Ernest Rutherford is considered the father of nuclear physics. He invented the very language to describe the theoretical concepts of the atom and the phenomenon of radioactivity. He named and characterized alpha and beta particles and the proton. Albert Einstein described Rutherford as a second Sir Isaac Newton.

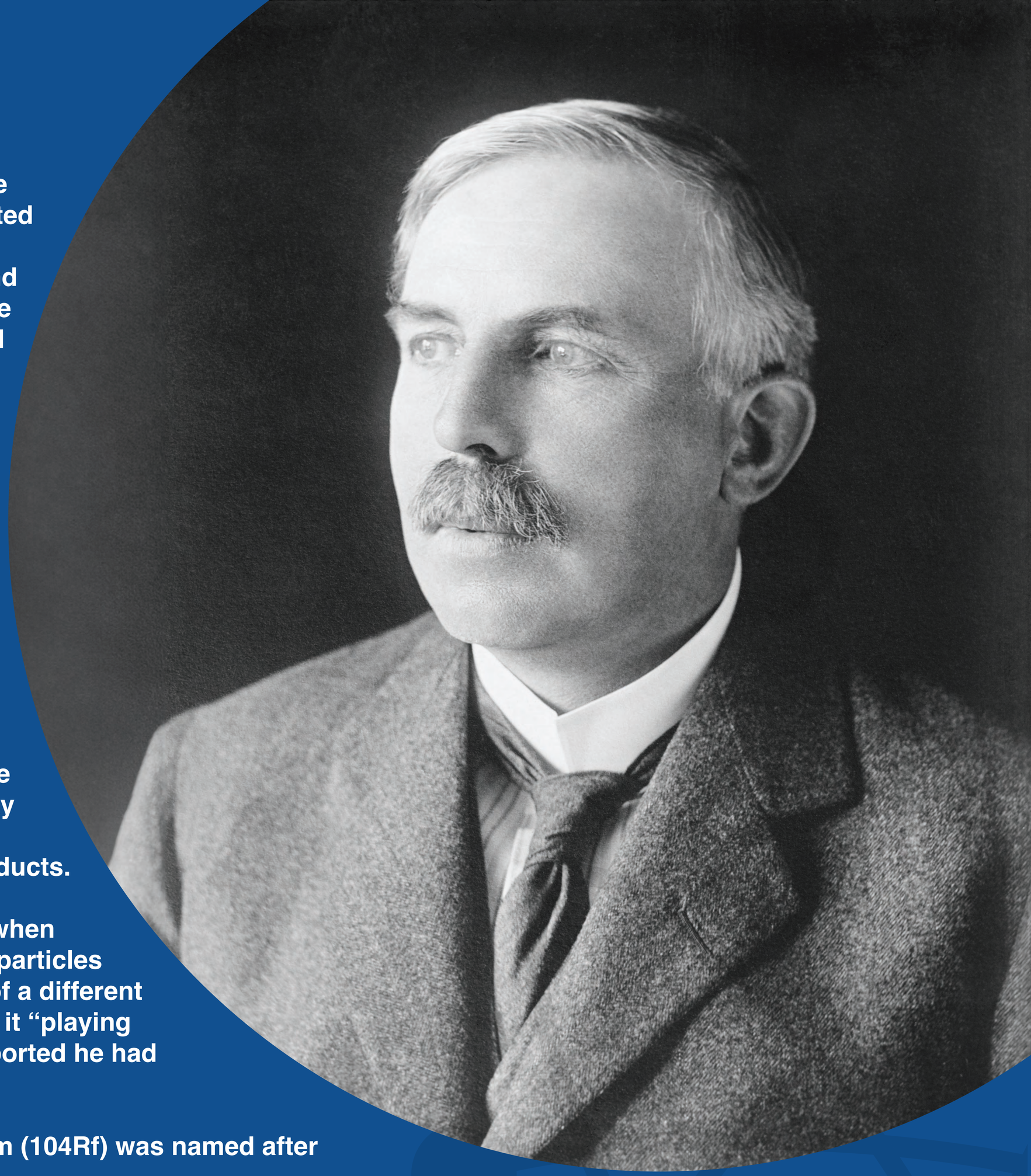
Rutherford showed that the decay of a radioactive element resulted in the production of a different element. For this, he received the 1908 Nobel Prize in chemistry.


He also developed the equations we still use today to calculate the decay rates of radioactive atoms and the production rates of their decay products.

His final major achievement came when he bombarded nitrogen with alpha particles and demonstrated the production of a different element, oxygen. Rutherford called it “playing with marbles.” The newspapers reported he had split the atom.

The chemical element rutherfordium (104Rf) was named after him in 1997.

Our collection includes a high-pressure ion chamber constructed at Rutherford's Cavendish Laboratory. Look for this in the Measuring Radiation section of the museum.

# Ernest Rutherford

*(1871-1937)*

ORAU Museum *of* Radiation *and* Radioactivity