INFORMATICS
EUROPE

# MORE WOMEN IN INFORMATICS RESEARCH AND EDUCATION
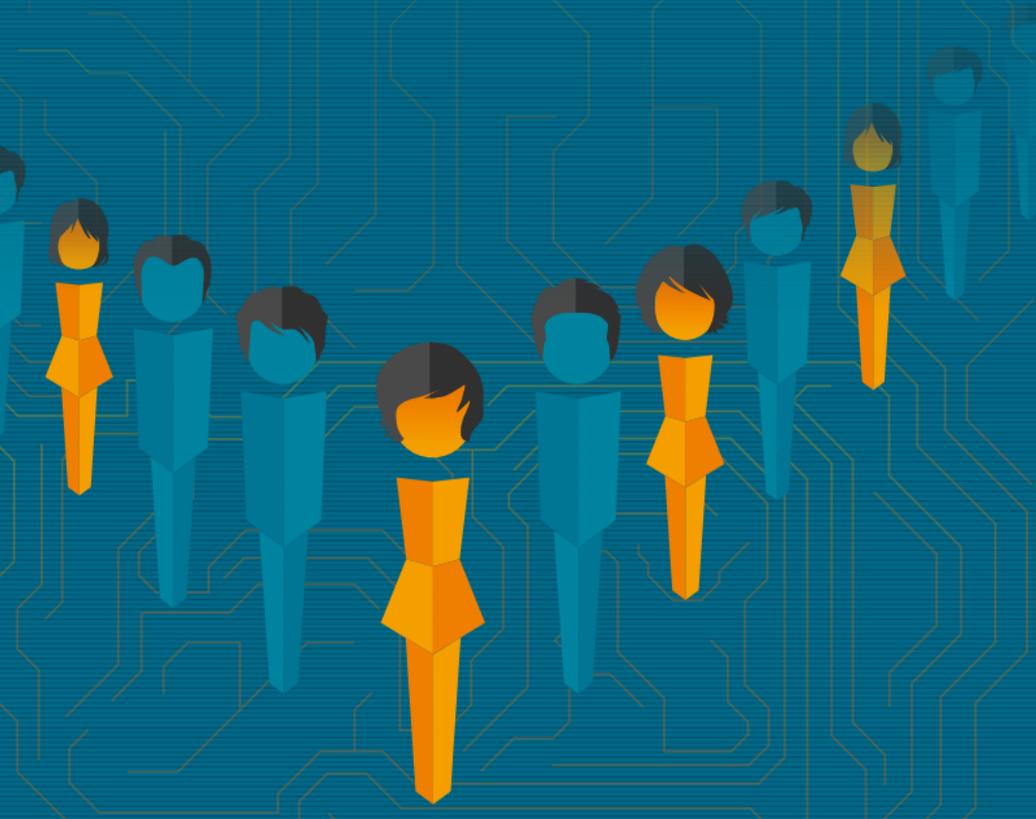
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# FOREWORD

"We often say that digital technologies change the way we live, work and learn today, that they offer unprecedented opportunities, while at the same time demand flexibility and adaptation.

We often also tend to underestimate women's contribution to today's digital world and the various fields of creativity and intellectual endeavours. Women remain underrepresented in many areas and their high potential is not fully included in the innovation process. This is an issue of concern for policy making on different levels. This is my concern too.

This asymmetry affects the tech sector in particular. Despite evidence that allowing for more women to enter the digital jobs market could create an annual € 9 billion GDP boost in the EU area, there is still a very large ICT gender gap in Europe. In order to fill it, we also definitely need more female graduates in this field.

Apart from equality aspects and job market needs it is also important that women thrive in the digital world. This is already happening – women are for instance brilliant software developers, product designers or IT business analysts. Nowadays so many young girls start their adventure with tech as enthusiastic and skilled coders. And there could be so many more!

We must strive to make the digital jobs and ICT-related research more attractive to women as a career path than it currently is. And I am sure that it is not only a demand from them that our work environments are supportive and safe. Supporting women and nurturing their talents can happen if we embed good practices into everyday work. This publication provides rich, comprehensive and hands-on advice on fostering gender equality and it embraces learning, working and career progression. Therefore, I warmly recommend it as useful inspiration to follow and apply in the academic workplace.

I wish the best of luck to all women who embrace the digital opportunity! "

**Claire Bury**
*Deputy Director General
Directorate General Communications,
Networks, Content and Technology
European Commission*

# FOREWORD

"Computation is at the core of the modern world, and has revolutionized our lives over the last fifty years. Universities and colleges cannot educate graduates fast enough to satisfy the demand from industry, and the careers for graduates in the field are varied, stimulating and well-rewarded. Nevertheless we are still failing to engage a significant proportion of the population in this exciting area. Universities have a key role to play both in reaching out to disengaged potential students and in leading by example, by ensuring that their own practices with respect to gender and diversity are of the highest standard.

This small booklet is packed with practical advice for deans and heads of department on measures to improve the gender balance in their institutions, both within the student body and within the staff. Simple changes can have a big impact and the steps taken to improve the working and studying culture for women will reap benefits and improve the working culture for everyone.

Without steps to widen participation in the discipline we will continue to be faced with a skills shortage that hampers the growth and development of the tech industry. There is a significant pool of female talent that is currently not attracted or retained. More importantly the needs and views of a substantial proportion of the population will not be taken into account in the development of the technology that will shape our future.

I applaud the work that has gone into compiling this booklet and encourage all deans and heads of department to give it serious consideration."

**Professor Dame Wendy Hall**
DBE FRS FREng
President ACM Europe Council

# INTRODUCTION

Informatics is a field where women are in the minority, with the result that this field is losing a large amount of potential talent. While this problem is common across cultures, we, research organisations, academia and collaborators in the field, should ensure that the women who do select to study and work in IT are fully-supported in achieving their goals and potential.

This booklet was created by the Informatics Europe Women in Informatics Research and Education working group. The booklet is intentionally compact to provide clear and simple best practices that will increase participation of women as both students and employees. It details actions that can be taken to attract women to participate in Informatics education and research and ensure their continued participation in the organisation at commensurate ratios with their male colleagues.

These actions are not temporary measures, but need to become ingrained in the processes of organisations, so that, when less attention is paid to the gender issue, the number of women in Informatics will not decline.

The bad news is that a predominantly male or female culture is self-sustaining. In the case of Informatics, the male-dominated culture has been the status quo for a long time. The good news is that when a mixed culture is achieved, this culture becomes sustainable. Research indicates that a minimum 30% of both genders achieves this stable mixed culture. So, while 50% of women would be a laudable goal, reaching 30% already allows us to congratulate ourselves on achieving a threshold.

While the gender issue is often perceived as a women's issue, a significant change is possible only when the majority of the heads and deans of Informatics departments and the leaders of research organisations see this as both a concern and an opportunity.

We hope that this document will help to promote the changes toward women's increased participation in Informatics research and education, to the benefit of all, men and women alike.

# RECRUITING FEMALE STUDENTS

- Use multiple social media channels (e.g., Twitter, Face-book, LinkedIn, Google+) to promote events and reach a high number of prospective students.

- Work with undergraduate open-day coordinators to recruit female student ambassadors and speakers from the department and industry. While female facul-ty may choose to volunteer as role models, this costs women their study/research time.

- Present example stories about women with suc-cessful careers in Informatics in recruitment materi-als and on the departmental website, encouraging female candidates to apply and reducing the stereo-type that Informatics related jobs are for "nerds".

- Offer courses and guest lectures on topics that are popular with undergraduate and graduate students and present new opportunities for researchers, such as human-computer interaction, multimedia, lifestyle Informatics, health Informatics or computational lin-guistics.

- Include in course descriptions aspects of creativity in tech education and work, such as information and communication design, user interface design or par-ticipatory design.

- Emphasise good prospects for employment in the IT sector for skilled workers and that salaries are above average.

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# RECRUITING WOMEN

- Advertise openly for all positions, stating that you are an equal opportunity employer.

- Describe positions in a broad way. State job criteria objectively.

- State in the recruiting materials and job descriptions that the university/department/institute is committed to facilitating the combination of work and childcare.

- Emphasise that jobs in Informatics allow for more opportunities for tele-commuting and tele-working, compared to other fields.

- State that flexible terms of employment are possible, such as working part-time and flexible working hours.

- Distribute advertisements across a number of chan- nels. For example, send them to women's networks' email lists, such as national women in tech networks or networks of female professors.

- Approach candidates directly. For example, send the advertisement personally to (at least) three wom- en you would like to see in the position. Ask them to apply, or ask them to send it to three other women who they think would be suitable.

- Allow 3 months for applications to be submitted. Time is needed for the advertisement to reach the right women, and they need time to respond.

- Take action if too few suitable women apply. For example, extend the deadline for applications and re-advertise the position (inter)nationally.

- Re-examine the applications and consider re-advertis- ing if the initial list of candidates selected for interview does not include any women.

# INTERVIEWING WOMEN

- Ensure that the composition of the hiring committee is as balanced as possible. For example, ensure that at least 30% of the committee consists of women, with a minimum of two female members.

- Invite women to the interview not only to see whether they are best for the position, but also to give them ex- perience of being interviewed and increase their status at their own institution.

- Raise the issue of increasing the representation of women in the department when interviewing women and men and ask how they would approach it. This provides extra tips and also shows the department is serious about the issue.

- Provide help with solving the "two body problem", that is helping to find a position for the applicant's partner.

- Consider 18 months per child since PhD completion for mothers when comparing candidates for any success criterion, thus reducing the time used to judge the achievements.

## ERC GUIDELINES

For maternity, the effective elapsed time since the award of the first PhD will be considered reduced by 18 months or if longer by the documented amount of leave actually taken for each child born before or after the PhD award.

For paternity, the effective elapsed time since the award of the first PhD will be considered reduced by the documented amount of paternity leave actually taken for each child born before or after the PhD award.

https://erc.europa.eu/sites/default/files/document/file/ERC-Work-Programme-2017.pdf

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# KEEPING WOMEN

- Schedule meetings only between 09:30 and 16:30, so carers of young children are able to deal with commuting and childcare.

- Overcompensate the imbalance of women in the institute by their overrepresentation at institute colloquia. For example, if 15% of the department is female, then make sure women give at least 25% of the talks. Invite external female speakers as well.

- Organise a course for all senior staff members on unconscious bias. These can cover all diversity issues not just gender equality issues.

- Provide support for the creation of a women's network within the department/institute, including secretarial support and a budget for holding events such as lunches.

- Distribute welcome packages with a booklet that lists childcare options as well as other useful info provided by faculty/institute members.

- Hold annual discussions with representatives of the women's network and the head of the HR department.

- Encourage senior members of staff in the department to act as mentors. This will create a community where knowledge is passed on to new members, keeping women interested in the department/organisation and in the field.

- Count the hours spent on female support and network issues in the same way as all other departmental commitments and duties. Do not assume that female employees can deal with this extra load in their "spare" time.

- Fund childcare as part of conference travel expenses for participating faculty and researchers with young children.

- Fund travel expenses for a partner to go to the conference location during the breastfeeding period.

- Inquire if conference venues have childcare facilities and personnel, and request organisers to provide attendees with childcare and breastfeeding options. Ensure that conferences organised by your department provide such facilities.

- Balance the didactic and scientific responsibilities of all staff and make explicit the priorities for evaluating an individual's performance (e.g., research excellence, students' satisfaction with courses, contribution to departmental duties).

- Create an "ambassador" program, or a personal development plan for researchers with high potential. Ensure that at least 30% are women.

- Upgrade a postdoc position to a tenure track position when there is an excellent female candidate and she meets the criteria specified. Include a mid-term review of progress against the criteria.

- Provide visibility and self-promotion training for female researchers in temporary as well as permanent employment.

- Provide coaching and mentoring to female researchers to make them more aware of their attitudes and concerns, for example, how to combine work and family demands and how to deal with the competition for permanent positions.

# PROMOTING WOMEN

- Ensure a reasonable representation of women in departmental or external committees, whilst also being careful not to unduly overload female members of staff with committee membership.

- Look for and propose suitable women when asked to nominate candidates for prizes, awards or prestigious tasks (e.g. for reviewing, representing the department internally or externally). Strive for equal numbers of highly qualified women and men on the short list.

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# SUPPORT MEASURES

- Consult the women in your department. For example, organise lunch once a month with a different woman, at a different level, and ask her how she views the organisation, her role and her career ambitions and prospects.

- Scout for and follow talented female researchers that could be called upon at some future point in time to complete diverse tasks.

- Anticipate the retirement of (male) professors by making an inventory of, and initiate training of potential female successors.

- Keep track of national and international networks for female researchers. Encourage women to take part in networks.

- Find successful role models and create opportunities for both men and women to share best practices.

- Monitor the percentage of women at all levels in the organisation. Create specific but realistic targets and action plans. Make the figures public in annual reports and departmental evaluations.

- Assign gender representation as a responsibility to a member of the management team, as well as ensuring it is in the HR department's portfolio. Encourage gender diversity to be championed by both men and women in the whole organisation.

- Support the creation of departmental and institutional policy that takes into account the number of children when comparing CVs in all instances related to hiring and promotions.

- Develop a special program for extra tenure-track positions for high potential talent, where the recruitment criteria are based on excellence rather than topic. Consider at least an equal number of female candidates for these positions.

# SOURCES

http://www.genderinscience.org/index.php/downloads

http://ercim-news.ercim.eu/en89/ri/genset-gender-equality-for-science-innovation-and-excellence

**A digital version is available at:**
http://www.informatics-europe.org/dl/more-women-in-informatics-research-and-education

**Further resources related to the topic are online at:**
http://www.informatics-europe.org/working-groups/women-in-icst-research-and-education.html

This booklet is a publication of the Informatics Europe Women in Informatics Research and Education working group:

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