



# IAU Executive Committee Women in Astronomy Working Group Annual Report 2021-2022

## **Members**

**Mamta Pommier (Chair)**

**Priya Hasan (Co-Chair)**

**Daniela Lazzaro (Executive Committee Liaison)**

**Dara Norman (Advisor)**

Alshaimaa Saad (Egypt) - Junior Member

Arianna Piccialli (Belgium)

David Valls-Gabaud (France)

John Leibacher (USA)

Josefa Masegosa Gallego (Pepa) (Spain)

Jolanta Nastula (Poland)

Lili Yang (China)

Aya Bamba (Japan)

Belinda Wilkes (USA)

Claudia Lagos Urbina (Australia)

Santiago Vargas Domínguez (Colombia)

## **1. Introduction**

Established at the XXV IAU General Assembly in Sydney (Australia), 2003, the Women in Astronomy (WiA) Working Group (WG) was *revitalized* with the new organizing committee members in September 2021. Besides introducing a well structured workplan, the WG continue to pursue and reinforce the earlier mandate to collect information, propose measures, and initiate actions in support of, or to advance equality of opportunity for achievement between women and men in astronomy, within the IAU, and the world at large.

In the next triennium, the WG will focus on the difficulties (bias, reduced career prospects, leaky pipeline and lacking role models, childcare issues, harassment, discrimination, unfair working conditions) faced by Women in Astronomy, help bridge the gender gap in Astronomy and STEM fields, and help the careers of women researchers and young women Ph.D. students worldwide. To achieve these objectives, the four point workplan has been put forward with a special focus on (i) Awareness & Sustainability, (ii) Training and Skill Building, (iii) Fundraising and career retention & (iv) Dissemination and communication of results via conferences, newsletters, etc.

## **2. WG activities and developments since September 2021**

Since its commencement, the WiA WG has initiated many activities for women astronomers all over the world to build an active and support-providing community. These activities (September 2021-March 2022) are listed below:

### **I- Awareness & Sustainability- from students, early career to senior level researchers**

- 1. October 2021-** IAU WiA WG bi-monthly online discourse Seminar series on ‘**Career Challenges faced by Women in Astronomy**’ with speakers- Mamta Pommier (IAU-WiA Chair, France), Debra Elmgreen (IAU President, USA), Santiago Vargas Dominguez (IAU WiA Organizing committee member, Colombia).

2. **December 2021-** IAU WiA WG bi-monthly online Interview series with ‘**Outstanding Women in Astronomy**’ Prof. Jocelyn Bell Burnell- To know the career challenges faced by her during her long career in Astronomy and get inspired by the career paths of outstanding Women in Astronomy
3. **February 2022-** IAU WiA WG seminar series ‘**Meet the Scientists**’ to promote International Women and Girl’s Day in Science with speakers Prof. Rohini Godbole (IISc, India), Dr. Samaya Michiko Nissanke (Univ. Amsterdam, Netherlands) who shared their career experiences.
4. **March 2022-** IAU WiA WG and OAO joint ‘**Draw and Astronomer**’ event to promote International Women and Girl’s Day in Science
5. **March 2022-** IAU WiA WG seminar series ‘**Enterprising women in Astronomy**’ to promote International Women’s Day and explore different career options in Astronomy with speakers- Dr. Sthabile Kolwa (University of Johannesburg, South Africa), Dr. Helen Mason (University of Cambridge, United Kingdom), Dr. Itziar Aretxaga (INAOEP, Mexico), Prof. Sara Seager, O.C. (Massachusetts Institute of Technology, Cambridge, MA, USA), and Dr. Stella Kafka (Exec. Director American Meteorological Society Boston, USA)
6. **August 2022-** IAU WiA WG session at the General Assembly meeting in Busan, South Korea to address the Gender imbalance issues faced by Women in Astronomy and STEM, organize the Women in Astronomy mentoring and lunch sessions
7. The WG has also supported the activities of **Standing Committee for Gender Equality in Science (SCGE)**, **African Network of Women in Astronomy (AfNWA)** and inauguration day of **Astronomical Society of Iranian Women in Astronomy**.

## **II- Training and Skill Building- from students, early career to senior level researchers**

1. **November 2021-** IAU WiA WG bi-monthly Training Program series on ‘**Essential Skills for Astronomy Research-1**’ on Introduction to Python and Jupiter Notebooks, Astropy, Matplotlib, ADS, Overleaf, and Latex by Dr. Priya Hasan
2. **January 2022-** IAU WiA WG bi-monthly Training Program series on ‘**Essential Skills for Astronomy Research-2**’ on Exploring solar images with visualization software JHelioviewer- by Dr. Santiago Vargas Domínguez, Twitter for scientist (Why & how to use it) by Dr. Arianna Piccialli and TOPCAT- astronomy catalog matching software by Dr. Priya Hasan
3. **February 2022-** Training international undergraduate students on ‘**Women in STEM career**’ by Dr. M. Pommier
4. **April 2021-** IAU WiA WG bi-monthly Training Program series on ‘**Essential Skills for Astronomy Research-3**’ on From Astronomy Data to Science by Dr. Priya Hasan

## **III- Dissemination and communication-for whole community**

1. the building up of a new WiA WG website and the logo for the diffusion of activities, resources, and announcements. All WG announcements can also be found in the call for participation section of the WG website.
2. setting up an open communication channel on various social media platforms to disseminate information about the WiA WG activities globally, which includes Twitter, Facebook, Youtube, and a dedicated Slack workspace.
3. to develop a better sense of unity as well as encourage active participation amongst the WG members, a regular ‘call for participation’ is announced in the monthly WG Newsletters. We have also launched the quarterly WG ‘**ENSEMBLE**’ magazine in December 2021, to showcase the scientific, outreach activities, achievements, and problems faced by women researchers in the work environment. *This magazine serves as a voice for women in Astronomy all over the world to assure they are well represented in the international astronomical community.*

The events listed in the above items were streamed via Zoom and YouTube, and attracted on average 100–200 participants per live event. The recordings of these public events are available on our WiA WG YouTube channel. These virtual series have received a lot of appreciation by the audience and we will continue to develop such activities and training programs until August 2024, to help the career and strengthen community of Women researchers worldwide.

#### **IV- Fundraising and career retention- from students, early career to senior level researchers**

1. 3 attempts have been made by the WG chair for fundraising to support the research activities and career of Women in Astronomy worldwide, however it has been unsuccessful as of now.

### **3. Developments since last triennium**

The earlier triennium (Sep 2018-Aug 2021) saw slow progress due to the Covid-19 outbreak, homeschooling, lack of an active IAU WiA communication channel, and other responsibilities. Nevertheless, the working group Chair and the Co-chair continued to support regular meetings and activities of the WG and initiated focus meetings on Diversity and Inclusion in Astronomy.

In the last 7 months, (beginning of the current triennium), the current WG has made significant progress and come up with a well-structured Work-plan as listed in the earlier section. Thanks to the efforts made by the Chair, Co-Chair, OC, WG, EC, and IAU office members as well as the global astronomy community who have participated in our activities and shared their invaluable support and experiences, we have:

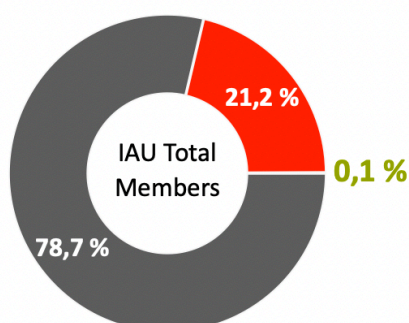
1. Carried out 2 successful surveys focused on Women's Careers in Astronomy and the impact of Covid 19 on their productivity with the participation of almost 850 researchers. Results of these surveys were supported on the European Research Council's official Twitter site and may serve as a database for funding agencies to counter gender balance issues while evaluating funding proposals.
2. Trained > 500 graduate students and early career researchers globally to attain essentials skills in Astronomy research
3. Carried out several awareness program series for the International Astronomical community
4. Conducted joint projects with the other IAU offices and promoted inclusive astronomy events at the school level where > 780 students have participated from all over the world.

Overall, the working group has led several successful activities in the last 7 months.

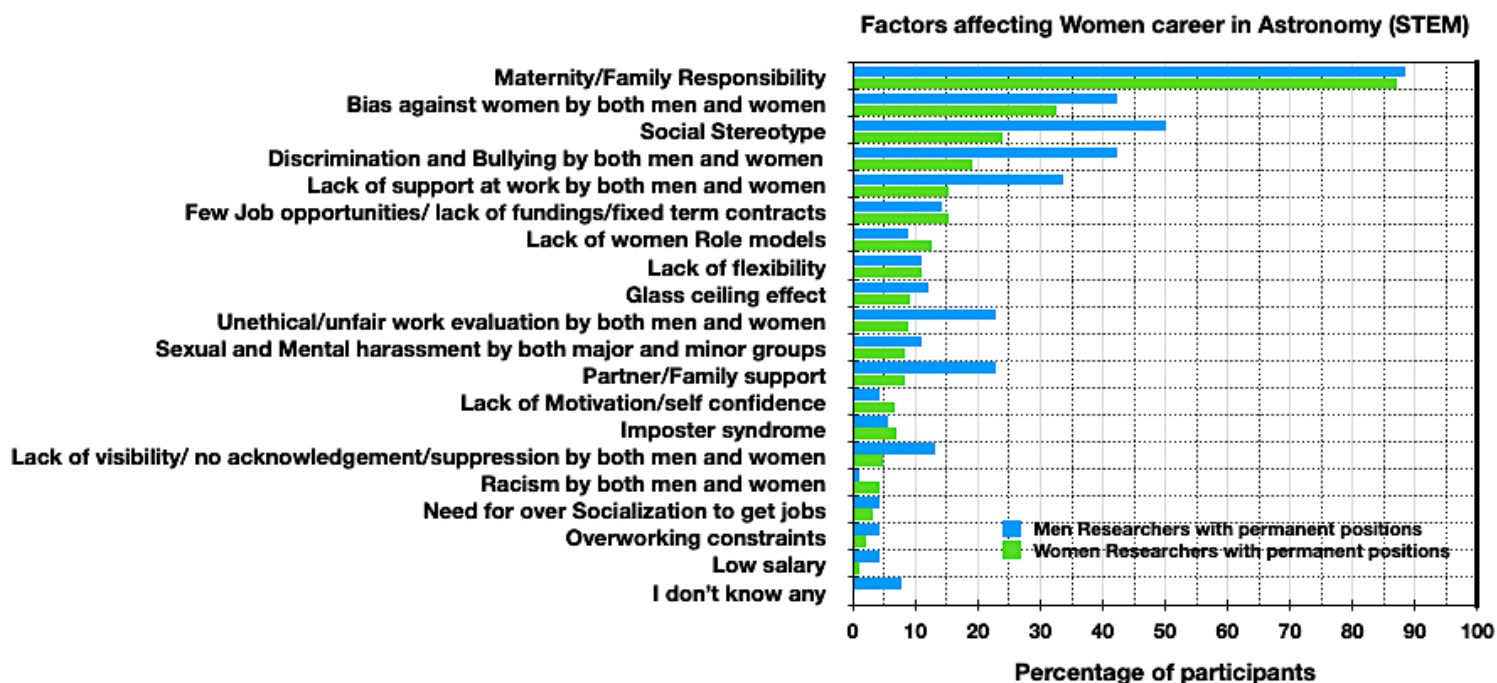
### **4. Closing Remarks**

The current IAU WiA WG statistics show that only 21% of women (Fig. 1) hold a permanent position in research worldwide and their proportion goes down to 1% at the director level mostly due to child minding and elderly caring responsibilities and lack of support to the career of mothers along with the other factors such as discrimination, bias, stereotype, suppression of work, harassment, racism, etc. (Refer IAU WiA ENSEMBLE Magazine Edition 1, and Fig. 2).

● Male ● Female ● Gender unknown



**Fig. 1 Total IAU members distribution**



**Fig. 2 IAU WiA Survey Series-1 gender-wise response from permanent researchers on factors affecting women career in Astronomy and STEM**

While the new OC of the IAU WiA WG continues to put in regular efforts, train graduate and early career researchers, support the achievements of women astronomers, address the issues and hurdles faced by Women in Astronomy worldwide and build stronger collaboration with the other IUA offices, *it has still not been successful in gaining financial support to retain the career of Women in Astronomy and achieve gender balance.*

This deficit of Women in Astronomy is unfavorable to their career sustainability and growth and renders STEM fields unhealthy and unsafe due to growing gender imbalance at every career stage. A clear need of interest to bring in new inclusive hiring policies, efforts, and support from research organizations, and funding agencies is mandatory to bridge the gender gap and help the IAU, EU commission and other global organizations gender balance vision programs for the next triennium to be successful.

The WiA WG has initiated efforts at the IAU EC level to get funds to support the career of Women in Astronomy under ‘*STEM Ambassador*’ program, and we are hope for positive outcomes.

## 5. Publications

1. IAU WiA Newsletter- Edition 5, Feb-Mar 2022
2. IAU WiA Newsletter- Edition 4, Jan 2022
3. IAU WiA ENSEMBLE Magazine Edition 1, Dec 2021
4. IAU WiA Newsletter- Edition 3, Nov 2021
5. IAU WiA Newsletter- Edition 2, Oct 2021
6. IAU WiA Newsletter- Edition 1, Sep 2021

**Mamta Pommier (Chair)**  
on behalf of the IAU Women in Astronomy WG