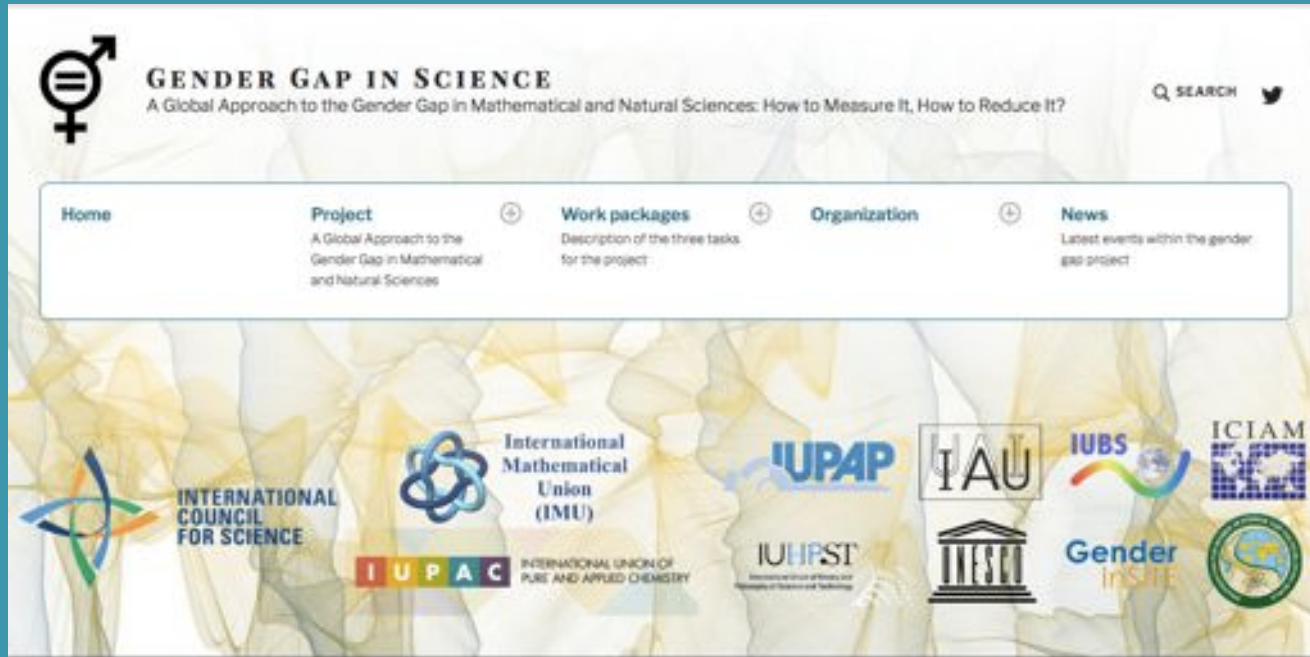


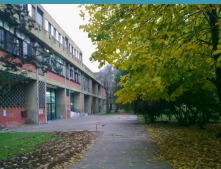
Gender Gap Project funded by ICSU

Silvina Ponce Dawson

Departamento de Física, FCEN-UBA and IFIBA (CONICET)



<https://icsugendergapinscience.org/>





**INTERNATIONAL
COUNCIL
FOR SCIENCE**

What is ICSU? International Council for Science

It's a non-governmental organization composed of national scientific bodies (122 members representing 142 countries) + 31 international scientific unions. Its last general assembly approved the merger with the International Council of Social Sciences.

What does it do?

ICSU mobilizes knowledge and resources of the international scientific community to strengthen international science for the benefit of society. It is very focused on sustainable development.

ICSU works with the UN as organizing partner for the Scientific and Technological Community Major Group.

The ICSU Secretariat is in Paris. There are also three regional offices in Africa, Asia-Pacific and Latin America.

Some members of ICSU:

Among the various national scientific bodies:

Academia Brasileira de Ciencias, Academia Chilena de Ciencias, Academia Colombiana de Ciencias Exactas, Físicas y Naturales, Academia Nacional de Ciencias de Costa Rica, Academia de Ciencias de Cuba, Viceministerio de Ciencia y Tecnología de El Salvador, Academia Nacional de Ciencias de Perú, CONICET (Argentina)

Among various Scientific Unions:

Matemática(s) (IMU, ICIAM), Química (IUPAC), Física (IUPAP), Biología (IUBS), Astronomía (IAU)

In 2016 ICSU started a new grants program. Projects needed at least two scientific unions that acted as leading applicants. Unions could not lead more than one project but could support more.

The Gender Gap Project, led by IMU and IUPAC, got one of the three 300,000 euro grants.

ICSU Grants Programme

Three Projects are awarded under the 2016-2019 Grants Programme.

Lead Applicant	Supporting Applicants	Regional Offices	Title of Proposal
IMU-IUPAC	IUPAC, IAU, IUBS, ICIAM, UNESCO, GenderInsite	ROA, ROLAC	A Global Approach to the Gender Gap in Mathematical and Natural Sciences: How to Measure it? How to Reduce it?
IUBS-INQUA	IUSS, IMU, IUGS, IUGG, IUPHST, IUFRO, AUC, CODATA, IMAGINARY, NRF, AAS, INSA, Mongolia, Ecuador and Egypt	ROA	TROP-ICSU: Trans-disciplinary Research Oriented Pedagogy for Improving Climate Studies and Understanding
IUPAP-IUCr	IUMRS, UNESCO, ICTP, SESAME, A/LS	ROA, ROLAC	Utilisation of Light Source and Crystallographic Sciences to Facilitate the Enhancement of Knowledge and Improve the Economic and Social Conditions in Targeted Regions of the World

The Project

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

The Gender Gap in sciences and mathematics fields is not a new issue. Over the past few decades, although there is better awareness as well as many initiatives to improve the numbers of female scientists in various fields, the gap between male and female still exists. Existing data on participation of women in mathematics and the natural sciences is scattered, outdated and inconsistent across regions and research fields. The project will provide evidence to support data-informed decisions on science policy. It will give easy access to materials proven to be useful in encouraging girls and young women to study and work in these fields. Contrasts and common ground across regions and cultures and less developed and highly developed will be highlighted.

Three tasks:

- A global survey including all natural sciences and math (AIP again in charge of it).
- Study of patterns of publication (detailed analysis of metadata)
- Compilation and elaboration of lists of good practices (considering regional differences)

All information will be available on its website:

<https://icsugendergapinscience.org/>



Project Partners

Original ones:

International Mathematical Union (IMU); the International Union of Pure and Applied Chemistry (IUPAC); the International Union of Pure and Applied Physics (IUPAP); the International Astronomical Union (IAU); the International Union of Biological Sciences (IUBS); the International Council for Industrial and Applied Mathematics (ICIAM); the United Nations Educational, Scientific and Cultural Organization (UNESCO); Gender in Science, Innovation, Technology and Engineering (GenderInSITE).

New ones:

The International Union of History and Philosophy of Science and Technology (IUHPST), an ICSU member, the Organization of Women in Science for the Developing World (OWSD) and the Association for Computing Machinery (ACM)

Project Organization

Executive Committee of 21 members:

4 from IMU, 4 from IUPAC, 4 from IUPAP, 1 from IAU, 1 from IUBS, 1 from ICIAM, 1 from IUHPST, 1 from ACM, 2 from UNESCO, 1 from GenderInSITE, 1 from OWSD

Coordination groups:

Each one in charge of one of the three tasks

Advisory Board

Funding

The participating scientific unions have contributed with additional funds beyond those received from ICSU.

The three tasks of the project are related to previous activities of some of the partners.

The survey has its immediate antecedent on the global survey of physicists carried out by the American Institute of Physics with the direct involvement of the IUPAP working group on women in physics for the elaboration of the questionnaire and dissemination.

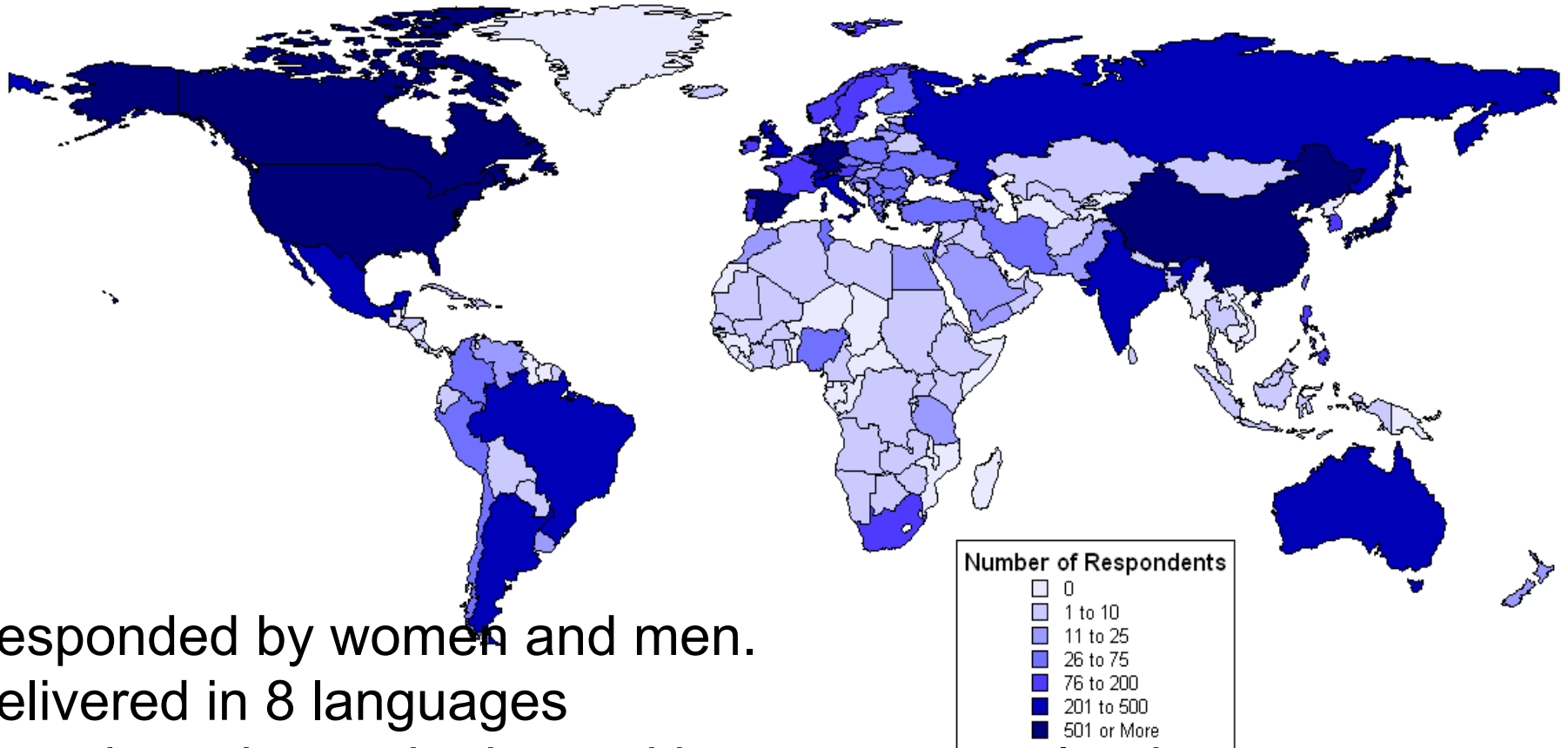
The study of publication patterns is based on a previous study performed on mathematics publications

The dissemination of lists of good practices among its members is something that most scientific unions have been doing.

The Global Survey of Physicists (2009-2010)

Carried out by the American Institute of Physics (funded by the Henry Luce Foundation)

Global Survey of Physicists; Most Recent Country of Respondent



Responded by women and men.

Delivered in 8 languages

Questionnaire worked out with country team leaders.

Comparability across countries insured.

GLOBAL SURVEY OF PHYSICISTS

إجراء استطلاع للرأي في لغة العرب. يتأكد قراءنا، مرحبًا بكم في استطلاع الرأي العالمي بشأن الفيزيائيين

欢迎参与全球物理工作者调查。以中文参与调查。请点击此处

Welcome to the Global Survey of Physicists. [To take the survey in English, click here](#)

Bienvenue à l'étude mondiale à l'intention des physiciens et physiciennes. [Pour participer à cette étude en français, cliquez ici](#)

Wir möchten Sie bei der globalen Umfrage unter Physikerinnen und Physikern begrüßen. [Klicken Sie hier, um die Umfrage in deutscher Sprache auszufüllen](#)

物理学者に関する世界的調査へのご協力ありがとうございます。
[日本語でアンケートにお答えいただく場合は、ここをクリックしてください](#)

Добро пожаловать во всемирный опрос физиков. [Чтобы пройти опрос на русском языке, нажмите здесь](#)

Le damos la bienvenida a la Encuesta global de profesionales de la física. [Para hacer la encuesta en español, haga clic aquí](#)

Data from Rachel Ivie, AIP

<30% of the respondents were students (students: mainly graduate)

Web distributed

14,932 respondents from 130 countries

Language of responses:

60% English; 11% German; 11% Spanish; 7% Japanese; 5% Chinese; 3% French; 2% Russian; 1% Arabic

Responses by region:

37% Europe

32% North America

17% Asia

7% South America

3% Africa

2% Middle East

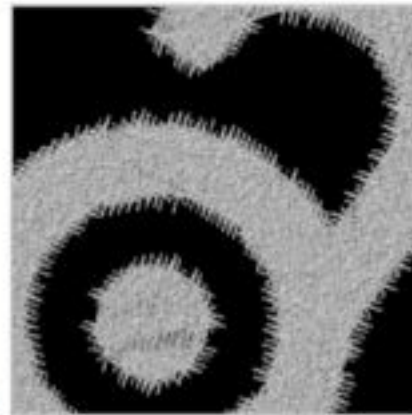
2% Australia

75% from Very Highly Developed Countries (21% Female); 25% from Less Developed Countries (27% Female); 1% had been to ICWIP's

A physicist, a
social scientist,
a mathematician

Task 2: joint data-backed study Team

Lucía Santamaría, Marco Tullney, Helena Mihaljević-Brandt



They have already studied patterns of publication in math using data from zbMATH which has info about millions of publications since 1970 of ~150,000 mathematicians.

Looked at: development over time, collaboration through coauthorships, presumed journal quality and distribution of research topics. Observed significant differences between genders (PLoS ONE, 2016).

Goals of Task 2

- Extend existing study on math to physics, chemistry, astronomy, and biology
- Include information on countries, regions and institutions
- Establish continuous data import and processing flow to allow for easy updates and longitudinal analyses
- Build professional code interfaces and offer analyses and visualizations to the public
- Help develop additional items for the global survey to answer questions that remained open in previous study
- Report on established results in form of scientific publications, popular press and social media

Some challenges of Task 2

Find suitable data sources

Analyze geographical information

Formulate new research questions

Develop algorithms

- Source partners currently identified are

- zbMATH for mathematics (including part of applications)
- arXiv for math as well as theoretical physics and CS

* ADS for astronomy

About Task 3

The people in charge of collecting the lists of good practices has already put some at: <https://icsugendergapinscience.org/work-packages/database-good-practices/>

I've started collecting information at our Latin American website: <http://wp.df.uba.ar/ggapsla>

It's far from complete!!! I expect to include many more examples during this Workshop!

Our timeline

We've had a first coordination workshop in Paris in June, 2017.



By the end of 2017 we will have done 3 regional workshops to bring in a regional point of view.

We expect to launch the survey by the end of 2018.

We will have a closing activity (organized by OWSD) in 2019.

Regional Workshops

The one for Asia/Pacific was held in Taiwan two weeks ago. The one for Africa will be held within two weeks in South Africa.

In our Latin American Workshop we will work on Tasks 1 and 3.

Wednesday	Thursday	Friday
14-14:30 Brief Introduction of participants	8:30-12:00 Survey	8:30-13:00 Best practices. Work in groups. Wrap up Overall conclusions. Future tasks.
14:30-17:30 Discussion on the survey. Laura	13:30-17:30 Best practices, presentations on regional examples.	14:30-16:00 Visit to Gold Museum

What we need from you?

Collaboration with survey questionnaire to check that it addresses main issues (especially those of our region) correctly

Collaboration disseminating information about survey in your country, region and within your discipline fellows.

Get as many people as possible to fill in the survey! (2018!!)

Collaboration collecting lists of existing best practices

Collaboration with elaboration of lists of practices suitable for our region, your countries and/or disciplines (ideas+info)

Active work to get policy changes implemented in your country and/or scientific unions.

It's all about work and networking!

Thank you all for being here!