

CRUK Convergence Science Centre (CSC) Overview

[The CRUK Convergence Science Centre](#) (CSC) is a partnership between the Institute of Cancer Research (ICR) and Imperial College London, which brings together world leading expertise in cancer research, engineering and the physical sciences (EPS) to address the big challenges in cancer. One of our strategic goals is to train future scientists by building cross-institutional research teams with supervisors from distinct disciplines who will equip our PhD students with cutting-edge convergence research skills.

Black Leaders in Cancer PhD Studentship Overview

The "Black Leaders in Cancer PhD Studentship" scheme was developed to help the next generation of Black leaders in cancer research. This programme was developed in [consultation with CRUK research community](#) and in close collaboration, [Black in Cancer](#) and the [Windsor Fellowship](#). By helping candidates from Black heritage backgrounds build their career in cancer research-related fields, this exciting programme is designed to make an immediate and tangible impact on the diversity of the research workforce.

This scheme is open to people who self-identify as being from a Black heritage background, including a mixed background, for example: Black African, Black Caribbean, Black Other, Mixed background (to include Black African, Black Caribbean or other Black backgrounds). The CSC has been selected as one location to implement this scheme.

One studentship is available starting October 2025. The student will have access to both institutions and benefit from the world class research infrastructure and expertise across the two institutions. The student will become a member of the CRUK Convergence Science Centre PhD cohort which is a unique group of students working across distinct disciplines to tackle the big problems in cancer. A unique convergence science training programme will provide the skills and language to navigate different disciplines. In addition students will also benefit from a comprehensive programme of mentoring, career support, leadership training and networking led by the [Windsor Fellowship](#) and [Black in Cancer](#).

Successful candidates will undertake a four-year research training programme under the guidance of the supervisory team. Students will receive an annual stipend, currently £23,000 per annum and project costs paid for the four-year duration. Convergence Science PhDs cover tuition fees for UK students only. Funding for overseas fees is not provided, international students are invited to apply subject to outlining how they will meet the difference in tuition fees.

CSC Research Themes

The CRUK CSC has two research themes: i) Convergence Discovery Research, aiming to identify cancer vulnerabilities through the integration of Discovery Research and clinical materials, and ii) Interventional Science, covering technological innovations in early detection and diagnosis, novel interventions and therapy monitoring.

The primary focus of **Convergence Discovery Research theme** is to support collaborative endeavours that develop new technologies to address currently intractable problems in cancer biology, and to translate these innovation to the clinic, whenever possible. Closely supported by our Clinical Development initiative, our Convergence Discovery Research theme aims to create a virtuous loop between Discovery and Clinical research (Iterative and reverse translation), allowing clinical trial materials (e.g. trial data, liquid and solid biopsies) to drive Discovery Research to, in return, inform and guide future clinical trials. Our ambition is to engage engineering and physical science (EPS) research groups to utilise the extraordinary potential of patient-derived models to solve unanswered biological questions, and find solutions to unmet clinical needs. This mission will also require a multi-modal Data Science approach combining OMICs, imaging, and mixed-methods research data to decipher in depth what the cancer biology can tell us in term of cancer emergence, adaptation, response to treatment, resistance, metastasis and recurrence.

The Interventional Science theme aims to put the patient at the centre of our innovations. The Centre's ambition is to support novel technologies bringing solutions to unmet needs along the patient journey. In early detection, we focus our efforts on bringing the continued development of ultrasensitive low-cost devices to detect specific early disease signals, supported by clinical positioning and adoption strategies. As modern devices need heavy data processing and analysis, we will support both hardware and software development through our Data Science initiative to connect new devices to

CSC Research Themes

achieve real-time analysis and smarter processing. For novel interventions, we will continue to develop technologies and methodologies to improve strategies for local control of advanced-stage cancers.

SUPERVISOR ELIGIBILITY

	Supervisors must fulfil the usual College criteria for eligibility to act as a PhD supervisor. ICR and Imperial supervisors <u>must receive approval from their Head of Division</u> to apply for this studentship.
Cross-institutional	Proposed projects <u>must be cross-institutional</u> (there should be at least 1 supervisor from Imperial College London, and 1 from Institute of Cancer Research (ICR).
Number of supervisors and tenure	At least one supervisor on the application must hold an academic position at ICR that is tenured over the complete period of the studentship. At least one supervisor on the application must hold an academic position at Imperial College that is tenured over the complete period of the studentship. This does not mean that supervisors who do not hold a position for the full four-year period cannot apply. They can be part of the broader supervisory team.
Expertise	The supervisors should provide different skill sets, and the most usual division will be to have one supervisor with “cancer” expertise and one supervisor with “physical/ engineering/ mathematics” expertise. These definitions are not meant to be restrictive, nor are they necessarily defined by departmental affiliations. What is important is exposure of the student to multiple disciplines, wherever these are located, to address an unmet need in cancer
External supervisors	The inclusion of external supervisors should be discussed with the CSC team before submission of the application form. Please contact them early in the process.
Cap on number of applications	A maximum of 1 application per supervisor is allowed for a given studentship call.

PROJECT REQUIREMENTS - ASSESSED COMPONENTS

Cancer led	Addresses an unmet need in cancer which aligns with the strategic research theme.
Convergence approach	<ul style="list-style-type: none"> Addresses the need for a convergence science approach to meet the challenge The appropriateness of the research teams and how the student will be trained in multidisciplinary research/share their time appropriately between teams.

PROJECT REQUIREMENTS - ASSESSED COMPONENTS

Feasibility and Suitability	<ul style="list-style-type: none"> • Training plan, including how the student will be trained in a manner that will benefit their career prospects • Achievability of the project for a postgraduate student for the duration of the funding
Impact	Describe the intended impact / scientific merit that would arise from this work. This can include fundamental insight into identifying new approaches to monitor responses to therapy more accurately and more frequently, and with lower impact on patients' lives and / or any other added value that the project can bring to the CSC, such as outreach, new collaborations (with companies) and follow-on funding. Indicate the timeframe for the achievements listed in your impact statement.
Novelty	<ul style="list-style-type: none"> • Quality and originality of the research • Clear and justified research questions • Translational potential

APPLICATION FORM

Proposal Title	Please provide a short title that accurately summaries your project.
Supervisors	Please provide the name and contact details of the supervisors including their expertise. Please include any additional supervisors whom you deem necessary for the success of your project, e.g., institutes, partners or associates.
Proposal Outline	Outline the scientific aims and approaches to be employed explaining why this meets our remit, in particular the application of novel approaches to address the research question and any translational potential. Within this section, you should include any relevant preliminary data that supports your hypothesis and proposed approach. (Up to 1000 words and 1 additional page of figures. Figure legends should not be used to add additional experimental details.)
Convergence science approach	State the novelty of the technologies and methodologies from the different disciplines to be employed. Outline the roles and contributions of the supervisors/teams. Give details of the project timeline and how you anticipate your student will share their time across the participating teams. Please note that applications that do not justify the convergence of distinct disciplines and approaches or only use well established methodologies to address the research question will not be considered within remit. (Up to 500 words)
Research theme alignment	Outline how your work aligns to our two Research themes . (Up to 300 words)
Literature references	Include a bibliography in the standard Harvard format listing any articles referred to in your proposal.
Advertising details	If your application is successful, we will advertise your project on external websites. Please list up to 5 key words/phrases that students might type into search engines to find your project.
Proposal Summary	This will be sent advertised to potential candidates during the admissions process. It should appeal to candidates coming from a EPS background.

APPLICATION AND REVIEW PROCESS

How to apply	The awards will be made based on written applications. Applications must be made using the separate application form provided. When filling in the application form it is important to demonstrate that your proposed project meets all the criteria listed. Proposals should clearly outline the innovative aspect of the research counterbalanced by its achievability in terms of time and funds. Please specify your research infrastructure, including the access to resources already in place and any additional needs in the feasibility section.
Review and Award	Each proposal will be reviewed by the CSC Training Committee whose expertise cuts across cancer biology and convergence research.
Relevant Dates	APPLICATION DEADLINE: Please email the completed application form as pdf, .doc or .docx file to CRUK CSC team (icr-imperial-convergence.centre@imperial.ac.uk) by Wednesday 16th October 2024, 5 pm.
Any Questions?	We actively encourage participants to discuss potential projects CRUK CSC team (icr-imperial-convergence.centre@imperial.ac.uk) if they are unsure of the procedure or the remit.

POST AWARD

Student Eligibility	The awarding body for these joint studentships is the CRUK. Students must therefore conform to the eligibility requirements laid down by the funding body, which normally means that the student must be categorised with UK fee status. All students must have a good honours degree (2.1 or above) in related disciplines, at MSc/MSci level (or equivalent).
CSC Training Programme and Events	Students are required participate in bespoke training and engagement activities organised by the CRUK Convergence Science Centre. They will include but are not limited to, patient and public engagement workshops, Responsible Research Innovation, and Human transformation studies course.