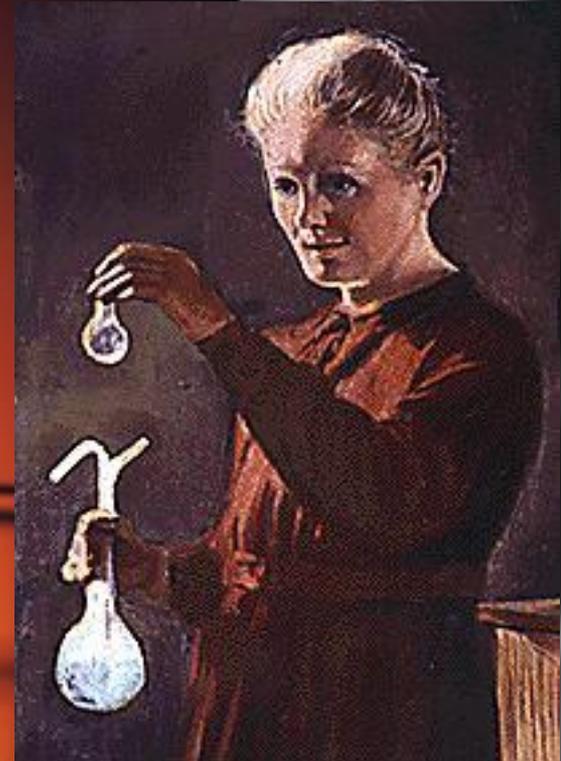


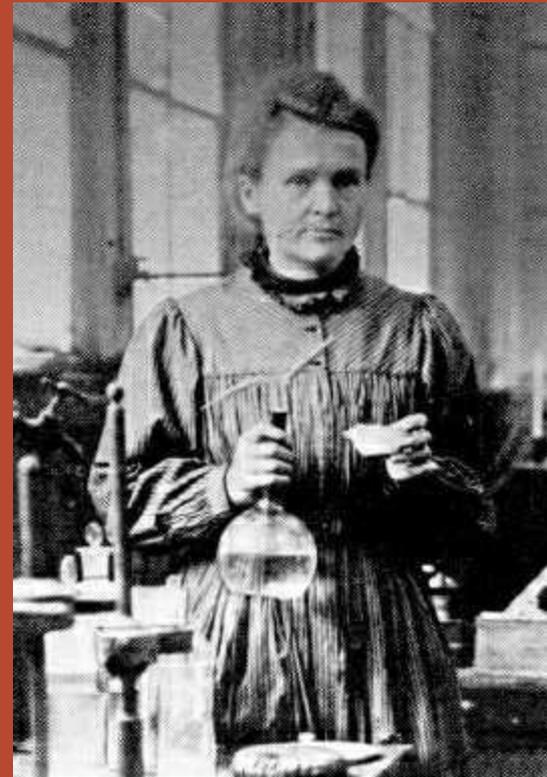
# *Quiet Genius Pushing Boundaries: Madame Curie*

Adam J. Wolfer, PhD



# Who was Madame Curie?

- Scientist –
  - Radioactivity
  - Polonium
  - Radium
- Polish
- Woman



# Who was Madame Curie?

- Role Model
- Wife
- Mother
- Icon



# What I learned

- Beauty
- Romantic/Tragic Icon
- Patriot
- Humanitarian
- Controversies



# History

- **Maria Sklodowska-Curie**  
**1867-1934**
- Born Warsaw, Poland\*
- Minor nobility
- 5<sup>th</sup> of 5 children of teachers
- Mother died of tuberculosis and sister died of typhus

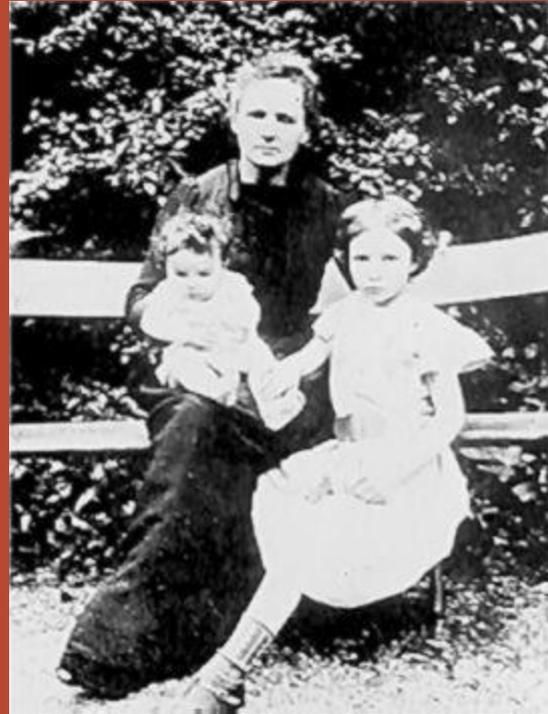
# History

- Flying University
- Governess
- Paris (1891)
- Sorbonne
  - Studied Math (1893), Physics (1894) and Chemistry
  - Top student
- Married Pierre Curie (1895)



# History

- Henri Becquerel discovers radiation in uranium (1896)
- Irene born (1897)
- Polonium (1898)
- Radium (1898)
- Nobel prize in Physics(1903)



# History

- Eve born (1904)
- Pierre's death (1906)
- Appointed to Pierre's position (1906)
- Isolated pure radium (1910)
- Nobel Prize in Chemistry (1911)





# Romantic/Tragic Icon

- Husband/wife Nobel winners
- “One of the loveliest unions in all of history of science had come to a tragic end.” Bernard Jaffe, *Crucibles: The Story of Chemistry*
- Marie carries on

# Romantic/Tragic Icon

- Madame Curie (1947)
  - Greer Garson and Walter Pidgeon
  - Mrs. Miniver
- Death from leukemia caused by radiation exposure (1934)

# Patriot/ Humanitarian

- Flying University
- Radium cure
- Curie Institutes
- Petite Curies WWI



# Controversies

- Nobel Prize
- French Academy of Science
  - Not a member
  - First woman 1979
- Teaching
- Affair with married man
- Role in research

MY TEACHER ALWAYS TOLD ME THAT IF I APPLIED MYSELF, I COULD BECOME THE NEXT MARIE CURIE.



YOU KNOW, I WISH THEY'D GET OVER ME.



ZOMBIE MARIE CURIE!

NOT THAT I DON'T DESERVE IT. THESE TWO NOBELS AIN'T DECORATIVE. BUT I MAKE A SORRY ROLE MODEL IF GIRLS JUST SEE ME OVER AND OVER AS THE ONE TOKEN LADY SCIENTIST.



LISE MEITNER FIGURED OUT THAT NUCLEAR FISSION WAS HAPPENING, WHILE HER COLLEAGUE OTTO WAS STARING BLANKLY AT THEIR DATA IN CONFUSION, AND PROVED ENRICO FERMI WRONG IN THE PROCESS. ENRICO AND OTTO BOTH GOT NOBEL PRIZES. LISE GOT A NATIONAL WOMEN'S PRESS CLUB AWARD.



THEY FINALLY NAMED AN ELEMENT AFTER HER, BUT NOT UNTIL 60 YEARS LATER.

EMMY NOETHER FOUGHT PAST HER VICTORIAN-ERA FINISHING-SCHOOL UPBRINGING, PURSUED MATHEMATICS BY AUDITING CLASSES, AND, AFTER FINALLY GETTING A PH.D, WAS PERMITTED TO TEACH ONLY AS AN UNPAID LECTURER (OFTEN UNDER MALE COLLEAGUES' NAMES).

WAS SHE AS GOOD AS THEM?



OH.



SHE REVOLUTIONIZED ABSTRACT ALGEBRA, FILLED GAPS IN RELATIVITY, AND FOUND WHAT SOME CALL THE MOST BEAUTIFUL, DEEPEST RESULT IN THEORETICAL PHYSICS.

BUT YOU DON'T BECOME GREAT BY TRYING TO BE GREAT. YOU BECOME GREAT BY WANTING TO DO SOMETHING, AND THEN DOING IT SO HARD THAT YOU BECOME GREAT IN THE PROCESS.



SO DON'T TRY TO BE THE NEXT ME, NOETHER, OR MEITNER. JUST REMEMBER THAT IF YOU WANT TO DO THIS STUFF, YOU'RE NOT ALONE.



THANKS.

ALSO, AVOID RADIUM. TURNS OUT IT KILLS YOU.

I'LL TRY.



# Legacy

- Understanding of matter
- Nuclear Medicine
- Irene Joliot-Curie (1897 – 1956) and Frederic Joliot-Curie
  - Nobel Prize (1935)
  - 2 others from Curie Institute
- Eve Curie Labouisse (1904-2007)
  - Author *Madame Curie* (1937)
  - Humanitarian

# Legacy

- Nuclear Power
- Women in science
  - *Pythagoras' Trousers: God, Physics, and the Gender Wars* – by Margaret Wertheim
  - *Before Big Science: The Pursuit of Modern Chemistry and Physics, 1800-1940* – by Mary Jo Nye
- Change that – people in science

Nothing in life is to be feared,  
it is only to be understood.

Now is the time to understand more,  
so that we may fear less.

Marie Curie

