

Inventive and Innovative



Frederick Martell and John Sutherland at work in the SMB laboratories using the Roentgen tube in the process of x-raying a man's hand, c1896.

Ballarat has always boasted an innovative population. The first School of Mines (SMB) in Australia was only one of many innovative and far sighted decisions. A vast range of innovations and inventions were created locally as the School gained worldwide fame.

X-rays

On 22 July **1896** a handful of Ballarat citizens, doctors and patients witnessed one of the first examples of x-ray in Australia. A German doctor, Wilhelm Konrad Roentgen announced his discovery on 31 January 1896 and within a few months SMB staff members were enthusiastically experimenting with the invention.

Julia (Bella) Margaret Guérin

Julia (Bella) Margaret Guerin was the first woman to graduate from an Australian University. The daughter of a Ballarat Goal Governor, she was appointed to teach arts and matriculation students at SMB, during a University of Melbourne affiliation with SMB from January **1887**. Bella Guerin's Victorian Honour Roll of Women citation recognizes her idealism, oratory skill and her commitment to equity for women.



Bella Geurin, Australia's first female university graduate.

Albert Whitelock Steane (1877–1970)

Albert .W. Steane was the first headmaster of the Ballarat Technical Art School opening the Sloyd (woodwork) Centre in **1902** at the Ballarat East Art.

Henry Sutton (1856-1912)

Henry Sutton has been referred to as the great grandfather of technology and 'Australia's Edison', yet he is Australia's forgotten genius. Sutton was responsible for an incredible number and range of inventions including the world's first Portable Radio with a range of 500 yards (457m). By the age of 20 Henry had designed and built at least 20 different types of telephones, and wired up the SMB laboratory when Graham Alexander Bell visited Ballarat to view Sutton's modifications of the telephone system, and also two papers on artificial flight, conceived by Henry at age 10, by observing birds and insects, were published in the Annual Report of the Aeronautical Society of Great Britain.



Cyril Callister
(This image was kindly provided by Kraft Foods Limited)

Cyril Percy Callister

'Vegemite', a yeast based spread, and perhaps one of most famous trademarks in Australia, was developed around **1922** by Callister for the Fred Walker Company (later known as Kraft). Educated at the Ballarat School of Mines, Callister secured the royal charter for the Royal Australian Chemical Institute in **1931**, becoming President of the Society of Chemical Industry of Victoria in **1935-36**.



Patent for the SMB Self-acting Pyrites Furnace

Joseph Flude (1825 – 1892)

The first member of the teaching staff at SMB was Joseph Flude who offered his services as lecturer in Metallurgy "gratuitously" to the new School. A popular lecturer, he became one of SMB's Life Governors and gave public addresses on various chemistry topics including "The Chemistry of the Atmosphere" and "Iron".



Valentine George Anderson

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Anderson practised as a chemical analyst in Melbourne from **1910**, and was partner from **1915** in the firm, Avery & Anderson, Analysts. Appointed to the Commonwealth Bureau of Science and Industry in **1916** he advised the Commonwealth on the availability of potassium from alunite, ash and kelp, on fuel economy, and on setting up the white earthenware pottery industry.



Dick Richards in Antarctica

Richard (Dick) Richards GM

Dick Richards joined SMB in **1914** leaving soon after to join the infamous **1915** expedition to Antarctica led by Sir Ernest Shackleton. Richards and others won the Albert Medal (later George Medal) for heroic devotion to duty whilst on the expedition. Returning to SMB Richards resumed his position as lecturer in Physics and Mathematics. He was appointed Principal in **1947**.

Upon his retirement Richards had given 44 years of valued service to SMB. Dick Richards is honoured through the naming of a SMB (later University of Ballarat) prize, the R.W. Richards Medal.