



How to combine science, leadership, and personal life: Some thoughts

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WHAT WOULD GENDER EQUALITY MEAN

We have to accept:

1. **Women are minority** in the STEM (science, technology, engineering, and mathematics) fields
2. As other minority groups, ethnic, racial, religious, or even disability, we are often **subjected to discrimination.**
3. This is **not because of lower abilities**; it is because our world is in much favor for men. They are stronger physically and they have more time to spend at work, for making a career. They are “hunters” from nature: assertive and aggressive.
4. When thinking about famous natural scientists, people mostly imagine men. Everybody knows **Newton, Einstein, Mourou**. But not often people recall the names of **Marie Curie, Mildred Dresselhaus, Donna Strickland**.

Gender equality requires equal enjoyment by women and men of socially-valued goods, opportunities, resources and rewards.

Gender inequality means that women are either fully excluded or disadvantaged in relation to decision-making and access to economic and social resources.

How can we improve this? What depends on us? How to defend us from possible discrimination?

My personal experience

I was **born in the USSR**. What it meant for me:

- very **good free-of-charge education** (if someone want it)
- **a lot of possibilities** for sports, music, etc.; all free of charge
- main message to everybody: **be modest; not demonstrate yourself**

Dream about astronomy

My father woke me ones at night and showed the Comet Ikeya–Seki just across Milky Way. This gave me a stimulus to learn physics, Mathematics, astronomy.



After school → Novosibirsk State University:

In the faculty of my year – 225 students, 14 girls among them

Support and understanding of teachers is very decisive and influencing all further career.

- how to overcome problems occurring

But we were lucky to have amazing teachers, many of whom were world-famous scientists.

Our teachers. Jubilee of Y.B. Rumer, 1981



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физфак

ноздровский



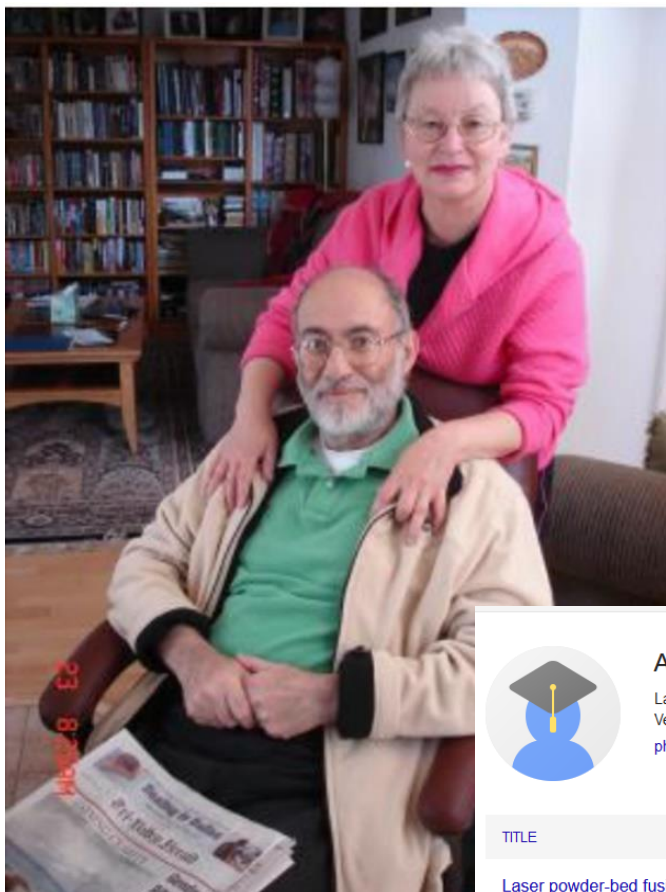
Laser-matter interaction
Laser fusion
Solitons in plasmas
Nonlinear optics
Particle acceleration
Space debris removal
Additive manufacturing
Fiber optics, atomic clusters, Etc., etc. etc.



1981

My inspiration No. 1: Sasha Rubenchik

<https://www.llnl.gov/community-education/employee-retirement-resources/in-memoriam/alexander-sasha-rubenchik>



From Sasha, I learned to be tolerant and respectful to everybody, to be widely thinking, be interested in different phenomena, to be keep interest to life, direct, to keep human and personalized relation to achieve objectives.



A. Rubenchik

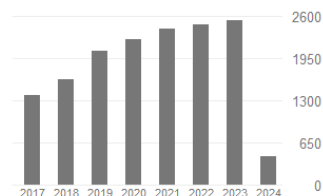
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Interaction of doughnut-shaped laser pulses with glasses

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My inspiration No. 2: Academician Dmitry Ryutov

Head of Plasma Physics Chair of
the Novosibirsk State University
at the Budker Institute of
Nuclear Physics SB RAS,
Novosibirsk, from 1967 to 1997.

Now: Professor in Lawrence
Livermore National Laboratory
The Fusion Power Associates
2010 Distinguished Career
Award for his seminal
contributions to fusion
research.



Which specialists do we need?
What do they have to know?
How to give them the required
knowledge in the best way?



My inspiration No. 3: Queen of Carbon

https://en.wikipedia.org/wiki/Mildred_Dresselhaus

Prof. Mildred Dresselhaus,
1930 – 2017

I got acquainted with Millie when she was 74, at the Nanotube Conference in Gothenburg.



Millie is famous for her work on **graphite**, graphite **intercalation** compounds, **fullerenes**, **carbon nanotubes**, and low-dimensional **thermoelectrics**. Her research helped to develop technology based on thin graphite which allows electronics to be "everywhere," including clothing and **smartphones**.

With the appearance of lasers in the 1960s, Millie immediately started to use lasers for magneto-optics experiments, which later led to the creation of a new model for the electronic structure of graphite.

From Millie I learned to be optimistic in any situation and keep sense of humor, especially regarding myself.

Conclusions from this my experience

- ❖ I was working in several countries, including USSR/Russia, Germany, UK. I consider that in Czech Republic, situation in gender equality is best though far not ideal.
- ❖ It is not possible to eliminate all problems in gender issue. Hence, it is necessary to go toward to equal opportunities via open discussions, open selections for positions, promoting women for leading positions.
- ❖ Personal advice – choosing fair people, who respect you, inspire you, support you. Run away and stop communication with “sociopathic” persons, from manipulators. It is dangerous for your mental health and leads for losing time in vain.
- ❖ Same is for personal life: it should be based on mutual respect, support, and help. In my experience, children help to plan your action better, to not spend time in vain, leads to discipline and responsibility.
- ❖ If you have become a leader, do all efforts to create and support trustful and supporting atmosphere in your group/department/institute. You, women, know it better how to keep warm creative atmosphere on the example of your families.

My inspiration to you: ONLY FORWARD!

If you have a goal, go toward it!

Cannot go? Creep to it!

Cannot creep? Lie down and
be lying in its direction!



Six Cs and more



Tasuku Honjo, an immunology and genomic medicine professor at Kyoto University, 2018 Nobel Prize in Physiology or Medicine, said his advice for people who want to pursue a career in scientific research is what he called the “**six Cs**”: **C**uriosity, **C**ourage, **C**hallenges, **C**ontinuation, **C**oncentration and **C**onfidence.

A bit more from me:

Learning during all your life

Sense of **h**umor

Perseverance

Critics (Subject to critics and multi-checking your ideas)

Family vs. science (do not contrast science against family!)