Spectroscopic research of the early development stages of chicken embryos without opening the egg shell

An internship position is available at the Biomedical Engineering & Physics department of the Academic Medical Center (AMC). In the group of Prof. Maurice Aalders novel spectroscopic techniques for applications in biophysics are developed. Research is performed by a multidisciplinary team that includes physicists, engineers, medical doctors, biologists and chemists. The internship is a collaboration with an innovative startup company.

Background

Fertilized chicken eggs are popular models for a wide variety of medical research. Recent development in illumination sources and in advanced spectroscopic sensor technology reveal a wealth of information in the optical spectra which is only partly understood.

Research description

In this research we investigate the very early development of the chicken embryo and the embryonic blood veins without opening the egg shell. Determining the optical properties of living tissue is challenging as it is a combination of smart experimental measurements and appropriate modelling of the light-tissue interaction.

Requirements

We are looking for a Master student with knowledge of physics and engineering and affinity for medical/biological applications. The duration of the internship can be adjusted according to the curriculum.

Learning outcome

The student will gain knowledge in the field of biomedical optics and develop skills in building set-ups, understanding models to describe light-tissue interaction and apply these models to analyse the data. Being part of an interdisciplinary and international research group, the student will acquire competences including: (1) collaboration, (2) scientific writing, and (3) presentation.

Contact

Prof. Dr. Maurice Aalders, m.c.aalders@AmsterdamUMC.nl

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