



ARC

ADVANCING RADIOTHERAPY CYMRU

COLLABORATION AND ENGAGEMENT EVENT 2026



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Why Collaboration Is Important

The ARC Academy Collaboration Event brings together colleagues from across the radiotherapy community to connect, share, and shape the future of radiotherapy practice in Wales. The event showcases innovative radiotherapy projects funded through the ARC Academy, highlighting emerging evidence, impact, and learning from across the programme.

Engagement events provide a valuable opportunity to strengthen collaboration across organisations and disciplines, while also creating space for discussion around key priorities for the future of radiotherapy. By bringing partners together, these events will help to foster meaningful dialogue, build new connections, and support the continued development and spread of radiotherapy innovation across Wales.



About Advancing Radiotherapy Cymru (ARC) Academy Programme

Advancing Radiotherapy Cymru (ARC) is an all-Wales programme accelerating innovation in radiotherapy. Launched in June 2023, ARC is supported by matched funding from Velindre Charitable Funds and The Moondance Foundation and will be delivered over a five-year period.

By fast-tracking new technologies, expanding access to cutting-edge equipment, and supporting service improvement across Wales. ARC aims to enhance outcomes for cancer patients, improve quality of life and experience, and reduce variation and inequalities in care.

To date, ARC has supported 17 projects across Velindre, Swansea Bay and Betsi Cadwaladr University Health Boards.

The ARC Academy is positioning Wales as a UK leader in radiotherapy training and development, helping to attract and retain a highly skilled workforce. ARC will also invest in research that directly benefits patients receiving radiotherapy across Wales.

- Supporting innovation within radiotherapy treatment, delivering improvement to treatments and service benefitting patients across Wales.
- Training the multi-disciplinary radiotherapy workforce across Wales, supporting service developments within the radiotherapy treatment pathway across Wales.
- Supporting clinically focused radiotherapy research projects.
- Expanding patient access to the SABR service.
- Expanding the stereotactic radiosurgery service.

Key Outputs

Theme 1: Innovating Radiotherapy Treatment and Services

- New clinical techniques embedded into routine practice, including adaptive radiotherapy and hippocampal-sparing whole brain radiotherapy
- National infrastructure established to support quality assurance, benchmarking and governance
- AI-enabled tools evaluated to improve efficiency, safety and consistency of care

Theme 2: Developing the Multi-Disciplinary Radiotherapy Workforce

- National education infrastructure established for non-surgical oncology
- Advanced practice and reporting roles embedded into clinical services
- Multidisciplinary training frameworks developed to support emerging techniques

Theme 3: Enabling Clinically Focused Radiotherapy Research

- New applied research studies embedded within NHS services
- Strong pipeline of academic outputs, conference presentations and workforce development
- Cross-Wales research collaboration strengthened

Theme 4: Expanding Access to Advanced Radiotherapy Techniques (SABR & SRS)

- SABR services expanded with enhanced safety and efficiency
- SRS capability extended to treat patients with more complex disease
- New clinical pathways implemented in Wales that previously required treatment outside the country

ARC Academy Projects



Innovating Radiotherapy Treatment and Services



Prashanth Bhat

Hippocampal Sparing Whole Brain Radiotherapy

The establishment of hippocampal sparing/avoidance whole brain radiotherapy (HS/HA WBRT) as a routine clinical service in Wales will introduce a more advanced approach for patients receiving prophylactic or palliative whole brain radiotherapy, with the aim of reducing treatment-related neurocognitive decline. By completion, the work will deliver a fully validated, standardised HS/HA WBRT technique supported by AI contouring, clear clinical workflows, and shared training resources, supporting wider adoption across Wales, reducing variation in practice, improving equitable access to advanced radiotherapy, and building workforce capability for future brain radiotherapy developments.



Tony Millin

Development of Online Adaptive Radiotherapy (OART)

The OART project focuses on improving the accuracy and effectiveness of radiotherapy treatments. Traditional radiotherapy plans are created weeks before treatment begins and cannot fully account for changes in a patient's anatomy over time. Online Adaptive Radiotherapy (OART) addresses this by adapting the treatment plan in real time using imaging taken immediately before each treatment session. The work centres on implementing OART using newly installed Varian Ethos machines, alongside the development of safe clinical workflows, comprehensive staff training, and robust system validation.



Support of Radiotherapy Physics Trial QA (Velindre)

Owain Woodley

Supporting the continuation and expansion of radiotherapy clinical trials at Velindre Cancer Centre during the transition to new linear accelerator hardware and treatment planning systems. By funding a dedicated temporary post to complete repeat quality assurance and transfer trials across new platforms, the project ensures uninterrupted patient access to clinical trials, reduces pressure on existing staff, and supports the safe introduction of new techniques. This work strengthens Wales' ability to participate in high-quality, multi-centre radiotherapy trials now and in the future.



James Williams

Support of Radiotherapy Physics Trial QA (Swansea)

Supporting the transition to a new radiotherapy treatment planning system (Monaco) at the South West Wales Cancer Centre by regaining national Radiotherapy Trials Quality Assurance (RTTQA) approval for clinical trial treatments. It involves developing new planning techniques, completing required dosimetry audits, and submitting updated test plans to ensure trials can continue safely on the new system. This work is essential to ensure patients can continue to access and participate in cutting-edge cancer clinical trials during and after the transition.



Rhys Carrington

DRAGON-QA: Data driven Radiotherapy Assessment and Governance through Ongoing National Quality Assessment

A national data-driven quality assurance platform is being developed to enable benchmarking of radiotherapy plans across centres in Wales. By securely collecting and analysing anonymised treatment data, it allows comparison against standardised metrics and supports identification of variation in practice. This facilitates continuous improvement, sharing of best practice, and evidence generation for adoption of new technologies, strengthening overall quality of care.



Leah Cox

Photobiomodulation Therapy

Photobiomodulation therapy is being introduced to reduce the severity of treatment-related side effects in head and neck cancer patients undergoing radiotherapy. Delivered as a short, daily self-administered intervention, it offers a practical and patient-friendly approach to supportive care. Evidence from other centres suggests reduced morbidity and improved treatment tolerance. Adoption within Wales addresses variation in access and enhances the overall patient experience.



Developing the Multi-Disciplinary Radiotherapy Workforce



Hannah Russon

Velindre Oncology Academy

A national Academy has been established to deliver accredited non-surgical oncology education, training, and upskilling across Velindre, Wales, and wider partners. By consolidating education into a single, coordinated offer, it removes duplication, standardises competencies, and creates clear, accessible career pathways. Flexible delivery models support a modern workforce operating across multiple sites and disciplines. The Academy strengthens recruitment and retention, builds advanced practice capability, and ensures the workforce is equipped to adopt new technologies and models of care, directly contributing to improved patient outcomes and long-term service sustainability.



Marie Glyn Jones

Radiography Training Posts

Targeted training posts are supporting the development of advanced radiographer reporting roles in ultrasound and plain film imaging. By enabling postgraduate training alongside maintained service delivery, the initiative expands diagnostic capacity without increasing reliance on consultant radiologists. This supports faster turnaround times within cancer pathways, including radiotherapy and SACT, and aligns with prudent healthcare principles. The model also creates a more flexible and resilient workforce, supporting safe role extension and long-term service sustainability.



Lucy Wills



Douglas Etheridge



Ffion Wynn

Multi-Professional Radiotherapy Target Definition (MPRTD) Programme

A national, multi-professional education and training programme is being developed to standardise radiotherapy target delineation across Wales. Initial work has assessed current practice, workforce capacity, and variation in approach, providing a clear evidence base for implementation. Building on this, a nationally endorsed training framework is being established, defining the competencies required for clinicians, radiographers, and physicists to undertake target delineation safely and consistently. The programme will deliver a quality-assured, accessible training model aligned to service needs and future demand. By improving consistency in outlining, a critical determinant of treatment accuracy, the programme strengthens clinical quality, supports workforce sustainability, and underpins safer, more effective radiotherapy delivery across all centres in Wales.



Victoria Trainer

Expansion of South Wales Molecular Radiotherapy and Theragnostics Service

Capability in molecular radiotherapy and theragnostics is being expanded to support delivery of personalised, systemically targeted cancer treatments. Workforce development, including MSc-level training and clinical experience, is enabling progression towards specialist licensing and service leadership. Expansion of this service increases treatment options available within Wales, reduces reliance on external centres, and supports integration of advanced therapies into routine care.



Enabling Clinically Focused Radiotherapy Research



Owen Nicholas Richard Hugtenburg

RaMP Bursary Programme

A structured MSc bursary programme is enabling coordinated radiotherapy physics research across Wales. Students undertake predefined, clinically relevant projects within multidisciplinary teams, linking academic study directly to service priorities. This model builds research capability within the workforce while generating outputs that support innovation and service improvement. By strengthening links between universities and NHS organisations, the programme supports long-term capacity building for research-led development by medical physicists in radiotherapy.



Carly Bliss

Prime Pull Immunotherapy

A novel “Prime-Pull” immunotherapy approach is being explored to redirect existing antiviral immunity towards tumour cells. By inducing tumour expression of viral antigens, cancer cells become recognisable to previously primed T cells, enabling a targeted immune response while sparing healthy tissue. The laboratory research explores interactions between radiation and the Prime-Pull immunotherapy using patient-derived samples in head and neck cancer, and links to the clinic through characterisation of antiviral immunity in patients undergoing radiotherapy. Outcomes will inform optimal treatment timing and potential combination regimens, with scope for wider application across tumour types if successful.



Lucy Faulkner

AI Auto-Contouring for SABR

Artificial intelligence is being evaluated to automate the contouring of organs at risk within SABR planning. By reducing the time required for manual outlining and improving consistency, this approach has the potential to accelerate treatment planning and increase service capacity. The work also explores opportunities for role expansion across the multidisciplinary team, supporting more efficient use of clinical expertise.



Expanding Access to Advanced Radiotherapy Techniques



Artjoms Smakovs

EPIbeam & EPIgray SABR

Advanced pre-treatment verification (EPIbeam) and in vivo dosimetry (EPIgray) systems are being embedded within SABR pathways at the South West Wales Cancer Centre. These technologies enable real-time monitoring and verification of delivered dose, strengthening assurance in high-precision treatments where margins for error are minimal. Integration into clinical workflows improves treatment safety, reduces the risk of delivery inaccuracies, and enhances confidence in complex planning techniques. Alongside workforce training, this establishes a robust technical foundation to support the safe expansion of SABR services and consistent delivery of high-quality care.



James Powell

SRS Clinical Fellowship

A dedicated clinical fellowship is supporting the expansion of stereotactic radiosurgery services in South Wales. This includes extending treatment eligibility to patients with more complex disease and exploring new service provision within South West Wales. Increasing local capacity reduces the need for patients to travel outside Wales and supports a more equitable and sustainable model of specialist care.

Shaping the Future of Radiotherapy in Wales

Collaboration and engagement events provide a valuable forum for open discussion, shared learning, and the exploration of future opportunities. They create space to exchange perspectives, raise questions, and consider common challenges, emerging priorities, and areas for joint working. By bringing together a range of organisations and disciplines, such events support meaningful engagement, generate collective insight, and encourage collaborative thinking that can inform future practice, strengthen partnership working, and support service development.