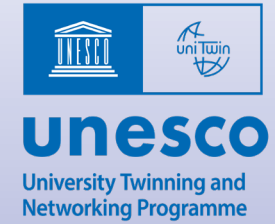


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WOMEN AND SCIENCE CHAIR



# WOMEN AND SCIENCE CHAIR

RESEARCH PROJECTS SELECTED IN 2022

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## Is inclusive science better science ?



**RENÉE B. ADAMS**

Professor of Finance, Said Business School, University of Oxford



**JING XU**

Assistant professor, Finance department, University of technology, Sydney

**W**e propose to examine whether changing women's representation in science changes science.

Recent calls to improve diversity in science focus on issues of fairness. What the literature has not yet acknowledged is that a lack of fairness may be detrimental to science. In theory, greater diversity among scientists should be associated with a greater diversity of scientific ideas and greater impact. However, this link may be broken if professional culture imposes a constraint on the production of knowledge by women. Using topics and citation patterns of scientific papers, we propose to test the link between diversity among scientists and the diversity and impact of science and the role of culture in moderating this relationship.

We expect the answers to these questions to have important implications for how universities, professional associations in science and research funding agencies approach discussions about diversity.

# Women in the Tech professions.

## Professional trajectory and collective mobilization of women



**CAMILLE DUPUY**

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**MARION FLECHER**

PhD in sociology and postdoctoral researcher, Centre d'étude de l'emploi et du travail (Cnam)



**FRANCOIS SARFATI**

Professor, Centre Pierre Naville (CPN - Univ. Paris-Saclay, Univ. d'Évry & CEET)

There are very few women in the IT services workforce. This observation leads us to question the place of women in the IT professions. This project proposes to study the modalities of the feminization of these jobs by studying, on the one hand, the professional trajectories of women who hold a job in computing, and, on the other hand, the forms of collective mobilization implemented to encourage and support this feminization. How and under what conditions do these women manage to enter this field? What employment status, what positions and what types of jobs do they hold? What types of organizations or professional associations can they rely on to defend their place and their interests in this professional field?

This project proposes to document gender biases in the orientation and development of careers in this professional world as well as the modalities of action to reduce them.

## Women and science, gender inequalities in higher education and scientific careers. The examples of engineering and medicine in India



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**APRAJITA SARCAR**

Postdoctoral researcher in the Centre de  
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**SEEMA SINGH**

Associate Professor in Economics & Head,  
Department of Humanities, Technological  
University, Delhi

Our research project focuses on the participation of Indian women in the field of medicine and engineering. Massification, privatization and professionalization have radically transformed the Indian higher education system since the 2000s. While inequalities related to class, caste, religion and place of residence remain as strong as ever, studies agree that gender inequalities have been reduced. However, if we look at the social composition of the academic streams, very strong gender inequalities persist between the different disciplines. Elite fields of study, particularly engineering, are much less welcoming to girls: in 2018-19, 8% of girls in higher education enrolled in these fields compared to 18.7% of boys. While more girls than boys enroll in medicine, which is also considered a prestigious field, they are less well represented in the specializations considered to be the most noble. The first objective of our study is therefore to account for the different mechanisms that can explain girls' orientations in what now functions as an academic 'market'. The second objective of our research will be to understand the social logic of the withdrawal of girls from the labour market even though they have the diplomas that would facilitate their integration. Indeed, the overall participation rate of Indian women in the labour market is 22% compared to a world average of 52.6% (World Bank, 2020) and it has been declining steadily over the last decade.

Our investigation will therefore aim, from an intersectional perspective, to understand how, depending on caste, class, location and religion, women orient themselves in the higher education and labour markets, and how this relationship between educational titles and jobs is played out for women engineers and doctors.

## African women and scientific publications: an empirical investigation



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**AOMAR IBOURK**

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**ZAKARIA ELOUAOURTY**

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African women researchers are a minority with 31.1% of the scientific community in Africa (UNESCO, 2020). Considering the gender dimension in scientific research creates new opportunities and opinions to develop a new outlook on scientific knowledge. To remove all barriers to the development of science, gender diversity is not the responsible thing to do but the smart thing to do. The aims of this project are manifold. First, to investigate the participation level of African women in scientific publications? In which field has this access improved: social sciences vs. exact sciences? Is this access uneven across regions (North Africa vs. Sub-Saharan Africa)? Is this access different according to the country's language (Anglo-Saxon vs. Francophone countries)? What are the obstacles encountered by African women in the field of scientific publication? What actions/programs should be promoted to strengthen the participation of African women researchers in high-level scientific journals? The methodological design of our project is based on a mixed approach (qualitative and quantitative) and by mobilizing both secondary data (a micro-database covering 50,000 scientific publications produced by African researchers, extracted from Scopus and Web of Science databases) and primary data collected through qualitative interviews with a sample of African women researchers.

## The Roots of Gendered Behaviour: Insights from an Online Experiment with Secondary Education Teachers



**MARION MONNET**

Post-doc researcher at the French National Institute for Demographic Studies (Ined)



**PHILIPPE COLO**

Post-doc researcher at ETH Zurich in economics and philosophy., Duisbourg-Essen University.



**ETIENNE DAGORN**

Post-doctoral fellow at the Institut National d'Etudes Démographiques, Assistant lecturer at Université Paris 1

**W**hat are the behavioral determinants of gendered teaching practices? Several studies show that teachers interact differently with boys and girls, grade them differently, and provide them with different evaluations and guidance. These gendered teaching practices have significant effects on the academic performance and educational choices of boys and girls, particularly in science subjects where gender stereotypes are prevalent. However, little is known about the behavioral roots of these gendered pedagogical practices. We propose an original approach to test two potential determinants: gender identity on the one hand and implicit gender bias on the other. We propose to develop a theoretical framework describing teachers' behavior under different assumptions. Secondly, we will test the predictions of our model using an empirical approach, based on an online experiment with high school teachers.

## Women and Science: Trust my competence (not my gender)!



### **VALENTINA ROTONDI**

Lecturer and Researcher, Department of Business Economics, Health and Social Care, University of Applied Sciences and Arts of Southern Switzerland, Associate Member Nuffield College, University of Oxford, United Kingdom.

Despite the relevance of STEM-related fields in reducing the skills gap, increasing employment opportunities for women, and reducing occupational segregation, ultimately spurring inclusive growth and shared prosperity, women are still underrepresented across them. Gender-based stereotypes are determinants of the under-representation of women in STEM professions, and scientific research is a field in which gender-based stereotypes are particularly present. At the same time, trust in science and scientists (irrespective of gender) is essential to highly differentiated societies, where knowledge is highly specialized and complexity is constantly growing.

This paper studies gender-based stereotypes in trust in scientists and the role played by culture. It does so resorting on a survey experiment conducted on two different samples: a representative sample of the adult Swiss population and a selection of students (from elementary and secondary schools) in Fribourg's bilingual (french and german) city.

## Generating technological impact from scientific research : the role of women



**LAURA TOSCHI**

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**FEDERICO MUNARI**

Full Professor of innovation management, university of  
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**HERICA MORAIS RIGHI,**

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**ANGELO DI IORIO,**

Associate Professor of computer science, university of  
Bologna

A context where the presence of a gender gap is particularly pronounced is the academic sector, in particular for what concerns the commercialization of scientific results (Ding et al. 2006; Kochenkova et al., 2020). In order to better understand its magnitude in terms of both research output within the scientific community and technological impact in the industry, we exploit unique data from the European Research Council and data related to science-based patents in order to understand whether (i) The gender gap in science is equally distributed among European countries, as shown by women participation in ERC-funded research projects, (ii) There are differences between male and female researchers in their ability to influence the technological progress with their research and (iii) There are differences between male and women researchers in the practice of disseminating knowledge on social media platforms to affect the technological impact of their research.



# How Female Representation Changes Science: Evidence from College Coeducation



**ASHLEY WONG**

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2023, Fellow, Tilburg University, 2022-  
2023



**FRANCESCA TRUFFA**

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Stanford Graduate School of Business,  
2022-2024

In recent decades, women have made remarkable progress in closing and reversing the gender gap in educational attainment. What is the effect of increasing female representation on scientific innovation and the direction of research? How do researchers modify their research when they are exposed to more female students in their universities? Which scientific fields grew and declined as a result of women's entrance in higher education? What are the implications of these changes for social welfare?

To answer these research questions, we study a natural experiment that sharply increased female representation on college campuses: the switch of universities from male-only to coeducation. Between 1960 and 1990, 76 all-male US universities, including many elite and prominent research institutions, transitioned to coeducation. Combining a generalized difference-in-differences design with a large and comprehensive database on academic research, we will apply natural language and topic modeling techniques to study how entrance of women at these universities led to shifts in research topics and innovation. In contrast to previous studies that focused on the role of women as scientists and researchers, the results of this study will provide novel evidence on how increasing representation among the student body can have broad implications on the direction of research.

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