FINAL REPORT

Paving the path for a diverse STEM-research environment enabling world class research and education*

*An anthropological exploration of the potential benefits and experienced barriers of attracting and retaining a diverse talent pool within STEM-research in Denmark

May 2023/ Jakob Schjelderup / Marie Pers / Emilie Baage Stuhr / Louise Vang Jensen

IS IT A BIRD

novo nordisk foundation
Benefitting people and society

VILLUM FONDEN

Preface

Paving the path for a diverse STEM-research environment is key to position Denmark as a world leading STEM-nation. Diverse teams outperform monocultural teams. And diverse perspectives, experiences, and skills ~~is~~ are key to innovation and the development of groundbreaking new ideas.

However, Danish STEM-research environments fall short on gender diversity. Out of the total number of students finishing a master's degree within STEM, fewer women than men choose to pursue a career within academia. Across career levels in academia, the 'leaky pipeline' of female research talents points out an unfulfilled opportunity for Denmark to ensure optimal conditions for groundbreaking research. Universities are already focusing on diversity, but there is potential for more.

In the autumn of 2022 a collaboration was initiated between representatives from the Danish STEM research environments, the VILLUM Foundation, the Novo Nordisk Foundation and the strategic innovation agency IS IT A BIRD. The aim of the collaboration was twofold. Firstly, to nuance the understanding of barriers and potentials for increasing gender diversity in Danish STEM research and education. Secondly, to co-create and test interventions in the STEM research environments to come up with concrete ideas for improving diversity and create a positive impact. The following report unfolds the result of the initial part of the work.

We hope to have sparked your curiosity.

Enjoy the read.

IS IT A BIRD

Executive summary

1. Background, purpose and research approach

The Danish STEM research environment is highly cited and attracts a large number of applicants for grants. However, the leak in the pipeline of female researchers in the research environments pose an unfulfilled potential for **Denmark to ensure a future position as a world leading STEM nation.**

The VILLUM Foundation and The Novo Nordisk Foundation have partnered up with the agency IS IT A BIRD and conducted an anthropological research study **exploring the barriers and potentials to attract and retain female STEM talent in academia, pointing out opportunity spaces** in which universities could act to increase diversity and promote better research and education.

Through ethnographic methods of participant observations, semi-structured interviews and focus groups, **we have engaged with both male and female research talents at various stages of their career** and across STEM departments and faculties. The approach has enabled a nuanced understanding of the everyday life of an individual scientist, as well as patterns across the personal stories of **barriers and factors influencing the experience of a career in academia.**

Furthermore, we have interviewed experts from **academia as well as other industries who have actively addressed diversity and inclusion within their organisations.**

2. Barriers and potentials identified through anthropological research

Five key barriers and potentials to attracting and retaining female talents in Danish STEM research, believed to also be applicable to other minority groups.

Female talents experience **not fitting the profile** of a scientist. The recruitment process pose a big potential, to encourage female talents, as well as transparently showcasing the diverse paths of an academic career.

Female talents experience **not belonging to a group** and being treated differently because of who they are rather than the work they do. A potential is to nurture the working environment within the research group, influencing the overall experience of being a scientist.

Female scientists lack access to informal networks to understand **'the name of the game'.** Opening up the knowledge living in informal networks increases the access to strategic guidance, as well as the chances of being 'in the right place at the right time'.

Female scientists experience that it takes specific traits **to play the game of academia** in order to succeed; there is a potential in being mindful of who is positioned with the 'academic housekeeping' and how to acknowledge different ways of thriving in academia.

Finally, the study finds that female scientists experience a conflict between their academic ambition and their ambition of **being more than just a scientist.** There is a potential in supporting scientists in striking this balance to retain them in academia.

3. Opportunity Spaces to spark concrete action

Alongside the anthropological research, an advisory group representing a broad range of Danish STEM-research environments, universities and faculties participated in a co-creation session leading to the identification of five opportunity spaces for repairing the leaky pipeline in STEM. The opportunity spaces are:

1) Emphasising academic capabilities and diversity in the recruitment process

2) Celebrating excellent academic group work

3) Supporting local initiatives with a centralised diversity and inclusion knowledge hub

4) Helping leaders and managers to create and lead inclusive research environments

5) Levelling the playing field for strategic mentoring among excellent academic talent

The opportunity spaces serve as a conversation starter and foundation for the next step of the project. In this phase, we openly invite the Danish Universities to nominate concrete initiatives to be developed, tested, and evaluated in 'Living Labs' in the STEM-environments in collaboration with our project team.

The ambition of the 'Living Labs' is to supplement the anthropological knowledge with inspirational cases, learnings and experienced effects gathered in through practice. Our wish is to equip the Danish STEM-environments with concrete, qualified ideas and recommendations, to the benefit of the conversation about how to increase diversity and inclusion.

Why diversity and inclusion is a winning formula in STEM research

Diverse teams perform better. In highly competitive elite environments, increasing diversity is a winning formula.

For many years, organisations across industries have engaged with and addressed the benefits of diversity and inclusion and the results are clear: **diversity and inclusion improve business performance and attract new talent.**

Studies conclude that diverse groups are **significantly more effective at solving complicated problems.** [1]

Moreover, numbers show that employees **have a desire to work in diverse companies – from which we can conclude that diversity attracts talent.**

"The benefit of diversity is that you have different minds, and the different minds are shaped by different experiences, different cultural origins, different everything. For me it's so obvious that if people don't think the same way, well, collectively you have many more options. That's the benefit of diversity."

Gisou van der Goot, VP of Responsible Transformation, EPFL

In science diversity is a determining factor for innovation and ground-breaking research.

Just as numbers show that diverse teams perform better than monocultural teams in organisational settings broadly, it is also the case in scientific areas. Having diverse perspectives, experiences and skills at the table is key to innovation and developing ground breaking new ideas in STEM.

Studies focusing on academic research groups have found that **gender diverse research groups receive more citations** than research groups with low gender diversity[1].

Research talents time and time again point out that well-functioning diverse research groups tend to experiment to a larger degree, increasing the ability to solve complex problems together and boosting the quality of their research.

We also find that the larger collective writes better applications and produces better research. We gain much more experience and knowledge exchange by being open."

Professor

1: Campbell, L. et al. (2013): Gender- heterogeneous working groups produce higher quality science.

Research talents experience the positive effects of diversity and inclusion. Diverse environments attract talent.

Research talents point out that better ideas come from research environments where diversity and inclusion is cherished as a strength, as it **makes individuals feel safer when sharing their ideas with fellow scientists**.

Scientists highlight that attractive environments are the ones where the group is prompted to both collaborate and offer **help and support to each individual projects and tasks**. Talents seek out environments offering aspects like a shared sense of values and purpose, multiple mentors and strong, horizontal networks.

"I feel when people are included in the group, we come up with better ideas. People feel safer sharing ideas in groups because they are not afraid of being ridiculed or that a bad idea will affect how we see them."

PhD

SETTING THE SCENE

The Danish STEM research environment is highly cited and attracts a large number of applicants for grants. However, there is an unfulfilled potential for Denmark to increase diversity and inclusion in research environments, to ensure a future position as a world leading STEM nation.

Denmark is not harvesting the fruits of a diverse talent pool as long as women are underrepresented to the current extent. In this report we explore the experienced barriers and potentials of female top talents to inform how we might increase diversity and inclusion in STEM overall.

KEY QUESTION

What are the barriers for attracting and retaining female STEM talent in academia, and which initiatives could the universities use to increase diversity in order to promote better research and education?

Contents

1 **The ethnographic approach and scope**

The outline of a deep dive into the reality of female top talents; a minority in Danish STEM research environments

2 **Rethinking the narrative of the research rock star**

Unfolding the experienced realities and potentials for attracting and retaining female top talent in Danish STEM research environments

3 **Opportunity spaces**

Areas and themes offering direction for concrete initiatives to address diversity and inclusion

The ethnographic approach and scope

A deep dive into the reality of female top talents; a minority in Danish STEM research environments

THE ETHNOGRAPHIC APPROACH

Taking people seriously, but not literally

The ethnographic approach adds thick data to big data. It is a deep dive into the everyday lives of people we want to learn more about, revealing why people act, think, feel, and say the things they do.

This method has enabled us to gain a contextual understanding of how female research talents, representing a minority group within STEM research, experience their everyday lives in academia, how they think about their careers, what drives them, which challenges they face, and how they overcome them.

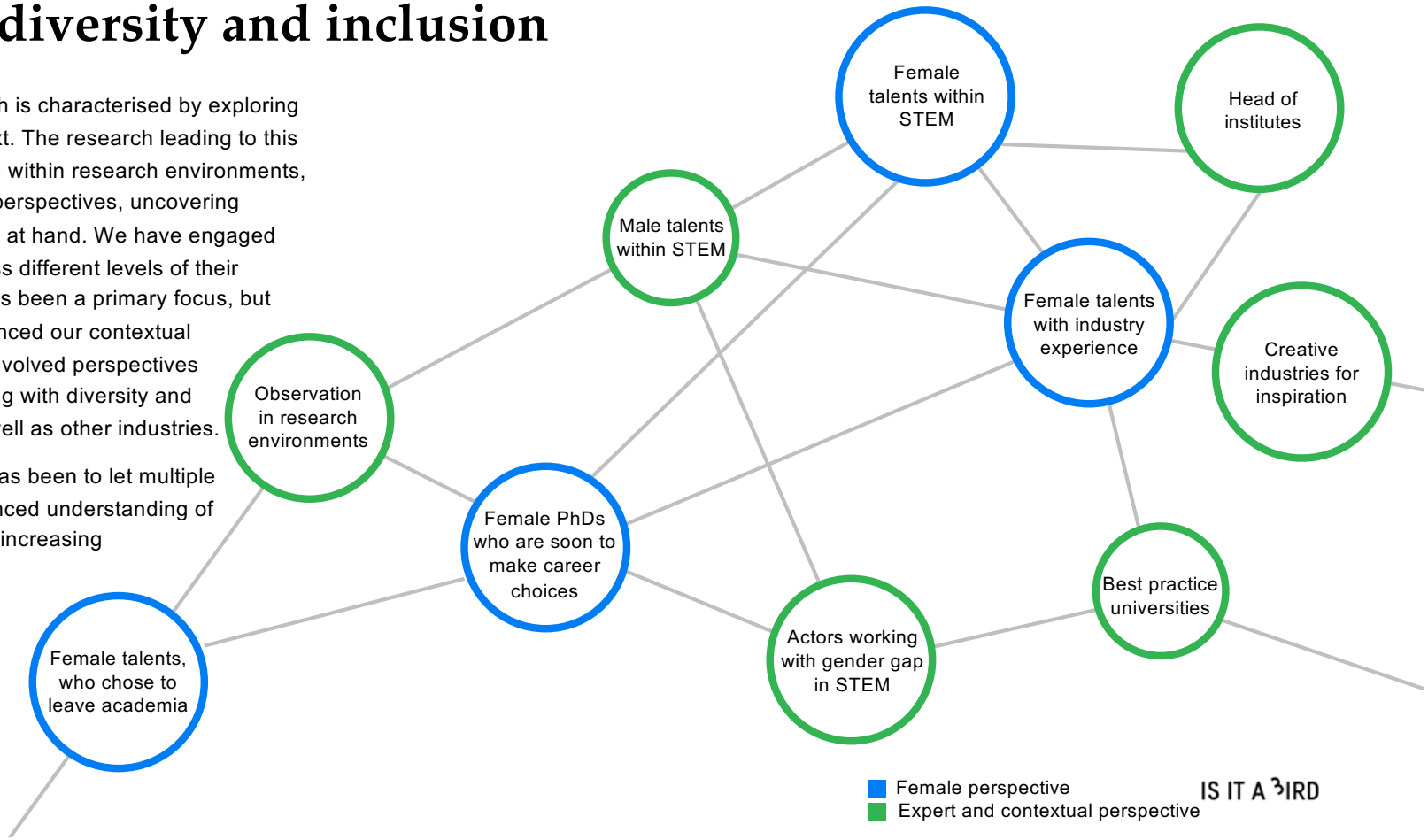
By being genuinely curious about their perspectives, we have gained a thorough understanding of what the world of academia looks like from their perspective.

> Anthropological knowledge is based on the researcher **sharing time and space** with the people he or she wants to understand, establishing relationships with them and thereby **experiencing life from their perspective**. The anthropologist follows people, **reflects upon what is being told**, returns with new questions and adjusts the insights accordingly. The method is **open, flexible and grasps the unexpected**.
>
> **Tjørnhøj - Thomsen. Ind i verden. 2003**

We have engaged with 'the research environment' in a broad sense to identify barriers and potentials for increasing diversity and inclusion

The ethnographic approach is characterised by exploring a problem openly in context. The research leading to this report has been conducted within research environments, exploring a wide range of perspectives, uncovering different views on the topic at hand. We have engaged with research talents across different levels of their careers. Female talents has been a primary focus, but male colleagues have nuanced our contextual understanding. We have involved perspectives from academic staff working with diversity and inclusion in academia as well as other industries.

The aim of our approach has been to let multiple perspectives inform a nuanced understanding of the barriers and potentials increasing diversity and inclusion.



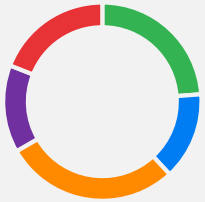
We have engaged with scientists across career levels, disciplines and universities in Denmark

GENDER SPLIT

18 WOMEN

3 MEN

CAREER LEVEL SPLIT



5 FORMER SCIENTISTS

3 PhDs

6 POST DOCs

3 ASSISTANT PROF.

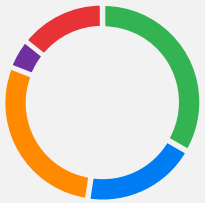
4 ASSOCIATED PROF./ PROFESSORS

DISCIPLINE SPLIT

11 NATURAL. SCIENCES

10 TECHNICAL SCIENCES

UNIVERSITY SPLIT



7 KU

4 SDU

6 AU

1 AAU

3 DTU

21 RESPONDENTS INTERVIEWED

4 DANISH AND INTERNATIONAL UNIVESITIES

3 OTHER INDUSTRIES

7 BEST PRACTICE INTERVIEWS

DESK RESEARCH

EXISTING REPORTS, SURVEYS, STUDIES, AND DEBATES ON DIVERSITY AND INCLUSION

Rethinking the narrative of the Research Rockstar

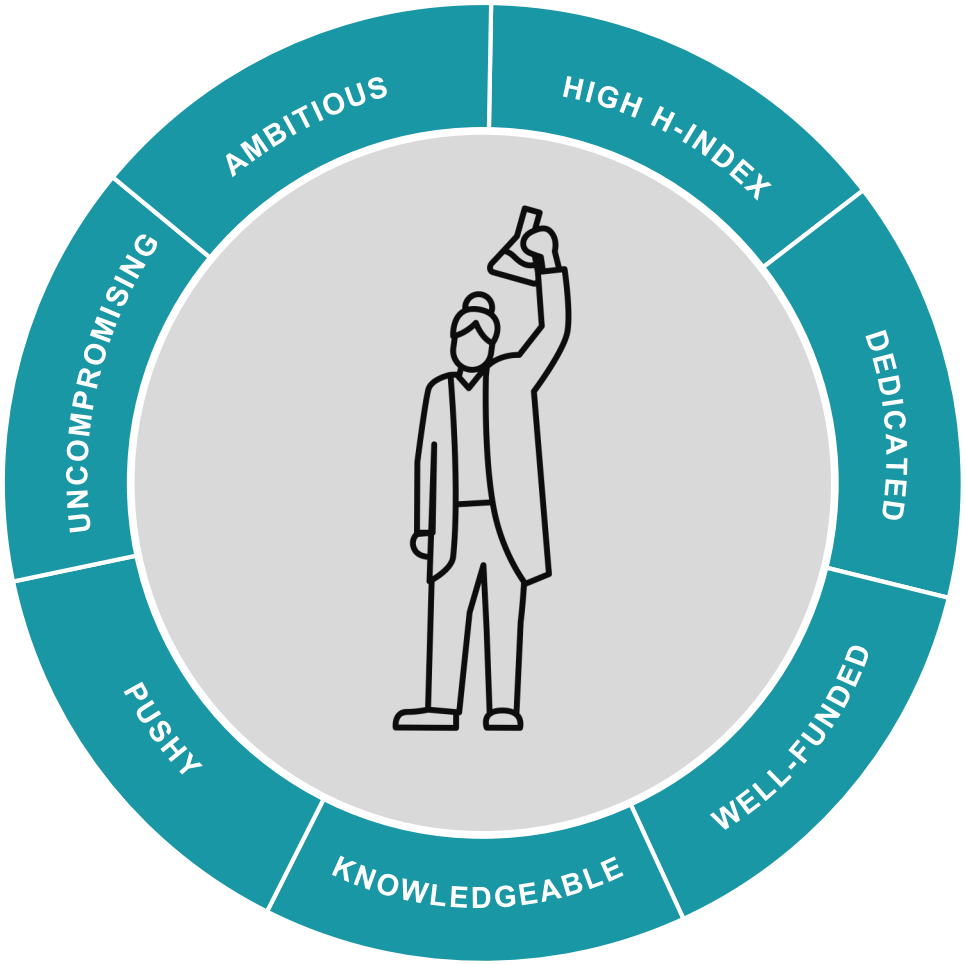
Experienced realities and needs, and potential for increasing diversity and inclusion in STEM

IS IT A BIRD

The ideal of the excellent individual dominates academia and defines what success looks like

"To be successful as a researcher you have to be stubborn and thick-skinned. Then you must be strategic and seek allies."

The narrative about the excellent individual, as told by both senior and junior scientists in our research, depicts people who have overcome great challenges and personal sacrifices while navigating the world of academia, in order to succeed in a highly competitive environment. **The narrative supports the understanding that a career in academia is not for everyone, and that the likelihood of succeeding depends of the brilliant individual's ability to aim high and apply a fixed set of personality traits.**



No rockstar makes it on their own, and for some talents, the path to success is longer…

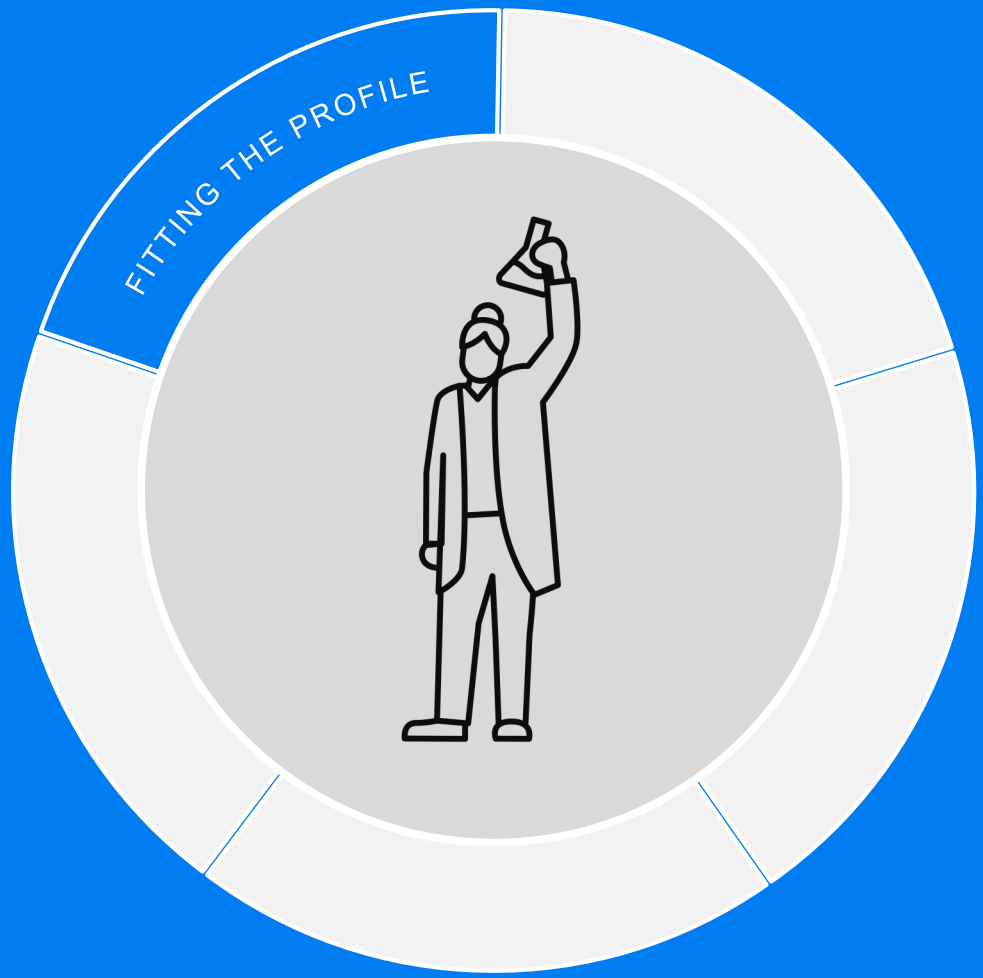
Our deep dive into the everyday lived experience of research talents adds important nuance to this narrative. Across the personal stories shared, researchers emphasise the **essential role of support within the competitive research environment,** in the broadest sense of the word.

While academia demands exceptional individual performances, a common belief among talents is that no individual research rock star gets there alone. Even the brightest minds need **professional recognition** from others, **emotional support**, **mentor guidance** and **access to networks**, in order to progress in their academic careers.

However, as we shall see, support is not evenly distributed and for female researchers who form a minority in the research environment, **the road to success in an academic career is paved with barriers related to: *fitting the profile; belonging to a group; the name of the game; playing the game* and*; being more than a scientist:* limiting diversity in STEM research**.

Experienced reality and potential #1:

Fitting the profile



As a senior researcher, it holds greater risk to promote a talent with a different profile to my own

"I tend to find people who look more like me." is how a senior researcher describes how she recognises aspiring talent. There is an interdependent relationship between junior and senior academic researchers; as scientists advance, they become more reliant on young researchers who can support their research. **Senior talents determine the "safe choice" in different ways:**

One strategy is to **look for talented candidates who have been trained in their lab** or have published articles. Another is to **look for a younger version of themselves**, also known as affinity bias: a bias towards people who are similar to yourself. This research suggests that affinity bias is prevalent in this environment, e.g. exemplified in how both junior and senior talent speak of Ph.D. students being selected without a formal hiring process.

RETURN OF INVESTMENT

"Bachelor and master students are conducting tests or small projects. And then you have to decide how much time you will invest in training. If you find a good student, they can be a talented and dependable resource for up to 5 years if they continue as a Ph.D. Furthermore, they are independent from day 1 as they have already been trained."

Associate Professor

A YOUNGER SELF

"The easiest talent to spot are the ones who have the grades and the ego. I tend to find the ones who look more like me. The ones who are quiet, but who think a lot and ask questions."

Professor

1- https://www.psychologytoday.com/us/blog/tracking-wonder/202006/the-bias-against-difference

I need to be encouraged to believe I can pursue an academic career

"Even though I wanted to pursue an academic career, I did not know I was among the chosen ones until my supervisor encouraged me to write my Ph.D." This is how one senior talent describes her entry to an academic career.

The narrow narrative about the research rock star and the 'chosen ones' who have what it takes to succeed in academia creates **a need for young talents to be reassured that they fit the profile**. The majority of talents in this research share experiences of personal encouragement to pursue their ambition and assurance that they fit into academia.

Our study, among others, indicates that reassurance is especially important for minority groups, as these profiles do not have the same role models as the majority[1].

> "I was curious about doing a Ph.D. but I was unsure whether I was smart enough. I had a meeting with my supervisor. He asked to see my grades and I told him I didn't think they were that high. He looked at them and said it was more than enough to do a Ph.D. and suggested I applied."
>
> **Professor**

1: Wu, D.J., Thiem, K.C. & Dasgupta, N. Female peer mentors early in college have lasting positive impacts on female engineering scholars that persist beyond graduation. *Nat Commun* **13**, 6837 (2022).

How might we …

… **reduce bias in the encouragement** of young academic talents?

Inspirational case: Symphony Orchestra auditions

Assessing talents on their skills, and not who they are

For quite some time the majority of symphony orchestras have been working actively with biases in the initial rounds of recruitment. It is a well-known and largely functional system where applicants are anonymised in the initial rounds by "playing behind a screen. This is how Jakob Holtze, Orchestra director, Danish National Symphony Orchestra talks about the recruitment process.

The blind auditions especially address affinity bias and force the recruitment committee to recruit based only on skill. While the screen is only used for the preliminary rounds, it still has a significant impact. Researchers discovered that this step alone increased women's chances of reaching the finals by 50%[2].

2: https://www.theguardian.com/women-in-leadership/2013/oct/14/blind-auditions-orchestras-gender-bias

I find myself alone and unable to figure out if I have what it takes to excel in science

During an interview, a PhD scholar is asked *"when was the last time that you felt successful in your work?"*, it leaves the interview dead silent. After a while the participant says *"I don't think that I have felt successful yet"*.

This response is not one-of-a-kind, especially among junior talents. Senior talents refer to publications or grants as concrete proof of success in our conversations. Smaller day-to-day successes, like understanding a text, solving a code or framing a good lecture is not top of mind.

The lack of day-to-day experiences of success contributes to a feeling of loneliness described by many of the junior talents, who find it difficult to find professional or emotional support in their day-to-day work.

Where senior talents discuss research with colleagues in their research group, younger talents might only have their supervisor for support. As there is no regular setup for how to get supervision the talents find their own way; this might be anything from a weekly meeting to quarterly check-ins.

LACKING FEEDBACK

"It feels like there needs to be some more clear way for people to understand when they are doing enough, when they are doing too much and when they don't need to worry about anything."

Assistant Professor

FEELING ALONE

"I felt very lonely at uni. Especially professionally. It takes too much effort to familiarise yourself with other people's research – even with people in your research group. So I felt people focussed on themselves and their own research."

Former PhD scholar

Mentorship reassures me that I am on the right path

During a visit to a university a comic was hanging in the hallway. The comic shows a PhD supervisor who asks a PhD scholar, how writing is going and when she will finish. The PhD answers that *if* she gets inspired it should go fast, otherwise it might take forever. This comic illustrates a need for reassurance we have seen across all career levels.

In academic environments the day-to-day work implies constantly exploring new ground, e.g. researching new niche topics, establishing a research group for the first time or initiating the application process for funding. Especially among junior talents, the reassurance of being on a good path is key to thrive. The reassurance can be professional, when a supervisor acknowledges your skills, or emotional, when feelings of being overwhelmed or stressed are acknowledged.

"My supervisor really includes me a lot and cares about personalities and not only work. He's a good person. He's not only focusing on work and what results you get. He also cares about me as a person."

Post doc

How might we…

… **support and reassure minorities** that there is space for them in academia?

Inspirational case: SheCanPlay

Seeing and meeting like-minded talents is especially important for minorities.

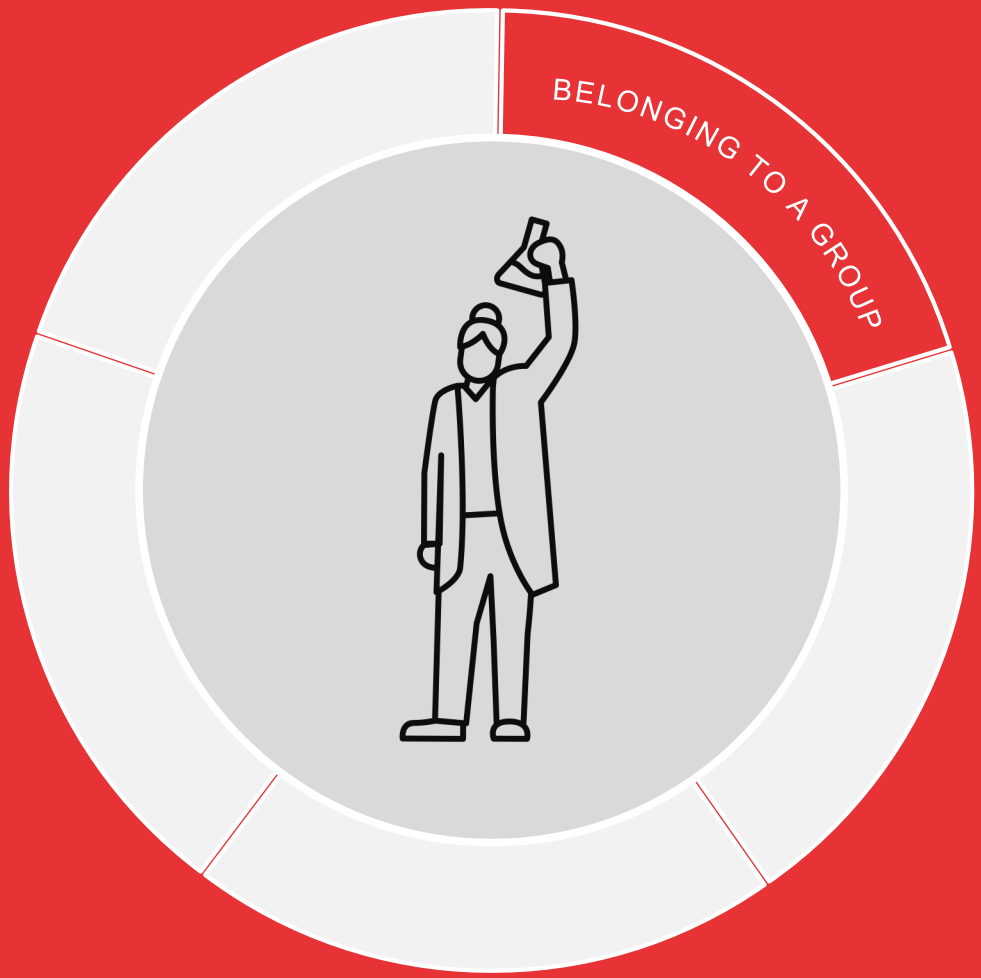
"As part of our first feedback, one of the female talents said: "I feel so lucky that I got the chance to meet likeminded people… I didn't know that there were others like me". It shows that female talents don't know where to look for encouragement when dreaming of making music and that there is space for them". This is how co-founder of SheCanPlay Karen Vincent describes the value of women entering a community and meeting like-minded people.

SheCanPlay is a community where young women and gender minorities develop their musical talent, seek advice and meet like-minded peers. The initiative is created to accommodate the distortion of gender representation in the music industry.

IS IT A BIRD

Experienced reality and potential #2:

Belonging to a group



The academic appraisal of the individual outshines the excellent group efforts

"It is not like I need to be worshipped like a rockstar, but it is part of being in academia." A senior talent defines success in an academic career.

Looking back on a long career in academia, this senior talent has established a reputation through highly recognised accomplishments such as prestigious grants and rewarded publications. The story depicts a shared experience that **professional accomplishments in academia are highlighted as individual accomplishments**, supporting the narrative of the exceptional individual overcoming challenges to succeed.

However, **there are real downsides to individualised recognition**. Collaboration can be difficult because the group is not recognised for the ground breaking results. People might even withhold information or equipment in order for one person to gain recognition over others.

BEING 1ST AUTHOR

"In academia you get recognition through publications and by being first author. There are often many authors on a paper, so it is usually the ones who are first authors who are credited for the work and get to present it at conferences etc."

Former Post Doc

COMPETITION

"Everyone seems to have an agenda for a lot of things they want to achieve. They have to make a PhD, a paper or get a grant. And then you also need to get some results at a certain time. So it can be a bit competitive between groups or even colleagues. People not sharing knowledge or results"

Post doc

I am motivated by being part of a group conducting excellent research

In an interview, a research talent describes an appreciation of the group she is a part of. How her colleagues are interested in her input, and take it seriously. She highlights an openness and **recognition of each group member's skills and competencies as one of the primary reasons for the group producing high-quality research.**

The talents describe a desire to conduct novel and excellent research. Doing so with brilliant colleagues motivates them to pursue their career in academia. It is a common perception that **the greatest results and achievements happen in teams where big wins are celebrated and difficult learnings and lessons are shared.**

"We experience that when the group is working as a collective we are able to write better applications. We get a greater exchange of knowledge and are able to build on experience by being open. I know that is not the way it is everywhere but we have proven that it is possible."

Professor

How might we…

… **support and ensure** that group efforts are recognised and celebrated alongside individual achievements?

Inspirational case: Computer Science - ITU

Promoting group work among scientists

"I use every occasion, including individual performance meetings, to inform scientists at the institute about what other people are doing, so scientists know if somebody is doing something that might be relevant for them. I encourage them to speak to each other because they share an interest but bring different perspectives."

This is how Peter Sestoft, Head of Computer Science at ITU, describes how he continuously ensures that individuals don't hold onto important knowledge but share with colleagues to foster community and collaboration across research groups. This example shows the importance of a management group that supports and reinforces diversity and collaboration.

IS IT A BIRD

I experience being exposed and treated differently because of who I am and not what I do

A senior researcher is asked if she has experienced being excluded because she is a minority, and to this, she answers: *"On one side I can come up with countless examples, but on the other side it is difficult for me to exemplify it because most of it is about being dismissed. It has nothing to do with what is said. It is about what is not being said."*

This quote captures a clear pattern across the stories shared, that female scientists experience being treated differently than male colleagues to various degrees in their professional collaboration.

Women describe being criticised more, whether for their research or for other things than their research, because of their gender. The more seniority the researchers participating in our study, the more examples they have gathered, strengthening their ability to point out the pattern of discrimination.

BEING CRITICISED

"I think it has gotten worse after I started my post doc [sexualised comments]. I can feel there are a group of older men who are not used to women in the group. So when a woman is presenting her work they spend more time commenting on her look than what she has achieved."

Post doc

BEING RIDICULED

"I have a male colleague who shakes his head every time I say something. And I have been thinking that someone should say something. I don't want to say anything myself, because I won't be the whiny person. I can also just not look at him. Still, I without a doubt he doesn't think that I should be in the position that I am in."

Associate Professor

I thrive in groups where we share ideas and explore perspectives

The talents emphasise the **importance of feeling free to be experimental and curious** when conducting research in a niche area, attempting to answer scientific mysteries, and breaking new ground in unexplored territories of research. A shared belief is that multiple perspectives and knowledge sharing are key factors enabling excellent academic research.

Having **a safe space where one can be vulnerable, share ideas, and openly explore different points of view is essential to fulfil the potential**. In other studies, this is referred to as 'psychological safety', which occurs when individuals are not rejected or ridiculed by the group for sharing their ideas and beliefs[1].

"I can see how my PhDs and Post Docs work better together when they enjoy being together. They simply get better at helping each other and sharing knowledge. So it is something I emphasise in my group."

Assistant Professor

Amy Edmondson (1999) Psychological Safety and Learning Behavior in Work Teams

How might we…

… support and ensure a research environment **where everybody feels safe** to be experimental and share ideas?

Inspirational case: SDU

Building inclusive environments through mentorships

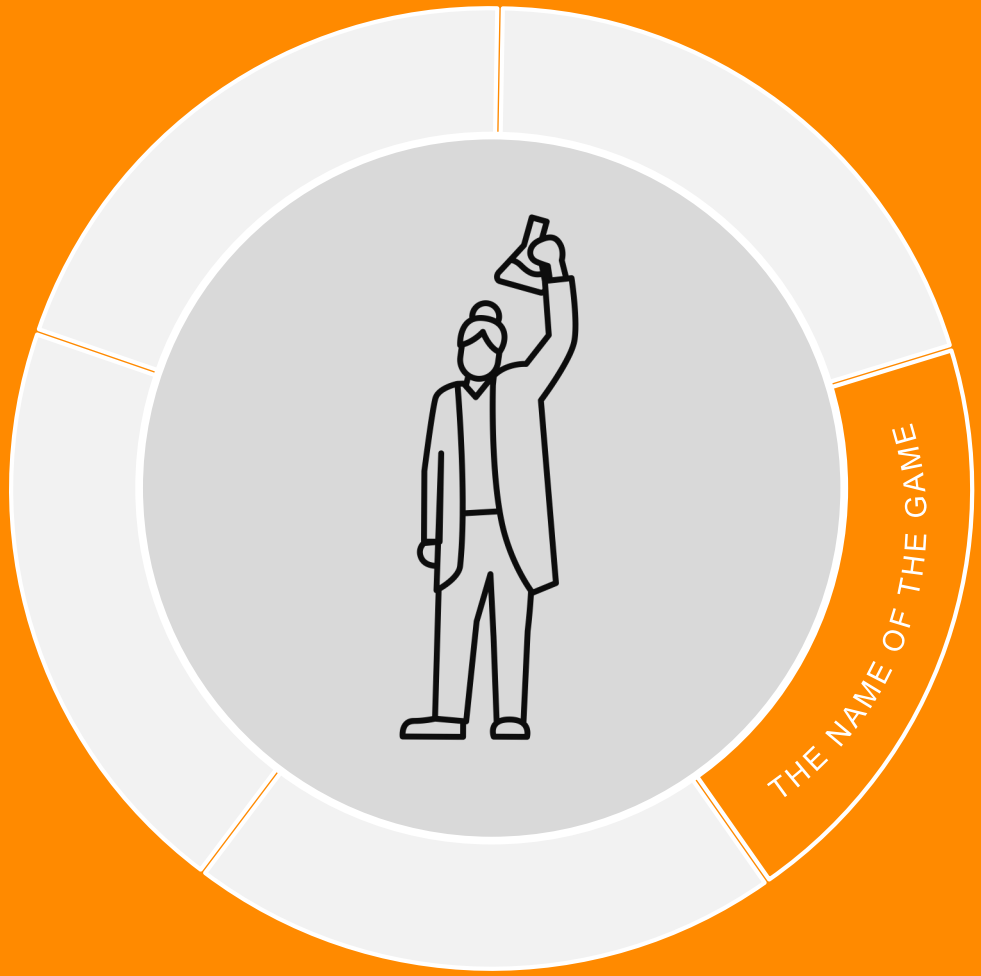
"We are currently piloting a bi-focal mentoring program. Here early career researchers get support and sparring on different perspectives of being a researcher. In addition, mentors get insights into the problems early career researchers face. This builds empathy both ways and also has the potential to inform structural adjustments to counter the systemic issues bearing down on career progression in academia. And this is essential to building inclusive research environments."

This is how Eva Sophia Myers, Team Leader of Gender Equality Team at SDU explains how the university is trying to address diversity through mentor programs. The initiative both supports younger scientists in learning about academia and fosters an environment with a high degree of psychological safety.

IS IT A BIRD

Experienced reality and potential #3:

The name of the game



I find it difficult to make a meaningful career plan and assess the long term benefits and risks

Both junior and senior scientists agree that **a career plan is necessary in order to strategically position yourself for long term success in academia.** According to the talents, only those who are continuously progressing in their ability to publish high-impact articles, acquire citations, and obtain funding are eligible for a more senior position.

However, because there is no clear path to follow in the scientific landscape, **it can be difficult to know where to position oneself and develop research skills as a young scientist.**

As a result, talents rely on supervisors to help them create a plan and weigh risks and rewards. **However, not all scientists receive the same level of assistance from their supervisors.** Consequently, there is an inequal access to opportunities, defined by their access to knowledge and support to help them succeed in academia.

DEMAND FOR PROGRESS

"Well, it's about publications and progress. If someone has been a postdoc for too long, then it's also over. There's often a requirement that you can't apply for certain funds more than 6 years after your PhD. So if you're going to do your postdoc, you have a very small window to apply for it, but you also have to separate yourself from your supervisor's research, which is also a requirement."

Former Post Doc

ABSENCE OF SPARRING

"I have pretty much done it on my own. I have not had a supervisor who showed me the way, had money to fund my positions and helped me get jobs. That has been a problem. Because you do not get positioned in the right situations and acquire important information which can make the difference for your further career."

Professor

I need guidance to position myself strategically for long term success

A senior researcher recalled how his PhD supervisor asked him if he wanted to pursue a career in academia. If so, the supervisor would assist him in determining where to go, how to get funding, and how to return to the university afterwards. The supervisor advised that the two of them should avoid publishing anything together while he was abroad, to increase his chances of promotion.

Research talents stress the **importance of understanding 'the game' in academia to position oneself strategically, in current roles as well as future positions.** They depend on guidance leading them through unknown academic landscapes, highlighting potential labs, research groups that will be beneficial to their careers, and most importantly, how to articulate the value of their research in the future.

"My post doc supervisor is extremely good at the strategic aspect of academia. She advised me a lot on what to say at the job interview for my tenure track. I basically changed what I would say one week before the interview because of her."

Assistant Professor

How might we…

…help ensure that **strategic guidance** and career planning is equally accessible to all talents?

Inspirational case: SheCanPlay

Understanding how you set yourself up for long term success

"Some of our female talents made some pretty bad deals with managers and live agents because they didn't know what it meant for their future as musicians. So now, the first thing we teach our female talents is actually the entire industry knowledge and the law surrounding making music". This is how co-founder of SheCanPlay Karen Vincent talks about the initiative to teach young female talents the tools to succeed in the music industry.

The initiative is 'democratising' knowledge that talents would otherwise need to have learned via, for example, a mentor, increasing the likelihood of more talents succeeding.

IS IT A BIRD

Having the right skills does not equal access to the right conversations

”Recommendations from important people can really just pull you out of nowhere into something incredible.” This is how a senior talent puts it when she is being asked to pinpoint crucial moments throughout her career.

One thing is to be able to strategically make a plan for your academic career. Another thing is to actually enter the conversations which can make or break that same career. This can include conversations about a job, a grant, or a collaboration.

To do so, scientists emphasise the importance of having a network of people who can help you enter these conversations and being willing to share the information necessary to advance.

Talents describe the strength of their network as one of the primary factors defining their success as researchers. But networking is not a level playing field: **a lot of networking occurs outside of formal gatherings and processes, and networks, despite professional qualifications, can be difficult for some talents to enter.**

CLOSED NETWORKS

“You can be just as interesting and attract funding but at my institute the challenge is that the institute leaders took classes together during university. They are old friends. If you are not part of that in some way then it is extremely difficult to establish oneself. That I think is extremely reprehensible.”

Post doc

ENTERING NETWORKS

“I have attended conferences where it has been difficult to network with others. When the men are standing in a big group talking it can be difficult to get in. When you try to talk to them it feels like they are ready to hand you their coffee cup because they don’t expect you to be a participant.

Post doc

I need help to be in the right place at the right time

"Network is the be-all and end-all in order to succeed in academia. You need it when you apply for grants and jobs." A talent reflects on the importance of network in academia. **Talents understand that there aren't many academic positions available at universities, so to maximise their opportunities, they need to be in the right conversations.**

As shown below, one way a supervisor can help research talents get into the right conversations is if he or she offers to share his or her network and contacts with another scientist, for example, by inviting them to meetings, conferences, or even professional collaborations.

> "During my PhD my professor showed me everything around science. She was also really good at including me in her network. She was very involved in these cost actions from EU. And through her I was put in contact with many professors and groups across Europe. She helped me form a big network of my own, early in my career."
>
> **Post doc**

How might we…

…**create opportunities** for all academic talents to be 'at the right place at the right time'?

Inspirational case: Women in Tech

Educate, equip and empower women with the necessary skills and confidence to succeed in STEM.

Women in Tech is the world's leading organisation for Inclusion, Diversity, and Equity in STEM, and it envisions a world in which access to knowledge, innovation, and business opportunities are based on interest and ability rather than gender.

The programme provides mentoring and career guidance for women pursuing a career in STEM, as well as events and the opportunity to create and expand their network. The programme discovers, among other things, that 97% of people value mentors and that 89% of both mentees and mentors feel empowered by their mentoring relationship.

https://women-in-tech.org/

IS IT A BIRD

Experienced reality and potential #4:

Playing the game

I have to master self promotion to make other people notice me and the excellence of my work

With a firm, direct and to-the-point attitude, a postdoc scholar in a group conversation shares how he *"knew exactly who to write to when coming back from my postdoc abroad to get a job and skip the bureaucratic process of writing an application."* This behaviour is rewarded in academia, where talents promote themselves to advance and get ahead of the competition.

A female talent shares how she did *"something she never imagined doing"* when she emailed a committee in support of a faster hiring process. She described the experience as "unusual" for her as it was outside of her comfort zone and she feared it might “blow up in her face”.

A senior talent describes what it takes for her to be promoted and appointed to the rank of professor: "I have just recently realised that I am part of a citation game. So the gloves are off. I need to self-cite as much as possible, and I need to be strategic about sharing articles from which I want to be cited”.

Not all research talents feel equally comfortable promoting themselves, but **they share the perception that one must be willing to put one self in the spotlight to succeed in an environment that rewards outstanding individual performances.**

SELF PROMOTION

“I was supposed to train others in my method, because I am the only one doing it. However, we know that the post doc promotions are coming up and I know that I stand out because I am the only one with these skills. So right now I am delaying the training and just work a bit longer to ensure my unique position“

PhD scholar

NO ROOM FOR DOUBT

“To survive in academia, (…) you need to truly believe that what you do is the right thing. You need to be able to promote your research as the one and only approach to carve out space for yourself. I believe it made it difficult for me to progress in the end, because I wasn’t able to articulate my research as THE truth.”

Former Assistant Professor

1: https://www.dr.dk/nyheder/indland/nyt-studie-hver-tredje-phd-studerende-foeler-sig-presset-til-skrive-mere-magtfulde

I need confidence to be proactive and bold to be competitive

As researchers navigate their academic careers, it becomes increasingly evident that **being proactive is a crucial factor in achieving success**. Proactivity entails understanding the landscape of academia and knowing when and where to cut corners to advance in a highly competitive environment.

However, this type of informal knowledge is not commonly accessible to young scientists. Rather, it is often imparted explicitly by mentors, or gained through years of experience, observation, and trial and error. As a result, **researchers who lack guidance or mentorship may struggle** to gain a comprehensive understanding of the academic system and the tactics needed to advance.

> "Some talents are good at being over-confident in what they do, and what they share. That makes you feel like you don't know as much as them, but it might be fake. Now I'm aware of it and can more easily detect when it's happening. But I still think it is difficult to promote my own research. I much rather want to talk about other research."
>
> **PhD scholar**

How might we…

…**promote excellent ideas** regardless of the personality traits of the owner?

Inspirational case: Louisiana Museum of Modern Art

Promoting artists for their excellent work regardless of personal traits

"If we would not mention the gender when talking about male artists, we equally do not do so when mentioning female artists. We simply highlight artists for their excellence" says Tine Colstrup, Curator at Louisiana about who the museum have addressed diversity.

Louisiana has been successful in balancing the number of female artists exhibited in the museum, resulting in a 50/50 split of male and female artists, as well as an increase in museum visitors. The focus on female artists was intentional in order to promote world-class art from a wider talent pool. However, the approach has been somewhat different from other approaches. Louisiana has chosen to "show it, don't tell it" to avoid emphasising the gender of the artists and to emphasise that all artists are displayed for their excellent work.

IS IT A BIRD

As a female and minority, I easily end up spending my time in committees, teaching or administrative tasks

"If 33% of a PhD committee has to be women, and we are only 16% women, then we need to work twice as hard in committees as our male colleagues."

As this senior researcher clearly highlights, as a minority group, **female talents are easily being asked to do more collective tasks than their male colleagues, taking time away from the tasks which enable recognition and promotion**.

In existing literature the inequal distribution of administrative tasks in academia is called *academic housekeeping,* as a term is used for tasks within universities that are low status, time-consuming and largely invisible (Kalm, 2019). Most mention administrative tasks, from committee meetings to supervising and teaching as distractions from carving out time for one's own research.

All researchers are likely to experience the challenge of carving out time to focus on research, but this study suggests that this challenge is greater among minorities, and the extra work becomes a disadvantage to a larger extent than in the male majority.

COMMITTEE WORK

"I can see that it is the same women who sit in the different committees, that I am also part of. It makes it even more difficult for them to have time for research because they are in 10 committees instead of 5."

Assistant Professor

ACADEMIC HOUSE KEEPING

"Well, I believe I got the task of being responsible for our master students in the lab because I was a woman. It was not said explicitly, but they emphasizes these womanly qualities like being structured and organized."

PhD scholar

I need to be cautious and not spend time on tasks that do not benefit my career

"Being a good supervisor is completely invisible in terms of promotion and funding." This is what an associate professor said when asked if certain tasks in her daily job are more important than others.

Certain tasks give the most credit, beginning with publications and funding, progressing to administrative tasks such as section head and ending with teaching and advising junior talent. Because tasks are not valued equally, **talents are forced to prioritise if they want to advance in their own career paths**. While some may enjoy teaching and supervision, they are aware that doing too much can be detrimental to their careers.

"I enjoy spending time on teaching and conveying knowledge to students. However, I think I have taught too much for what was beneficial for my career."

Former Post doc

How might we…

… support diversity by ensuring that all **tasks are equally divided or equally valued**?

Inspirational case: The 'No Club'

Democratising who does collective tasks in an organisation

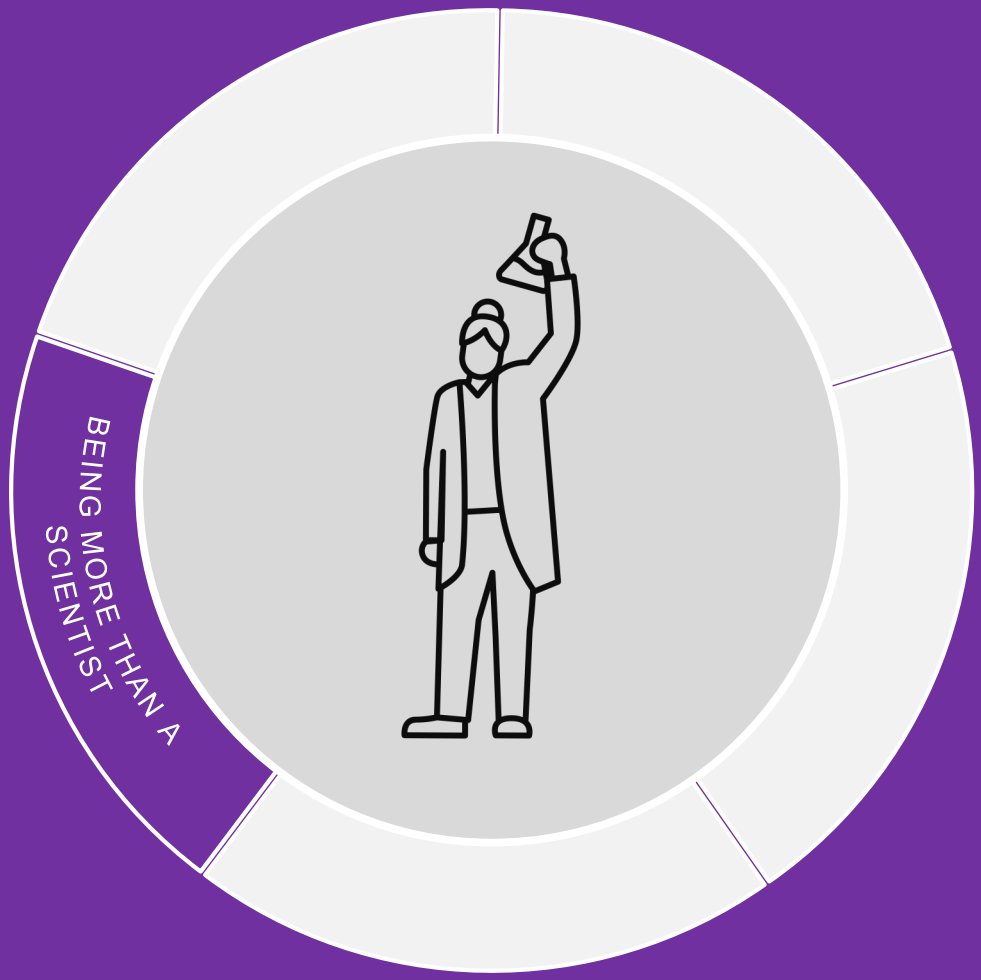
The 'No Club' is written by professors Linda Babcock, Brenda Peyser, Lise Vesterlund, and Laurie Weingartoffer. The book draws on studies, anecdotes and innovative advice from Fortune 500 companies to make suggestions for how organisations can democratise how tasks are distributed and valued in terms of employees and their performance evaluation.

The book recommends that organisations and their leaders put systems and structures in place which first of all assess the organisation's collective tasks, monitor who performs them, and ultimately evaluate and change which tasks help employees advance and which do not.

https://www.thenoclub.com

Experienced reality and potential #5:

Being more than a scientist



In the limitless life as a researcher, it is hard to balance living well and being successful

Talents describe a desire to be more than a researcher and enable a life outside of academia. **Considerations about how to make one's personal life compatible with academia form a large part of the research data of this study.**

”I actually think that I have an okay work-life balance but that is solely because I have come to terms with – and this may sound a bit absurd – but being an average PhD-scholar”, as one junior researcher reflects during our conversation.

Her reflections illustrate a trade-off that talents repeatedly bring up during interviews, in which **general well-being conflicts with success and vice versa**.

Talents agree that they are not taught how to manage the never-ending work that awaits them in academia, leaving them with no choice but to work around the clock, potentially leading to burnout or seeking opportunities elsewhere.

DEDICATION TO THE ROLE

“My workday begins at 5:30 a.m.. Typically, I read new articles or get an overview of the most recent research in various journals. I'm at the university by 9 a.m., either teaching or working on my research. After that, I return home for a meal. Sometimes, I continue working until 9-10 pm.”

Post doc

DEFINING BOUNDARIES

“Everyone is working a bit more, so working on the weekends and sending emails. (…) Once my supervisor sent an email to me on a Friday evening that I got a rejection, and I would like to avoid it at the moment. Like now I don’t receive emails after 9-10 o’clock or in the weekends.”

Former Post doc

Helping talents define small scale success on the path to the big wins

Talents in academia are celebrated for their big wins; a breakthrough in research, the publication of a research article or succeeding with a funding application. However, the big wins are not frequent, and in the meantime, scientists seek other ways to define success in a work life where it is always possible to do more to get further.

There is potential in assisting scientists break down what good looks like at a smaller scale than the big wins. As demonstrated in the quote below, talents appreciate the efforts from mentors or advisors setting up additional parameters for success, in order to feel progress in everyday life where the efforts and workload is potentially endless.

> "I didn't understand what I was doing wrong to be more successful and I was really discouraged. But then I met a female researcher and she started mentoring me. She could break things down in a way that I was like "oh, this is what I'm supposed to do"".
>
> **Assistant Professor**

How might we…

…**help define and acknowledge smaller successes** in academia?

Inspirational case: UCPH FORWARD

Community and individual mentoring

UCPH FORWARD is a network of junior researchers where they can share ideas, challenges and ambitions with likeminded peers. Members can participate in exclusive talks and debates on a variety of relevant topics with selected representatives from the Danish and international academic, industrial, social, commercial, and political sectors.

Additionally, members receive individual mentoring to support them in breaking down their career goals into manageable milestones, thereby supporting talents in defining their own small-scale wins along their academic career.

https://employment.ku.dk/working-at-ucph/ucph-forward/

IS IT A BIRD

I find it difficult to see how my family aspirations can co-exist with the planning of my academic career

While building on existing research both done by IS IT A BIRD about international talents and other studies about diversity in academia, we know that considerations about parental leave and family life are topics which are top of mind among research talents in general.

However, the focus on female talents as a minority within STEM research adds nuance to the picture and elaborates on the themes of parental leave and family life as a barrier for retaining female talents in STEM.

Long before the actual parental leave, female talents feel forced to consider how a dream of a career in science and dreams of a family can coexist during the early years of their academic careers.

Biological, societal and strategic aspects define the considerations women have when **debating whether or not to have children while also striving towards academic goals.**

The desire to start a family conflicts with the demands of academia to go abroad and gain the necessary skills and networks qualifying them for senior research positions.

FAMILY ASPIRATIONS

"It came to a point where I felt I was forced to decide between family or my career in academia. The women I saw succeed in academia either didn't have kids, got divorced or got kids later in life. And I was not willing to make that gamble."

Former Post doc

ACADEMIC ASPIRATIONS

"I made the deliberate decision to have my children later in life. When you are on maternity leave, you simply lose something. Checking out for six months is the worst thing you can do for your career. You must maintain constant contact with people to be productive in writing articles and obtaining grants."

Professor

I need help to stay in the conversation before, while and after a leave

Both male and female scientists describe how parental leave and having small children make it difficult to stay in the conversation and be open to potential opportunities. **They also agree that it is more difficult for female talents to maintain a strong network because fathers can take part-time leave,** whereas most female talents will be out completely for a while in the early months after giving birth.

As demonstrated by the quote below, the talents see potential in the **universities playing an active role in assisting scientists to remain part of the conversation.**

"Currently my wife and I are on split parental leave so I have 4 days at home and 1 day at work, as I need to be in touch with my group. My institute has also agreed to pay for a research assistant, to help me with administrative tasks which has made it an easier workload, but I still check my email everyday."

Assistant Professor

How might we…

…**support scientists to stay in the conversation** during and after parental leave?

Inspirational case: Computer Science - ITU

Emphasising that family is a part of life as a scientist

At ITU, Head of Computer Science Peter Sestoft has adjusted the recruitment process when looking for new talents, to emphasise and acknowledge that his employees are 'more than a scientist': *"In the actual job post we include a section on what it is like to live and work in Copenhagen. We mention family values and childcare. (…) In the hiring process we make sure to have members with kids who can explain how they combine their professional and private life."*

IS IT A BIRD

Summary of realities, needs and potentials

	EXPERIENCED REALITY	NEED AND POTENTIAL	HOW MIGHT WE…
FITTING THE PROFILE	Senior researchers promote talents **similar to their own profile**	I need to be **encouraged to believe I** can pursue an academic career	**reduce bias in the encouragement** of young academic talents?
	I find myself **alone and unable** to figure out if I have what it takes to excel	**Mentorship reassures** me that I am on the right path	**support and reassure minorities** that there is space for them in academia?
BELONGING TO A GROUP	The academic **appraisal of the individual** outshines the excellent group efforts	I am motivated by being part of a group **conducting excellent research**	support and ensure that **group efforts are recognised and celebrated** alongside individual achievements?
	I experience **being exposed and treated differently** because of who I am and not what I do	I thrive in a group where we **share ideas and explore perspectives**	create a research environment **where everybody feels safe** to be experimental and share ideas?
UNDERSTANDING THE NAME OF THE GAME	I find it difficult to make a meaningful career plan and **assess the long term benefits and risks**	I need guidance to **position myself strategically** for long term success	help ensure that strategic guidance and career planning is **equally accessible to all talents?**
	Having the right skills does not equal access to **the right conversations**	I need help to be in **the right place at the right time**	**create opportunities** for all academic talents to be 'at the right place at the right time'?
PLAYING BY THE NAME OF THE GAME	I have to master **self promotion** to make other people notice me and the excellence of my work	I need confidence to be **proactive and bold** to be competitive	**promote excellent ideas** regardless of the personality traits of the owner?
	As a female and minority, **I easily end up spending time in committees**, teaching or administrative tasks	I need to **be cautious and not spend time** on tasks that do not benefit my career	support diversity by ensuring that all **tasks are equally divided or equally valued**?
BEING MORE THAN A SCIENTIST	In the limitless life as a researcher, it is hard to **balance living well and being successful**	Helping talents **define small scale success** on the path to the big wins	help **define and acknowledge smaller successes** in academia?
	I find it difficult **to see how my family aspirations** can co-exist with the planning of my academic career	I need help to **stay in the conversation** before, during and after a leave	**support scientists to stay in the conversation** during and after parental leave?

Opportunity spaces

Areas and themes offering direction for concrete initiatives to address diversity and inclusion

Working with the identified potentials and barriers to ensure more diversity and inclusion

This next chapter presents five opportunity spaces to support actors and stakeholders in the STEM-ecosystem to work with the **identified barriers and potentials addressing *diversity, equity and inclusion (DEI) at the Danish universities*.** The opportunity spaces and the ideas to initiatives have been co-created with stakeholders from the universities in Denmark, to ensure that it is relevance at the universities.

Reading guide

The first page of the opportunity space explain the area where there is a potential to work with diversity and inclusion and what the opportunity is.

The second page presents four concrete ideas to initiatives, highlight some of the relevant stakeholders to involve and an inspirational case.

01

RECRUITMENT

Emphasising academic capabilities and diversity in the recruitment process

02

THE RESEARCH GROUP

Celebrating excellent academic group work

03

DEI KNOWLEDGE HUB

Supporting local initiatives with a centralised diversity and inclusion knowledge hub

04

LEADERSHIP

Helping leaders and managers to create and lead inclusive research environments

05

CARRER GUIDANCE

Levelling the playing field for strategic mentoring among excellent academic talent

01 Emphasising academic capabilities & diversity in the recruitment process

The recruitment process is a key channel to enhance diversity and inclusion in any organisation. It significantly impacts the talent who apply and are selected for an academic career.

This project finds that for young scientists to pursue an academic career, they need to be encouraged and reassured that they belong in the academic world. The research indicates a risk of affinity bias in the recruitment process, as senior scientists are more likely to choose scientists they see as the "safe choice" and often fill an open position before is has been publicly advertised.

There is **an opportunity to revise the hiring processes** at Danish universities to encourage and reassure a more diverse group of scientists to pursue an academic career, and to ensure scientists with different backgrounds have a fair chance to be selected.

This initiative should concentrate on how job postings are written, how interviews are held and how candidates are scored.

POTENTIALS THE OPPORTUNITY SPACE ADDRESSES

Senior researchers promote **those like themselves;** I need **encouragement** to believe I can pursue academia
↳ *How might we **reduce bias in the encouragement** of young academic talents?*

When I find **myself unable to figure out if I fit in academia**, mentors reassures me that I am on the right path
↳ *How might we **support and reassure minorities** that there is space for them in academia?*

Mastering **self promotion** is necessary to gain recognition; I need the **confidence** to be proactive
↳ *How might we **promote excellent ideas** regardless of personality traits?*

"In Denmark, researchers are responsible for hiring their own PhD students, which can be difficult because it has such a significant impact on their research. In contrast, in the USA, PhD students are admitted at the institutional level. They are screened and in their first year they work as research assistants, after which they must go out and find groups to work with."

Anne-Grethe, Professor

IDEAS FOR INITIATIVES

01 Focus on inclusive language

Job postings are the first insight into an organisation and your future job, so relatability is crucial. Some organisations have seen an increase in female applicants by using more inclusive language in job postings to ensure candidates can see themselves in the position. "*Gender-decoder*" is a tool, that helps you identify subtle biases in job ads by scanning them

https://www.stemwomen.com/the-importance-of-inclusive-job-adverts

02 Use promotion/recruitment committees

Using recruitment committees at the PhD and post doc levels can help the university place a greater emphasis on the academic capabilities of candidates. By including members from diverse backgrounds and perspectives on the committee, there is a greater chance of reducing unconscious bias. This can help address the under-representation of certain groups in academia and create a more diverse and inclusive academic community.

03 "Blind" assessment of candidates

Blind assessment has been used for decades in classical music and is slowly being adopted by other organisations. To avoid bias and focus on the qualifications required for the job, information such as name, gender, and age are hidden during the initial selection process, until candidates are interviewed.

04 Centralised hiring of students

By hiring centrally, the university or department will take responsibility for hiring PhD and Post Doc researchers with exceptional academic credentials. Centralised hiring can assist in reducing affinity bias and focusing on obtaining a diverse pool of exceptional academic talent.

PEOPLE & PLACES TO INVOLVE

- Senior researchers sitting in hiring committees
- University / department leadership
- HR and DEI office
- Recruitment processes

INSPIRATIONAL CASES

An inclusive recruitment process
Computer Science - ITU

Small changes have been implemented in each step of the recruitment process to ensure that the department and position are appealing to a diverse group of candidates and that biases are addressed in the recruitment process. In both the job posting and the interviews, the department emphasises career opportunities and work-life balance. They invite minority groups for interviews first, and acknowledge bias in performance data to ensure equal opportunities for candidates.

"Blind" assessment of candidates
Symphony Orchestra DR

In the preliminary rounds of recruitment, the Symphony Orchestra uses blind auditions, which address affinity bias by forcing the recruitment committee to recruit solely on skill. The Head of the Symphony Orchestra tells that he has seen candidates who would not have made it to the first interview get the job, because of this recruitment method.

IS IT A BIRD

02 Celebrating excellent academic group work

Behind every successful scientist is a team of collaborators who have assisted in the development, refinement, and execution of excellent research. Yet the spotlight is usually cast on the individual rather than the group.

This study found that celebration of individual scientists can damage collaboration among colleagues and research groups. Celebration of individuals can also be a barrier to attracting and retaining profiles who aren't interested in competing or fighting for attention but just want to be part of excellent research.

According to other research projects, diverse groups receive more citations and perform better when solving complex problems. As a result, **there is an opportunity to celebrate excellent research done by groups in addition to individual academic achievements**. This could lead to greater collaboration within groups and make space for more excellent researchers in academia.

POTENTIALS THE OPPORTUNITY SPACE ADDRESSES

Academic appraisal of **individuals outshines group** efforts; I am **motivated by being part** of an excellent research group
↳ *How might we support **group efforts being recognised and celebrated** alongside individual achievements?*

Mastering **self promotion** is necessary to gain recognition; I need **confidence** to be proactive
↳ *How might we **promote excellent ideas** regardless of personality traits?*

"When I choose a workplace in the future, I would like to have a place with more diversity and group work in general. It is something that I will look for and prioritise."

Fiona, PhD-student

IDEAS FOR INITIATIVES

01

Celebration of group achievements internally at the university

A first step towards celebrating groups as a whole would be to highlight team efforts in internal letters, department meetings, and on the intranet. This will help to highlight the excellent research done by a group of people rather than individual scientists.

02

Diversity CV for research groups to promote with diversity and inclusion

This research show that younger scientists wants to work in groups that prioritise diversity and inclusion. A diversity CV that highlights the initiatives senior researchers and the research group have taken to work with diversity, psychological safety and inclusion can help putting further emphasis on the agenda.

03

Knowledge sharing among research groups

New and diverse perspectives stems from taking the time to discuss perspectives among and across research groups. Institutes can arrange quarterly or bi-yearly knowledge sharing sessions where different groups share their work.

04

Grants for groups

Awarding grants to an entire group would be the ultimate celebration of the group as a collective. The grants would additionally be a recognition that each scientist could then showcase in their individual career.

PEOPLE & PLACES

- Senior and junior scientists
- Research group leaders
- Department leadership
- Foundations
- Intranet, newsletters, townhalls

INSPIRATIONAL CASE

The Danish Young Academy's Celebration of the Research Environment of the Year

The Danish Young Academy have established an award to recognise the importance of good research environments for the work, performance, and well-being of each scholar, as well as to recognise each participant's contribution to the research community. The goal is to spark a conversation about the qualities and effects of a good research environment.

Based of the nominations to the latest reward the Danish Young Academy learnt that the excellent research environments tend to;

- have a strong sense of belonging to a community
- A shared set of values, defined and discussed among group members
- Enable support from multiple mentors

03 A centralised diversity and inclusion knowledge hub to support local initiatives

Continuously working with diversity, equity, and inclusion at the universities requires focus, time, and resources dedicated within local DEI offices as well as by management and scientists. **There is an opportunity to establish an inter-disciplinary DEI knowledge hub** to support and assist local DEI offices and leaders working with DEI locally.

A DEI knowledge hub would act as a sparring partner for resources, training, and support, ensuring that DEI is effectively integrated into all university processes and departments. The team would contribute to the contextualization of DEI at universities by developing a shared language and understanding of the barriers and biases facing minorities. The team could develop tools and initiatives to assist leaders and employees in dealing with day-to-day DEI issues. By doing so, the central DEI team could help ensure time, resources, and money are spent most efficiently.

POTENTIALS THE OPPORTUNITY SPACE ADDRESSES

When I find myself **unable to figure out if I fit in** academia, **mentors reassures me** that I am on the right path
↳ *How might we **support and reassure minorities** that there is a space for them in academia*

While I experience **different exposure and treatment** due to who I am, I **thrive in a group** where we share and explore ideas
↳ *How might we create a research environment **where everybody feels safe** to be experimental and share ideas?*

"I think one of the most impactful things we have done is to actually to hire someone who has the responsibility of our DEI program. Because if it is not part of their primary job, other tasks will always be prioritised. "

Gisou van der Goot, VP of Responsible Transformation, EPFL

IDEAS FOR INITIATIVES

01

Mandatory bias training

Bias training can give employees and leaders a shared language for identified challenges, biases and privileges, unfolded in, for example, a workshop format. The training could provide tools for leaders and employees to collaboratively address the issues.

02

Inspirational speakers talking about diversity and inclusion

Inspirational speakers can be a way of addressing diversity and inclusion by sharing their personal experiences, perspectives, and insights. By bringing in speakers from diverse backgrounds, the universities can help educate and inspire the employees to become more aware of diversity and inclusion ultimately creating a more welcoming workplace for all.

03

Networking between the local DEI offices to share best practice

A centralised knowledge hub for local practitioners at the universities can be a valuable resource for enhancing collaboration and improving their work with diversity and inclusion. By bringing together practitioners from different areas and providing a platform to share knowledge and best practices, the hub can help prioritise and utilise resources effectively.

04

Anonymous surveys to evaluate DEI work

A centralised DEI hub could gather knowledge about the state of DEI at the universities, at institutes, and potentially in research groups, to reveal the status and development of the experience on the ground. Anonymity would be important given the sensitive topic.

PEOPLE & PLACES

- Local DEI office
- University management
- Senior scientists and junior scientists
- Networks across universities working with DEI

INSPIRATIONAL CASES

Bias Training
EPFL

EPFL has introduced biased training everybody at the university. The university has encouraged research groups to take the training together to have a conversation about biases and privileges. For these sessions the university offers a DEI-consultant to help facilitate the conversation and ensure a safe space for people to voice their perspectives.

Spin-Out Denmark
SDU

Spin-out Denmark an initiative funded by the Villum Foundations and led by SDU. It is a collaboration between the Danish universities to strengthen the universities capacity and ability to support scientists in creating business based on their research. The initiative is acting as a hub where researchers from across universities can get accesses to mentors, activities and network.

04 Helping leaders and managers to create and lead inclusive research environments

As DEI becomes more integrated in organisations, it must also become a natural part of a leader's skillset. In order to be successful with diversity, equity, and inclusion, leadership must buy into it, support activities, and pave the way. Leaders are the ones who are in the position to change and set new directions for the organisation or the team they are leading. Often leaders act as role models for the rest of the employees.

As a result, it is critical that leaders have the right tools and mindset to create and lead inclusive research environments.

There is an opportunity to support and encourage leaders, mentors, and supervisors to create and lead diverse and inclusive research environments. This can be done by providing them with the necessary tools to address the challenges and work with opportunities, while creating a safe and constructive work environment that benefits everyone.

"The academic environment is characterised by competition and hierarchies. However, a major downside to this dynamic is that individuals must continuously secure their status. Therefore, all means of power are used - one of the most toxic of which is sexism, resulting in a "chilly climate". The chilly climate is a very difficult thing to tackle as it involves all of us, from leaders to HR representatives and union representatives, etc. So, it is a difficult agenda, but it is also one of the most important."

Eva Sophia Myers, Team Leader - Gender Equality Team, SDU

POTENTIALS THE OPPORTUNITY SPACE ADDRESSES

While senior researchers promote **those like themselves**, I need **encouragement** to believe I can pursue academia
↳ *How might we **reduce bias in the encouragement** of young academic talents?*

While I experience **different exposure and treatment** due to who I am, I **thrive in a group** where we share and explore ideas
↳ *How might we create a research environment **where everybody feels safe** to be experimental and share ideas?*

IDEAS FOR INITIATIVES

01

Campaign about the academic benefits of diversity, equity and inclusion

Scientists and leaders must understand that DEI is not only normative, but also a matter of creating better research. A campaign highlighting the academic benefits of DEI could be a way to kick start the required mindset shift.

02

Learning community for leaders across the university

Establish learning communities that bring together leaders from different departments and levels of the organization to discuss diversity and inclusion topics and share best practices. These communities can provide a forum for leaders to discuss real-life challenges and share insights on how to overcome them, leading to the creation of effective DEI initiatives.

03

DEI training as part of the curriculum to become a PhD supervisor

PhD supervisors are extremely important for a scientist's initial years as they act as a sparring partner and catalyst for young scientists' network building. Bias training can ensure that supervisors are aware about their own biases in helping scientists and give them the tools to address biases they see in the organisation.

04

Diversity and inclusion as part of performance reviews

To incorporate diversity and inclusion into daily work and processes at the university, it must be measured and evaluated. As a result, universities should assist leaders in making diversity and inclusion a natural part of performance evaluations.

PEOPLE & PLACES

- Research group leaders and PhD supervisors
- Department and University management
- Local DEI Office
- Networks for leaders and PhD supervisors

INSPIRATIONAL CASES

The 'No Club'

A suggestion for how organisations can democratise how tasks are distributed and valued in terms of employees and their performance evaluations. The book recommends how organisations and their leaders put systems and structures in place which assess the organisation's collective tasks, monitor who performs them, and ultimately evaluate and change which tasks help employees advance and which do not.

HeForShe
UN Women

HeForShe supports men and boys to join the fight for gender equality by providing them with a platform as well as concrete tools and strategies to get started. The HeForShe action kits are files that everybody can download with concrete steps (*plan, act, inspire)* for how to get involved and start acting.

05 Levelling the playing field for strategic mentoring among excellent academic talent

Mentoring, sparring, and guidance are crucial for scientists to contribute to excellent academic research, both as team members and as senior scientists leading research groups in their field.

This study discovered that strategic mentoring on how to position one's research, how to build a network with other researchers, and which labs to enter for further career development are essential for succeeding in academia. However, access to mentoring and this knowledge is not equal for all scientists, resulting in some having a higher chance of success than others.

As a result, **there is an opportunity to develop a more structured approach to career development throughout scientists' careers in order to ensure that all academic talent has equal access to career guidance and mentorship**, levelling the playing field for academic talent to succeed.

"It is extremely important have a mentor who can help you make a strategy for your career. This became particularly clear to me towards the end of my PhD, when I told my supervisor that I wanted to pursue a career in academia. He helped me figure out where to go and how to get back to the university. He also told me that when I was working as post doc we should not publish articles together, because I needed to appear independent. He basically helped laying out the entire strategy for me."

Eric, Assistant Professor

POTENTIALS THE OPPORTUNITY SPACE ADDRESSES

Because I find it difficult to **assess the long term benefits and risks**, I **need guidance to position myself strategically**
↳ *How might we ensure that strategic guidance and career planning is equally accessible to all talents*

I have to **master self promotion** to make people notice me, but **I need confidence** to be proactive and bold
↳ *How might we **promote excellent ideas** regardless of the personality traits of the owner*

IDEAS FOR INITIATIVES

01

Peer-to-peer knowledge sharing about dos and don’ts in academia

Knowledge sharing from peers at the same career level and the level just above can provide a window into the next steps of an academic career and what it takes to get there. Peer-to-peer meeting and sparring can potentially also increase a feeling of belonging.

02

Breaking the process down to create small successes

By breaking down the academic career path, through tools like the kanban-framework or through conversations with a supervisor, scientists can more easily identify and celebrate smaller wins in an academic career.

03

Multiple supervisors to provide access to strategic knowledge and network

Supervisors or senior scientists are often the gatekeepers to strategic knowledge and networks for junior scientists. Providing scientists with more than one supervisor would give multiple openings to knowledge and network.

04

Office providing neutral career advice and support

Advice and sparring on ones career path could be made more accessible through a neutral department where scientists could be granted 2-3 sessions with a career advisor.

PEOPLE & PLACES

- HR department
- Junior scientists and senior scientists
- Department leadership
- Weekly/biweekly supervisor meetings
- PhD networks
- Project management course

INSPIRATIONAL CASES

Women in Tech

Women in Tech is one of the world’s leading organizations for Inclusion, Diversity & Equity in STEAM. The overall purpose of the program is to educate, equip, and empower women with the necessary skills and confidence to succeed in STEM. The programme provides mentoring and career guidance for women pursuing a career in STEM, as well as events and the opportunity to create and expand their network.

Meet our people podcasts, Sandvik

Sandvik is an global industrial engineering group based out of Sweden. The company have a podcast where a diverse group of employees are interviewed about their job and career at the company. The podcast not only shows the diversity of the company but also give insights into what it takes to get into different positions at the company.