



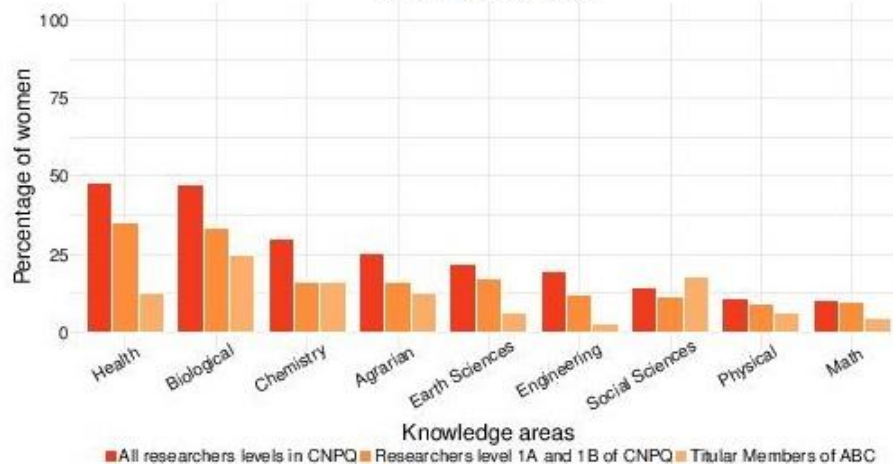
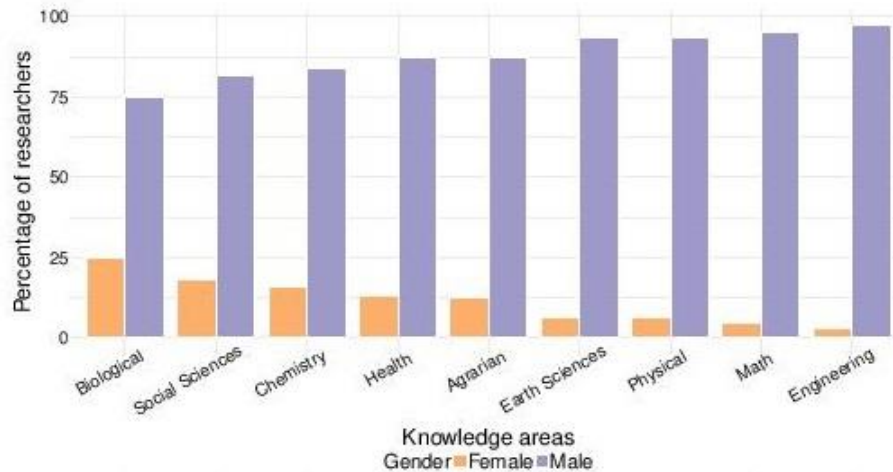
MINISTÉRIO DA CIÊNCIA, TECNOLOGIA, INOVAÇÕES E COMUNICAÇÕES
INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS

Women in Space Activities under the Brazilian Space Program

Dr. Maria Virginia Alves
INPE Head of Staff
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United Nations Expert Meeting on Space for Women
Organized jointly by the United Nations Office for Outer Space Affairs and UN Women
4 - 6 October, 2017, New York, United States of America

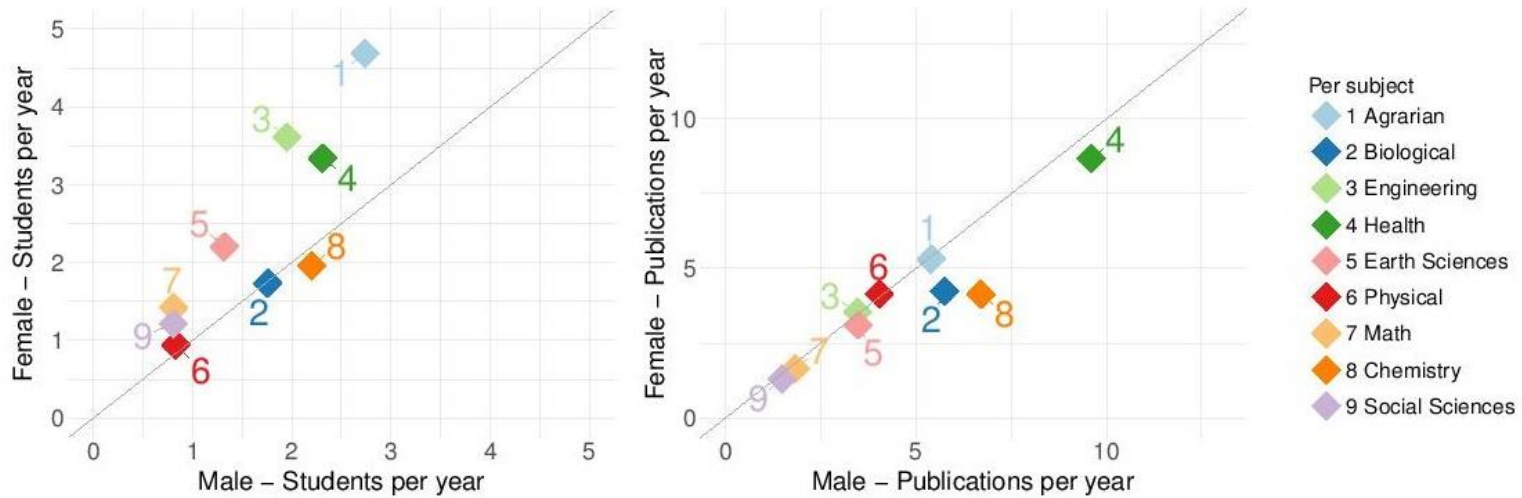
Overview women in science - Brazil



(top) Percentage of male and female members of the ABC in each area;
 (bottom) percentage of female members of the ABC, of the CNPq PQ-research and of the CNPq 1A and 1B PQ-research members in different areas.

In Brazil affirmative action for women in science is considered to be unnecessary, because there is a common belief that all the procedures for promotion do not suffer from gender, race or geographic background biases.

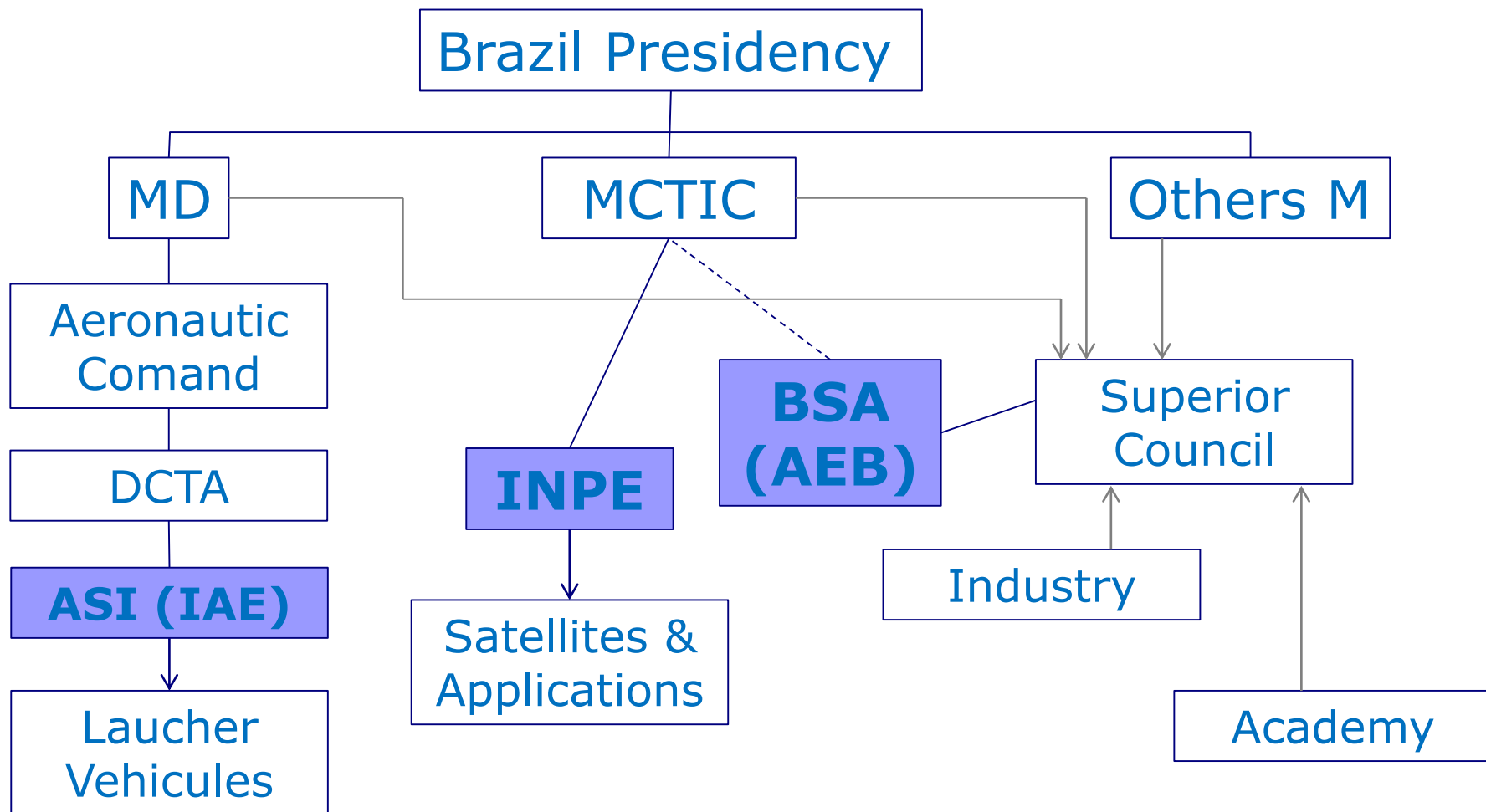
HR formation



(left) Average number of human resources production; in most areas of knowledge women produce more human resources than men. (right panel) and average number of articles production in the different areas by the male (x axis) and female (y axis) members of the ABC; we observe that in most areas the average number of papers published by men and women lies close to the line $y = x$, which suggests that they have a similar production.

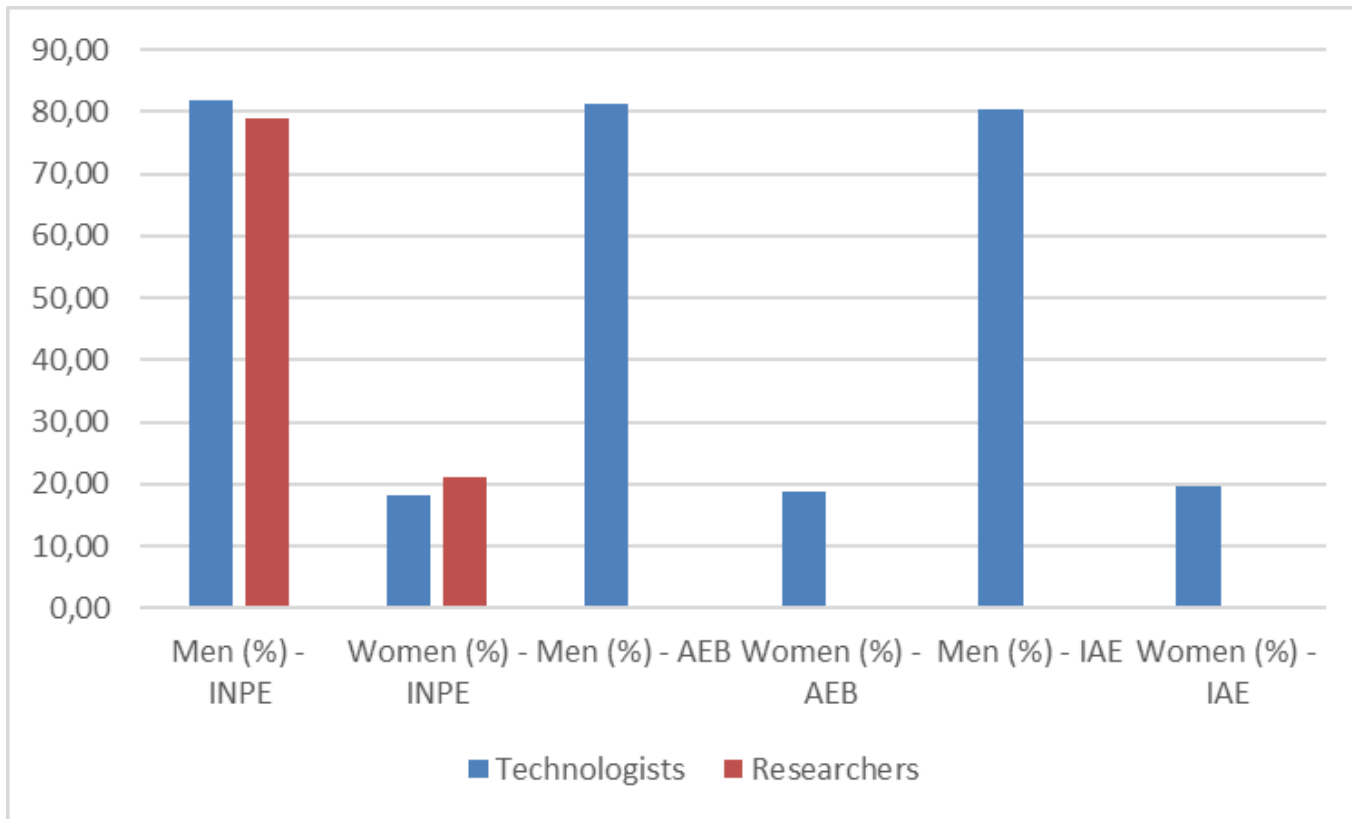


National System of Development of Space Activities (SINDAE)





INPE – IAE – AEB - Personnel

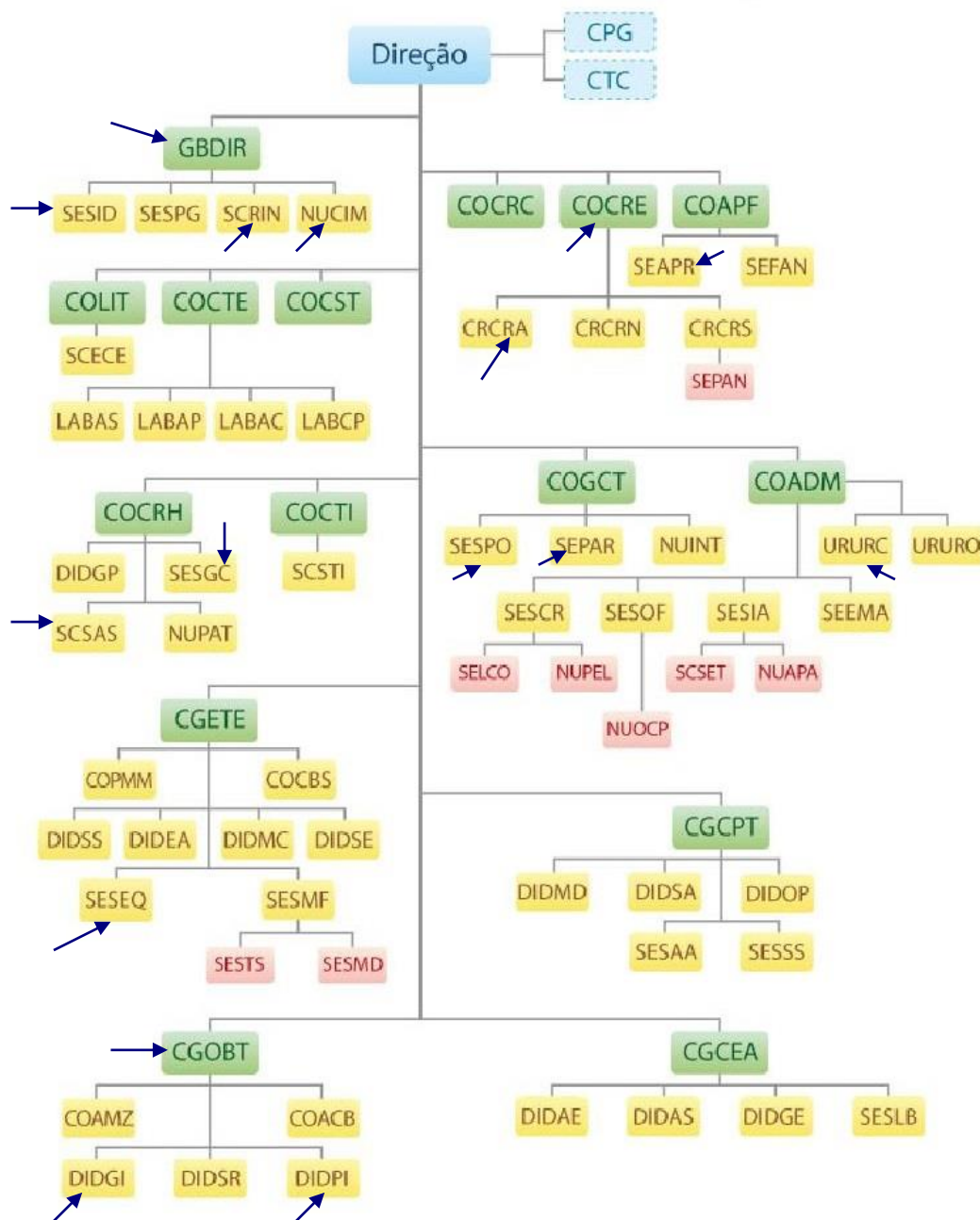


With the help of Dr. Camila M Lapa (IAE) and Michele C. S. Melo (AEB)



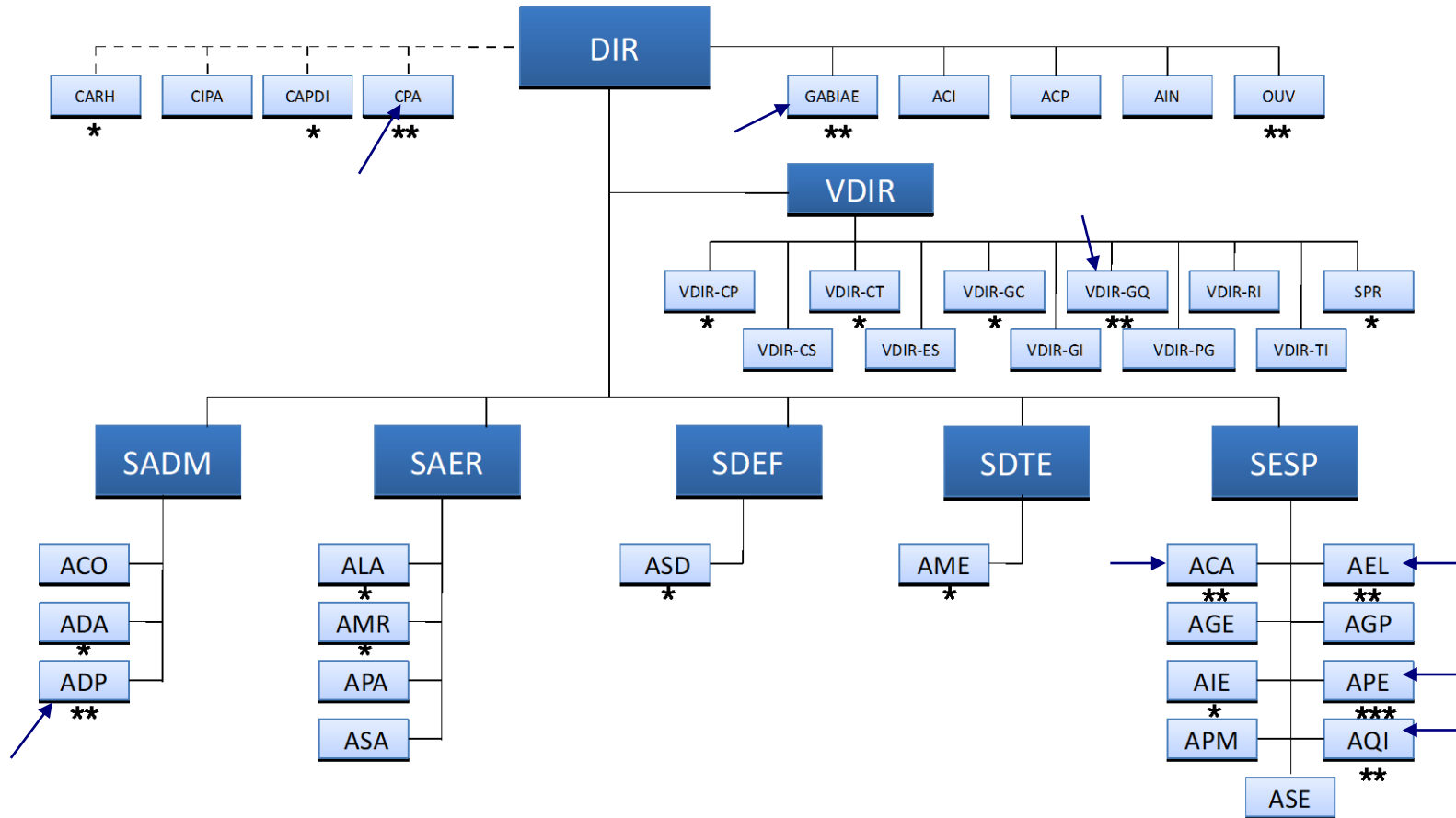
INPE – Chart

Arrows indicate positions occupied by a women (23%).





IAE – Chart

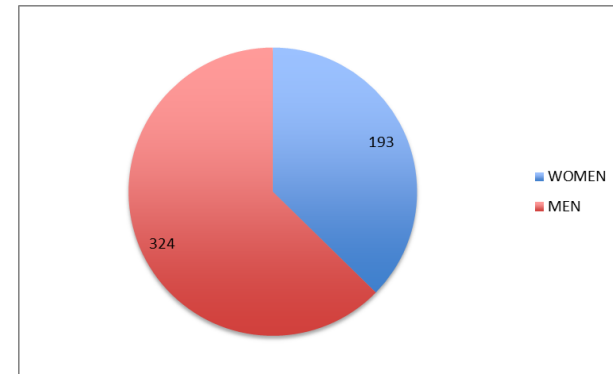
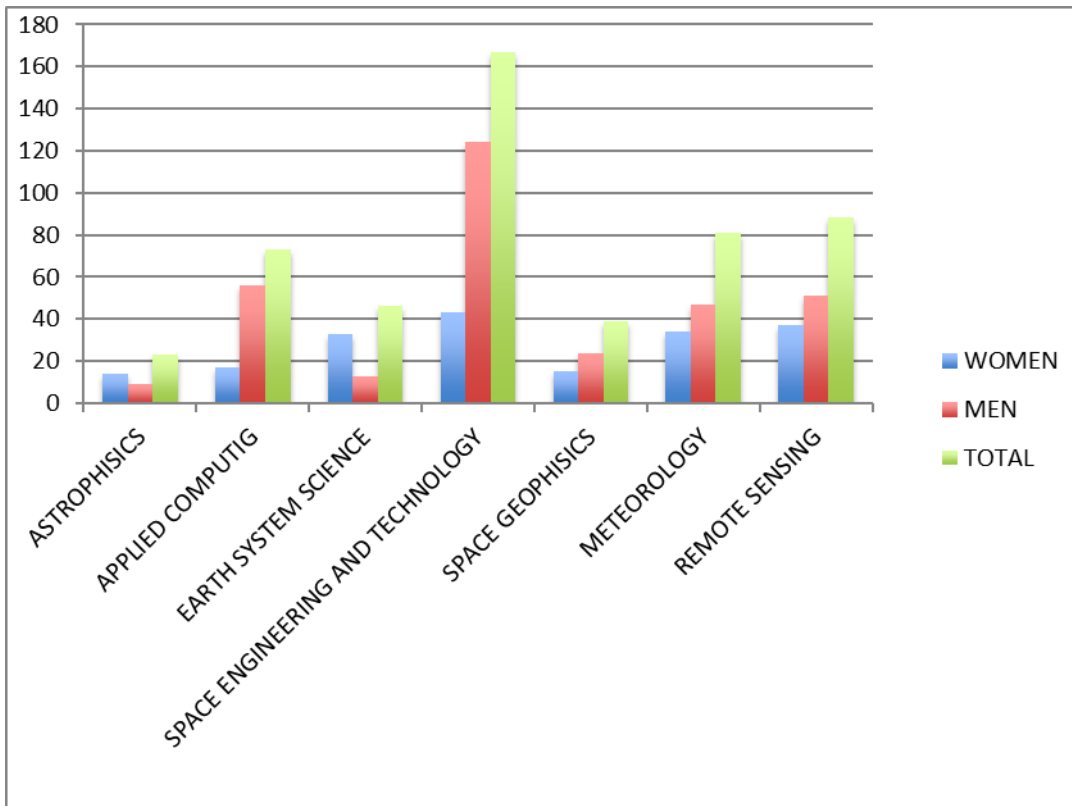


* civil servants, men; ** civil servants, women; *** female military officer; The other are carried out by military personnel, men. Arrows indicate positions occupied by a women (~20%).

Cortesy of Dr. Camila M. Lapa, Cap. Eng.



Future – Capacity Building



Enrolled graduated students at INPE
Cortesy of Dr. Adriana Thomé

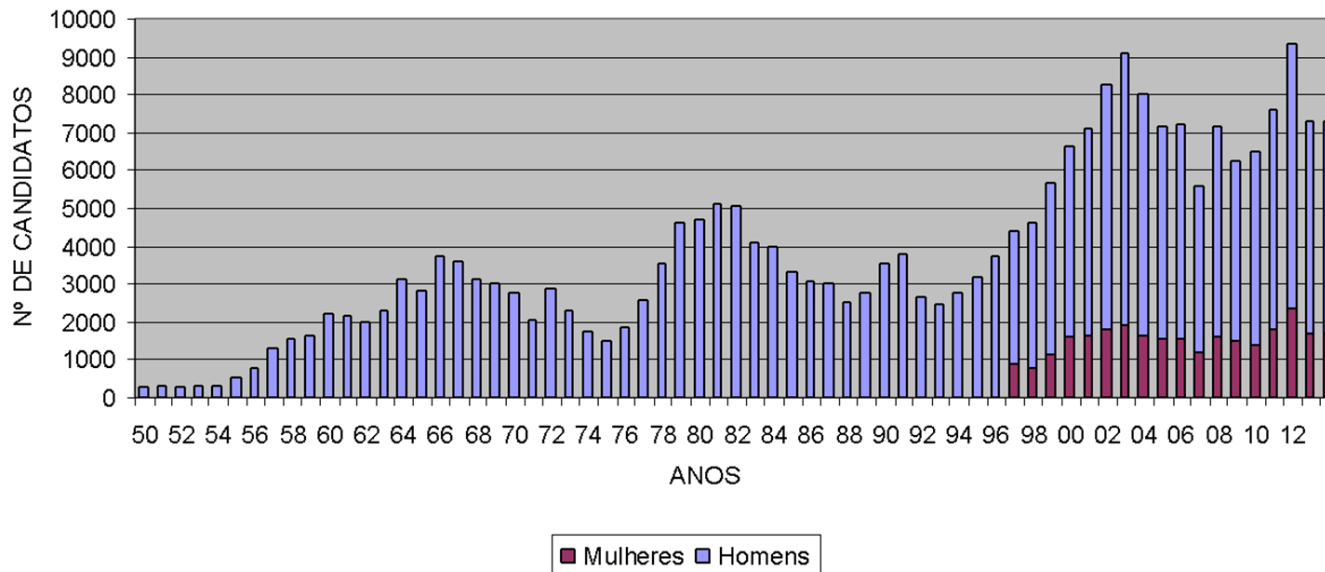


Future – Capacity Building

| University | Beginning | Spots (total) | M (%) | F (%) |
|------------|-----------|----------------|-------|-------|
| UnB | 2012 | 140/year | 60 | 40 |
| UFSC | 2013 | 50/year | | |
| UFABC | 2007 | 120 (~30/year) | | |
| UFSM | 2015 | 40/year | 80 | 20 |
| ITA | 2010 | 170/year | | |
| UFMG | 2009 | 50/year | | |
| UFMA | 2018 | 40/year | | |
| EESC-USP | 2010 | 40/year | | |

Undergrad courses on
Aerospace engineering

ITA - VESTIBULAR 2014
CANDIDATOS INSCRITOS



Rocket



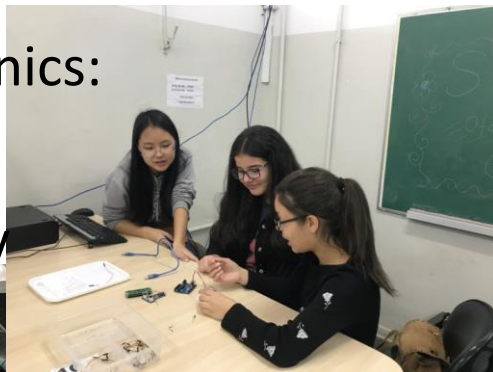
Johnson & Johnson



I am graduated in Computer Engineer at ITA. I have worked at EMBRAER (Brazilian aircraft manufacturer) and now I am a professor at ITA. We are working on a grateful project here to develop our undergrad girls and to stimulate young girls to take STEM2D careers. **Juliana de Melo Bezerra** Computer Science Department - ITA

Workshops for girls in high school

Electronics:



Chemistry



Optics



Example of successes



"How did I manage to survive in physics with the constant mosquito bites of our colleagues (through mansplaining maninterrupting as gaslightning) ? Passion for science and being a bit stubborn. But I might confess that these mosquito bites ache like an old injury in wet days."

Dr. Marcia Cristina Bernardes Barbosa, Professor and Director of the Physics Institute at UFRGS. In 2013, her research on abnormal water behavior was recognized as an important breakthrough for world science. She represented Latin America and was one of the international Laureates of For Women in Science, the first prize dedicated to female scientists worldwide.

Example of successes



Dr. Inez Staciarini Batista (INPE) is graduate at Physics from Universidade Federal de Goiás (1972), Master's and PhD at Space Science from INPE (1975, 1985) from INPE. Has experience in Geosciences, focusing on Aeronomy, acting on the following subjects: ionosphere, equatorial ionospher, and spread f, theory and experiments. Has acted as Vice-president of the SBGf, Coordinator of the Space and Atmospheric Science at INPE; is member of the COSPAR Bureau.

“Being a female researcher in a male-dominated research area is not an easy task. Even though there is no explicit discrimination, women often feel intimidated or uncomfortable to work in an environment where, sometimes, she is the only female representative. Sometimes in meetings where many persons are expressing their opinions, the lonely female voice can barely be heard amidst the set of male voices of much stronger timbre. However, if she is sure that she is following her vocation, the female researcher will find the strength and motivation to move forward and to win the respect of the community and, by doing this, she will be an example for future generations.”

Example of Success



Brazilian mathematician Thelma Krug, a researcher at INPE, was elected in 2015 as one of the vice presidencies of the Intergovernmental Panel on Climate Change (IPCC). In 2015 she received the award Make the Difference, Society and Sustainability, organized by the Brazilian newspaper O Globo.

"It is not enough just to be, we have to be to make a difference." She was the first female at INPE to coordinate the Earth Observation area.

"Internationally, we see a more concerted effort of institutions to engage women scientists from all fields. One example is the Intergovernmental Panel on Climate Change – IPCC : in this cycle, a series of seminars have been and will continue to be developed, with a focus on gender balance. It is becoming clear that the world will need to face transformations in many aspects, and that the role of women cannot be neglected. It will hopefully not take long for the benefits of a more gender balanced world to be recognized."

Example of Success



“Even though still fewer than men researchers in space engineering, women are not less brilliant neither less committed to science and technology”

Dr. Fátima Mattiello-Francisco
 Senior Technologist at INPE
 Head of the Regional Centers



September 14th, 2017
 Auditorium Professor Arnel Picquenard (ITA)
 São José dos Campos - SP

SPORT Mission Workshop

Agenda:

- 9h - The SPORT Mission: The importance of Space Weather - Dr. James Spann (NASA) - PI SPORT
- 10h - The SPORT Payload Instruments: Which measurements will be made and how
 Prof. Charles Swenson (USU) - Co-PI SPORT
- 11h - The SPORT Platform: How it will operate in Space - Prof. Luis Loures (ITA) - SPORT Platform Manager
- 14h - The Science in the SPORT Mission: Which contribution will be given (remote) - Dra. Linda Krause (NASA)
- 15h - The SPORT Ground Segment: How it will be controlled and how the Data will be released
 Dra. Fátima Mattiello (INPE) e Dr. Joaquim Eduardo Rezende Costa (INPE)



THANK YOU!