirements on mobility rules can be found in the following link https://ec.europa.eu/research/mariecurieactions/sites/mariecurie2/files/msca-itn-fellows-note_en_v2.pdf
- Proficiency in written and spoken English; knowledge of the local language is a plus
- Knowledge of modelling and/or computing skills would be an advantage
- Additional criteria can apply for each specific research project (details about each project can be found here<https://eyemodel.eu/projects/>.)

More details about the application process can be found on: https://eyemodel.eu/applications/
For further information, please contact the Network Coordinator.

José M. González Méijome
University of Minho
Network Coordinator
umin@oberon-itn.eu<mailto:umin@oberon-itn.eu>

Jos Rozema
University of Antwerp

Science Coordinator
uant@oberon-itn.eu<mailto:uant@oberon-itn.eu>

Barbara Pierscionek
Anglia Ruskin University
Training Coordinator
aru@oberon-itn.eu<mailto:aru@oberon-itn.eu>

Sabine Kling
University of Bern
Communication Coordinator
ubern@oberon-itn.eu<mailto:ubern@oberon-itn.eu>