

# Gender & Science

## A Lecture Series

### Abstract

This lecture series offers an introduction to the relationship between gender and science, with a focus on the specific intersections with the sciences taught at ETH.

It is designed to acquaint participants from all scientific backgrounds with the various ways in which gender perspectives matter for specific scientific disciplines, as well as for science in general.

There is agreement across academic disciplines today that gender influences and structures the production of knowledge and that scientific knowledge production in turn shapes gender notions. Even within “hard” sciences such as biology, physics, engineering, etc., gender is a significant factor in determining what counts as “objective” knowledge, who can know it, what kind of knowledge is produced, or how this knowledge is acquired and justified. Feminist research aims to reveal how dominant conceptions of science and knowledge practices disadvantage women\*, and other subordinate groups, with the goal of reforming these practices. An important part of feminist critique is to show that such efforts substantially improve the overall quality of research.

In a series of guest lectures, scholars from different scientific disciplines provide accessible insights into the intersection between gender studies and the guest lecturers’ respective fields of research. The lecture series thus encourages learning from concrete examples rather than abstract theory. The goal is for participants to be able to compare different approaches used to speak about gender and other types of bias in scientific research and to eventually apply relevant concepts and methods to critically evaluate practices their own disciplines of study and research.

### Time and Venue

Tuesdays, 12:15-13:45

RZ F21

### Contact

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### Main lecturer

Elena Valdameri - [elena.valdameri@gess.ethz.ch](mailto:elena.valdameri@gess.ethz.ch)

### Organizing Committee

Sophie Bettex

Raquel De Haro

# Detailed Program

## Why gender matters: Socially responsible perspectives on technology and innovation by integrating gender and diversity studies

*Prof. Dr. Carmen Leicht-Scholten*  
*RWTH Aachen University*

October 1

The integration of gender and diversity studies into technology and innovation is crucial for fostering socially responsible perspectives that address the needs of all users. Traditional approaches in technology development have often overlooked the diverse experiences and perspectives of women and underrepresented groups, leading to biased outcomes that reinforce existing inequalities. By incorporating gender-sensitive analysis and diversity considerations into the innovation process, we can create more inclusive technologies that serve broader populations, enhance user experience, and promote equity. This talk explores the importance of taking into consideration perspectives of gender and diversity in technology, highlighting how these perspectives contribute to ethical innovation, reduce bias, and drive sustainable development. By examining case studies and current research, we illustrate how integrating gender and diversity can lead to more just and socially responsible technological advancements. Ultimately, this approach not only aligns with ethical imperatives but also catalyzes innovation by unlocking new insights and opportunities for all.

## Sex/Gender in the Brain and Diversity in Neuroscience: Critical Notes

*Prof. Dr. Anelis Kaiser Trujillo*  
*Department of Computer Science, University of Freiburg*

October 8

Brain research today attracts acute scientific and public interest. Publications explaining why women and men feel, think, act, or talk differently are increasingly encountered. This practice can turn into a controversial topic when human behaviour is directly linked to structures and activities of the brain. In this talk, I aim to present and discuss how sex/gender is categorised, treated, measured and discovered in (f)MRI studies, i.e. in studies that look at how women and men differ in structure and function of the brain. Additionally, I will present how diversity has found its way into neuroscience and how AI-based methods, with their underlying emphasis on multiplicity, further highlight human diversity yet not solving old problems such as gender pay gap in STEM persists or poor number of women in STEM fields. Central to my research is a transdisciplinary background based in Neuroscience and Gender Studies. While in neuroscience gender is a hard variable, in gender studies gender is a social phenomenon, a result and a facet of human action and social structures – in short: a social construct. My aim is to bridge the divide between these two epistemologically different approaches.

October 15

## Gender and Sports Science – A Historical Perspective

*Dr. Elena Valdameri*  
ETH Zürich

October 22

## Physical Space Design and Identity Formation

*Honorata Grzesikowska*

*Urban Masterplanner, Architect and Researcher* [honorata.io](https://honorata.io)  
*Founder Urbanitarian - Urban Database* [urbanitarian.com](https://urbanitarian.com)  
*Spatial Equity- Feminist Arch and Urb* [architektoniczki.com](https://architektoniczki.com)  
*Co-funder JUSThood - Participatory Futures* [justhood.net](https://justhood.net)  
*IAAC MAEBB Faculty Member* [iaac.net](https://iaac.net)  
*SISD Shenzhen Faculty Member* [sisd.hit.ed.cn](https://sisd.hit.ed.cn)

Historically, architecture and urban planning have adhered to a 'one-size-fits-all' approach, neglecting the diverse needs of women, children, the elderly, and people of all abilities. This has resulted in urban environments that often fail to meet their needs and increase their vulnerability. Gender issues, coupled with other social inequalities, are often perpetuated by these spaces. In today's context, where more women head households and participate in the formal economy, cities must become inclusive and supportive environments for all. Efforts to promote inclusivity in urban design and architecture often fall short, focusing narrowly on specific issues such as physical disability without considering gender, age, or intersectionality. Addressing these challenges requires integrating gender perspectives into city governance and urban design to mitigate inequalities. This lecture explores methodologies for creating gender-inclusive spaces, emphasizing the concept of "gender-equal space" and envisioning an equitable city.

Key learning objectives include understanding gender-sensitive architecture, applying spatial equity approaches, leveraging data-driven processes to assess inclusivity, and developing critical design thinking for heterogeneous urban contexts. Case studies of successful gender-sensitive design projects, such as schoolyards, highlight the significance of unstructured public spaces in shaping children's social identities.

Participatory processes in schoolyard design revealed how physical layouts influence the spatial behavior and social dynamics of children. Active, dominant children often occupy central spaces, relegating others to the peripheries, reinforcing social hierarchies. These insights underscore the need for comprehensive, gender-sensitive design to foster equality and prevent stereotype reinforcement. The project's findings advocate for mobility knowledge, democratized sports, and the long-term impact of childhood spatial experiences on adult engagement in public spaces and society.

## Gender and Maths

October 29

*Laura Prat Baiget*  
*Universitat Autònoma de Barcelona*  
*Department of Mathematics*

We will talk about gender stereotypes (the implicit and the explicit ones) in mathematics and in other contexts in science; providing some examples of situations that typically occur and looking at statistical results appearing in some articles that have been published. We will consider also women that are referents in mathematics and their invisibilisation. We will also discuss some phenomena such as the #NoMoreMatildas, the #AllMalePanel or the Jennifer vs John effect.

## Bias in LLMs and its effect on Diversity & Inclusion

November 5

*Nadia Fischer*  
*CEO and founder of Witty Works (CH)*

LLMs are increasingly used to generate copy in the workplace or in science. But scientific research clearly shows: LLMs replicate and even amplify bias. Therefore, they carry the risk to inadvertently discriminate Women, People of Color or People with Disabilities. In our lecture, we will examine what human unconscious bias is and look at studies that show how this human behavior has found its way into LLMs. We will look at the economic and legal consequences it has for Diversity & Inclusion of underrepresented groups and for businesses in the private and public sector. Naturally, we will also examine what can be done to mitigate the bias of LLMs.

## New Faces of Bias in Online Platforms

November 12

*Prof. Dr. Annikó Hannak*  
*Department of Informatics, University of Zürich*

The internet is fundamentally changing how we socialize, work, or gather information. The recent emergence of content serving services creates a new online ecosystem in which companies constantly compete for users' attention and use sophisticated user tracking and personalization methods to maximize their profit. My research investigates the potential downsides of the algorithms commonly used by online platforms. Since these algorithms learn from human data, they are bound to recreate biases that are present in the real world. In this talk, I will first present a measurement methodology developed to monitor personalization algorithms in the context of platforms such as Google Search or online stores. Second, I will talk about recommendation and rating systems in the context of employment related platforms such as job search sites, freelancing marketplaces and online professional communities, and their danger to reinforce gender inequalities.

## Digital rights, technology and gender

*Prof. Dr. Mariana Valente*  
*University of St.Gallen*

November 19

Digital technologies have opened up new avenues for expression and diversification of points of view, including gender equality. At the same time, it has enhanced existing forms of gender-based violence like stalking and allowed new ones. What is particular about online gender-based violence, what are its effects, and what is the discussion at the legal, corporate, and design levels?

## The Impact of Sex- and Gender-Sensitive Approaches on the Practice of Medicine

*Prof. Dr. Sabine Oertelt-Prigione*  
*University of Bielefeld*

November 26

There is a growing recognition of the impact of sex and gender on health and disease. Sex and gender can influence disease development, symptoms, diagnostic accuracy, and therapeutic choices and success. But how do we operationalize sex and gender in medicine? And, what do we learn from analyzing sex and gender for our everyday clinical practice? This presentation will start from a methodological standpoint and illustrate how to measure sex and gender differences in medicine. We will then transition from the application of these analyses to their consequences for clinical practice. Using examples from cardiology, oncology, neurology and primary care, as well as digital health, we will highlight how sex- and gender-sensitive medicine can lead to more precise, more holistic and more impactful healthcare.

## The cycling brain and its behavioral implication

*Prof. Dr. Belinda Pletzer*  
*University of Salzburg (AT)*

December 3

The brain is built to change in response to environmental changes, including changes in the hormonal milieu. As a consequence, female brains cyclically adapt to hormonal fluctuations along the menstrual cycle. In this lecture I will present the current state of knowledge about menstrual cycle related changes in the brain and discuss their implications for emotion, cognition and behaviour.

## Environmental Multilateral Diplomacy and the Role of Feminist Policies

*Marie-Claire Graf*  
*Climate Youth Negotiator Programme; ETH Zürich*

December 17