

Women in Physics in South Africa

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Presentation Plan

- The History
- Conferences: 2002, 2005, 2008, 2011
- Launch Women in Physics in South Africa
- Projects of WiPiSA

The History

1. Few women in Physics as compared to other sciences

2. Nobel Prize statistics:

Physics: 2

1903 – Marie Sklodowska Curie

1963 – Maria Goeppert-Mayer

Chemistry: 4

1911 – Marie Sklodowska Curie

1935 – Irene Curie Joliot

1964 – Dorothy Crowfoot Hodgkin

2009 – Ada E Yonath

Physiology/Medicine: 10

2004 - Linda E Buck

2008 - Françoise Barré-Sinoussi

2009 - Elizabeth H Blackburn

2009 - Carol W Greider

IUPAP working Group 1999

The mandate

- To survey the situation for women in physics in IUPAP member countries.
- To analyse and report results with suggestions on how to improve the situation.
- To suggest ways that women can become more involved in IUPAP
- To report to General Assembly in 2002.

Recommendations

- **Attracting Girls into Physics (childhood to university)**
- **Launching a Successful Career (University to Mid-Career)**
- **Balancing Family and Career**
- **Getting Women into Physics Leadership**

UNIQUE HISTORY

Transformation of a society

Grasping a brutal history

The 1956 march to the office of the Prime Minister

Struck a woman

Struck a rock

9 August Day – National Women's Day

Women's Month: August

Activities around women in Science

Awards in Business

Awards for Women in Business Technology

Role Models



Women in Physics in South Africa

- Launch 2005
 - celebrating international year of physics
- Funded by DST
- Biggest Fund ever received by SAIP
- Funds Administered by DST

Workshop at Launch

Writing aims and objectives unique to SA

- To stimulate an interest in physics amongst girls and women
- To encourage girls and women to study physics
- To encourage and support girls and women to work in physics-related careers
- To assist in removing or overcoming obstacles and barriers for girls and women to study physics and work in physics-related careers

Objectives

- Attracting girls into Physics
- Mentoring young women in Physics
- Obtaining baseline information on women in Physics in South Africa

UP: Girls Workshop

- Resistors necklace



- ear-rings



Bed-side lamp



ICE-CREAM

- USING LIQUID NITROGEN



Operation Starlight



2007

- A "Women in Physics" initiative -

Sponsored by the South African Institute of Physics
Hosted by the Physics Department, Nelson Mandela Metropolitan University



Thank You

A party of famous physicists

- One day, all of the world's famous physicists decided to get together for a tea luncheon. Fortunately, the doorman was a grad student, and able to observe some of the guests...
- Everyone gravitated toward Newton, but he just kept moving around at a constant velocity and showed no reaction.
- Einstein thought it was a relatively good time.
- Coulomb got a real charge out of the whole thing.
- Cavendish wasn't invited, but he had the balls to show up anyway.
- Cauchy, being the only mathematician there, still managed to integrate well with everyone.
- Thompson enjoyed the plum pudding.
- Pauli came late, but was mostly excluded from things, so he split.
- Pascal was under too much pressure to enjoy himself.

- Ohm spent most of the time resisting Ampere's opinions on current events.
- Hamilton went to the buffet tables exactly once.
- Volt thought the social had a lot of potential.
- Hilbert was pretty spaced out for most of it.
- Heisenberg may or may not have been there.
- The Curies were there and just glowed the whole time.
- van der Waals forced himself to mingle.
- Wien radiated a colourful personality.
- Millikan dropped his Italian oil dressing.
- de Broglie mostly just stood in the corner and waved.
- Hollerith liked the hole idea.
- Stefan and Boltzman got into some hot debates.
- Everyone was attracted to Tesla's magnetic personality.
- Compton was a little scatter-brained at times.
- Bohr ate too much and got atomic ache.
- Watt turned out to be a powerful speaker.
- Hertz went back to the buffet table several times a minute.
- Faraday had quite a capacity for food.
- Oppenheimer got bombed.

- Title: A Sexual Encounter between a Capacitor and an Inductor

One evening, with his charge at full capacity, Micro Farad decided to get a cute coil to discharge him. He went to the Magnet Bar to pick up a chip called Millie Amp. He caught her out back trying self induction; fortunately, she had not damaged her solenoid. The two took off on his megacycle and rode across the Wheatstone Bridge into a magnetic field, next to a flowing current , to watch the sine waves.

Micro Farad was very much stimulated by Millie's characteristic curve. Being attractive himself, he soon had her field fully excited. He set her on the ground potential, raised his frequency, lowered her resistance, and pulled out his high voltage probe. When he inserted it in parallel, he short-circuited her shunt. Fully excited, Millie cried out, "ohm, ohm, give me mho". As he increased his tube to maximum output, her coil vibrated from the current flow. It did not take long for her shunt to reach maximum heat. Now with the excessive current shortening her shunt, Micro's capacity rapidly discharged – every electron was drained off. But that was not the end of it. Indeed, they fluxed all night, tried various connections and hookings until his bar magnet weakened, and he could no longer generate enough voltage to sustain his collapsing field. With his battery fully discharged, Micro was unable to excite his tickler, so they went home. A few weeks later, they were merged forever and oscillated happily ever after.