

Ewa Sieliwarczyk

Project title: *Exploration of novel electrocardiographic markers and genetic drivers of electrical dysfunction in dilated cardiomyopathy*

Duration	6 months
Short Bio	I am a 5 th year trainee in medical genetics with a special interest in inherited heart disease. In 2023 I successfully completed my PhD on the topic of inherited cardiac arrhythmia, which included both clinical studies and genetically engineered zebrafish models of cardiac disease (see https://www.sciencefiguredout.be/about-fluorescent-zebrafish-and-sudden-cardiac-death for more info). Since then, I've been interested in expanding my scientific expertise to the use of artificial intelligence in inherited cardiac disease.
Home Institution	University of Antwerp/Antwerp University Hospital
Host institution	Imperial College London
Project description	At prof. James Ware's Cardiogenomics research group at Imperial College London, I've been able to develop deep learning models for the analysis of the electrocardiogram (in collaboration with prof. Fu Siang Ng's group). These models were used to identify novel genetic and phenotypic associations with normal cardiac electrophysiology. Additionally, I've been able to apply these techniques to explore the role of the electrocardiogram in inherited cardiac diseases. The models I developed can be used to improve disease and outcome prediction in dilated cardiomyopathy.
Personal statement	My stay in London has been invaluable in my career development. By learning from experts in genomic analysis and machine learning, I've been able to learn how to apply these techniques independently. These skills and the connections I made will be extremely helpful in establishing new research projects on these topic in my home institution.