University of Zurich[UZH]

RECRUITING FOR EXCELLENCE

DEAR COLLEAGUES,

What kind of wind have you experienced so far in your career – a helpful tailwind pushing you forwards or a hindering headwind making each step more labored?

A vast collection of 30 years of empirical research continues to show that women in science are judged more critically than men and are often evaluated as less capable when performing similar or even identical work. This systematic bias against women has important implications for every stage of a woman's scientific education and career. A small sample of these eye-opening studies can be found on the inside of this flyer (pages 4-5). They make the case that women face pervasive unfair treatment, the cumulative effect of which is evident in the numbers of women who become professors, Nobel prize winners, organizational leaders, and so on.

We, as scientists, both men and women, are not immune to the emotions and biases that affect one's ability to be objective. We tend to favor studies that confirm our own research conclusions (confirmation bias), we are drawn to colleagues with a similar hobby or alma mater (halo effect), and we have all experienced typical cultural depictions of scientists as older, white men (leading to stereotype effect). At a meta-level, a recent study showed that male STEM (Science, Technology, Engineering, and Mathematics) faculty members rated research demonstrating bias against women in STEM fields as low quality scientific work and favored instead the altered abstract specifically designed in this experiment to show no such bias exists (Handley et al. 2015). What is the take-home message here? We all need to be aware of our own unconscious biases (definition on page 2) and the ways we can counteract them, especially in the process of evaluating candidates for professorships (tools on pages 2 and 6).

Why does this matter? Aside from the reasons of basic fairness and need for self-awareness of biases that underlie our thoughts, a strong argument can be made that a diverse faculty is a stronger faculty. This "business case" for diversity is already well-known in the commercial world, where there is strong evidence that well-managed diverse working groups are more creative, innovative, and productive.

We also know that ecosystems with greater biodiversity are more productive, resilient, and adaptable. Greater diversity in our Faculty of Science would ensure equitable representation of women in decision-making and improve role modeling for our students (especially, but not only, the women.)

How is the Faculty of Science doing with respect to gender equality? In the decade ending 2018, the percentage of women professors has grown to 17% with the help of the new recruitment procedures in place since 2015 and described in this flyer (see page 6). Also, increasing awareness of the powerful influence of solo status (see page 6) has led to more women invited for talks and job interviews. And the chronic gender pay gap evident in businesses around the world is minimal at the MNF, where men and women's professorial salaries show no differences.

How do we move forward? This flyer is an important tool to help each of us inform ourselves about unconscious bias, and it provides resources to investigate our own biases (page 2). We should be reflective during the hiring process, know the measures in place to help counteract bias (page 6), and be open to the idea that "scientific excellence" is an open and evolving concept, difficult to identify with a single metric like the H index. And finally, it is important to keep in mind that the recruitment process involves judging candidates but also candidates judging us. Our values about openness, transparency, and fairness are evident in the wording of our job advertisements and institute websites as well as in our recruiting processes, employment policies, and visitor hosting practices.

Recruiting, evaluating, and hiring colleagues are some of the most important things we do as a community. I thank you for your introspection and diligence to make this process as fair and progressive as possible.

Roland Sigel

Prof. Dr. Roland Sigel, Dean,
Faculty of Science (MNF), UZH

FACULTY OF SCIENCE

Sara Petchey, UZH Faculty of Science
Dr. Karin Gilland-Lutz, UZH Office for Gender Equality
Petra Siebert, UZH Faculty of Science
Dr. Ines Kohler, UZH Faculty of Science

WHAT ARE WE DOING NOW?

The MNF appoints its professors in accordance with federal and cantonal law, as well as university and faculty regulations. Moreover, the Swiss federal Constitution contains an anti-discrimination clause, which protects the characteristics of origin, race, gender, age, language, social position, way of life, religious, ideological or political convictions, and physical, mental or psychological disability (Article 8). The Constitution also specifically states that women and men have equal rights both in law and in practice.

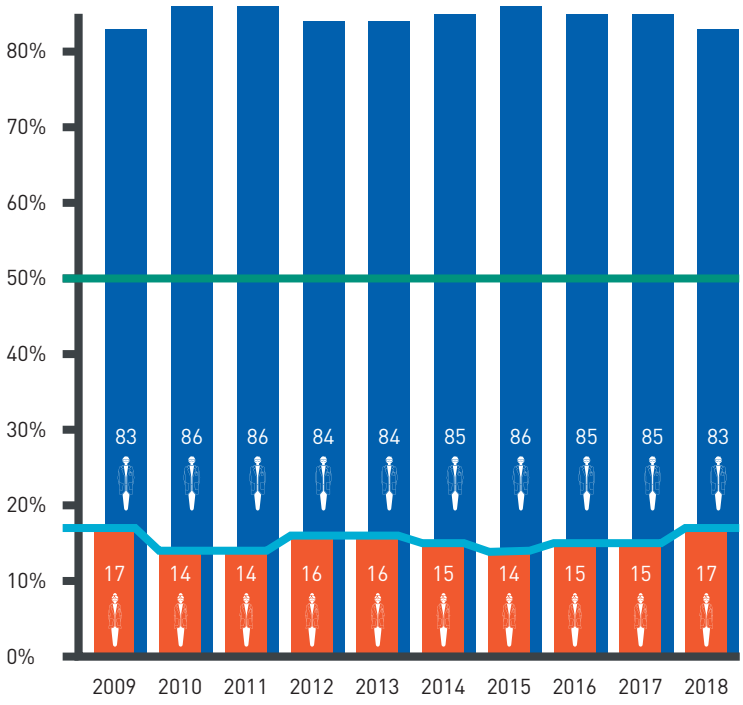
For the MNF this means that the way we recruit must afford all applicants the same opportunity to convince us of their excellence.

The Faculty of Science has taken steps to unpack the professorial recruitment process. Data for 2009 – 2018 show that:

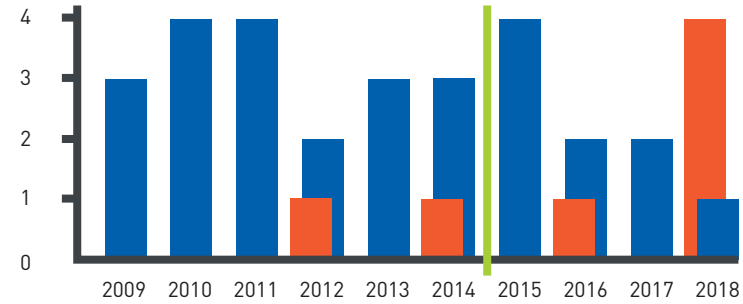
- Women submitted 15 % of all applications (506 of 3364 applicants were women)
- Women constituted 23 % of job talk invitees (49 of 212 invitees were women)
- Women made up 19 % of primo loco-placed candidates who also accepted the offer (7 of 36 primo-loco-ranked applicants were women)

Women constitute a fifth of the potential appointees throughout the process. This is not enough to increase the number of MNF women professors substantially. Why don't more women scientists apply at MNF? A larger pool of applications by women would enable the Faculty to also increase the percentages of women in the subsequent states of the recruitment process.

Professors at the MNF including SNSF, directly appointed, and ad personam professorships.



Number of newly appointed men and women professors at the MNF 2009 – 2018



These numbers refer to competitive appointment processes. SNSF professors, direct appointments to a professorship, ad personam professorial titles, and appointments to the level of adjunct professor are excluded because of being non-competitive in terms of the search and hiring process addressed in this flyer.

Start of the implementation of new hiring measures of the Gender Equality Action Plan.

Women Men

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IS GENDER BIAS REAL?

HEADWINDS AND TAILWINDS

There is a large and growing body of evidence showing that women face unconscious and pervasive discrimination at many points along their scientific education and career. Women in science, for example, are graded more critically, receive fewer awards and grants, and are subconsciously viewed as natively less scientifically able than men (see columns below). Each incident of discrimination could be subtle or small in magnitude, but their accumulated influence over time acts as a headwind making women's advancement in science more difficult.

In stark contrast, men and women alike tend to assess the scientific competency of men more favorably than that of women across all aspects of academic and scientific practice. Male students, for example, get more encouragement in their studies, are picked more often for academic awards, are recommended more convincingly for jobs, and are ultimately judged more hirable. Each of these examples and other similar patterns act as tailwinds, subtly supporting and promoting men in their scientific careers.

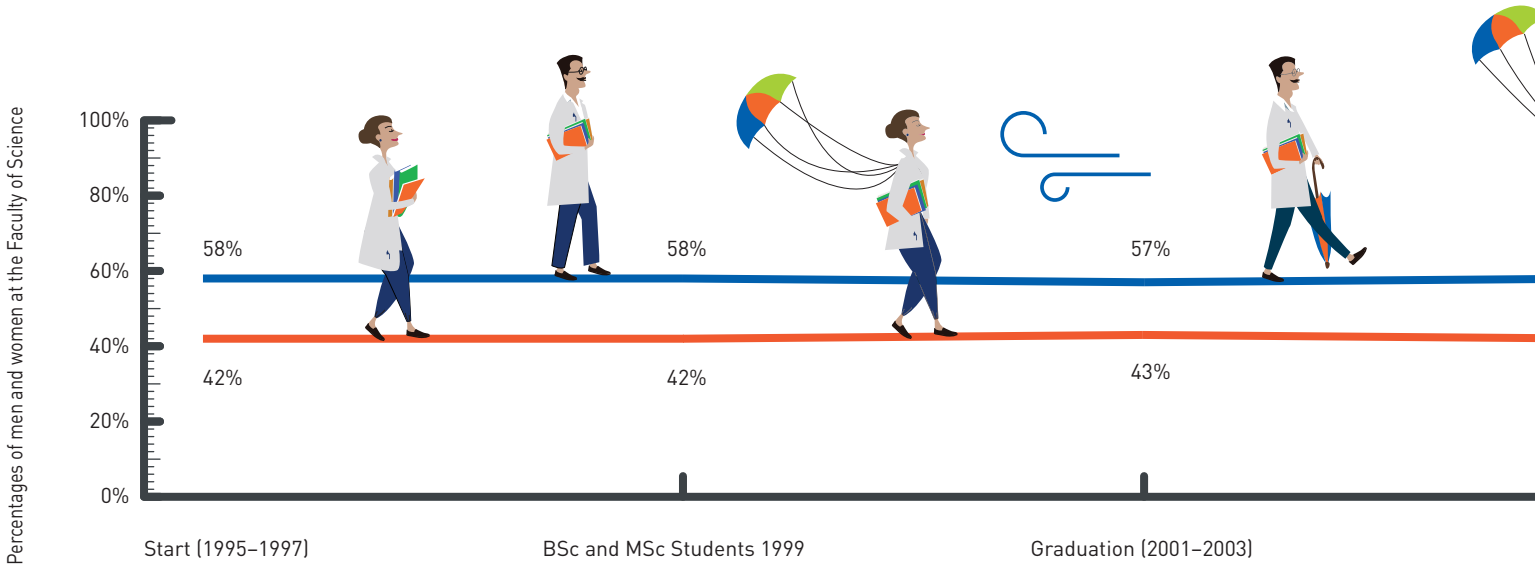
It is important to think of the accumulated influence of bias when evaluating the metrics that finally make it to a candidate's CV.

AM I GENDER BIASED?

Our subconscious influences how we make sense of the world around us, and this can be extremely useful. However, sometimes the way our subconscious naturally processes information can result in faulty interpretations and biased decisions, which we are often not fully aware of and that may directly conflict with our consciously held views. A good exercise for understanding your own unconscious thought processes is the Implicit Association Test available at https://implicit.harvard.edu. The IAT measures how strongly you associate certain concepts (e.g., women, immigrants) and evaluations such as good or bad. Your results might surprise you, and this could very well be the best first step towards counteracting bias.

All biases are learned over time. Changing them is difficult, but we can challenge our biases by creating processes that expose and confront their influence on our decision-making.

THE PIPELINE NOT ONLY LEAKS...



UNCONSCIOUS BIAS ACTS AS HEADWINDS AND TAILWINDS TREATING MEN AND WOMEN DIFFERENTLY AS EACH PROGRESSES THROUGH HIS OR HER SCIENTIFIC TRAINING & CAREER

EXAMPLES OF BIASES IN ACADEMIC SETTINGS

CLASSROOM, LAB, AND FIELD

Female students in science face challenges in how they are perceived, graded, and treated.

- Professors might favor male students. Researchers sent identical letters, purportedly from students, to more than 6,500 professors at 259 top American universities asking to discuss research opportunities. Professors were more likely to respond to email from "Brad Anderson" than from other fictitious aspirants with names like "Claire Smith" or "Juan Gonzalez" (Milkman et al. 2015).
- Analysis of 14 million student ratings on "RateMyProfessor.com" show strong differences in perception. Male professors are described as "geniuses," "stars," "knowledgeable," or "the best," and female professors as "bossy," "disorganized," "helpful," or "annoying" (Schmidt 2015). Undergraduate students also prefer men when rating their peers (Grunspan et al. 2016). Teachers receive lower evaluation ratings if their online student think they are women instead of men (MacNell et al. 2015).
- Nearly two-thirds of male and female field scientists reported in a survey that they had been sexually harassed in the field. 666 field scientists from 32 disciplines including biology and geology were surveyed. 3/4th were women. More than 20% reported sexual assault (Clancy et al. 2014).
- Female physics students can be graded more harshly than their male peers. Experimental results show a significant gap between men's and women's scores for the exact same answer when graded by teachers with up to 10 years of experience (Hofer 2015).

AWARDS AND GRANTS

Women often have to prove more evidence of competence than men in order to seem as equally competent. Then they have to prove it again to show it was ability and not luck.

- Women needed 2.5 times the publications of their male counterparts to mitigate the bias favoring men in the application process. This disadvantage was not found among those women candidates who knew someone on the panel. These were the conclusions of a groundbreaking study of postdoc fellowships awarded by Sweden's Medical Research (Wenneras & Wold 1997).
- A strong CV can compensate for a weaker grant proposal, but only for men. An analysis of application and review materials (n= 2823) for a prestigious personal research grant in the Netherlands found evidence of gender bias favoring men. Men received significantly more competitive "quality of researcher" evaluations and had significantly higher application success rates despite receiving "quality of proposal" evaluations on par with women applicants (Van der Lee & Ellemers 2015).
- Women are underrepresented as recipients of scholarly and research awards and tend to receive awards at higher rates for teaching and service (AWIS 2015). This is also evident here at the MNF. PhD distinctions awarded by the Faculty of Science 2008 to 2017:

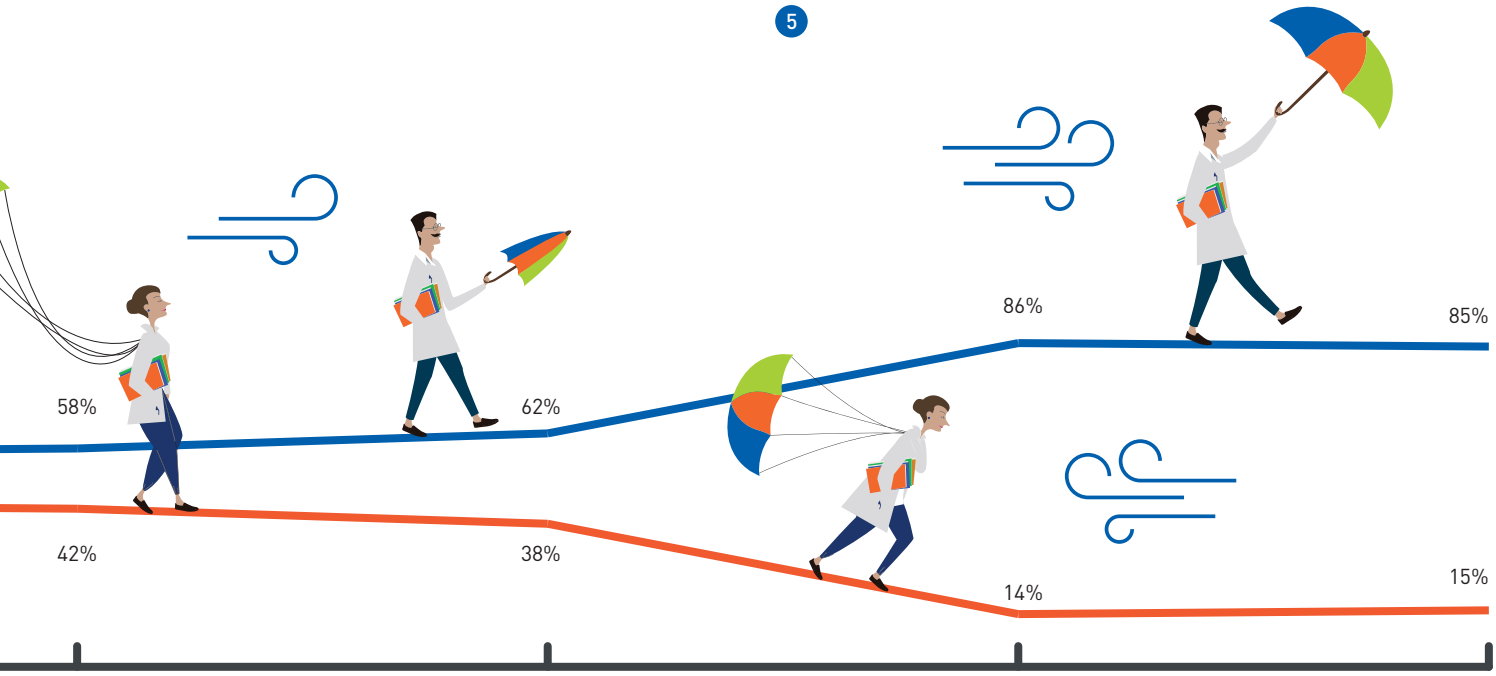
Graduations		Distinctions	
M	1077	M	97
F	940	F	47

Odds Ratio = 1.88
95% CI = 1.31 to 2.70

PUBLICATIONS AND CITATIONS

Studies analyzing decades of scientific publishing of hundreds of thousands of papers show significant differences in the patterns of women and men as authors. New papers also show the value of gender diversity in the team of authors.

- Analysis of over 8 million papers from natural sciences, social sciences, and humanities reveals persistent, subtle gender inequality. For example, men predominate the prestigious first and last author positions, and women are significantly underrepresented as authors of single-author papers (West et al. 2013).
- Women scientists who collaborate and publish together with their husbands/partners are often described as taking a "partnership" advantage, while this is hardly the case vice versa (Ahlqvist et al. 2014).
- Men and women participating in an experiment rated publications purportedly from male authors as higher in scientific quality, especially if the topic was male-typed. Collaboration interest was highest for male authors working on male-typed topics. These are the results of an experiment in which 243 young communication scholars rated conference abstracts ostensibly authored by men or women, but in fact the author gender was randomly assigned (Knobloch-Westerwick et al. 2013).
- Gender-heterogeneous working groups generally produce papers with higher perceived quality than other groups comprised of highly-performing members of the same gender (Campbell et al. 2013).



VISIBILITY AND NETWORKING

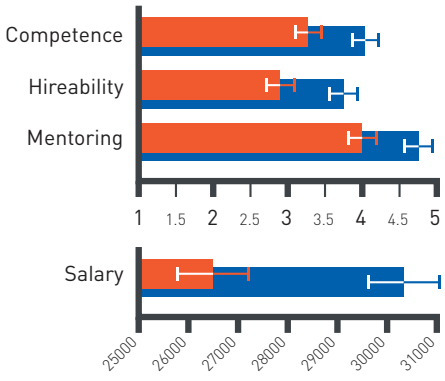
"If good women would apply, I would hire them." is a common quote in the discussions of the leaky pipeline. These "good women" are not hiding, but they have less access to powerful networks, fewer powerful mentors, are invited less often to give keynote talks (and are not introduced with their titles of "Doctor" or "Professor" when they do).

- Networking is complex and subconscious. The facts that men tend to form social bonds more easily with other men and that the majority of academics in senior positions are men mean there are strong and informal networks in which men recommend and support each other, invite each other for talks, cite each other's works, and keep each other informed of job opportunities (Van den Brink & Benschop 2011).
- Colloquium talks enhance a scientist's reputation, networks, research collaborations, and sometimes result in direct job offers. Analysis of 3,652 talks showed men were more likely to be speakers than women, but that when women are colloquium chairs (or at least committee members), the likelihood of having a female colloquium speaker increases (Nittrouer et al. 2017).
- Women are under-represented in the world's science academies and research councils – worldwide, most are more than 80% men. Fewer of half of academies and councils have strategies or policies in place to address the gender equality (Gibney 2016).
- High-achieving and elite male researchers in the life sciences train 10 - 40% fewer women than do their peers. The more decorated the male professor, the greater the skew. Women professors do not show this bias. A disproportionate number of assistant professors are trained in and recruited from such elite "gateway" labs, thus affecting the number of highly competitive women in faculty job searches (Sheltzer & Smith 2014).

LETTERS OF RECOMMENDATION AND HIRING

What if we could remove gender from the hiring process? Sounds impossible, but it has happened. Orchestras introduced "blind auditions" with a screen to conceal candidates' identities. The percentage of women rose from 5% (1970) to 40% (today). Similar results occurred in blind auditions for programmers and engineers (Goldin & Rouse 2000).

- Analysis of 1000 letters of recommendation found that letters for women were shorter, showed less conviction, and more often mentioned the women's personal lives or service roles. They frequently included subtle "doubt raisers" such as, "It is amazing she has been able to accomplish so much while raising a family." Men more often receive superlative adjectives like "brilliant" or "outstanding," while women are often described as "hard-working" or "dedicated" (Skibba 2016).
- John? Or Jennifer? In a landmark double-blind study involving 127 identical applications for a lab tech position, differing only by a randomly assigned name. Men and women alike rated John as more scientifically competent, more hirable, gave him a higher salary and more career mentoring.



Moss-Racusin et al. 2012

Women Men

LEADERSHIP AND SOCIETY

Women walk a fine line when presenting themselves at the work place. Those who present themselves as highly confident and competent can be perceived as aggressive, too ambitious, comparatively unlikeable. Men displaying the same qualities do not risk violating gendered norms. The alternative is also not great; women who adhere more closely to the social norms of their gender — warm, gentle and modest — are rated as less competent.

- Men are stereotypically judged to be stronger leaders than women. However, an experiment involving 900 group members and 70 leaders showed that when the team being led had 40% women or more, evaluations of female leaders rose to levels on par with the evaluations of male leaders (Gloor et al. 2016).
- Male and female researchers do equally well under comparable circumstances (Faniko et al. 2016). However, women are disadvantaged by doing more hours of uncompensated university service (Guarino & Borden 2017). This sets off a vicious circle which leads to less productivity in publication and less high-profile citations (Van den Besselaar & Sandström 2017).
- The "baby penalty" affects women with children, making them far less likely to receive tenure than childless women or men with or without children (Mason et al. 2013). Similarly, a "maybe baby" bias in hiring disadvantages women without children (Stöcklin 2016).
- Paradox of meritocracy – Professionals who think of themselves as objective are more vulnerable to bias (Uhlmann & Cohen 2007). 445 experienced managers in organizations which explicitly promote meritocracy gave better staff evaluations to men in an experiment where equal performance data was presented for evaluation but with a randomly assigned gender (Castilla & Benard 2010).

HOW TO COUNTERACT UNCONSCIOUS GENDER BIASES IN PROFESSORIAL APPOINTMENTS

Gender-balanced structure and search committees

- ☐ Include at least two women and two men professors from MNF in committees preparing the statements on professorial positions and in hiring committees.
- ☐ Determine the selection criteria and their relative weight prior to advertisement of the position and apply them consistently to all applicants.

Note:

- The lower the percentage of women on selection committees and the less transparent the criteria for selection, the less likely women are to be appointed (EC 2009).
- The less transparent the definition of "hirable" is in searches for academic leaders, the more likely men are chosen over women (LERU 2018).
- With unclear criteria committee members may tend to judge using criteria that favor candidates from well-represented demographic groups (Biernat & Fuegen 2001; Uhlmann & Cohen 2005).

Advertising the job

- ☐ Define the position in the widest possible terms consistent with the needs of the university/department. Make sure the position description does not unintentionally exclude woman applicants by focusing too narrowly on subfields in which few specialize.
- ☐ Include only those qualifications that are vital. Research shows that women apply for jobs if they meet 7 of 10 listed qualifications; men apply if they meet 4 of 10 (Pearn Kandola 2014).
- ☐ Use gender neutral vocabulary. Be aware that men are typically described with individual and authoritative words whereas women are often described with communal words.

INDIVIDUAL, AUTHORITATIVE WORDS	COMMUNAL WORDS
DETERMINED AND INDEPENDENT	COMMITTED AND RESPONSIBLE
ANALYTICAL WORK STYLE	CONSCIENTIOUS WORK STYLE
CAUTIOUS AND SENSIBLE	CAUTIOUS AND NOT DARING
AUTONOMOUS, COMPETENT, CHAMPION, PROMISING SUCCESSFUL, LEADER, COURAGEOUS, OUTSPOKEN	TALENTED, HELPFUL, SUPPORTIVE, TRUSTWORTHY, COLLABORATIVE, SOCIABLE

- ☐ Include proactive language which indicates a commitment to diversity:

"The University of Zurich is an equal opportunities employer."

"The University is especially interested in qualified candidates who can contribute, through their research, teaching, and/or service to the diversity and excellence of the academic community." (from the University of Michigan)

Be aware of cognitive biases

- Confirmation bias influences us to selectively search for and interpret evidence that verifies our preconceptions or expectations. For example: grant reviewers favor proposals for projects that confirm their own views (Ernst et al. 1992).
- Attribution error is our tendency to make assumptions, for example, that high performing men achieved success by their own merit, while high performing women had a good team of support (Pern Kandola 2014).

Selecting the short list

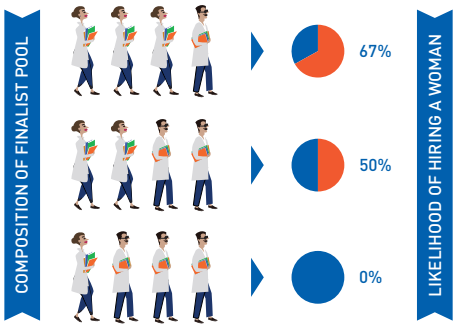
- ☐ Evaluate both the full CV and the 1-page CV. The 1-page CV is a form submitted by the applicant which provides information on periods of time in which the applicant was not engaged in an academic activity on a full-time basis (possibly due to family commitments, time spent working in industry, long periods of illness, etc.) and can be used to estimate the "academic age" in a fair way.
- ☐ Select at least one woman and one man as referees to write a review letter for each candidate of the final selection. If comparative review letters are required, at least one must be from a woman referee.
- ☐ Structure reports are to contain gender-balanced lists (50/50) of academics that the structure commission considers to be possible candidates for the position. The Dean rejects structure reports until they comply. The search committee contacts all listed individuals.
- ☐ Only allow verifiable statements. If someone makes an unverifiable claim, e.g. "I heard from a colleague that this candidate isn't a good PhD supervisor.", stop the meeting, ask that the statement be confirmed in writing - and find out the same information for all candidates (Of course, if the information does not pertain to your selection criteria, dismiss the statement out of hand and proceed).

Organize talks, interviews, and site visit

- ☐ Write a set of core questions before the interviews to be used with every candidate.
- ☐ Do not ask about candidates' private lives, family or marital status, etc. during the interviews. You are selecting a scientific colleague; private lives do not matter at this stage. Consider stating in all interviews that such aspects of a potential move to Zurich will be considered with the candidate to whom you eventually make an offer.
- ☐ Avoid solo status. Research shows that if there is only one candidate who differs from the others in some aspect such as gender, ethnicity, or age, chances to be hired decrease for this candidate.

Note:

- The odds of hiring a woman were 80 times greater if there were at least two women in the finalist pool (regardless of the size of the finalist pool). And there was statistically NO chance of hiring a woman when she was the sole woman in the finalist pool. These were the conclusions from an empirical study that looked at a university's hiring decisions involving 598 job finalists for 174 positions over 3 years (Johnson et al. 2016).



- Gender stereotypes are likely to negatively influence evaluation of women when they represent a small proportion (less than 25%) of the pool of candidates. In other words, seeming different from the group makes a candidate's gender difference the most salient point in her evaluation. Focusing on a candidate as a woman instead of the candidate as a scientist leads to inferences of incompetence (Heilman 1980).

Selection of new professors

- The selection of new professors is an imperfect process, most often because the criteria developed in a hiring process are different from those actually applied when individuals make decisions. Especially when time is limited, it is easy to rely on one's "gut feeling" and prioritize the "suitable" candidate who would "fit well" in the institute, university, etc. This is where bias is most influential.

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