

And then

Academics and beyond.

Women in Physics

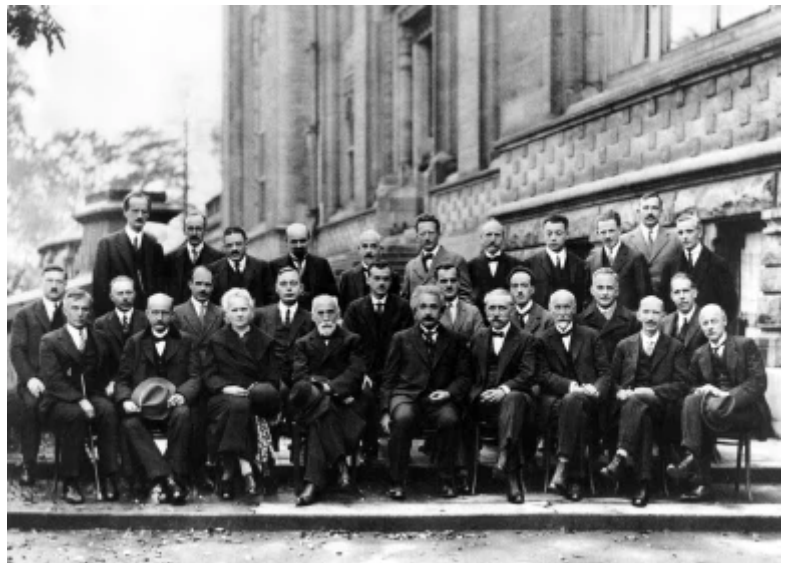
👤 Ram Ramaswamy 📁 Conference, Education, Gender, General Stuff, Online teaching, Pedagogy, Science communication 🕒 July 2, 2023 July 4, 2023 ⏱ 5 Minutes



When the first **Solvay Conference** (https://en.wikipedia.org/wiki/Solvay_Conference) was organized in 1911 to discuss current problems in Physics and Chemistry, Marie Curie was the only woman invited. It probably took her 1903 Nobel prize in physics to secure her place at the table, though in all fairness, many (but not all) of the men there were Nobel laureates.

Sixteen years later, when the fifth Solvay was held in 1927, she *still* was the only woman at the meeting although by then she had her second Nobel prize (in chemistry, in 1911).

There were some other women who might have been invited to the meeting on quantum physics – Lise Meitner had been appointed Professor of Physics in Berlin in 1926 (she would go on to discover nuclear fission) and the mathematician Emmy Noether who made seminal contributions in mathematical physics. There may have been others as well, but the bar had been set high: the next woman to be awarded the Nobel prize in physics was Maria Goeppert-Mayer, in 1963...



Things did not change as rapidly as one might have hoped in the following decades.

Few women were able to break through the various barriers that anybody, regardless of gender, needed to in order for them to have research careers in physics. Some of the causes for the low representation were poorly understood till recently, when the role of bias, both explicit and innate became quantified. In an article in the New York Times in 2013 Eileen Pollack asked **Why Are There Still So Few Women in Science?** (<https://www.nytimes.com/2013/10/06/magazine/why-are-there-still-so-few-women-in-science.html>) where she also gave some answers. Women aiming to have a research career in physics get little encouragement, experience considerable bias in the workplace, in addition to the considerable cultural bias that exists in most societies. It is interesting to note that when Pollack graduated from Yale in 1978 with an undergraduate degree in Physics, she was the only woman in her class. In 1953, **Sheila Prasad** (<https://ece.northeastern.edu/edsnu/prasad/prasad.html>) was similarly the only woman in her BSc Physics class at Mysore University, but that was twenty-five years earlier, and in India!



But this post is mainly about a Conference and some Workshops that will be held in the coming week that relate to this issue. The International Union of Pure and Applied Physics (or IUPAP) which in some sense represents physicists worldwide decided to create a Women in Physics

(WiP) Working Group (WG5) in 1999 with the main aim being to suggest means to “improve the situation for women in physics. Since this is a global organization, the hope was to use the strength of numbers to address an issue that did not seem to change over the years

One of the main activities of WG5 is to organize a conference every three years (<https://iupap.org/who-we-are/internal-organization/working-groups/wg5-women-in-physics/wg5-conferences-and-meetings/>), and this year, the 8th International Conference of Women in Physics, **ICWIP8** (<https://icwip2023.hbcse.tifr.res.in/>) will be hosted by India from 10 to 14 July. Memories of the pandemic and lockdowns have made this meeting an entirely online affair, but having attended an earlier ICWIP in Stellenbosch, South Africa, I know the energy and vitality of an in-person conference where women are in the majority in all senses of the term.

WG5 has taken more onto its plate and now this group is also given the task of suggesting means to increase gender diversity and inclusion in the practice of physics and to promote and take actions to increase gender diversity and inclusion across countries and regions. One of the outcomes of the general global awareness was the creation of the Gender in Physics Working Group (<https://www.tifr.res.in/~ipa1970/gipwg/>) (GIPWG) of Indian Physics Association (<https://www.tifr.res.in/~ipa1970/>) (IPA), the main moving force behind the push to bring this conference to India.



Having been part of the country team in the past, the opportunity to do something substantial at this meeting of the ICWIP has been very tempting, and along with Professor **Madhurima** (<https://cutn.ac.in/teams/v-madhurima/>) of the Department of Physics, Central University of Tamil Nadu, two workshops are being organized at GITAM University in Hyderabad.

Teaching Physics Online: Issues of Access & Equity in the Classroom

(<https://icwip2023.hbcse.tifr.res.in/interactive-workshops.php>) will be an online meeting from 2:30-4:30 pm IST on Sunday, 9th July. Since the theme for the International Women’s Day 2023 was specified by the UN to be **DigitAll – Innovation and technology for gender equality**, this seemed like a good discussion point, especially since already before the COVID-19 pandemic hit the globe, education was leaning towards online modes through the use of MOOCs. Post-pandemic, online education is here to stay. In India, this is reflected in the National Education Policy 2020 which has a large online education component. On the one hand there is a noticeable gender inequity in access to digital devices and internet, and on the other hand, the amount of time available to women teachers (and students) is restricted by societal norms.

In this workshop, an international panel of speakers will discuss the extent to which undergraduate and postgraduate Physics education can be delivered online, in an environment that cannot be accessed equally by all. In order to bring different experiences to the table, we have invited seven physicists (all Professors) from universities across the world, **Wenny Maulina** (<https://fisika.fmipa.unej.ac.id/wenny-maulinas-si-m-si/>) (University of Jember, Indonesia), **Ana Amador** (http://users.df.uba.ar/anita/amador/Ana_Amador/Welcome.html) (University of Buenos Aires, Argentina), **Muriel Botey Cumella** (<https://futur.upc.edu/MurielBoteyCumella>) (Universitat Politècnica de Catalunya, Spain), **Rosario Reserva** (<https://www.msuiit.edu.ph/about/leadership/research-and-extension-units.php>) (Mindanao State

University-Iligan Institute of Technology, Philippines), **Paula Vilarinho** (<https://www.ciceco.ua.pt/?tabela=peossoaldetail&menu=218&user=477>) (University of Aveiro, Portugal), **Halina Rubinsztein Dunlop** (<https://smp.uq.edu.au/profile/204/halina-rubinsztein-dunlop>) (U Queensland, Australia) and **Marcia Barbosa** (<https://www.if.ufrgs.br/~barbosa/>), the Vice-Minister for Strategic Policies and Programs of the Ministry of Science and Technology, Brazil (and on the faculty of Federal University of Rio Grande do Sul) to share their points of view about how effective (or ineffective) the teaching of Physics can be via the online mode. Hopefully we will probe the nature of learning in this new environment and the efficacy of evaluation online and the role of academic administrators in ensuring quality online education. Since it is all online, location is hardly an issue, but fact of the matter is that both organisers of the satellite meeting will be at GITAM. But there is more-

The pandemic (remember those days? The *son et lumière*?) made all education online, and during the darkest of those days, Prof. Madhurima and I set up the **Discussion Forum for Online Teachers or DFOT**, (<https://ramramaswamy.wordpress.com/2022/06/30/the-paths-we-take/>) through which we tried to get the community of teachers to talk about the different strategies we all used during those days. The **Panel Discussions** (<https://sites.google.com/view/dfot2020/panel-discussions?authuser=0>) explored a variety of topics, including

- How to Engage Students in Online Classes
- Ways of Evaluating Online Classes
- Online Teaching: The Role of Administration
- Challenges of Teaching Mathematics and mathematical Physics Online
- Virtual Labs and online Field work
- Online Teaching & Persons with Disabilities
- Advantages of Online Higher Education

I've written about DFOT on this **blog before** (<https://ramramaswamy.wordpress.com/2020/09/>), but one thing we thought was whether we could use the occasion of ICWIP to have a discussion with physics teachers in India on just how effective the online medium can be when there is no pandemic to worry about, and what the gender dimension is in practice. On the 8th of July, we will have a **Workshop on Teaching Physics Effectively Online** (<https://icwip2023.hbcse.tifr.res.in/teaching-physics-online-workshop-and-talk.php>) an in-person meeting at GITAM. Teachers who are participating in the discussion include **Bindu Bambah** (<https://sites.google.com/view/binduabambahsop/about-me>), **Rukmani Mohanta** (<http://sop.uohyd.ac.in/assets/docs/RukmaniMohanta.pdf>), **Barilong Mawlong** (<http://sop.uohyd.ac.in/assets/docs/Barilang.pdf>) (all from the University of Hyderabad), **Venkatesh Chopella** (<https://www.iiit.ac.in/people/faculty/choppell/>) (IIIT) **Meenakshi Viswanathan** (BITS-Pilani) (<https://universe.bits-pilani.ac.in/Hyderabad/meenakshiviswanathan/profile>) and **Sai Preeti** (<https://gsaipreeti.wordpress.com/about/>) (GITAM). There will also be a hybrid lecture by **Vandana**



ICWIP2023
8th International Conference on Women in Physics
(Satellite Event)

TEACHING PHYSICS ONLINE: ISSUES OF ACCESS & EQUITY IN THE CLASSROOM

Schedule

Topic	Speaker (s)	Time (PM IST)
Opening Remarks	Ram Ramaswamy	2:30 - 2:35
Sharing practices	Wenny Maulina (Indonesia)	2:35 - 2:45
	Ana Amador (Argentina)	2:45 - 2:55
	Muriel Botey Cumella (Spain)	2:55 - 3:05
Breakout room		3:05 - 3:15
Panel Discussion	V Madhurima (India -Moderator)	3:15 - 3: 55
	Rosario Reserva (Philippines)	
	Paula Vilarinho (Portugal)	
	Halina Rubinsztein-Dunlop (Australia)	
Breakout rooms		3:55 - 4:05
Concluding Discussion	Ram Ramaswamy (India) in conversation with Marcia Barbosa (Secretary of Strategic Policies and Programs of the Ministry of Science and Technology, Brazil)	4:05 - 4: 25
Closing	V Madhurima	4:25 - 4:30

Coordinators:
Ram Ramaswamy and V Madhurima

Duration: 2 hours (2:30 - 4:30 pm IST; +5:30 GMT)
Date: 9th July 2023 (Online mode)

Number of participants: 30

Satellite event of ICWIP2023
Workshop on
Teaching Physics Effectively Online and Women in STEM
8th July 2023
Organized by
Dept. of Physics, School of Science, GITAM – Hyderabad
and Gender in Physics Working Group (GIPWG)

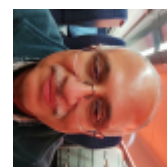
About Conference
The International Conference on Women in Physics (ICWIP) is a biennial conference conducted by the International Union of Pure and Applied Physics (IUPAP). This year it is being hosted by India in a hybrid mode. In connection with this, ICWIP is conducting a one day workshop on Teaching Physics Effectively Online and Women in STEM at GITAM Hyderabad. The event will be followed by a public lecture by Dr Vandana Sharma, IIT Hyderabad.

Resource Persons	Panel Discussion
<ul style="list-style-type: none"> • Dr. Ram Ramaswamy, IIT Delhi • Dr. Bindu Bambah, University of Hyderabad • Dr. Jyotsna Jha, Director, Centre for Budget and Policy Studies • Dr. V Madhurima, Central University of Tamil Nadu • Dr. Venkatesh Chopella's team – IIT, Hyd. • Dr. Sarilang Mawlong, University of Hyd. 	<ul style="list-style-type: none"> • Dr. Rukmini Mohanta (University of Hyderabad) • Dr. Meenakshi Vishwanathan, BITS-Pilani, Hyd. • Dr. Sai Preeti, GITAM, Hyderabad • Students
Public Lecture	Details
Dr. Vandana Sharma, IIT Hyderabad Will be delivered in hybrid mode	Maximum Participants 40 members (Limited seats) Transport on request can be arranged to and from Miyapur Metro station.
Registration Link	Registration Fee
https://forms.gle/9JDS9y3w2phue4EE Last date for registrations 23 June 2023	No Registration Fee
Venue	Event Coordinators
3-211 Seminar Hall GITAM (Deemed to be University), Hyderabad Rudhanam, Patancheru Mandal, Sangareddy, Dist. Telangana, India - 502 329, www.gitam.edu	Dr. Ram Ramaswamy, IIT Delhi Dr. V Madhurima, CUTN
GITAM Coordinator	
For further information please contact Dr. C. Sai Preeti - +91-77021 88865 icwip_2023@gitam.edu	

About GITAM
Gandhi Institute of Technology and Management [GITAM] (a deemed to be University U/S.3 of the UGC Act, 1956) popularly known as GITAM is an educational institution in Andhra Pradesh, India. Established in 1980, that it was conferred the status of deemed to be university in August 2007 by the UGC, stands testimony to its quality and potential. Subsequently, GITAM Hyderabad Campus was started in 2009, followed by Bengaluru Campus in 2012. GITAM - Hyderabad, an off campus established in the year 2009 currently hosts six schools including Basic Sciences, Pharmacy, Management, Architecture, Social Sciences, Technology and Public Policy. These schools have both graduate, postgraduate programs along with Doctoral programs.

Sharma (<https://people.iith.ac.in/vsharma/>) of the IIT Hyderabad on *Imaging assisting Humankind: Fundamental Science to Application* and hopefully there will be a **link to the online talk here** (https://youtube.com/live/8vYe_dghrPY?feature=share).

How all this will impact the general issue of women in physics or their (under)representation is not very direct, but since these are all issues that concern the teaching and learning of physics, the availability and access to instruction, and the gendered nature of many aspects of higher education in India, it is a fair bet that by bringing together a group of articulate physicists to talk about these matters, there will be considerable food for thought.



Published by Ram Ramaswamy

From 1986 to 2018 (October, when I retired) I taught at the Jawaharlal Nehru University in New Delhi. From mid 2011 to early 2015 I was Vice Chancellor of the University of Hyderabad (UoH), also known as Hyderabad Central University (HCU). Currently I am a Visiting Professor at the IIT Delhi. [View all posts by Ram Ramaswamy](#).

[Create a free website or blog at WordPress.com.](#)