University of Leicester
AIM studentship project 2026

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Section 2 – *Project Information*

Project Title	Developing predictive models for side effects from radiotherapy for breast cancer

Project Summary

Radiotherapy saves lives—but for some breast cancer patients, it can leave lasting side effects such as breast pain, changes in appearance, or arm swelling (lymphedema). These complications can affect comfort and mobility for years after treatment.

This PhD project aims to change that. We are investigating why some patients experience these side effects while others don't, looking at genetics, treatment timing, and other biological factors. For example, could the time of day you receive radiotherapy influence your outcome? Early evidence suggests it might—and your research could help uncover why.

You'll join a unique collaboration between **world-leading genetics researchers in Leicester**, **clinical oncologists in Nottingham**, and our **industry partner Therapanacea who are** a pioneer in AI-driven radiotherapy software. This means you'll gain experience across cutting-edge genomics, clinical oncology, and artificial intelligence.

Using data from thousands of patients, you'll develop advanced computer models that combine genetic profiles, imaging, and clinical details to predict individual risk. These AI-powered tools will help clinicians provide personalised risk reports before treatment begins—empowering patients to make informed choices and reducing long-term harm.

Your work will contribute to **safer, smarter, and more personalised cancer care**, improving quality of life for survivors worldwide.

References

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