

Pursuing Science: A Journey of Purpose and Growth in Plasma Physics

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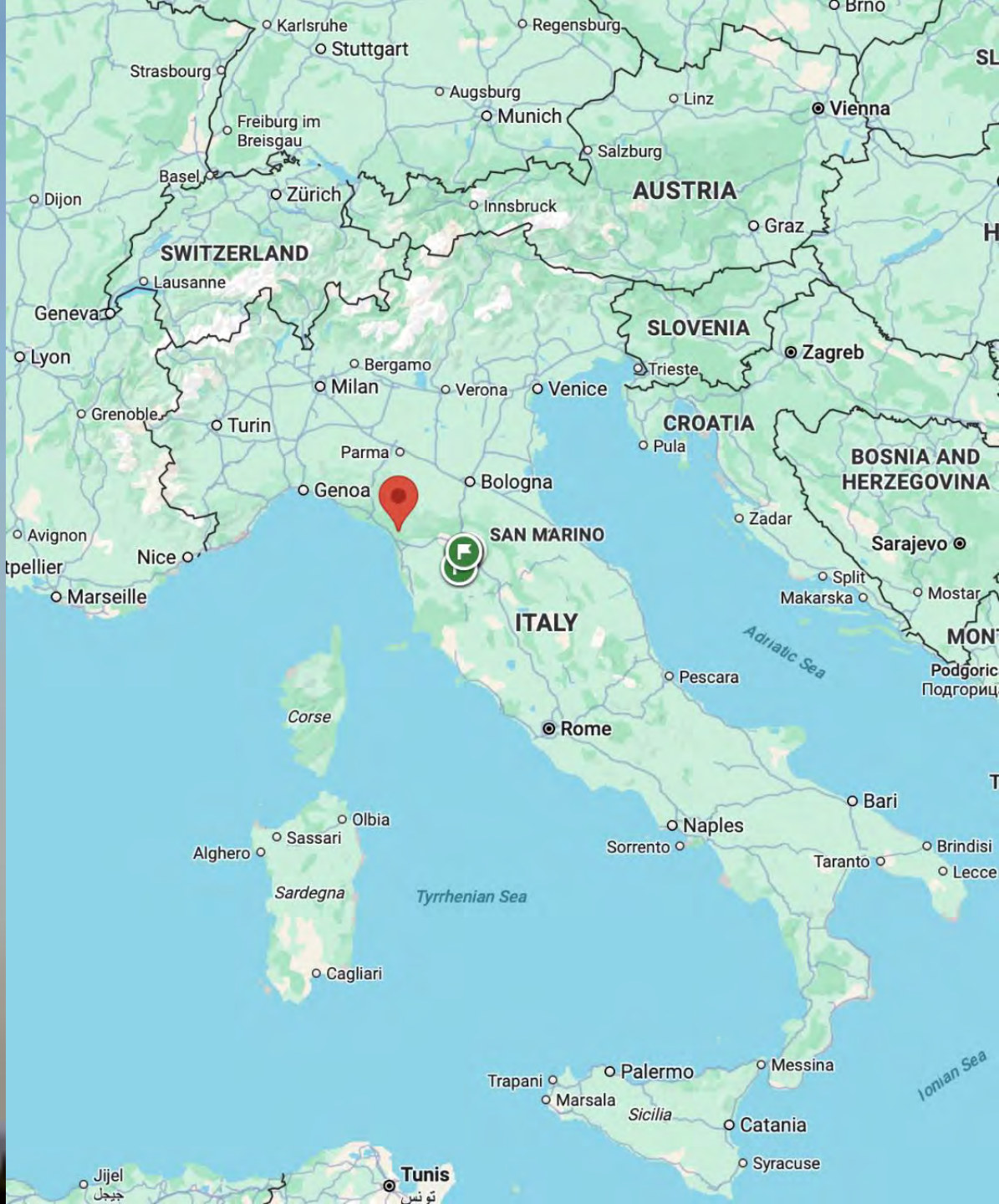


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MACIEJ WINIARCZYK ©2014





- 2009 MS in Physics at University of Pisa, Italy
- 2009-2012 PhD at the Sorbonne University, Paris
- 2012-2018 Postdoctoral fellow at JPL and researcher at UCLA
- 2019- professor at UT Austin

Challenges and turning points

- **Challenges:** I was at a disadvantage compared with respect to my peers, as my school prioritized foreign languages and classical studies instead of math and physics.
- **Role models & focus on my goals:** My professor in Linear Algebra I, Prof Fortuna was an inspiration for me and motivated me to persist through difficulties to achieve my longer-term goal of pursuing a career in science.
- **Support systems:** I decided to study plasmas and join the plasma group in Pisa for my Master thesis, inspired by my professor of E&M. The group in Pisa provided an engaging yet supporting environment. I found joy in conducting research in plasma physics. It was then I realized I wanted this to be my profession.

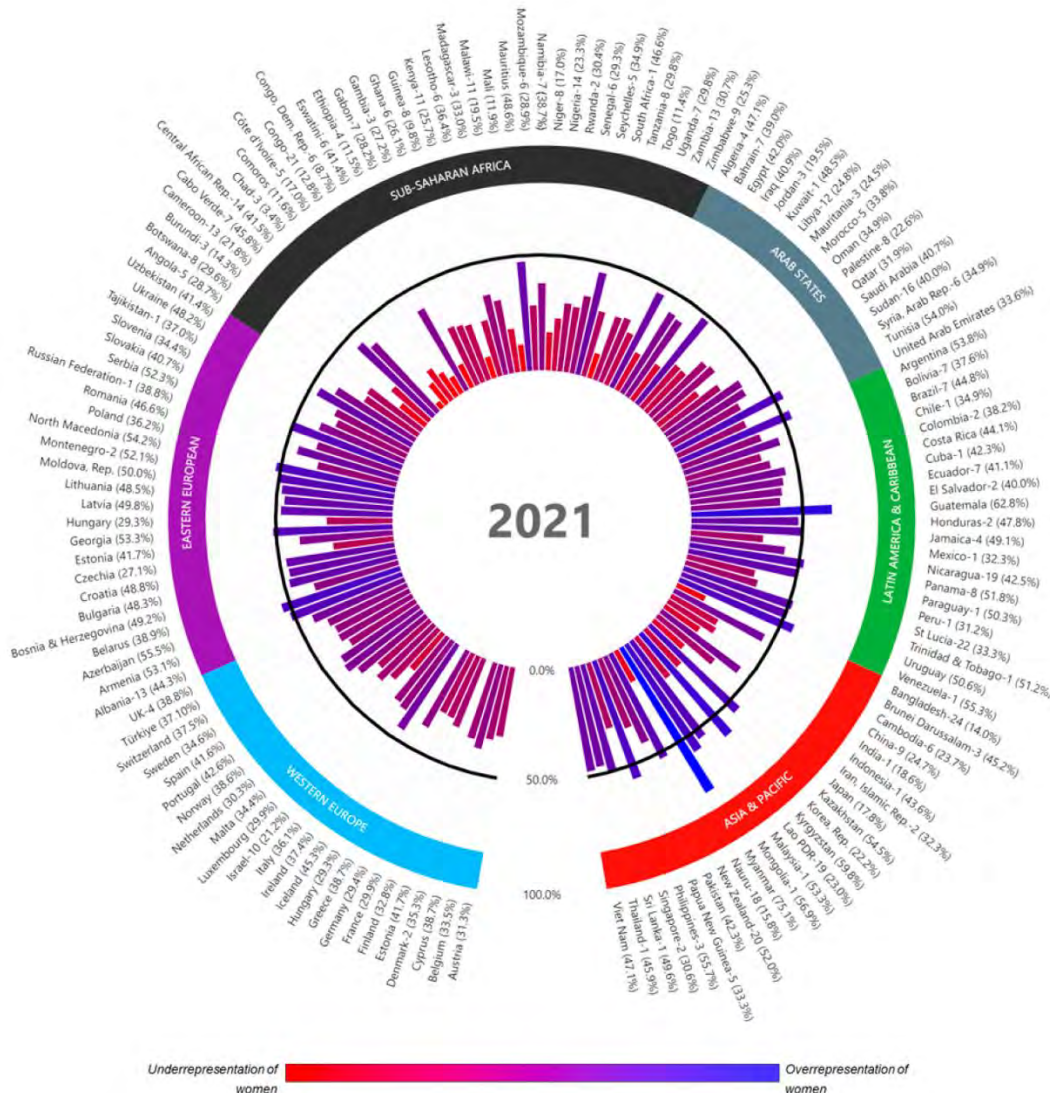
Belonging in STEM



- As I moved on to be a researcher, I found that being a woman in science often means having to challenge stereotypes and constantly prove our worth.
- As I've grown from student to postdoc to professor, I found that focusing on what I truly enjoy – solving problems and sharing knowledge – allows to control the fears of not belonging and leave them in the background noise.
- Belonging in STEM doesn't mean blending in—it means showing up as you are and show that excellence comes in many forms.

María Lorena Ramírez Hernández

Women in science: Where do we stand?



- Women make up about 31.7% of researchers worldwide (as of 2021), according to UNESCO. This includes all science disciplines, not just physics. In physics specifically, the numbers are often lower.
- In UNESCO's 2025 STEM report, women still represent only 35% of STEM graduates globally, with **no significant progress over the past decade.**

<https://unesdoc.unesco.org/ark:/48223/pf0000253479>

<https://unesdoc.unesco.org/ark:/48223/pf0000388805>

Mentorship

Currently two graduate female students in my group (40% of the total!)

Mentored two high school students who went on to study astrophysics/physics

Mentored one undergraduate student went on to grad school in space physics