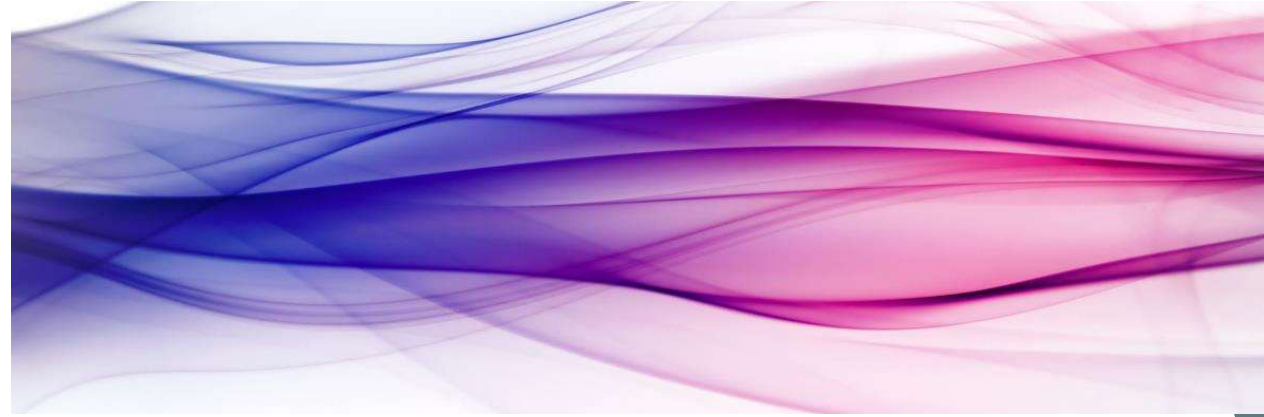




Underpinning gender-inclusive strategies



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Women scientists around the world: strategies for gender equality"
webinar
February 10, 2025

I dedicate my contribution in this webinar to

- Dr Anneke Levelt Sengers (1929-2024), a physical scientist from the Netherlands, based in the United States of America. She also formed the National Academy of Sciences of the United States of America and was a passionate advocate for women in science. In 2007 she proposed the creation of the Women for Science Programme (Wfs) at the InterAmerican Network of Academies of Science (IANAS). Still in force!
- As focal points we have met every year in different countries and from the beginning she captivated us with her commitment, dedication and permanent monitoring to record how much progress the science academies were making on gender issues and also to involve more women scientists in our countries



My talk

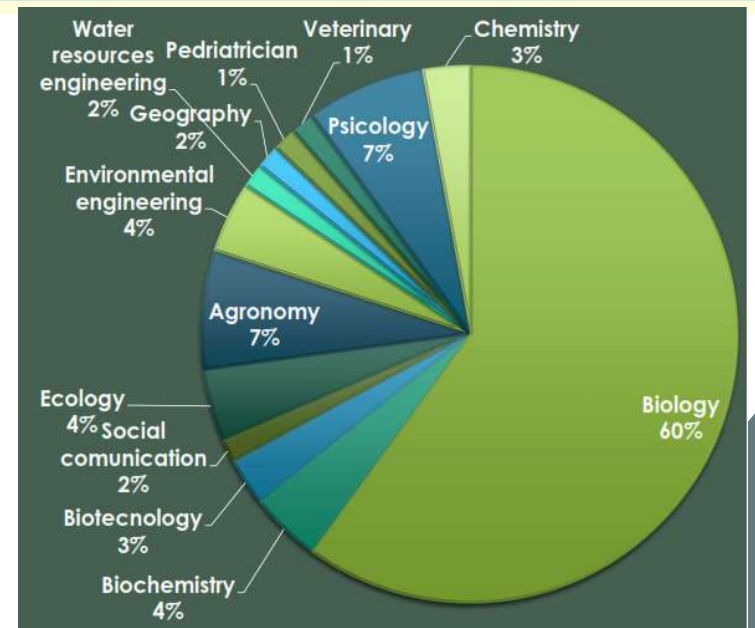
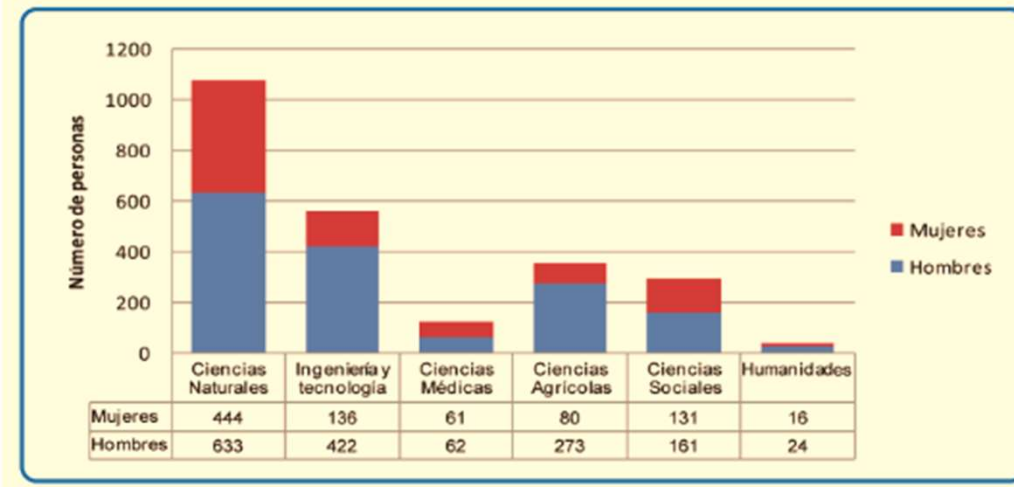


- I have not faced an environment of gender discrimination during my professional performance. I had no doubt that this was an impediment
- Only once have I suspected that it was a factor that delayed my admission to the Bolivian Academy of Sciences. This has become clear to me over the last few years, in relation to how the Academy works
- What strategies were implemented to achieve inclusive conditions? Fundamental was to target groups of women scientists and to operationalise actions in the academy. It is a never-ending task

Gender data in Bolivia

- To 2011, about 2,500 researchers in Bolivia, 55% (men) and 45% (women) in all areas of knowledge
- 45% of women are represented in the natural sciences, while agricultural sciences have less than a third
- In 2018, a sample of 380 Bolivian women scientists showed 60% with a background in biology
 - Psychologists and agronomists with 7% each
 - Chemistry, ecology, biochemistry and environmental engineering (4% each)

Gender and scientific areas - Bolivia (2011)



Mujeres científicas en la Academia Nacional de Ciencias - Bolivia



En ocasión del II
de febrero - Día
Internacional de
la Mujer y la
Niña en la
Ciencia



Febrero 2023

- For more than 30 years, only two women scientists were part of the Bolivian academy as full academics of the Bolivian Academy of Sciences to 2008. The first woman to be invited as a full member joined in 1965, then in 2001 the second female scientist was appointed
- Currently, the number of active women academicians totals 10 (out of a total of 32 active academicians) and has increased over the last 12 years. The majority are in the natural sciences: three biochemists, two biologists, two agronomists, one chemist, one psychologist and one medical geneticist
- Three women academics make up TWAS, one the Latin American Academy of Sciences

My professional performance as a biologist



Throughout my professional training, I was able to carry out various activities related to biological-botanical research. Numerous field works, especially in areas of the Bolivian Amazon, and the documentation of vegetation, species and in particular of native palms I did not suffer gender discrimination!



I was able to establish contact with colleagues and scientists in Bolivia and internationally, on the one hand to organise working groups, and on the other hand to develop joint projects. I did my undergraduate studies at the Universidad Mayor de San Andrés in Bolivia, then my MSc and PhD at the University of Aarhus, Denmark I did not suffer gender discrimination





One of the most precious gifts at the university was the opportunity to mentor almost 70 undergraduate and master's students, mostly women. Supervising young researchers is one of the most important satisfactions because you can sharpen your skills in passing on lessons and motivate them to keep growing. I did not suffer gender discrimination!



Finally, as an indicator of my work, I published 85 scientific articles in indexed journals, 21 books, 76 book chapters, among others. At the beginning, my publications were individual, but then I formed groups of co-authors generating fascinating experiences with different specialists and contributing in the final versions I also did not suffer gender discrimination

My admission to the Academy of Sciences

- In 2002, the academicians Dr Armando Cardozo, a specialist in Andean camelids, proposed my name for membership of the Bolivian National Academy of Sciences. At that time, I was not familiar with the Academy's admission procedures. I was not aware of how long my application had been delayed. It is possible that for that purpose I updated my Curriculum Vitae twice.
- And I was invited to join in May 2008 with the topic 'Influences of historical and evolutionary landscapes on the richness and current distribution of native palms in Bolivia'
- A few years later, I gained a better understanding of the procedures and conditions under which one joins a world-class academy of science



- In retrospect to my participation in the Academy of Sciences, I have had the endorsement of the Presidency of the Academy of Sciences. For example, I got the chance to be Bolivia's focal point in the Women for Science Program since 2009. It was a golden opportunity to learn the realities of women's groups in other IANAS (InterAmerican Network of Academies of Sciences) countries
- Experiences were shared and in some way the academies manifested some changes. The conditions of sorority in some taskforces also inspired everyone about the mechanisms of solidarity, support and growth of the group that was maintained for years



Gender commission (since 2010)



- Although the role of a gender commission may be more general, it is very important that its composition be achieved between men and women. This commission submits reports on activities and the Academy plenary endorses its operation
- Generally assumed the task of supporting with specific regulations and selection criteria so that the Marie Curie Award, in force during the same period, would proceed to the evaluation of applications for the annual recognition of Bolivian women scientists



- In 2023, it was proposed to establish this Commission as a reference point at the institutional level on gender equality within the group of full academicians. It was also urged to address institutional definitions to prevent any type of discrimination and violence based on gender

A national prize awarded to Bolivian women scientists

- Marie Curie (2012)

- The Marie Curie Award was created in 2012 by the National Academy of Sciences in order to recognize women scientists
- For about eight years, the call challenged the institutional postulation of 2-6 female researchers per year; but due to the pandemic in 2020 it was not launched. It was resumed in 2021, in which 20 Bolivian women scientists postulated
- The evaluation work has the basis for this Award and is in charge of the Gender Commission of the Academy. This Award is still in force and although the delivery of a certificate and a plaque does not imply an economic value, it has already been registered as an opportunity to recognize the trajectory of Bolivian women scientists
- It is not a concession, it is a right and compliance with demanding and competitive criteria, in relation to indicators of intellectual production



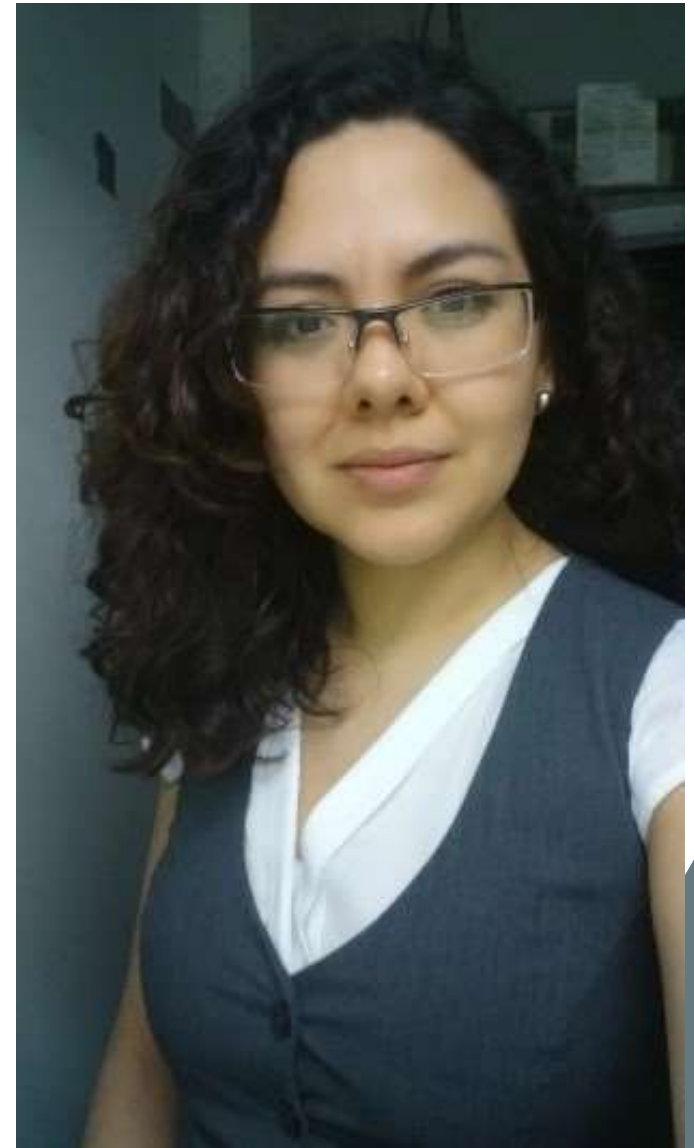
2021 Award Winner: Biochemistry



- Esther Flores, PhD and Master in Phytopharmacy and PhD in Chemistry and Chemical Engineering
- Universidad Mayor de San Andrés, La Paz
- *"After 24 years of work (this award) is a stimulus for the work being done; it implies that the effort made and the time invested to develop each research has been valued."*

2022 Award Winner: Biologist

- Carla Fernández Espinoza, PhD,
Master in Environmental Sciences
and PhD on Water Resources
Engineering
- Universidad Mayor de San Simón,
Cochabamba
- *"I hope that many more Bolivian
women scientists will be encouraged
to apply, showcase their work and
make science in Bolivia more visible."*



2023 Award Winner: Environmental engineer



- Helga Fruberg Flores, Dr.,
- Universidad Católica Boliviana "San Pablo", Cochabamba
- *"Winning this award helped me to believe in myself and to strengthen my work as a researcher, so I motivated other scientists to have these awards."*

- Since May 2021 to 2024, a new administration term of three years of the Academy began in which, for the first time, a woman scientist has assumed the position of President
- By representing the Academy, all the structural details were known internally, thus contrasting the characteristics - before and after - of how an institution that represents the science of a country works
- This connotation was an open book for me to recognize the institutional political will to generate dynamics to adapt and modernize the statute and specific regulations. But also to gradually generate work cohesion, a favorable environment and progress based on consensus



New award created - Bolivian institutions and researchers (2023)

- 'Science in Bolivia' (Premio Ciencia en Bolivia) with five categories for Bolivian institutional and researcher trajectories:
 - 1 Institutional,
 - 2 Intellectual production,
 - 3 Scientific-technological innovation,
 - 4 Equitable and inclusive science, and
 - 5 STEM education
- Two awards have already been made to 9 research institutes for their contributions to science in Bolivia



New academicians + improved rules (2021-2024)

- Full Academicians: In total 11 new scientists were admitted to the Academy during my term of office, four of whom were women
- It was necessary to **adjust the regulations** for the admission of new scientists based on international bibliometric indicators of Science and Technology, as well as the functioning of an Admissions Commission that was highly efficient
- Corresponding Academicians: The trajectory of Bolivian scientists abroad in various areas of knowledge were invited to the Academy. Eleven academics were included: six women (USA, Germany, Netherlands, Chile, Poland and Oman) and five men (USA, Brazil and Canada)



Final comments

- Rather than noting discrimination, it is better to address the safety and performance of women scientists, starting with oneself, then individualising and 'passing the word' to groups
- This strengthens not only the spirit, but of being part of networks between people, motivating self-confidence and security to continue to grow. It is a daily task and it is rewarding in every way!

THANK YOU FOR YOUR ATTENTION!