

Eureka moments!

Highlights from 50 years of Australian science

Eureka: an expression of triumph concerning a discovery.

"Eureka!" (I've found it!) yelled Archimedes as he leapt out of the bath and ran naked down the street. A sudden flash of inspiration allowed him to solve King Hieron II of Syracuse's problem of whether his crown was solid gold or not.

Science research is incremental, continuous, long-term. However, occasionally there is a Eureka moment where the solution suddenly becomes clear, the clouds part, the riddle's solution bright and bold.

Presented here are a few examples of such Eureka moments that have occurred over the past 50 years in the fields of health, technology and the environment.

The impact on society and culture is evident.

Australian science has a global impact.

This exhibition has been jointly developed by the Australian Academy of Science and the National Museum of Australia in recognition of the Academy's 50th anniversary.



Australian Academy of Science



www.science.org.au

Future Eureka's



Water, water, everywhere, nor any drop to drink.

Coleridge, Samuel Taylor (1798). *The Rime of the Ancient Mariner*.

Salinity is one of the biggest environmental problems facing Australia today. It leads to decreased water and soil quality and can result in **undrinkable water** for plants, animals and people.

Each year, salinity costs:
\$130 million per year in lost agricultural production
\$100 million **damage** to infrastructure such as roads, bridges and buildings
\$40 million **loss of environmental assets**^{1,2}

Salinity refers to the amount of salt in the soil, the rock layer, groundwater and surface water. It occurs naturally, especially in old and flat landscapes typical of Australia. However, it becomes a problem when salt concentrations increase due to changes in land use such as clearing and irrigation.

Recently, **remote sensing** has been used to map salt stores in the ground. These accurate **maps** of salinity channels are developing our understanding of how and where the salt moves through Australian landscapes.

The causes of salinity are complex which means solutions will be complex.

Could there be a Eureka moment coming up that helps us deal with salinity?

We hope so.

The Australian Academy of Science

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- recognises research excellence
- publishes proceedings and reports
- advises government
- conducts international scientific relations
- organises scientific conferences
- fosters science education and public awareness of science and technology.