The Curies

Presented by
Fabio Cyro
Kumar Ankush
Inder Pal
Vamshi Kodipaka

Early Life

- Pierre Curie, born to Eugene Curie and Sophie-Claire Depouilly Curie
- Home-schooled till early teens, knack for mathematics and geometry, earned his math degree at age 16
- At 18, earned equivalent of higher degree, started working as a lab instructor

Early Life

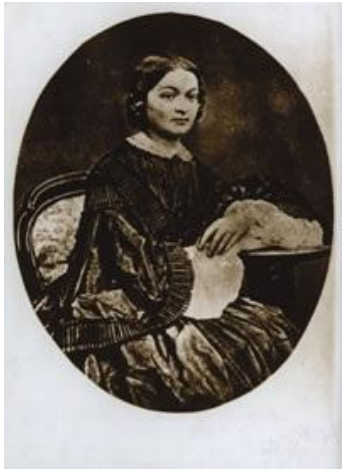
- At young age of 21 (1880), Pierre & Jacques demo-ed piezoelectric phenomenon
- In 1881, demo-ed reverse effect of piezoelectricity - electrostriction
- Invented generation and detection devices for both, almost all electronic devices run on this property of the crystals

Early Life

- Born on November 7, 1867 in Warsaw, Poland; same year as Alfred Nobel was granted a patent for dynamite
- Given name was Marya Sklodowska, but her family and friends called her “Little Manya”.

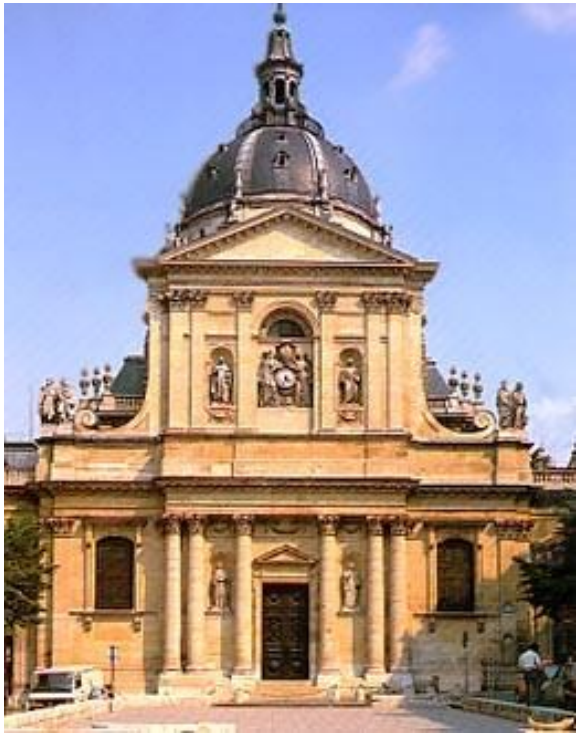
Early Life

- Her father, Władysław Skłodowski, was a math and physics Professor;
- Her mother, Bronisława Skłodowska, was a pianist, singer, and teacher and died when Marie was 11 years old.



Early Life

- Graduated high school when she was 15;
- In 1891 she enrolled at the Sorbonne in Paris as “Marie” and graduated in 1893.



Research

- Studied ferromagnetism, paramagnetism, diamagnetism at doctoral
- Gave Curie's Law
- Also gave Curie Dissymmetry Principle - http://bit.do/curieprinciple

Research

- Isolated polonium and radium with Marie
- Curie and one of his students, Albert Laborde, made the first discovery of nuclear energy and qualitative property of the radiation

Research

- Marie Curie decided that her thesis for her doctorate would be on Henri Becquerel's mysterious "x-rays" that are given off by uranium;

Marriage

- Marie didn't pay heed to Pierre at initial advances

"It would be a beautiful thing, a thing I dare not hope, if we could spend our life near each other, hypnotized by our dreams: your patriotic dream, our humanitarian dream, and our scientific dream."

Marriage

- Famously didn't wear "bridal" costume at the marriage

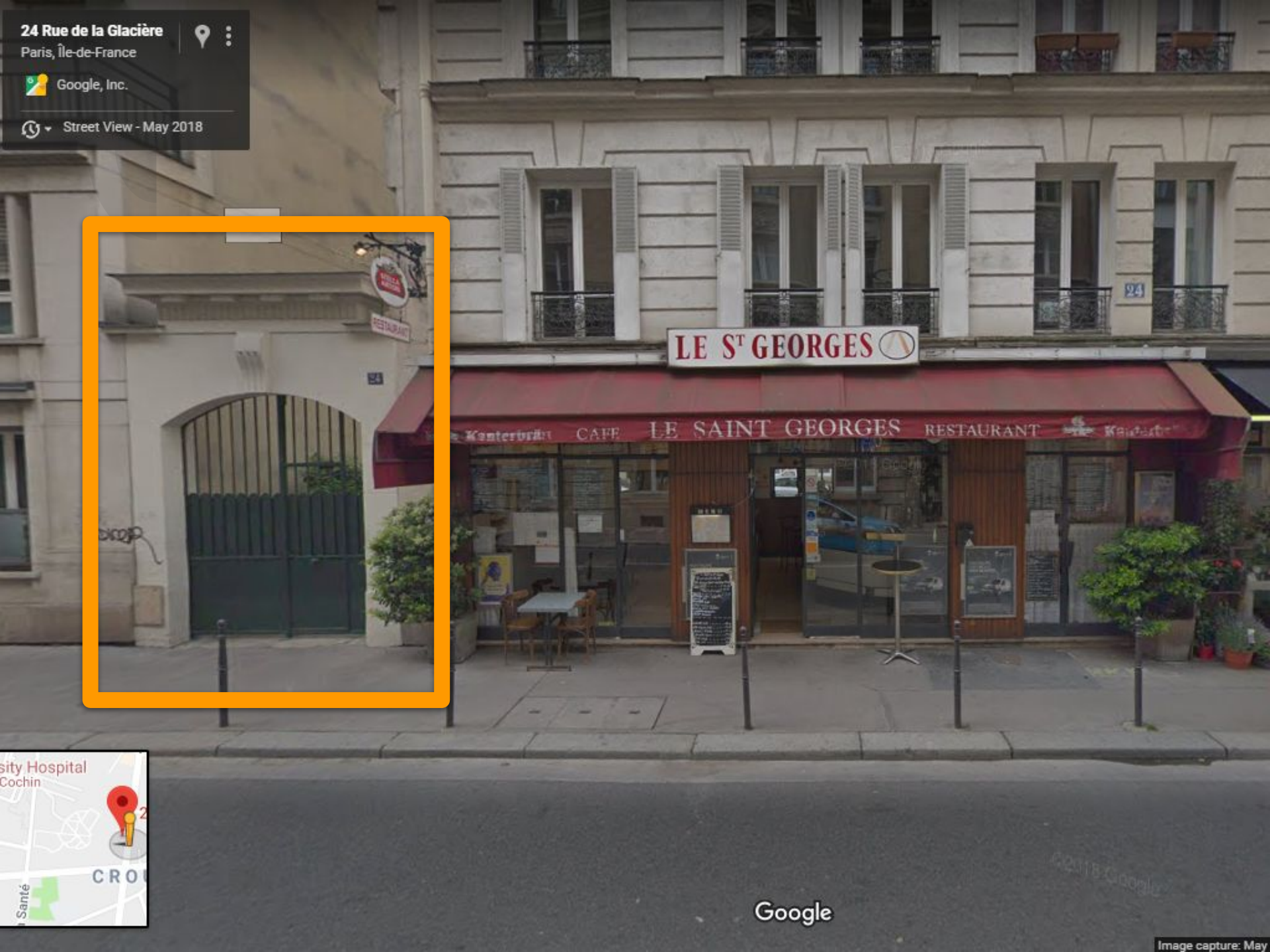
"I have no dress except the one I wear every day. If you are going to be kind enough to give me one, please let it be practical and dark so that I can put it on afterwards to go to the laboratory."

Research

- Pierre stopped his work on crystals to work with Marie
- Marie continued her work, with Pitchblende
- In July 1898 they extracted a new element that was even more radioactive than Uranium
- They called this new substance ‘Polonium’

Research

- She discovered that the only known elements that were radioactive were Uranium and Thorium
- Coined the term “radioactivity”


24 Rue de la Glacière
Paris, Île-de-France
Google, Inc.
Street View - May 2018
LE ST GEORGES
CAFE LE SAINT GEORGES RESTAURANT
24
RESTAURANT
sity Hospital
Cochin
Santé
Google
Image capture: May

Research

- In January of 1899, discovered Radium
- In 1910, Marie isolated pure Radium metal
- Light, heat and damage living flesh.

Impact

- Invented and improved design of many instruments
- The ‘electronic’ world exists because of piezoelectric phenomenon, from microprocessors to radio and mobile communication

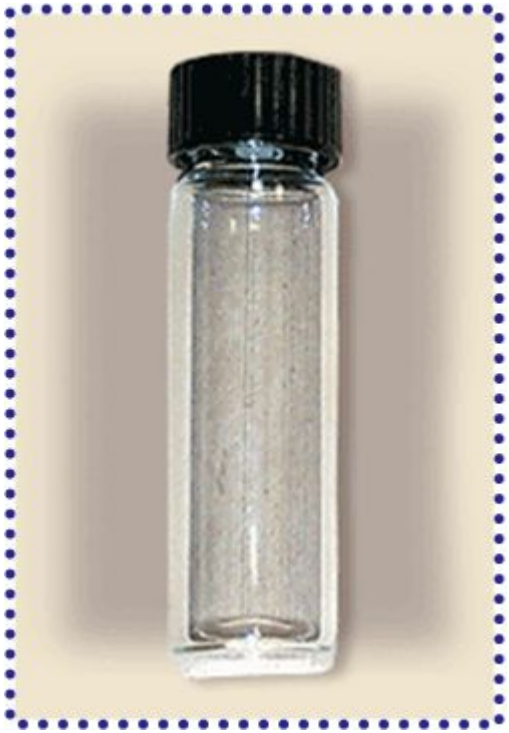
Awards

- Shared Nobel Prize with Marie and Henri Becquerel
- Shared the Devy Medal w/ Marie
- Matteucci Medal w/ Marie

Impact

- Marie also invented tiny glass tubes that were filled with radon (a radioactive gas)

- Doctors would insert the tubes in patients at spots where the radiation would destroy diseased tissue



After Pierre

- Marie took over his teaching job at the Sorbonne in 1906
- 1st woman professor at any French university
- Paris radium institute in 1907, and in 1914 was named after Pierre

Health Issues

- Radioactivity problems;
- In 1911 Marie had problems from depression and severe kidney problems.

After Pierre

- In August 1914, the Radium Institute was renamed to Marie's husband

- After the institute was finished, Germany invaded France. Immediately, Marie donated all of her money to the War fund, and signed up to be a nurse

Declining Health

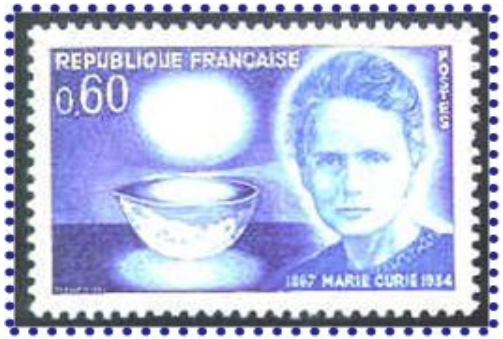
- After the War, she spent a lot of time with her two daughters Irene and Eve
- After 3 years, she resumed her work with radium at the Paris institute
- She noticed burns on her hands and her eyesight started failing around 1932

Last days of Marie

- Marie's blood had been weakened by her constant exposure to radium
- This caused her to develop aplastic anemia
- Marie eventually contracted leukemia and died on July 14, 1934

Accomplishments

1



Legacy

- Led to new therapeutic and diagnostic methods for treating cancer in **medicine**
- They had two daughters, Irene, born in 1897 and Ève, born in 1904
- Her awards to be given to the scientific institutions she was affiliated with rather than to her

Questions