NCCR MUST and Gender Equality Measures

Professor Ursula Keller, ETH Zürich
Director, NCCR MUST

NCCR MUST/RESOLV Gender and Science Meeting
9 – 10 September 2019, ETH Zürich

www.nccr-must.ch
NCCR Molecular Ultrafast Science and Technology
NCCR MUST, July 2010 – June 2022

• 26 Principal Investigator (PI) groups from 6 Swiss universities and the Paul Scherrer Institute (PSI), Villigen

• Disciplines in our network: Physics, Chemistry and Biology

• Leading Houses: ETH Zürich and University of Bern

• Directors:
  Prof. Ursula Keller, ETH Zürich
  Prof. Thomas Feurer, Uni Bern

• PI groups distributed across Switzerland
NCCR MUST (2010 – 2022)

- Time-resolved structural dynamics in atoms, molecules and condensed matter
- Observing the fastest processes in nature
- Controlling atomic and electronic motion

How light steers electrons in metals

Physicists at ETH Zurich have measured how electrons in transition metals get redistributed within a fraction of an optical oscillation cycle

Mikhail Volkov, Ursula Keller and co-workers have measured how electrons in so-called transition metals get redistributed within a fraction of an optical oscillation cycle. They observed the electrons getting concentrated around the metal atoms within less than a femtosecond. This regrouping might influence important macroscopic properties of these compounds, such as electrical conductivity, magnetization or optical characteristics. The work therefore suggests a route to controlling these properties on extremely fast time scales.


August 5, 2019. More >>

Recording a molecular energy machine in action


July 5, 2019. More >>

Modelling of air collisions during re-entry of a space vehicle
Analysis of NCCR MUST gender situation
ETH Zürich Gender Monitoring Statistics 2017/18
(Prof. Renate Schubert and Romola Storjohann)

Chemistry

Physics

[Leaky pipeline D-CHAB, 2017 graph with data for BSc, BSc*, MSc, MSc*, Doc, Doc*, Post-SSA, SS, Prof, showing percentage of females (f) and males (m) across different stages of education and career.]

[Leaky pipeline D-PHYS, 2017 graph with data for BSc, BSc*, MSc, MSc*, Doc, Doc*, Post-SSA, SS, Prof, showing percentage of females (f) and males (m) across different stages of education and career.]

Challenges and Positives for MUST in 2010

Challenges:
- Imbalanced gender distribution in our science network
- In Physics very low numbers of women physicists at the starting point
- In Chemistry the 50:50 gender distribution at undergraduate level does not translate into progression for women scientists
- Little progression of women scientists into leadership positions in both disciplines

Positives:
- Investment of NCCR Directors in the Advancement of Women/Equal Opportunities issue
- Two female full Professors in our network and Direction Committee (Director and our Delegate for Equal Opportunities) from beginning
- Early commitment to working on these issues
- NCCRs are a 12 year funding tool
MUST successful measures

Measure 1: Increase the Number Women at Leadership Level and at all levels in NCCR MUST
In 2014 the gender percentage for Senior Researchers (PIs) in the network was 9% female PIs.

At end of Phase II we had 20% female PIs and in Phase III we have 23% female PIs (4 full professors and two assistant tenure-track professors)

14 new female postdocs and 28 female PhD students recruited in Phase II

Source: NCCR Guides 2017 and 2019
ETH Zürich Gender Monitoring Statistics 2017/18
(Prof. Renate Schubert and Romola Storjohann)

Chemistry: MUST figures 2019

Physics: MUST figures 2019

MUST successful measures

Measure 2: Networking Initiatives for Women in Leadership

ETH/EPFL WPF, https://eth-wpf.ch
ETH/EPFL WPF, https://eth-wpf.ch
ETH Women Professors Forum (ETH WPF)

NCCR MUST creates and establishes ETH WPF
2011 - 2013

Ursula Keller, President; Janet Hering, Vice-President
Anna Garry, MUST, Coordinator

Consolidation Phase at ETH Zürich
2014 - 2016

Ursula Keller, President; Janet Hering, Vice-President
Daniela Meier, Coordinator, ETH Equal Office
Creation of Website: www.eth-wpf.ch

Expansion Phase to EPFL in 2016

Janet Hering, Chairwoman, 2 Vice-chairs, ETHZ + EPFL
WPF moves to ETH Domain office, Zürich. Ursula Keller steps down from Board after 2 periods in office.
NCCR MUST supports transition

ETH Domain and new Forums
2016 - 2019

First ETH/EPFL General Assembly, 29.3.2017
Ursula Keller supports new WPFs in Ruhr Bochum and Oldenburg, Germany
NCCR MUST supports WPF financial side

eth-wpf.ch
The ETH WPF goals

• to become the **advisory board** for the ETH “Executive Board” for women in leadership positions

• to increase **women leadership participation** within ETH

• **building membership and collegiality between ETH women professors:** monthly scientific lunches, social events, etc.

• **networking**, support, exchange of experience, inter-disciplinary and inter-departmental information flow

• to **nurture and promote** excellence of women scientists

• to provide **successful role models** for our students and encourage (our mostly Swiss) undergraduates to set and achieve higher goals for their careers

• to **help to develop working “structures” for more diversity**, for dual career couples and families (optimized for different departments)

• to reach out to Swiss industry: board members, consultants

• to reach out to women in Swiss politics

• to collaborate with other networks for women in leadership positions
6th Assembly Meeting, 28 March 2019, ETH Zürich – joint meeting with EPFL professors

Plans for 2019 and beyond:
Network and knowledge exchange, outreach, support advancement and recruitment of women faculty, co-operation with Equal Opportunity Offices

Membership of female professors in 2019: 70 (ETHZ, 70%), 47 (EPFL, 87%)
ETH WPF: A Survey of Issues Important to Women Professors at EPFL and ETHZ, 2019

Published and for download here
http://www.nccr-must.ch/nccr_must/news_4.html?4518
Or here
https://zenodo.org/record/2710622#.XXTsoy2B1dC
EPFL Commission on Status of Women Faculty, established March 2019 (follow MIT Report 1999)

https://www.epfl.ch/about/equality/equalityepfl/commission-status-women-faculty/

Established in response to ETH WPF – EPFL Survey, reported in 2019

**Members:** Five male and five female professors (one from each of the larger schools), Human Resources Director, Gender Equality Delegate, Administrative support

**Part 1:** data gathering to collect data on the gender distribution for a number of parameters: Salary Space Financial resources Hiring and promotion Leadership and named chairs Awards Teaching Grievances Extramural fundraising

**Part 2:** Interviews 30 women professors and 15 male professors by Prof. Eric Davoine from the University of Fribourg

**Part 3:** Reporting: Focus group to discuss the findings Recommendations will be articulated Report will be finalized

(4 meetings already in 2019, next one September)
D-PHYS : Open Faculty Search for female professors: calls

ETH Zurich, Gender Monitoring
https://ethz.ch/services/de/anstellung-und-arbeit/arbeitsumfeld/chancengleichheit/strategie-und-zahlen.html

2017 28.2 Full and associate Professors, 2 women (Keller and Carollo) \textbf{7\%}
2019 27.2 Full and associate Professors, 1 woman (Keller) \textbf{3.7\%}

In comparison to the previous year, the number of full and associate professorships at the department of PHYS expressed in full-time equivalents increased by 1.0 to 28.2 in 2017. 2.0 full-time equivalents thereof were filled by women (minus 0.5 full-time equivalents compared to the previous year).

In 2017, assistant professors were occupied in the amount of 5.8 full-time equivalents at the department of PHYS (minus 1.4 full-time equivalents compared to the previous year). 1.0 full-time equivalents were held by female assistant professors.

The proportion of women among professorships reached 8.8\% in 2017 and thus lay 1.3 percentage points below the previous year’s value.
MIT USA (2010 22% women faculty)


1994: establishing a committee on women faculty in the school of science
16 out of 17 tenured women Professors

MIT report 1999
“the feeling of an injustice, the anger that accumulates from this recognition, and the strong desire for change for themselves and future generations”

Source: OSA, OPN, April 2015
D-PHYS : Open Faculty Search for female professors: calls

Open Strategic Searches: (under D-PHYS head Prof. Simon Lilly)

2017/18 special search for female professors to fill Assistant Tenure Track positions in IQE and Solid State Physics:

• 6 invited for interviews and presentations at a departmental symposium

• 3 Assistant Professors offered and accept positions, with the formal announcement of third in Dec. 2018 (tenure track)

A second round will open in 2019 (goal is to increase >30%)

28 Full and associate Professors, 4 women (Keller and 3 current Ass. Prof. ) **14%**
28 Full and associate Professors, 4 + 5 (resp. 6, Keller retire 2024) women **39%**
Measure 2: Networking Initiatives for Younger Women Scientists
NCCR MUST Women Scientist Network est. 2011
132 women scientist members including alumni in 2019

After consultation - identified potential issues for our women scientists:
Isolation, lack of self-confidence, difficulties with male-dominated environment,
uncertainty about a science career working with family life
(Physical Review, Physics Education Research, 12 August 2016 – same concerns)

Created a MUST community:
Individual support and advice from MUST office: email news, two career and skills
workshops per year, mentoring, increased visibility, information on available provisions in
universities (e.g. Reseau Romand de Mentoring, Fix the Leaky Pipeline, NCCR
workshops, new science awards), maintain contact with alumni members

Other outcomes:
Creates future science networks, cross boundaries, embeds our gender work in science
environment
NCCR MUST Women Scientist Network 2019

• MUST workshops and training activities, alumni members as role models, and currently returning members to MUST science network

• Annual Meeting Grindelwald, Careers Workshop with Prof. Enrica Bordignon and Prof. Clara Saraceno, Ruhr Bochum University, January 2019

• PIs support program with time and travel expenses
Measure 3: Gender and Science Initiative with RESOLV

- 84 participants (professors, junior research leaders, postdocs and Ph.D. students)
- Directors of MUST/RESOLV (Ursula Keller and Martina Havenith) Prof. Angelika Kalt, Director of SNSF, Prof. Tomas Brage, D-Phys, University of Lund, Sweden; Prof. Lesley Cohen, D-Phys, Imperial College, London; Prof. Doris Wastl-Walter, Vice Rector, University of Bern; Prof. Teresa Montaruli, D-Phys, Uni Geneva; Maya Widmer former SNSF head of gender office
- Contributions from student associations Phimale, WINS, VSETH
- Workshop on preparing applications for ERC starting grants
Measure 4: Inter-MUST Women Postdoc Awards
Inter-MUST Women Postdoc Awards Phase I, II, III:
Support for women scientists at the stage when most leave academia

**Objective:** to **both** increase and strengthen research between PIs in our network and boost women postdoc numbers in MUST

The award: Collaborating PIs receives 50% of the postdoc’s salary over two years

Criteria for applications:

- Research project has to involve 2 or more MUST PIs working together
- Direction Committee (12 members) approves the application

Availability:

- 2 awards in Phase I (2010 – 2013)
- 4 awards in Phase II (2014 – 2018)
- 2 awards in Phase III so far

The number of female postdocs has increased from **10 (12%)** at the end of Phase I to **23 (28%)** (incl. 3 Inter-MUST) at the end of Phase II

*N.B Other NCCRs have now introduced awards for female postdocs too!*
Measure 5: Highlighting progression and advancement of women scientists
Advancement of MUST Women Scientists

**Natalie Banerji:** Postdoc, Ambizione Award 2011
SNSF Prof. 2014, Associate Prof. Fribourg 2015
MUST PI, 1 December 2015
**Full Professor, University of Bern, 1 August 2017**
First female professor in D-Chemistry and Biochemistry, Uni Bern
(n.b. now there are 3 more female professors in Chemistry!)

**Arianna Marchioro:** Roke Group, EPFL
Former PhD student in Moser Group
**Ambizione Award, 2017**

**Elsa Abreu,** Johnson Group, ETH Zürich
Postdoc
**Ambizione Award, 2018**
Advancement of MUST Women Scientists

**Clara Saraceno:** PhD and Postdoc, Keller Group, ETHZ (till 2016)
Sofia Kovalevskaja Award 2015
Tenure-track ass. Prof. (2016-2018), Associate Professor (since 2019), Ruhr Bochum University
ERC starting grant 2018

**Alexandra Landsman**, Postdoc, Keller Group, ETHZ (till 2014)
Group Leader, Max Planck Institute for Physics of Complex Systems, Dresden, 2014-2019

Associate Professor, Ohio State University (OSU), USA, since 2019

**Laura Cattaneo**, Postdoc, Keller Group, ETHZ
Measure 6: Communication

- OPN Column “Reflections in Diversity”
- Inspiring stories from women professors
OSA: OPN “Reflections in Diversity” Column
http://www.nccr-must.ch/advancement_of_women/opn_column_reflections_in_diversity.html

Established by MUST in 2012 – commissioning editors: Anna Garry and Ursula Keller

Frederique Vanholsbeeck, A Journey to Equality and Diversity, July 2017

Sile Nic Chormaic, Challenging a Culture of Inequality, October 2017

Jie Qiao, Being the CEO of your own Career, March 2018

Thomas Bergdörfer, GENERA: towards equity in Physics, September 2018

Renate Schubert, Treat Each other Respectfully, November 2018

Thomas Brage, What does Gender have to do with Physics, February 2019

Annual OPN readership: in print 20,000 readers and on-line 137,000

3 columns per year: next out September 2019
Inspiring Conversations with Women Professors: the many routes to career success, Elsevier 2019

Conversations with 23 professors
See talks later today!
Measure 6: Initiatives for mothers and parents
Fellowships for Postdoc Mothers: Career Retention Measures

Retaining Postdoc Mothers in an Academic Career

DECEMBER 2016, OSA OPTICS & PHOTONICS NEWS, p. 19
D-PHYS Initiative: Fellowship for Postdoc Mothers, since 2018

Female postdoc who becomes pregnant and wants to pursue a career, can apply for a fellowship to finance a PhD student for four years, co-supervised within the group of her professor/supervisor.

Conditions and rules:
• Submits a scientific proposal during pregnancy outlining the PhD project, which will start before she goes on maternity leave.
• Successful candidate must be paid 100% by her PI, and can conduct her working life with flexibility in the early stages of motherhood, whilst supervising the PhD student.
• Postdoc mother is released from teaching for one year.
• Costs: around 60 kCHF per annum per pregnancy.
• Second pregnancy: no need to reapply if within 2 years of first fellowship.
SNSF 120% Childcare Support for NCCR PhDs and Postdocs

SNSF 120% support grant

- PhDs (since 2016) and Postdocs in NCCRs can apply for funds to: Pay for childcare of preschool children whilst they develop their careers or pay for some assistance in labs during absence
- Application needs to be supported with a career development letter from their PIs (postdoc eligibility is up to 5 years after they received their PhD)

MUST offers to pay hotel and travel expenses for a partner to accompany a parent to look after the children during the annual meeting
Conclusions
Summary of Achievements from these Measures

- The creation of **ETH Women Professors Forum** – a network of women professors working to influence recruitment, tenure, working environment and retention
- **Advancement** of women in our network into leadership or promoted positions in MUST and in other institutions
- A successful network with RESOLV on gender – now FP-RESOMUS
- Active and growing MUST Women Scientist Network
- MUST Women Postdoc award increases numbers of female postdocs and benefits MUST interdisciplinary science
New challenges for excellent women

Andrea S. Kramer and Alton B. Harris,
"It’s not you, it’s the workplace: Women’s conflict at work and the bias that built it.”
https://www.johnmurraypress.co.uk/titles/andrea-s-kramer/it’s-not-you-it’s-the-workplace/9781473697287/

• “Bitches” – i.e. how women sometimes describe female bosses
• ... but female bosses treated these women just as many men did – but they are judged more harshly
• Evidence and facts however show: “more women than men are paying it forward to ensure the future advancement of women (and men) who work for them”
• Workplace gender bias is serious – we need special measures!
Learning for Leadership

22.03.2019 | Zukunftsblog
By: Prof. Janet Hering | 3 Comments

What does it mean when the first professor recommended for dismissal in 164 years is female? Eawag Director Janet Hering addresses three areas to develop in terms of ETH governance.

ETH Zurich appointed its first female professor in 1985, 130 years after opening its doors; by the end of 2017, 14% of the professors were women. It could be just a coincidence that the first formal action to dismiss a professor involves a female professor, but it could also tell us something about the challenges that female faculty face as an isolated minority within ETH Zurich. To identify these challenges is not a claim of gender-based discrimination. Rather, it is an attempt to address the gender dimensions of this case as well as issues that arise for individuals belonging to other minority groups.

I would like to highlight three issues that disproportionately affect female faculty: dual career situations, unconscious bias, and poor governance. I highlight these issues because ETH Zurich’s leadership is just beginning to...
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• ... but female bosses treated these women just as many men did – but they are judged more harshly
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• Workplace bias is a serious – we need special measures!

Solutions:
• New challenge:
  many women are confronted with the accusation that they are leading wrong / bad
• **Hire more women professors** (with additional measures)
• **Implement better “corporate governance”** (i.e. better for all and improve “culture”)
  participation, rule of law, accountability & transparency, responsiveness, consensus orientation, equity, inclusiveness, effectiveness & efficiency
MUST2020

10 Years of NCCR MUST
6–10 September 2020, Grindelwald, Switzerland
Save the date!