

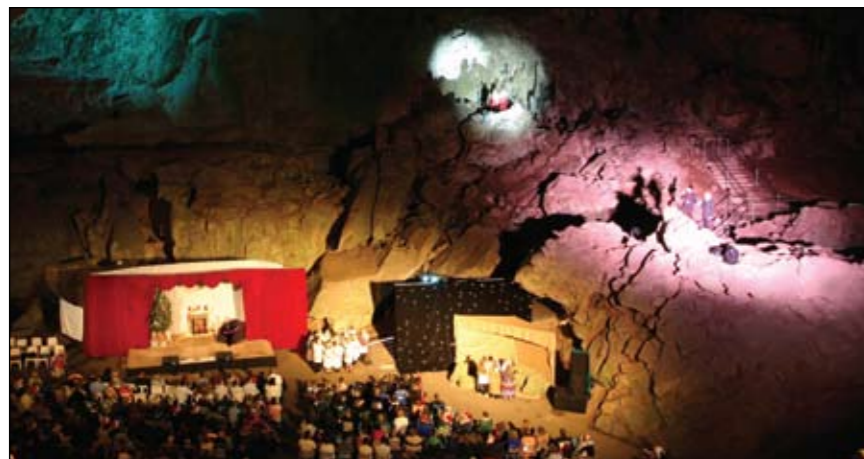
# The Jenolan Caves Christmas Spectacular

## Cavers sing carols to support childhood cancer research

The Jenolan Caves Christmas Spectacular centres around Carols in the Caves, an annual event at Jenolan Caves since 1992. On the 13th December 2008, Carols in the Caves was held in Jenolan Cave's Grand Arch where almost a thousand people sat spellbound, as performers sang from the stage and from high among stalactites and stalagmites. The day time concert was compered by Janice McGilchrist, from ABC Central West. Afternoon

entertainment was provided by the fantastic Zyppclubb band. The audience was treated to a marvellous evening concert, hosted by Simon Marnie from 702 ABC Sydney. The Grand Arch echoed to the sounds of the brilliant tenor, Richard Lane. For the first time, the audience marvelled at the Jenolan Caves Staff Choir, who sang the Jenolan's own version of The 12 Days of Christmas. Santa, along with Bandaged "Rudolf" Bear, also made an appearance. Following

the evening concert, the Christmas cheer continued with a charity auction of a fabulous prize donated by Qantas, raffle draws and the live band Snez playing at Caves House. The Christmas Spectacular raised \$6000 for the Tumour Bank at The Children's Hospital at Westmead. Our thanks go to the Jenolan Caves Reserve Trust for their marvellous support, with a special mention to Domino Cove, Grant Commins, Dan Cove and Peter Austen for their support.



the children's hospital at Westmead

Corner Hawkesbury Road and Hainsworth Street  
Locked Bag 4001 Westmead NSW 2145 Sydney Australia  
Tel 02 9845 0000  
Visit our website: [www.chw.edu.au](http://www.chw.edu.au)

**For more information:**  
The Tumour Bank website address is [www.chw.edu.au/tumourbank](http://www.chw.edu.au/tumourbank)  
or you can email us on [TumourB@chw.edu.au](mailto:TumourB@chw.edu.au)

# the tumour bank

the children's hospital at Westmead



## Bankers on trial!

**Dr Dan Catchpoole**  
*Head of Tumour Bank*

When you hear reports of 'medical research' in the media, you immediately think of scientists in white coats attempting to understand the intricate details of our existence. These sorts of activities do take place at The Children's Hospital at Westmead. The Hospital's Oncology Research Unit performs experiments that aim to tell us about the basic workings of cancer cells. These scientists are seeking to understand why cancer cells grow out of control, what chemicals they are sensitive to, what makes them different from normal cells and why they resist treatment with chemotherapy. Such basic research produces knowledge that underpins the development of new strategies, therapies and clinical trials for treating cancer patients.

In recent times, a new medical research approach has been described. This has been called translational research. This type of research seeks to understand how the knowledge gained in the laboratory can be applied to improving the treatment of patients. Similarly, it also takes clinical problems and establishes experimental systems that allow the problems to be explored by scientists in the laboratory. Fundamentally, translational research requires tissue

samples from patients for it to be successful. Tumour Banks, such as the one at The Children's Hospital at Westmead, form a central role to the success of this translational research. What is becoming more evident is that major national and international cancer groups running clinical trials are requiring tissue to be collected for basic research investigation. Tumour Banks are now regularly being asked to work with these clinical trials groups to collect, store and manage tissue samples taken as part of the clinical trial. In this way, the importance of Tumour Banks to the translational research activities of the Hospital are being realised.

As always, the Tumour Bank has been busy supporting research into childhood cancer through provision of tissue samples to scientists around the world. Professor Farida Latif from the University of Birmingham has sent us a report on her investigations into how, in childhood leukaemia, some genes are specifically switched-off through a process called epigenetic inactivation. Professor Latif has reported on how this will allow us to determine whether these switched off genes are responsible for cells becoming cancerous. Please read her story on page two of the newsletter.



Kids! Bring us your artwork and it may appear in the next edition of our newsletter.

With Christmas over for another year, we can report on a different sort of fundraising effort for the Tumour Bank. Back in December 2008, the magnificent Jenolan Caves in the Blue Mountains ran its annual Carols in the Caves Concert. A fundraising Spectacular was organised with the Tumour Bank at The Children's Hospital at Westmead being the major beneficiary. Over 1000 people enjoyed the concerts and, with the help of the media partners, ABC Radio, word spread about the Tumour Bank all over central and western NSW. At the end of the event, over \$6000 was donated to the Tumour Bank. Please turn to page four to see the photos of the event.

**Dr Dan Catchpoole**  
**Head of Tumour Bank**

# Flicking the switch on leukaemia



Professor Farida Latif from the University of Birmingham

One third of all childhood cancers are leukaemia and approximately 400 new cases occur each year in the UK. Leukaemia is a type of cancer that originates in the bone marrow tissue contained within our bones. Leukaemia can be classified into several different types. The two major subtypes of leukaemia include acute lymphoblastic leukaemia (often referred to as ALL) and chronic lymphoblastic leukaemia. Acute lymphoblastic leukaemia can affect children at any age and is the most common cancer seen in children under the age of five years.

In an effort to understand what causes leukaemia in children, scientists have focused on understanding what genes cause leukaemia. Scientific research into the genetics of childhood leukaemia has discovered that certain genes are temporarily switched-off in children with leukaemia. Our research into acute lymphoblastic leukaemia has focused on finding these switched off genes. Finding these genes will give us clues as to what causes leukaemia. The switching-off of certain genes occurs by a process that scientists call epigenetic inactivation.

One of the unique features of epigenetic inactivation is that new drugs are available that can switch-on genes that have been switched off by this mechanism. The use of these new drugs to reverse the effects of epigenetic inactivation is called epigenetic therapy. In clinical trials, some of these new drugs have shown promising results.

Our current research efforts have been focused on finding which genes are switched-off in children with leukaemia. To do this, we need a large number of samples from both healthy patients and children with leukaemia. The Children's Hospital at Westmead's Tumour Bank has formed an essential part in our research into childhood acute lymphoblastic leukaemia. The Tumour Bank has provided us with a large number of samples from leukaemia patients. We are using the latest technology to screen our samples to find genes that potentially cause leukaemia. We believe that our research into what genes cause acute lymphoblastic leukaemia may ultimately improve the early diagnosis, treatment and prognosis of children with leukaemia.

# all about the tumour bank

The long-term goal of research into childhood malignancies is to reduce the incidence of cancer and to improve the outlook of children suffering with this disease. It is through research that we will gain the knowledge about cancer that will eventually lead to new approaches in therapy. However, such research is dependent upon the availability of cancer specimens for the scientists to study.

## The Tumour Bank

The Children's Hospital at Westmead's Tumour Bank is a collection of cancer specimens, donated by patients and obtained through the normal course of treatment. These samples are placed in long-term storage and made available to research scientists around the world for future investigations into the improvement in the diagnosis and treatment of children with cancer.

Since its inception in 1998, the Tumour Bank has stored over 24,000 samples from 2300 patients, representing 50 different types of cancers.

The aim of the Tumour Bank is to encourage and facilitate research to improve prevention, diagnosis and treatment of childhood cancer. By providing

samples to research groups within the Hospital, around Australia as well as throughout the world, the Tumour Bank will prove to be a valuable resource as it helps us to:

- understand the molecular mechanisms which lead to cancers in children,
- develop tests that enable screening for those children at an increased risk of cancer,
- aid the establishment of new molecular-based diagnostic tests, which will assist in the selection of the most appropriate treatments
- identify targets for potential new cancer remedies.

The Tumour Bank has already provided tumour specimens to research groups around Australia. Findings from some of these investigations will be briefly described in each edition of this newsletter.

Many people and departments throughout the Hospital play a role in the activities of the Tumour Bank. In particular, the Tumour Bank is supported by:

- The Oncology Research Unit
- The Oncology Department
- Histopathology and Haematology Departments
- Medical Records Department

- Computer Services
- Public Relations
- Fundraising

## Consent

Many patients and parents support the Tumour Bank through the donation of tumour tissue, blood and bone marrow samples. These samples are removed from patients in the operating theatre or in the clinic during the normal course of treatment.

A consent form tells patients and parents about the Tumour Bank. This form, once signed, gives permission for samples to be stored in the Tumour Bank and later given to scientists studying childhood cancers.

## The decision to give us permission to collect samples from your child for the purpose of research is voluntary.

If a patient or parent decides not to give permission, or to withdraw it at a later time, the child's care will not be affected in any way.

## Collection and Storage

The Tumour Bank receives resected tumours and biopsies, as well as blood, bone marrow and cerebral spinal fluid specimens that have been removed for diagnostic purposes from patients in the operating theatre or in the clinics.

Once the diagnostic process is complete, the residual tissue specimens are transferred to special low-temperature cryogenic vials and immediately snap-frozen in liquid nitrogen. This freezes the samples very quickly and preserves proteins and genetic material within the sample. Once frozen, the samples are placed in numbered boxes and stored in a freezer at -80°C.



In some circumstances, specimens stored within other Hospital departments may be requested by the Tumour Bank to further support research applications.

## Database

Once stored, each sample is recorded on the Tumour Bank database. Information recorded includes:

- Age of the patient and age at diagnosis
- History of the cancer
- Type of cancer
- Results of pathology tests
- Type of treatment received

## Privacy

When the samples are provided for research, **the child's name will not appear on the sample.** At no time will any personal contact details (address, phone number) be issued with the specimens. **The child and family will therefore remain entirely anonymous** to the researchers who receive any Tumour Bank specimen.

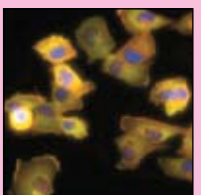
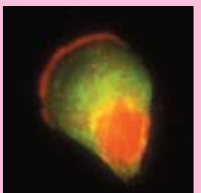
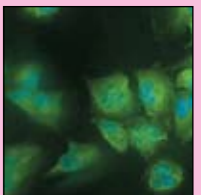
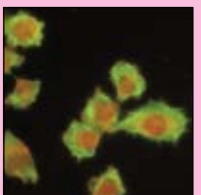
However, if the findings of the research could help us with a child's treatment, the coding on the sample will allow the Tumour Bank staff to forward the results to the doctor who is caring for the child.

## More Information

Our website address is [www.chw.edu.au/tumourbank](http://www.chw.edu.au/tumourbank) or you can email us on [TumourB@chw.edu.au](mailto:TumourB@chw.edu.au)

Cancer cells – the green colour indicates a protein associated with tumour development.

Photos courtesy of Julie Hughes



The Tumour Bank's Clinical Nurse Consultant, Julie Palmer, discussing Tumour Bank Consent with Teanager Jake.