This year we have partnered with OxCODE – Oxford’s Early Detection network - to bring you our first session dedicated to the early detection work happening across the University and Hospitals Trust.

Read more about OxCODE on page 5.
## CRUK Oxford Centre 9th Annual Symposium
**Wednesday 21st October 2020**

### Session 1: Early Detection
**Chair:** Bethan Psaila

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<td>Indirect Infectious Carcinogens as Trigger for Common Human Cancers</td>
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It is our great pleasure to welcome you to the 9th Annual Cancer Research UK Oxford Centre Symposium. Under (old-)normal circumstances, the Symposium is a forum for cancer researchers across Oxford to meet, mingle, and catch up, as well as showcasing the outstanding work being carried out by our multidisciplinary research community. Although this year, as with so many aspects of our lives, will feel and look different, we hope that you enjoy hearing about some of Oxford’s flagship cancer research projects, and join us in welcoming new recruitments and celebrate some of this year’s successes.

We are delighted to have a programme of exciting talks focusing on efforts underway across Oxford in the themes of Early Cancer Detection and Non-genetic Tumour Heterogeneity. In addition, we are going to have an opportunity to hear from some of this year’s crop of new cancer researchers including Prof. Eva Morris, Prof. Tim Elliot and Prof. Yang Shi to whom I hope you will join us in offering a warm Oxford welcome. We are also very grateful to Professor Harald zur Hausen for taking the time to join us today to talk about his Nobel Prize winning work that identified the role of the papilloma virus in cancer of the cervix.

Next year’s symposium will be a 2-day event celebrating 10 years of Oxford housing a cancer Centre and we look forward to being with you in person then, as we hopefully get back to something approaching normal service.

Finally, the CRUK Oxford Centre would like to take this opportunity to thank Cancer Research UK and our other funders, the University of Oxford, the NIHR Oxford BRC, and Oxford University Hospitals NHS Foundation Trust for their partnership in the CRUK Oxford Centre and for their presence here today.
We are a network brought about by a partnership between the University of Oxford and Oxford University Hospitals NHS Foundation Trust.

By harnessing Oxford’s world-leading cancer research, we follow the mission of facilitating collaboration to ensure rapid translation from scientific discovery to treatments for patients.

The ultimate aim of the Centre is to enhance cancer research activity in order to increase cancer cure rates. The Centre currently comprises over 600 members from over 25 different Departments, Units and Institutes of the University, as well as the NHS Foundation Trust.

This partnership provides a cumulative investment of approximately £55m each year for cancer science in Oxford and this funding is directed toward research to save and improve people’s lives.

We support and connect people working across a range of disciplines and we aim to facilitate research collaboration on a local, national and international scale to speed up translation from scientific discovery to treatments in patients.

OUR CORE PRINCIPLES

The centre is guided by core principles that drive the foundation of research activities. These are:

- Accelerate the translation of internationally recognised science
- Support a broad portfolio of clinical research
- Be dynamic in responding to emerging challenges and opportunities
- Enhance collaboration
- Support the development of both the national, and international cancer research agenda
- Integrate local and national leadership through transparent Centre governance
- Train for translation
- Enhance donor relations through engagement and involvement
- Represent cancer research UK locally, nationally, and internationally
OxCODE launched in June 2019 to consolidate Oxford’s significant expertise and realise the full potential of cross-disciplinary discourse and collaboration for advancing early cancer detection research for patient benefit.

Early detection is the future of cancer research and will transform cancer care to achieve enhanced cancer cure. Our aspiration is for Oxford to become world-leading in this research discipline.

OxCODE aims to stimulate more early cancer detection activity in Oxford. With over 220 members from more than 30 Departments, Units and Institutes in the University and the Oxford University Hospitals NHS Foundation Trust, we are continuing to expand our multidisciplinary early detection research community by hosting a series of events, including the early detection session held today at the CRUK Oxford Centre Annual Symposium 2020.

We are also increasing the scale and scope of early cancer detection research at Oxford by providing infrastructure funding for new projects and grant writing support.

Since its launch, OxCODE members have successfully led funding applications for early detection projects worth >£24m, with new OxCODE-facilitated consortia focussed on the early detection of liver cancer, lung cancer and myeloma amongst others. If you have an early detection research idea, please get in touch.

All University of Oxford or OUHFT researchers with an interest in early cancer detection are welcome to join. If you wish to be added the mailing list to hear about future events and funding opportunities, please email Dr Francoise Howe at francoise.howe@ludwig.ox.ac.uk

For more information, see our website: www.oxcode.ox.ac.uk

OxCODE is supported by:
The CRUK Oxford Centre facilitates a number of clinical and lab-based services, available to OUH and University staff.

The Cancer Centre and its partners (the NIHR Oxford Biomedical Research Centre and the NIHR/CRUK Oxford Experimental Cancer Medicine Centre) fund a comprehensive array of research infrastructure that is available to researchers across Oxford.

These services exist to help researchers and clinicians get the most out of their work, from assistance with sample access to connecting them with commercial partners to help forward their work.

Each of our tools, teams and services have a webpage with details on who to contract if you are interested in learning more. You can also find more information on the following pages.

OXFORD CANCER CLINICAL POSITIONING SERVICES

Oxford Cancer: Clinical Positioning Services (OCCPS) is an Oxford-based network of scientists and clinicians designed to partner with commercial organisations, and accelerate the clinical development and positioning of novel cancer diagnostic and therapeutic strategies.

By utilising Oxford’s expertise we provide tailored, peer review of clinical development strategies and CMO-level advice on positioning products for the UK and international oncology market. We then signpost partners to those best positioned to deliver a programme, support the project’s development and funding acquisition. Currently, the portfolio contains 86 studies at varying stages of development, in a range of disease sites, in collaboration with a range of different partners.

If you are a researcher or clinician, you can find out how you can become a part of this service on our website here. If you are a potential academic or industry partner, you can fill our a Project Proposal Form and email it to us at cancercentre@oncology.ox.ac.uk so that we can find a partner that suits the project.
MOLECULAR DIAGNOSTICS CENTRE

The Oxford Molecular Diagnostics Centre (OMDC) is an ISO-accredited research facility that aims to develop, technically validate and clinically evaluate precision clinical genetics assays for early detection, treatment response/monitoring and risk stratification of patients with blood diseases and cancer.

By working in partnership with commercial pharmaceutical/diagnostic/biotech companies, academic groups and national clinical trial groups, the OMDC have access to novel diagnostic strategies and liquid biopsies that are made available to Oxford researchers and clinicians. Services available to Oxford staff include:

- Quality assured Sample Handling
- Expertise in Library Preparation for whole genome sequencing, custom-made panels and targeted sequencing
- Access to the latest sequencing technologies
- Data processing and bioinformatic services

For more information on the technologies and services available to Oxford researchers see our website, or contact Sara Mathie on OMDC@oncology.ox.ac.uk to engage in our services and submit your project via this form.

TRANSLATIONAL HISTOPATHOLOGY LAB

The Translational Histopathology Laboratory (THL) specialises in the translation of research into clinically accredited and deployable Immunohistochemistry (IHC) and Immunofluorescence (IF) assays.

Led by Drs Sarah Blagden and Alistair Easton, the goal of the THL is to establish GCP compliant and validated assays for biomarkers that can be used to accompany the development of new cancer treatments. We work with research teams in the preclinical development of IHC biomarkers in mouse or human tissue which can then be further developed to accompany a clinical trial (to GCP standard). Alternatively, we can conduct IHC on samples (such as archived or fresh tumour tissue) obtained from clinical trial patients.

Services that we offer include:

- Tissue Processing, Embedding and Sectioning
- Hematoxylin & Eosin (H&E) Staining
- Antibody Optimisation
- Single and Double Antibody Tissue Staining (Chromogenic IHC)
- Slide Scanning, Automated Tissue Segmentation and Scoring
- TMA Construction
- RNAscope®
- Multi-plex Immunofluorescence (IF) and Imaging
- Halo® – Image Analysis Platform

If you are interested in using our services please email thl enquiries@oncology.ox.ac.uk with the THL application form found here.
CLINICAL TRIALS

To ensure discoveries and advances are efficiently translated into patient benefit, the Cancer Research UK Oxford Centre supports adaptable core clinical trial infrastructure. This facility is flexible and responsive to enable scientists from a range of clinical and fundamental scientific backgrounds to translate their work into the clinic.

All our members are eligible to apply and access this resource through presenting their project at the interactive Clinical Trial Development Group (CTDG) The CTDG is an informal forum of clinicians, statisticians, trial managers, pathologists, and lab scientists who will refine your project and develop trial proposals, signpost opportunities for collaboration and/or translational research, and identify relevant funding calls.

Oxford Cancer are always looking for new and impactful discoveries to develop, and we encourage all interested researchers to contact us at cancercentre@oncology.ox.ac.uk if they are interested in utilising this infrastructure.

SAMPLE COLLECTION

Oxford BRC and Oxford Cancer offer a Patient Sample Collection service that supports researcher access to biological samples from consented patients with carefully curated patient data

The infrastructure is flexible and allows tailored sample collection to the project’s needs, along with multiple time-point sample collection and samples from individuals categorised as ‘at risk’ of developing specific cancers.

At present we have sample collection in place for the following disorders:

- Oesophageal Cancer
- Barrett’s Oesophagus
- Colorectal Cancer
- Pancreatic Cancer

All researchers and clinicians across the University of Oxford and OUH are eligible to apply for sample access.

For more information or to request access, please contact Mari-Lenna Issaias via mari-lenna.issaias@oncology.ox.ac.uk.
PATIENT & PUBLIC INVOLVEMENT

Oxford Cancer’s Patient & Public Involvement in Research (PPI) service connects Oxford’s researchers with cancer patients of the past & present. In doing so, PPI can guide cancer research in a way that benefits patients.

Oxford Cancer’s PPI service is open to Oxford researchers, and can be used to help their work through:

• Assisting researchers on grant applications
• Reviewing patient information leaflets
• Producing clinical trial awareness videos
• Sitting on steering groups for clinical trials
• Participating in patient and carer focus groups
• Offering a translational angle to research

Researchers can utilise our PPI panel, made up of past and present cancer patients and members of the public who have had their lives impacted by cancer, to help their work. More information about panel members can be found on our website.

If you are interested in utilising our PPI service then please fill in an Expression of Interest form and send it to Nikki Hayward, our PPI lead on nikki.hayward@oncology.ox.ac.uk.

MEDIA & COMMUNICATIONS

The Cancer Centre can support the impact of your cancer research through media and communications.

If you have an upcoming paper, new collaborative project or interesting cancer research story, then contact Megan Harvey, Communications and Research Outcomes Officer at the Cancer Centre, to see how we can help promote your work online or in the popular press.

• Press releases & media relations
• Website articles & blogs
• Social media promotion & digital support
• Internal communications
The Development Fund is a scheme initiated at the very inception of the Centre in 2010. The aim of this fund is to support short-term, pump-priming funds to support innovative, proof-of-concept cancer research projects. Often the projects we support are at a too early of a stage to be competitive for major research support but have the potential to be with just a small amount of investment, usually less than £15,000. Priority is given to projects with a clear translational trajectory, to early career researchers and for new collaborations between investigators.

Applications to the Development Fund are reviewed by the multidisciplinary Research Committee with support from previous awardees. The projects are ranked on criteria such as scientific quality, strategic relevance and translational potential, and feasibility.

Please email the cancer centre if you have any questions or are interested in applying for future rounds: cancercentre@oncology.ox.ac.uk

Applications for the 2021 Development Fund will be open in December 2020. Keep an eye-out on our website and mailing list for when submissions are open.
Ms Marketa Tomkova & Mr Michael McClellan  
Ludwig Cancer Research  
*Detection of non-clonal mutations and mutational signatures by single-molecule sequencing*  

Ms Yurena Vivas-García  
Ludwig Institute for Cancer Research, Nuffield Department of Medicine  
*Identification of pathways driving resistance to drugs targeting fatty acid saturation in cancer*  

Ms Mara Artibani Nuffield  
Department of Women’s and Reproductive Health / Weatherall Institute of Molecular Medicine  
*Establishing a 3D model of minimal residual disease for drug screening*  

Dr Benjamin Fairfax  
Department of Oncology  
*Characterising the cfDNA methylome in patients with metastatic melanoma treated with immune checkpoint blockade*  

Prof Simon Leedham & Ms Nadia Nasredden  
Nuffield Department of Medicine  
*The WNT signalling pathway landscape of colitis-associated colorectal cancer*  

Prof Matthew Freeman  
Sir Dunn School of Pathology  
*Developing animal models of iRhom2, a potential new target in KRAS-induced cancer*  

Dr Lonnie Swift  
Department of Oncology  
*Exploiting synthetic defects in metabolism and DNA repair to improve the treatment of glioma*  

Prof Geoff Higgins  
Department of Oncology  
*Preclinical evaluation of Atovaquone as an immune therapy sensitiser*  

Prof Richard Gibbons  
Radcliffe Department of Medicine / Nuffield Division of Clinical Laboratory Sciences / WIMM Weatherall Institute of Molecular Medicine  
*Genome-wide optical mapping of replication stalling*  

Ms Ysobel Baker & Prof Tom Brown  
Department of Chemistry  
*New chemical architectures for the therapeutic targeting of RNA*
HIDI
A Human Immune Discovery Initiative

Immunology intersects with numerous areas of research, including oncology, neuroscience and metabolism. The HIDI Internal Fund helps to connect these areas together.

HIDI provide a mechanism to enable researchers to connect with immunologists. HIDI sponsors four Discovery Platforms: **Immune Phenotyping, Imaging, Genomics and Peptidomics**, each led by experienced immunology researchers who can provide advice on experimental design and support project delivery.

The HIDI Internal Fund is now open for applications. The fund awards up **£15,000** (and in exceptional cases up to **£50,000**) to pump prime excellent, novel, collaborative immunology research. For more information visit the Immunology Network [website](#).

**HIDI INTERNAL FUND NOW OPEN DEADLINE – 11th DECEMBER 2020**

+30 AWARDS
FUNDED BY HIDI
6 DEPARTMENTS
FUNDED FROM 70 APPLICATIONS
+£337K
IN IMMUNOLOGY GRANTS

University of Oxford
IMMUNOLOGY NETWORK

HIDI is run by the University of Oxford Immunology Network. The Network brings together a community of over 300 researchers across the University with an interest in Immunology. To find out more, visit their [website](#), follow them on Twitter (@OxImmuno), sign up to our mailing list on [immunology_network-subscribe@maillist.ox.ac.uk](mailto:immunology_network-subscribe@maillist.ox.ac.uk) or email Georgina Kerr (georgina.kerr@medsci.ox.ac.uk).
Dr Bethan Psaila is a CRUK Advanced Clinician Scientist who primary focus is on the use of single-cell approaches to study normal and malignant megakaryocyte development and myeloproliferative neoplasms.

This is important as in certain malignancies, such as erythro-megakaryocytic leukaemias and myeloproliferative neoplasms, megakaryocytes develop abnormally and contribute to key pathological features of the disease, including the harmful scarring that destroys the bone marrow.

The use of Big Data, Multiomics and AI to improve Lung Cancer Screening: DART

Prof. Fergus Gleeson is a consultant radiologist and Head of Academic Radiology. His research focuses are on the use of imaging techniques in small-scale trials with the particular ambitions of improving the mechanisms of data analysis and correlating the imaging data provided with histology and treatment outcomes.

InnovateUK and CRUK have funded a programme of research to improve outcomes in participants undergoing Lung Cancer Screening using low dose CT: The Integration and Analysis of Data using Artificial Intelligence to Improve Patient Outcomes with Thoracic Diseases (DART). Led by Prof. Gleeson, the DART team will integrate clinical, imaging and molecular data for the first time using AI algorithms with the aim of earlier and more accurate diagnosis of lung cancer.
**DeLIVER: Early detection of hepatocellular liver cancer**

Ellie Barnes is a Professor of Hepatology and Experimental Medicine who leads research with a focus on T-Cell immunology relevant to gut and liver disease.

The Barnes group are currently developing pan-genotypic vaccines for HCV prevention and national programs to stratify the early detection of hepatocellular liver cancer.

Launched in 2020, the DeLIVER study aims to better understand the pre-cancerous changes in the liver and use this knowledge to inform new technologies for early HCC detection. This is being done through studying people at high-risk of developing HCC and multiparametric imaging, host and viral genetics, and liquid biopsies.

**PROF. ELLIE BARNES**
Nuffield Department of Medicine
10.10am-10.30am

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**Risk stratification and early detection of breast cancer in The Million Women Study**

Gillian Reeves is Professor of Statistical Epidemiology and current Director at the Cancer Epidemiology Unit. Gillian is co-principal investigator of the Million Women Study, a very large UK cohort study of women’s health.

Recent funding for the Million Women Study will enable the collection of digital mammograms, and other relevant screening data, on up to 400,000 women, around 18,000 of whom will have developed breast cancer by the end of 2023. We plan to use these data to assess the role of breast density and other mammographic features in predicting breast cancer risk, and to combine this information with existing data on a wide range of lifestyle and other risk factors to develop population based risk stratification tools for use in UK women.

**PROF. GILL REEVES**
Nuffield Department of Population Health
10.30am – 10.50am
SPEAKER ABSTRACTS

Session 2: Non-Genetic Heterogeneity

Simon Leedham is a Professor Molecular and Popular Genetics and Honorary Consultant Gastroenterologist. His area of work focuses on adult gastrointestinal stem cells as the targets of carcinogenic gene mutations and potential origin of luminal gastrointestinal cancers.

His published work has examined the clonality and genetic mutation burden of pre-neoplastic gastrointestinal disease. Current research focuses on the homeostatic cell-signaling pathways that control intestinal stem cells and the dysregulation of these pathways in carcinogenesis.

Adam Mead is a Professor of Haematology and MRC Senior Clinical Fellow. His research is focused on understanding how the normal haematopoietic stem/progenitor hierarchy is disrupted during the development of myeloid malignancies.

The aim of the Mead group is to improve the management of myeloproliferative neoplasms (MPN), chronic myeloid leukaemia (CML) and related conditions through better characterisation and therapeutic targeting of malignant stem and progenitor cell populations.

The group also works in the development and application of single cell genomics techniques to analyse malignant stem cell populations.
Non-genetically directed cell states determine survival in serous ovarian cancer

Ahmed Ahmed is a Professor and Surgeon of Gynaecological Oncology, and Director of the Ovarian Cancer Cell Lab at the WIMM.

His group is interested in investigating the mechanistic basis of ovarian cancer development, progression and resistance to therapy.

The inter-differentiation between cell states promotes cancer cell survival under stress and fosters non-genetic heterogeneity (NGH). NGH is, therefore, a surrogate of tumour resilience but its quantification is confounded by genetic heterogeneity making it difficult to quantify NGH. In this presentation, Prof. Ahmed will show that accurate quantification of NGH in ovarian cancer unravels a key role of the mesenchymal cell state in determining survival in ovarian cancer.

Stem cell heterogeneity in myeloproliferative neoplasms (MPN)

Adam Mead is a Professor of Haematology and MRC Senior Clinical Fellow. His research is focused on understanding how the normal haematopoietic stem/progenitor hierarchy is disrupted during the development of myeloid malignancies.

The aim of the Mead group is to improve the management of myeloproliferative neoplasms (MPN), chronic myeloid leukaemia (CML) and related conditions through better characterisation and therapeutic targeting of malignant stem and progenitor cell populations.

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**PROF. SIMON LEEDHAM**

Wellcome Centre for Human Genetics

11.50am – 12.10pm

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**Fetal origin of leukaemia as a source of heterogeneity**

Associate Professor Andi Roy is a Paediatric Haematologist and Clinician Scientist studying the developmental origins of childhood leukaemia.

The heterogeneity in the biology of acute lymphoblastic leukaemia (ALL) may depend on the developmental stage and type of cell it originates in. Most childhood ALL originate in utero, and a particular subtype, MLL-AF4+ ALL is uniquely treatment-refractory in infants compared to older patients. Fetal-specific characteristics of the target cell may make infant ALL particularly aggressive.

To test this hypothesis, the Roy lab have created the first faithful MLL-AF4+ infant ALL model by CRISPR-Cas9 editing of human fetal liver cells.

**PROF. ANDI ROY**

Department of Paediatrics

12.10pm – 12.30pm
Mechanism validation identified from reverse translation of rare responders in sarcoma

Bass Hassan is a clinical scientist and the Group Leader for the Tumour Growth Control Group (CRUK). He is a Professor of Medical Oncology in the Sir William Dunn School and Department of Medical Oncology.

Genetic and epigenetic mechanisms are best identified following evaluation of the extremes of biological phenotype. Exceptionally rare responses to anti-cancer medicines fall in this category, yet remain enigmatic because of heterogeneity. Here, a specifically designed bedside-to-bench experimental programme identified and validated a mechanism for the rare sensitivity to insulin-like growth factor (IGF) inhibition in genotypically defined primary Ewing bone sarcoma (ES).

DPhil in Cancer Science

Applications are open for the 2021 cohort of students. Applications can be made via our website here, and close 8th January 2021.

The Cancer Research UK Oxford Centre awards around 12 full-time positions on the DPhil in Cancer Science Programme each year for researchers looking to start their academic career at one of the world’s leading research organisations.

The programme is unique and distinctive in offering integrated training across the following themes: Immunity, Infection & Inflammation; DNA Damage Response & Radiation Biology; Cancer Genetics & Epigenetics; and Cancer Big Data. It builds on Oxford’s outstanding research record in these areas, spanning both the University and Hospital Trust.

If you or anyone you know would be interested in applying then more information can we found on our website. Project submissions for the 2022 cohort will be open to Oxford group leaders and PIs in Summer 2021.
SPEAKER ABSTRACTS

Session 3: New to Oxford

Mark Middleton is a Professor of Experimental Cancer Medicine and Consultant Medical Oncologist.

He is a current Co-Director of the Cancer Centre, where he has established a new Doctoral Training Programme for a DPhil in Cancer Science, offering non-clinical, medical student and clinical fellowships and programmes for post-doctoral research.

His work concentrates on the development of new cancer drugs and on the treatment of melanoma and upper gastrointestinal tract cancers.

Session Chair
Prof. Mark Middleton
Department of Oncology

National Colorectal Cancer Intelligence

Eva Morris is a Professor of Health Data Epidemiology who moved to join the Big Data Institute and Nuffield Department of Population Health in 2019.

She continues her work in Oxford in the field of health data research, with a continued interest in the use of national cancer datasets to investigate the management of colorectal cancer and so generate evidence that will drive improvements in CRC care and outcome.

PROF. EVA MORRIS
Nuffield Department of Population Health
13.25pm – 13.50pm
**Combining computational modelling, structural biology and immunology to understand antigen processing**

Prof. Tim Elliott will be joining the Nuffield Department of Medicine and Oxford’s cancer research community in January 2021.

Tim Elliott was amongst the key group of immunologists who developed studies of antigen presentation at the molecular level during the 1980s, undertaking a series of studies to determine and define the immunostimulatory properties of MHC Class I molecules. This work underpins rational T-cell based vaccine design and continues to fuel translational research.

His current research programme encompasses themes within the biology of antigen processing and presentation and immunity to tumours.

**PROF. TIM ELLIOTT**
Nuffield Department of Medicine
13.50pm – 14.15pm

**Cellular plasticity and cancer-causing pathogens revisited**

Xin Lu is a Professor of Cancer Biology, Director of the Oxford Ludwig Institute and Oxford Centre for Early Cancer Detection, and current Co-Director of the Cancer Centre. In 2020 she was announced as a Fellow of the Royal Society for her contributions to understanding cellular pathways that control cell fate in development and disease.

Cellular plasticity – the ability of cells to change their characteristics and fate – is a key feature of development, regeneration and cancer. Prof. Lu’s research investigates the molecular switches that control cellular plasticity, particularly in the initiation, progression and treatment of cancer.

Recently, she has revisited research into cancer-causing pathogens, such as *H. pylori* and Epstein Barr virus, with the aim of improving treatment efficacy by more selectively killing cancer cells.

**PROF. XIN LU**
Ludwig Institute for Cancer Research
14.25pm – 15.00pm
Shi lab past and future: Chromatin, RNA modifications and Cancer

Prof. Yang Shi joined the Ludwig Institute for Cancer Research as a Principal Investigator in 2020.

His primary area of interest is in identifying key epigenetic regulators in cancer, elucidating their mechanism of action and providing the conceptual basis for translating our basic findings to the clinic via the development of new therapeutic strategies.

Currently, Shi lab is focusing on two cancers – acute myeloid leukaemia and diffuse intrinsic pontine glioma - where chromatin/epigenetics have been shown to play a crucial role in the maintenance of a poorly differentiated state. They are exploring combinatorial mechanisms that promote cancer cell differentiation and therefore may provide the rationale needed for therapeutic considerations.

They are also exploring epigenetic regulators in cancer and the host immune system to find ways to turn "cold" tumours "hot" and to help ensure sustained response to tumour immune checkpoint blockade therapy.
Indirect Infectious Carcinogens as Trigger for Common Human Cancers

Harald zur Hausen studied Medicine at the Universities of Bonn, Hamburg and Düsseldorf and received his M.D. in 1960. After his internship he received the license to practice medicine and worked as a postdoc at the Institute of Microbiology in Düsseldorf, subsequently in the Virus Laboratories of the Children’s Hospital in Philadelphia where he was later appointed as Assistant Professor. After a period of 3 years as a senior scientist at the Institute of Virology of the University of Würzburg, he was appointed in 1972 as Chairman and Professor of Virology at the University of Erlangen-Nürnberg. In 1977 he moved to a similar position to the University of Freiburg. From 1983 until 2003 he was appointed as Scientific Director of the Deutsches Krebsforschungszentrum (German Cancer Research Center) in Heidelberg. He retired from this position in 2003.

Prof. Zur Hausen’s specific field of research is the study of oncoviruses. In 1976, he published the hypothesis that human papillomavirus plays an important role in the cause of cervical cancer. Together with his collaborators, he then identified HPV16 and HPV18 in cervical cancers in 1983-4. This research directly made possible the development of a vaccine which was introduced in 2006. He and his wife, Prof. Ethel-Michele de Villiers, are also credited with discovery of the virus causing genital warts (HPV 6) and a monkey lymphotropic polyomavirus that is a close relative to a recently discovered human Merkel cell polyomavirus, as well as techniques to immortalize cells with Epstein-Barr virus and to induce replication of the virus using phorbol esters. His work on papillomaviruses and cervical cancer received a great deal of scientific criticism on initial unveiling but subsequently was confirmed and extended to other high-risk papillomaviruses.

He received a number of national and international awards, among them the Robert-Koch-Price, the Charles S. Mott Price of the General Motors Cancer Research Foundation, the Federation of the European Cancer Societies Clinical Research Award, the Paul-Ehrlich-Ludwig Darmstädter-Price, the Jung-Price, Hamburg, the Charles Rudolphe Brupbacher Price, Zürich, the Prince Mahidol Award, Bangkok, the Raymond Bourgine Award, Paris, the Coley-Award, New York, the Life Science Achievement Award of the American Association for Cancer Research, San Diego, and the Nobel-Prize for Medicine, 2008.