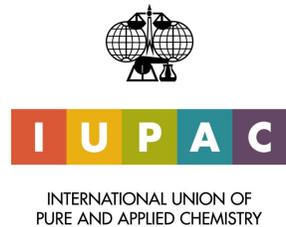
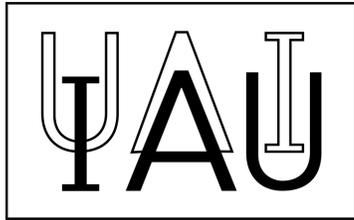


# Gender Equality in Science: From a Project to a Permanent Network of Scientific Unions

2<sup>nd</sup> ISC General Assembly  
Members' Forum  
Monday 11 October 2021  
12:45-14:00 UTC

# Organized by 11 ISC Full Member Scientific Unions



With the support of **GenderInSITE**

# Purpose of this Session

- **Inform** ISC members of the results of the 'Gender Gap in Science Project' (GGS, funded by ISC, 2017-2019).
- **Introduce** the Standing Committee for Gender Equality in Science (SCGES) founded when the GGS Project was concluded.
- **Invite** all international scientific bodies that are ISC members to join SCGES

# Marie-Françoise Roy



- Currently emerita professor of mathematics in Rennes France
- Specialist of algorithms in real algebraic geometry
- Actively involved in the creation of femmes & mathématiques, European Women in Mathematics, African Women in Mathematics
- Chair of the IMU Committee for Women in Mathematics since its creation in 2015
- Coordinator of the Gender Gap in Science project
- Representative of IMU in the Standing Committee for Gender Equality in Science
- <https://irmar.univ-rennes1.fr/en/interlocutors/marie-francoise-roy>

# Gender Gap in Science project Achievements and future steps

Marie-Françoise Roy

Gender Equality in Science session

ISC Members Forum

11 October 2021

# THE GENDER GAP IN SCIENCE

A Global Approach to the Gender Gap in  
Mathematical, Computing, and Natural  
Sciences: How to Measure It, How to Reduce It?



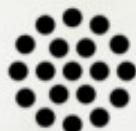
A multidisciplinary and  
multicultural project funded by the  
International Science Council



@GenderGapSTEM



fb.me/GenderGapSTEM



International  
Science Council



International  
Mathematical  
Union  
(IMU)



INTERNATIONAL UNION OF  
PURE AND APPLIED CHEMISTRY



Gender  
InSITE



IUHPST  
International Union of History and  
Philosophy of Science and Technology

## Project 2017-2019

funded by ISC (ICSU), lead by IMU and IUPAC

<https://gender-gap-in-science.org/>



# Gender Gap in Science Book

10 819 views

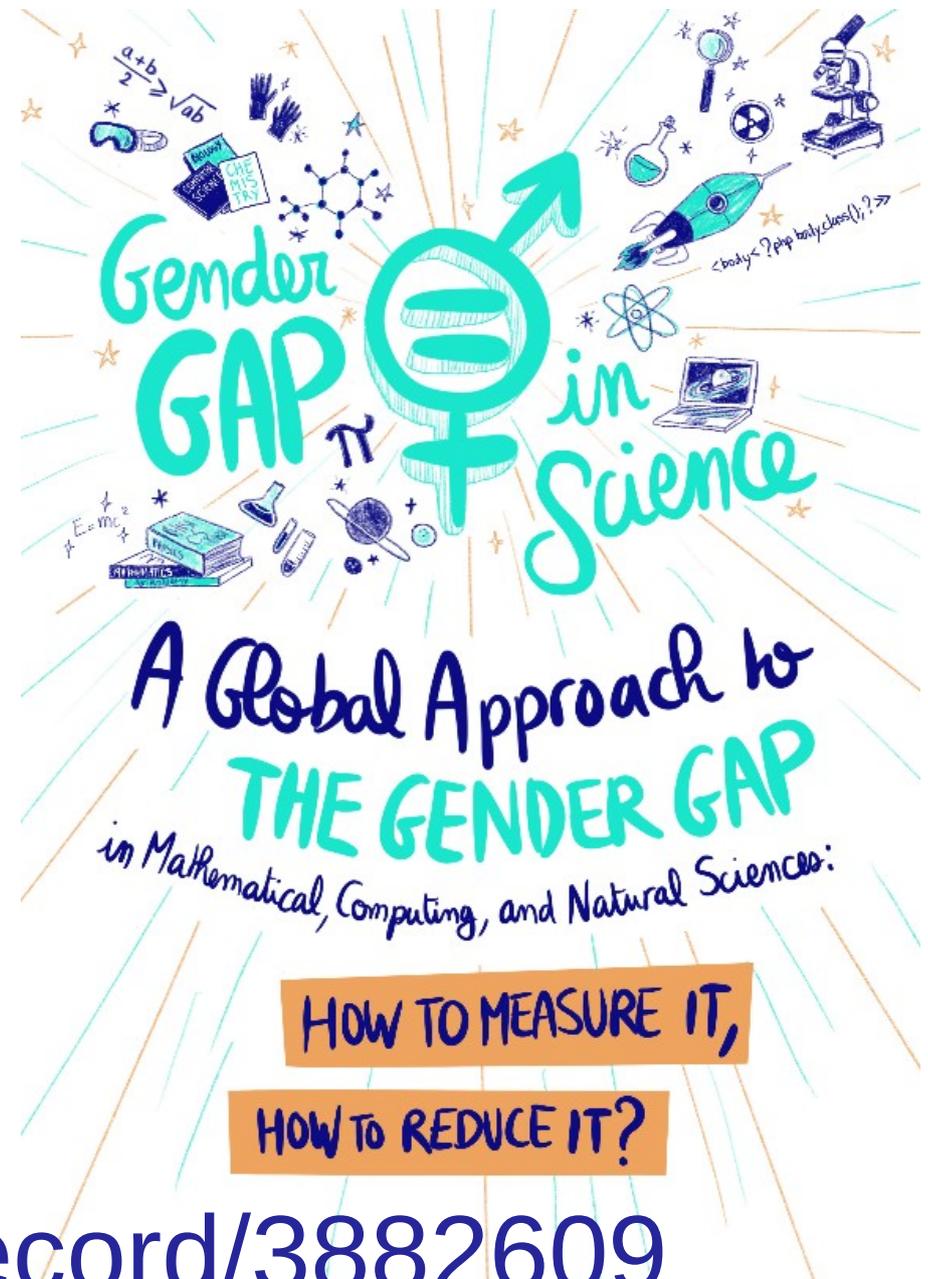
7 846 downloads

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Published by IMU with ISBN

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## Three parts

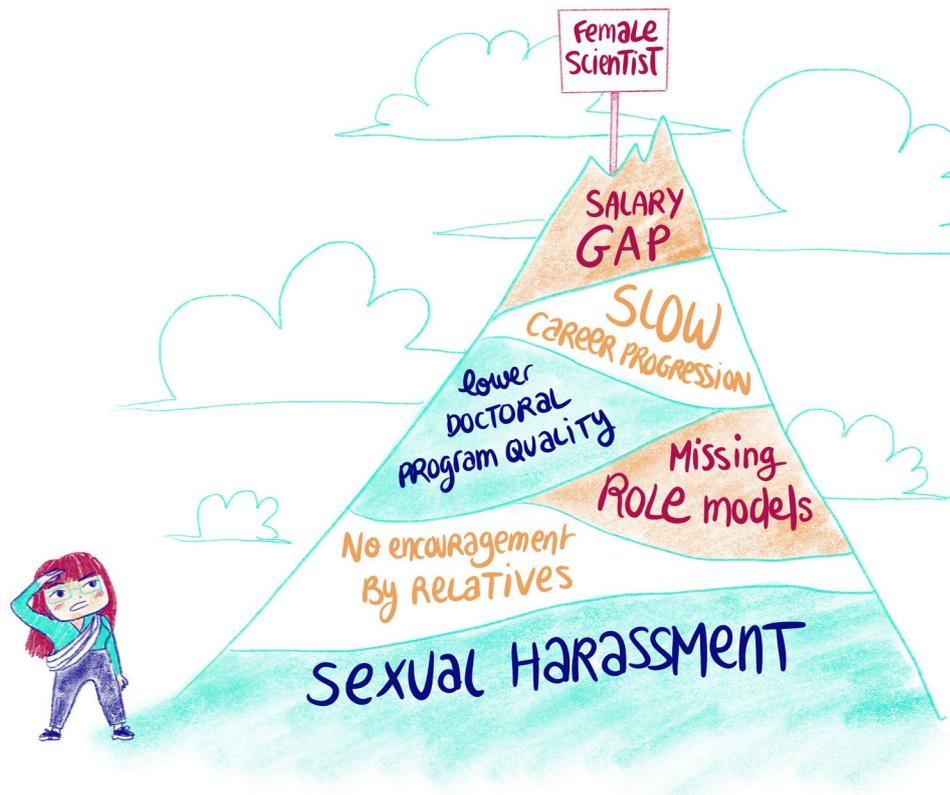
- Global Survey of Scientists: 32,000 answers
- Analysis of Academic Publications: millions of publications analyzed since 1970
- Database of Good Practices: 68 activities

## Recommendations

- Instructors and parents
- Local organizations
- Scientific unions

# Global Survey of Scientists

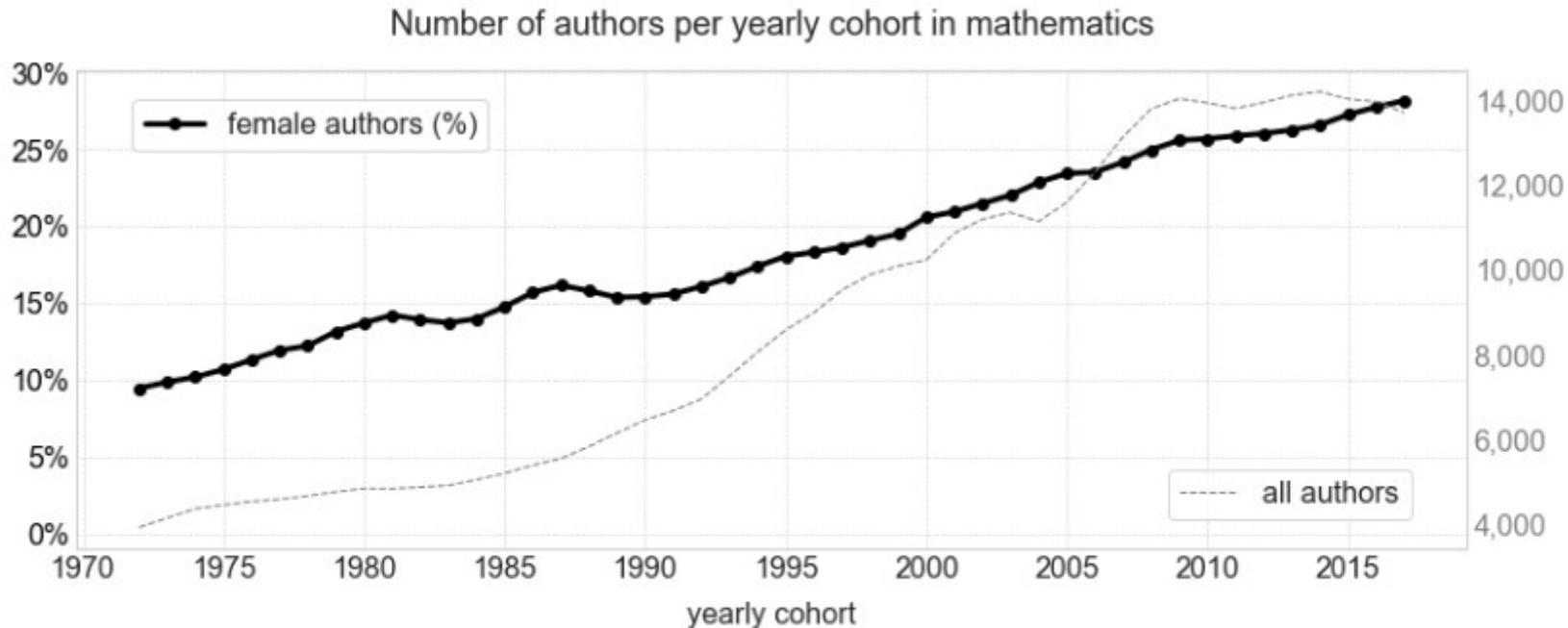
32,000 answers, men and women,  
130 countries, 8 languages



- Women's experiences in both educational and employment settings are consistently less positive than men's.
- Over a quarter of women respondents across the sciences reported personally experiencing sexual harassment at school or work.

# Analysis of Academic Publications (millions of publications, since 1970)

- Steady increase of the proportion of women authors of scientific papers (10% to 27%)



**Figure 13:** Number of active (publishing) mathematicians since 1970 and percentage of them that are women.

# Evolution in chemistry

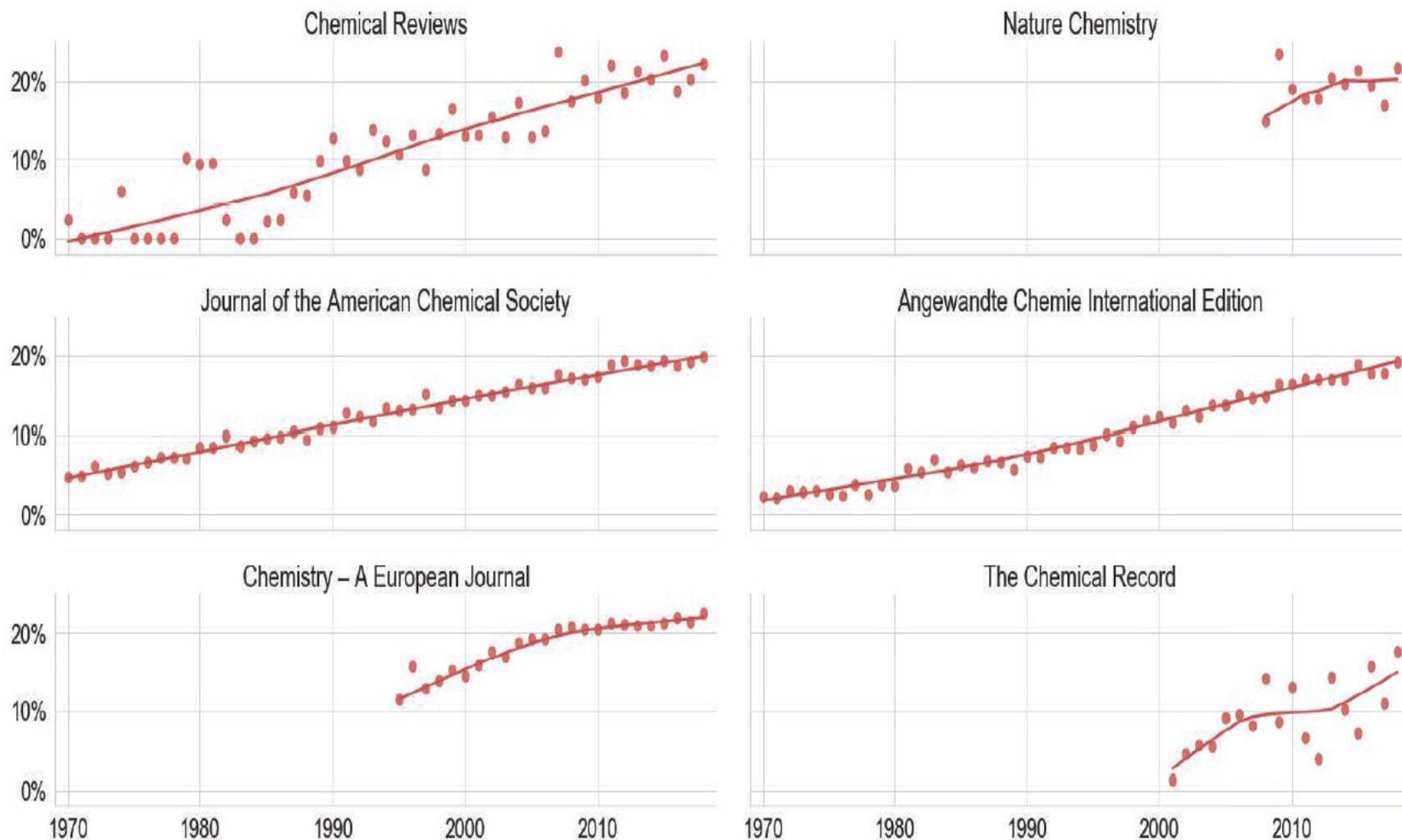
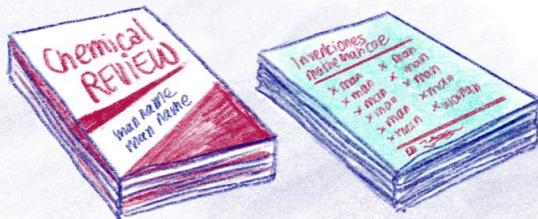


Figure 5. Trends in authorship by women in six major chemistry journals.

# Publications in “Top Journals”

improve in Astronomy and Chemistry,  
remain static in Mathematics and Theoretical Physics

1970



< 10% of top journals  
papers are authored by women

2020



20% in astronomy, astrophysics  
and chemistry and still < 10%  
in mathematics and theoretical  
physics

# Database of Good Practices



- Engage families and communities in promoting STEM careers to girls, especially when these careers are contrary to cultural expectations and norms.
- Engage females in exploring socio-scientific issues.
- Promote social support for females, such as peer networks and mentoring by more experienced STEM researchers or professionals.
- Develop females' STEM leadership, advocacy and communication skills.

# Recommendations

## For instructors and parents

- Avoid gender bias
- Promote gender balance and gender awareness

## For scientific and educational organizations

- Promote a respectful, collegial working environment
- Prevent, report and address sexual harassment and discrimination
- Address impact of parenthood, promote child friendly environments
- Promote gender equality in institutional policies

## For Scientific Unions and similar worldwide organizations

- Work to change culture and norms
- Promote best practices
- Increase visibility of female scientists (awards, editorial boards, etc.)
- Create committees for women in science

# Gender Gap in Science Booklet

Summary of the project in 8 pages:

Currently in English, French, German and Spanish, as well as Chinese

(both simplified Chinese and traditional Chinese characters)

<https://gender-gap-in-science.org/promotional-materials/>

*A Global Approach to the Gender Gap  
in Mathematical, Computing, and Natural Sciences:  
How to Measure It, How to Reduce It?*



The **gender gap** is the difference between women and men “in terms of their levels of participation, access, rights, remuneration or benefits”. According to the UNESCO Institute of Statistics, **fewer than 30% of the world’s researchers are women**, which reflects the existence of a clear gender gap in science. To truly **understand and reduce** it, it is necessary to identify the various factors that deter women from pursuing careers in scientific disciplines.

The project “A Global Approach to the Gender Gap in Mathematical, Computing, and Natural Sciences: How to measure it? How to reduce it?” contributes to this analysis from three complementary perspectives:

- The **Global Survey of Scientists** addresses issues related to missing role models, feelings of critical exclusion, harassment, or low participation and retention rates.
- The **Study of Publication Patterns** provides insights on the proportion of women as research authors or the presence of women publishing in renowned journals.
- The **Database of Good Practices** introduces a conceptual framework to analyze them, in order to provide evidence of effectiveness and impact.



Website of the project: <https://gender-gap-in-science.org/>

# Links to the Tools of the Project

List of all survey questions:

<http://bit.ly/GSSQuestionList>

Interactive tool on publication patterns:

<http://gender-publication-gap.f4.htw-berlin.de/>

Database of good practices:

<https://www.mathunion.org/cwm/gender-gap-in-science-database>

# The future of GGS project

Survey : make the data available for approved research projects and protect privacy, special studies for Math/Applied Math, Chemistry, Astronomy, Africa, Latin America

Publications : more research on publications patterns, Ph D grant HTW Berlin

Good practices : finalization of the database, support from IMU's office

Last virtual coordination meeting : October 6 2021

# Catherine Jami



- Senior Researcher at the French CNRS, Paris
- Historian of science, specialist of the mathematical sciences in 17th-18th century China, and of the circulation of knowledge between Europe and East Asia.
- Secretary General of IUHPST/DHST (2013-2021) and of IUHPST.
- Member of the Coordination Group of the Gender Gap in Science Project
- Representative of IUHPST on the Standing Committee for Gender Equality in Science
- Chair of the Standing Committee for Gender Equality in Science
- <http://cecmc.ehess.fr/index.php?3005>

# The Standing Committee for Gender Equality in Science



# After the Gender Gap in Science Project

- Final Conference (November 2019): more than 100 participants from 60 countries and various disciplines.
- What next?
  - Continue to work together.
  - Monitor the progress of gender equality in the unions that took part in the project, and especially the implementation of the recommendations made in the project's final report.
  - Can we create a permanent structure?

# A Memorandum of Understanding Between Unions

- Drafted jointly by six unions (IMU, IUBS, IUHPST, IUPAC, IUPAP, ICIAM) during the spring of 2020.
- Signed in the summer of 2020 by 9 founding partners (IAU, IMU, IUBS, IUHPST, IUPAC, IUPAP, ICIAM, ACM and GenderInSITE), all of whom had worked on the Gender Gap in Science Project.
- Commitment to continue working on reducing the gender gap in each partner's discipline.
- Exchanges and cooperation to work more effectively.

# The Role of SCGES

- Helps partners to promote gender equality within their organizations, and in particular:
  - Follows the progress of the implementation by partners of the recommendations of the Gender Gap in Science Project;
  - Approves proposals for new partners to join SCGES;
  - Endorses projects and initiatives to promote gender equality in science proposed to it by partners;
  - Facilitates communication among partners, among other things by developing and maintaining a website.

# Commitments of the Partners 1

- Endeavor to promote gender equality in its own structure, proceedings and scientific discipline, noting the recommendations of the Gender Gap in Science Project;
- Appoint a representative to SCGES, as well as a deputy representative who may stand in for the representative in case of need;
- Support its representative in contributing to and attending meetings;
- Share with SCGES, and especially with its chair, all relevant information that can help promote gender equality in science;
- Make a contribution to SCGES's common funds decided on a year-by-year basis (300 € in 2020; 250 € in 2021).

# Commitments of the Partners 2

- Set up projects and initiatives to promote gender equality in science, possibly in cooperation with other SCGES partners, but also with other organizations and institutions;
- Decide whether to contribute to projects and initiatives led by other partners and endorsed by SCGES, and consider the modalities of this contribution.
- Share communications relevant to gender equality in science with its members and through its networks, by all means at its disposal, including social network accounts, website, newsletters and journals, electronic and in print;
- Call upon its member organizations or its representatives, if relevant, to set up national or regional initiatives to promote gender equality in science.

# The 15 SCGES Partners Today

\* Founding partner

- International Astronomical Union\* (IAU)
- International Council for Industrial and Applied Mathematics\* (ICIAM)
- International Geographical Union (IGU)
- International Mathematical Union\* (IMU)
- International Union of Biochemistry and Molecular Biology (IUBMB)
- International Union of Biological Sciences\* (IUBS)
- International Union of Geological Sciences (IUGS)
- International Union of History and Philosophy of Science and Technology\* (IUHPST)
- International Union of Pure and Applied Chemistry\* (IUPAC)
- International Union of Pure and Applied Physics\* (IUPAP)
- International Union for Physical and Engineering Sciences in Medicine (IUPESM)
- International Union of Psychological Science (IUPsyS)
- International Union of Soil Sciences (IUSS)
- Association for Computing Machinery\* (ACM)
- GenderInSITE\* (GIS)

# How SCGES Works

- Twice a year, plenary meeting with all representatives and deputy representatives: exchange of information on partners' activities, and discussion of SCGES actions.
- SCGES officers meet at least every other month.
- Yearly contribution of 250-300 €.

# SCGES Officers

- Chair: Catherine Jami (IUHPST)



- Vice-Chair: Guy Smagghe (IUBS)



- Communication Officer: Marie-Françoise Roy (IMU)



- Treasurer: Mark Cesa (IUPAC)



- Webinar Coordinator: Carol Woodward (ICIAM)



# Standing for Gender Equality in Times of Covid-19

Recommendations to limit the negative effects of caregivers' burden on their scientific careers:

- Academic institutions should urgently **extend the contracts of academics who are in temporary positions**, and they should take caregiver burdens into account when scheduling decisions about promotion or tenure.
- Funding agencies and recruitment committees should take into account the **burdens of increased caregiving** and of preparing online teaching (often at short notice) when assessing applications, as these are major causes of lapses in research productivity.
- Journals **should ask authors to indicate their caregiving burden**, and put authors who report a major load of childcare or eldercare at the front of the queue for publication.
- Fees for online conferences **should be adjusted for participants who have lost income** due to pandemic-related job changes or caregiver responsibilities.

# Achievements

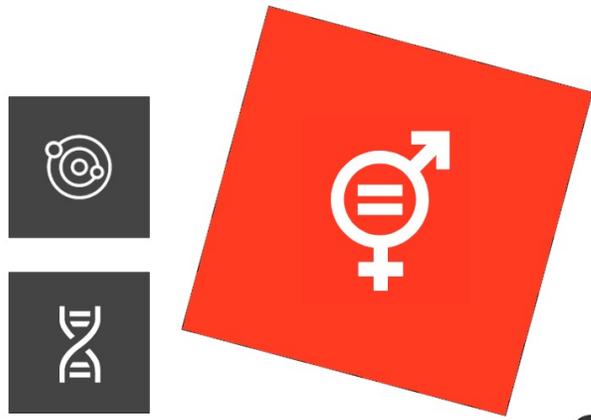
- Exchange information concerning actions in favor of gender equality in scientific unions.
- Statement on the impact of Covid-19 on the career of women scientists.
- At present SCGES partners include over 30% of ISC Full Member Scientific Unions.
- First SCGES Annual Report (September 2021).

# Looking Ahead

- Increasing the visibility of issues relating to gender equality in science.
- In 2022 SCGES will start a series of webinars open to all those interested to present and discuss:
  - The situation of women in various scientific disciplines and the actions taken in favor of gender equality in these disciplines;
  - Gender as an aspect of the research done in some of these disciplines.
- Continuing to work with ISC.
- Extending our partnership.

# INVITATION

SCGES partners invite all ISC member unions to join the in the SCGES partnership.



Standing Committee  
for **Gender Equality** in Science

**SCGES**

[https://gender-equality-in-science.org/  
scges.genderquality@gmail.com](https://gender-equality-in-science.org/scges.genderquality@gmail.com)