The Gender Group in High Energy Physics in India: Efforts and Initiatives towards Gender Equity

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ICWIP2023

8th International Conference on Women in Physics

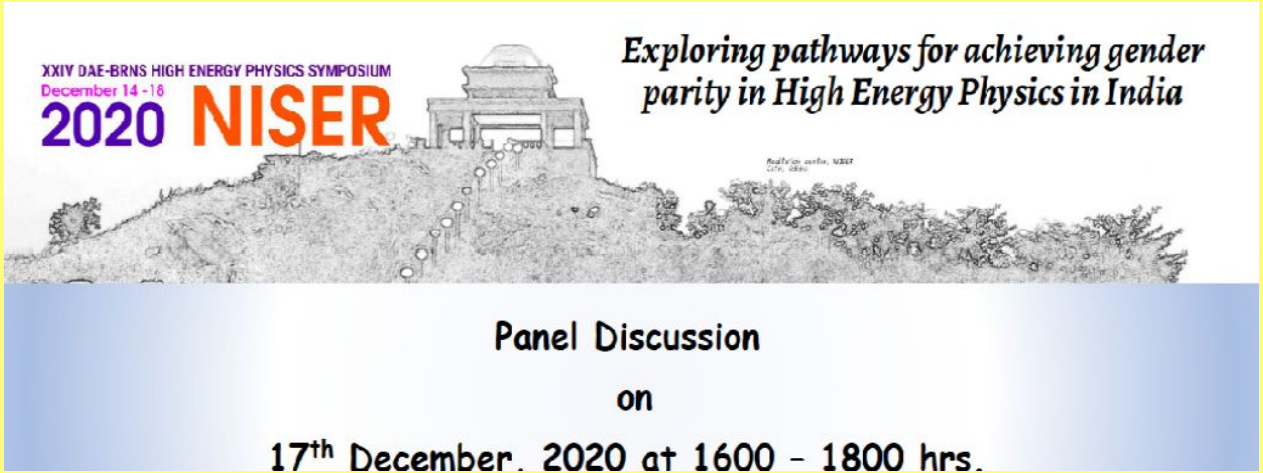
Online Mode

10-14 July 2023

Genesis of Gender in HEP working group

- **Special Plenary Session in the DAE-High Energy Physics Symposium 2020:**
  to deliberate the issues related to gender-gap in HEP

- **Formation of a gender group in HEP:**
  In this meeting it was unanimously decided to form HEP Gender group under the Gender in Physics Working Group of Indian Physics Association



https://www.tifr.res.in/~ipa1970/news/513/NE1.pdf

Activities (2021-2023)

- **First-ever gender session in Indian String meet 2021**

  A panel discussion on **"Gender Imbalance in String Theory: Focus on India",** with emphasis on the imbalance at the root level of education till higher level of employment for women researchers in String Theory. [https://www.youtube.com/watch?v=DBgAjSAurwE]

- **Gender Session in the 2022 DAE-HEP symposium**

  A panel discussion on **"Two Body Problem in Academia and Possible Ways to Overcome it"** was held.

  The two body problem is identified as a major cause of the **leaky pipeline syndrome,** and the panel discussed various issues related to this.

- **A detailed survey on women in Physics**

  A detailed survey on the **fraction of women in the Physics profession in various Indian institutes** and the cause and challenges were discussed.

  The study was presented in the **30th International Symposium on Lepton Photon Interactions at High Energies** in January 2022

Panel discussion on "Gender Imbalance in String Theory: Focus on India", Indian String meet 2021 (online)

Panel discussion on "Two Body Problem in Academia and Possible Ways to Overcome it", December 2022, 2022 DAE-HEP symposium (in person)

Panel Discussion : Gender imbalance in String theory focus on India

- **Women in String theory**
  An experimental science like Biology that requires committed time in the laboratory attracts and retains more women researchers compared to Physics in general and String theory in particular. In this context the prejudices like myth of mathematics and theoretical physics being “hard for girls” were mentioned.

- **Bias, imposter syndrome**
  Panelists discussed issues like bias related to women in science, imposter syndrome etc.

- **Need of affirmative action**
  The need of affirmative action at all levels and support from family and colleagues, on campus accommodation, flexible work hours, child care facilities etc. were discussed.

- **Measures taken**
  The measures taken at ICTP and by the Indian Academy and Govt. of India were also discussed.

Panel Discussion : Two body problem in academia

- **Two body problem in academia**

  It exists since decades (**A major cause of leaky pipeline**). Spouses not having job at same place problem adversely **affects family balance, career growth, interruption in children's education and their emotional wellbeing**.

- **Loss in trained human resource**

  Many times women are not able to realize their true potential

- **Discussions by Panelists**

  Personal experiences, possible issues if both spouses are hired in same department, policy level changes needed as well as situation in countries outside India

  It was pointed out that in foreign countries many Institutions make effort to arrange employment at different levels to the spouse of employee as this kind gesture serve as win-win situation both the employer and employee. Similar solutions can also be looked at in the Indian context.

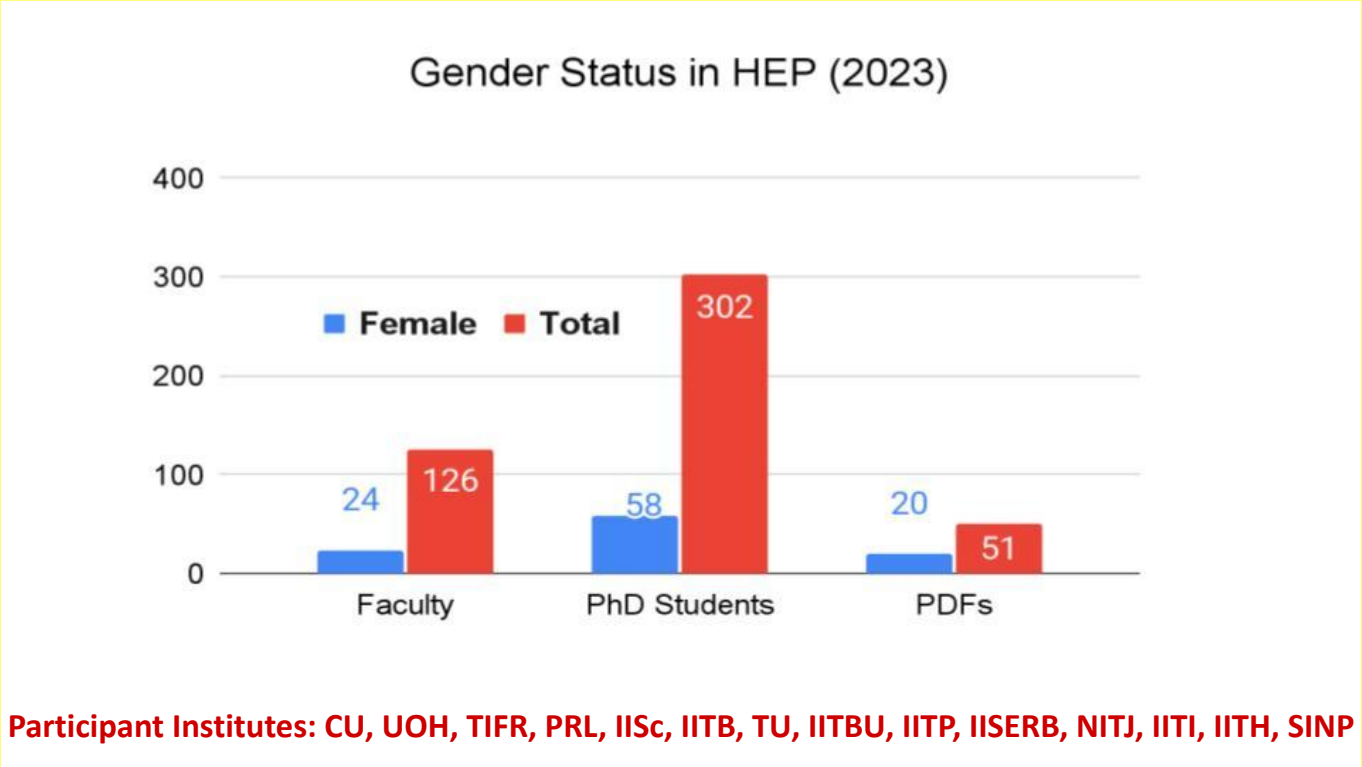
- **Creating two body opportunities**

  — Govt of India policies — **mobility grant for women researchers, various women in science schemes.**

Gender Status in HEP (2023)

- The data from the participant institutes across India shows the following **fractions for female representation**:

Faculty	**16 %**
PhD Student	**19%**
PDF	**28 %**

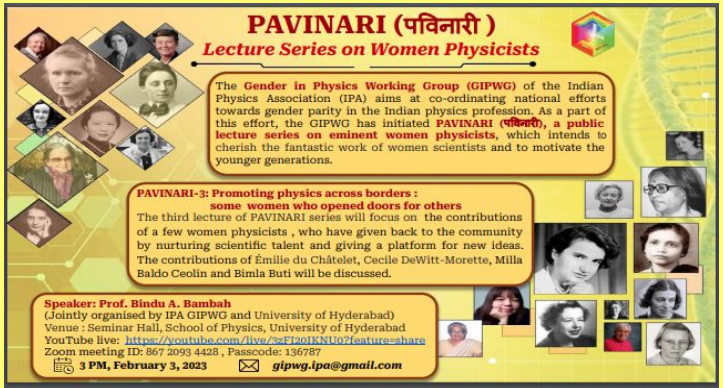


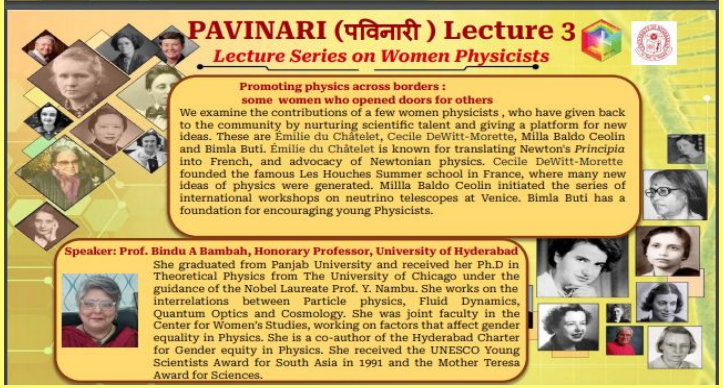
Participant Institutes: CU, UOH, TIFR, PRL, IISc, IITB, TU, IITBU, IITP, IISERB, NITJ, IITI, IITH, SINP

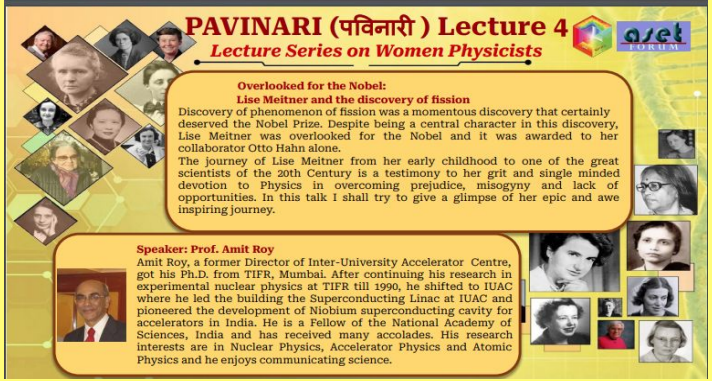
Courtesy: Dr. Pragya Pandey

HEP talks at PAVINARI Lecture Series

(https://tinyurl.com/pavinaritalks)







“Promoting physics across borders:
Some women who opened the doors for others”
Prof. Bindu A Bambah

“Overlooked for the Nobel:
Lise Meitner and the discovery of fission”
Prof. Amit Roy

Role models in HEP

- **The biography of Prof. Suman Beri titled "Suman Beri – Higgs Boson, Top Quark and Single Top Quark – The Story of a Punjabi Woman Scientist" was released on (April 30, 2023)**

- **Prof Beri was the first woman professor of the Physics Department of Punjab University, Chandigarh and the first woman professor emeritus.**

- **Being among the top scientists in the country, her big contributions include:** observation of the top quark in 1995, observation of single top quark production in 2009, observation of the Higgs boson in 2012

The Way Forward!

- **Implementation of proposed gender equity policies & recommendations at institutional level**
- **Continued efforts for addressing biases**
- **Inclusion of social scientists in the discourses**
- **Mandatory gender sensitization, nationwide surveys and statistics**
- **Career development & mentoring programs for young students**
- **Wider involvement of men in gender equity programs**
- **Moving beyond gender as a binary**

Thank you for the kind attention!