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## **Latest Cell Imaging Suite unveiled**

The Kids Research Institute at Westmead has today celebrated the opening of the Correlative Light and Electron Microscopy Suite (CLEM).

The CLEM Suite will be fundamental in giving scientists a better understanding of childhood illnesses through enabling them to analyse molecular and cellular structure in greater detail.

The million dollar research suite was funded by over \$1 million dollars in grants and donations given to the Institute by private and government funded bodies.

Dr Laurence Cantrill, Advanced Microscopy and Imaging Specialist, says the new technology is hoped to enable scientists to find new and better treatments for some diseases.

“It (CLEM) gives a fundamental understanding of what is going on in a particular disease,” Dr Cantrill said.

“The CLEM Suite means more scientists will be able to better understand the diseases they are studying, which creates more possibility for finding new and better treatments.”

The CLEM suite has allowed scientists to intricately study the structure and changes to diseased cells through the use of fluorescence and the ability to snap freeze samples in a high pressure freezer.

New fast scanning technology has also enabled cells to be rapidly imaged into different optical sections and later viewed in 3D.

The introduction of the new equipment has been effective in speeding up the cell biology process and keeping the Kids Research Institute at the forefront of disease research.

“Before confocal technology, tissue had to be treated, embedded into a solid medium and then physically sliced to see the different sections. We were looking at hundreds of different slides but that process has now been very much reduced,” Dr Cantrill said.

However, Dr Cantrill suggests it is the ability to freeze cells that makes the CLEM suite unique.

“Our suite is unique because of the speed, brightness but also because of the freezer,” he said.

“This technology allows people to take living cells and freeze them, process them for electron microscopy, and view the same cells in even greater detail through the electron microscope. This enables people to see cells in 1 thousand times more detail.”

The advances in detail have given scientists the ability to analyse cells in action and determine the molecular components of the cells that are causing these actions to occur.

The CLEM Suite, which has been completed for just less than 2 months, will now be accessible to over 800 scientists at the Westmead Research Hub who hope the new technology will eventually help them to better treat illnesses, such as cancer and neuromuscular diseases, down the track.