

OF COURSE!

Eight inspiring stories about becoming a scientist



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Imprint

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The number of women in science and academia drops with each increasing level of qualification in the fields of science, technology, engineering and mathematics (STEM fields). In Germany about 50% of the students in mathematics and natural sciences, but only 20% of the professors are women. As a result, the STEM fields lack the rich diversity of the German population. This has serious consequences on the research system. Diverse workplaces have been shown to be more productive, more innovative and more creative because people with different background address problems in different ways, ask different questions, and come up with different hypotheses and strategies to solve problems.

One way to address this systematic under-representation of women towards the top of the academic career path (“leaky pipeline”) is to provide role models, women and men, to the students and scientific community.

The booklet you are holding in your hands features eight illustrated interviews with researchers who experienced gender biases and imbalance at home, during their education, and at their work place. They actively made positive changes allowing them to lead a happy and fulfilled life as a scientist. May these people inspire you and encourage you to pursue your dreams!

Lara's story by Jeff Chi

Lara has loved mathematics ever since she was a small child. She played math games with her grandmother...

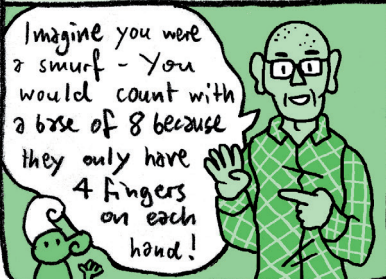


And that makes?

32!

A comic panel showing Lara and her grandmother. Lara is asking a question, and her grandmother is responding with the number 32.

... enjoyed the class her creative math teacher gave at school...



Imagine you were a smurf - You would count with a base of 8 because they only have 4 fingers on each hand!

A comic panel showing a teacher with glasses and a green plaid shirt explaining a math concept to a student. The teacher is using hand gestures to illustrate the concept of base 8 counting.

I don't get it...

Wow that's really cool!



A comic panel showing Lara sitting at a desk and explaining something to a friend who is looking confused. Lara is using hand gestures to help explain.

... and always had fun helping her friends.



Do it like this, look!

A comic panel showing Lara and a friend sitting on the floor, studying together. Lara is pointing to a book and explaining something to her friend.

So naturally, when time came to apply for university:



Lara, what would be your favorite place to study math?

A comic panel showing a woman with short hair and a purple top asking Lara a question. Lara is smiling and looking thoughtful.

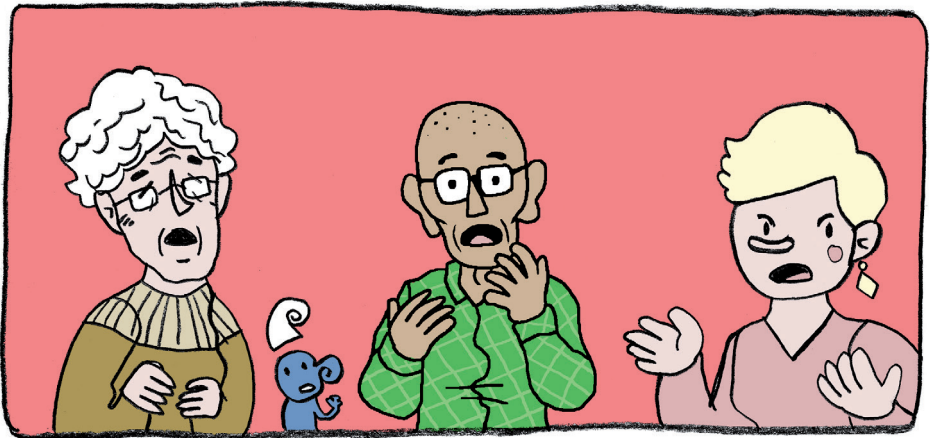
... oh, I'm not sure...

... I don't know if I can do it, studying math...

Earth sciences sound fun, too.



A comic panel showing Lara looking uncertain and nervous. She is holding a book and looking down.



In earth sciences there were a lot of math-related courses. Lara loved them so much, she dreamt about studying mathematics after all.

But could I do it?

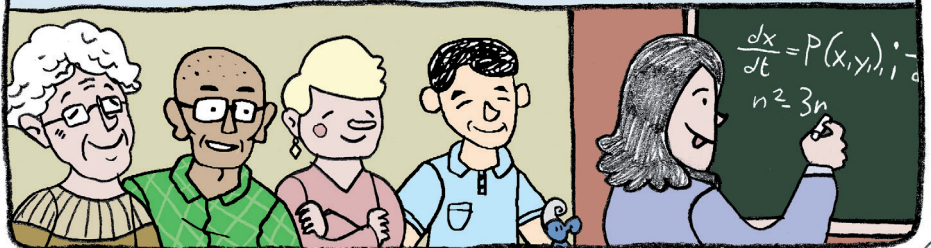


And one day a professor told her:

Just try!



Today she has a PhD in mathematics! She avoids working with people whose attitude she doesn't like. And whenever she feels self-doubt she listens to the people who always believed in her.



Lena's story by Lisa Fruehbeis

I have decided at an early age that I wanted to study science.

I want to study French in the future!

I like numbers!

Oh... I prefer languages.

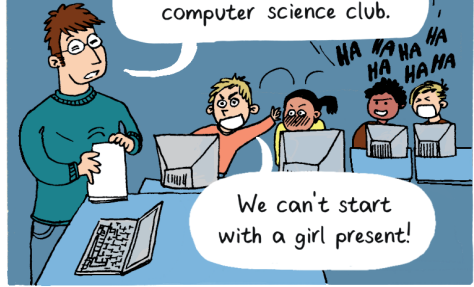


It was not very easy to follow through with this decision though.

Hi class, welcome to the computer science club.

HA HA HA HA HA HA HA HA

We can't start with a girl present!



My parents are no scientists. I had no support from them.

I want to go into science!

If you say so.

Won't that be really hard?

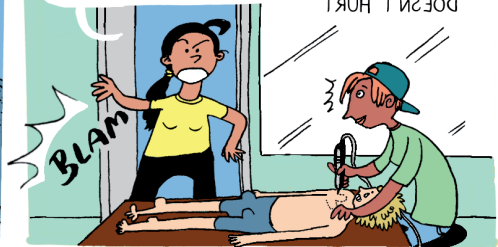


I was miserable. But I am someone who isn't easily discouraged.

I want to have my arm tattooed! All of it!

DOESN'T HURT
ZOOTAT

BLAM



I continued working hard.



And I was lucky enough to meet one person that believed in me.

Lena!
What are you interested in?

Er... maybe Physics?

I can only encourage you on this path.



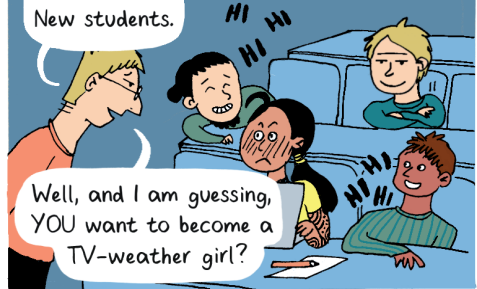
More importantly, she made me believe in myself.

UNIVERSITY ADMISSION



At first I thought it would be the same all over again.

Ahhh.
New students.

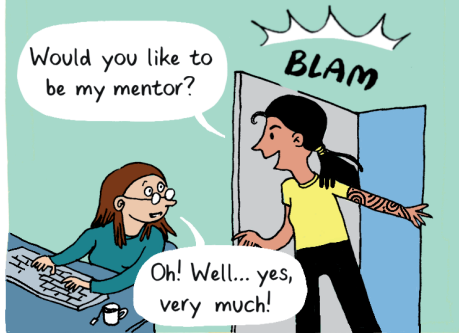


Well, and I am guessing, YOU want to become a TV-weather girl?

But I took the lead myself this time.

Would you like to be my mentor?

BLAM

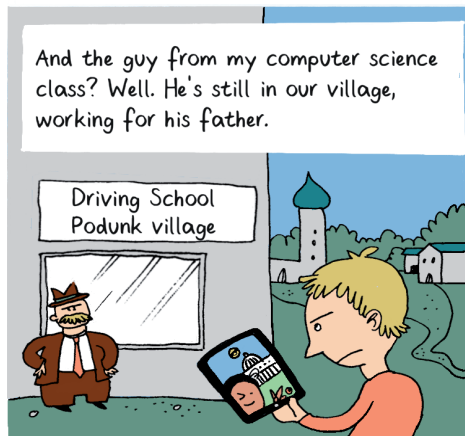


Oh! Well... yes, very much!

I am now doing a PhD in Atmospheric Science, traveling around the world to present my research.

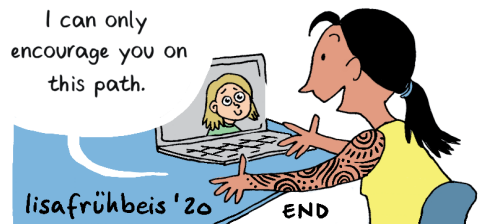


And the guy from my computer science class? Well. He's still in our village, working for his father.



And I try to make it easier for future generations. I take part in a program connecting school girls to female scientists.

I can only encourage you on this path.



Maria's story by Tim Gaedke

When did you decide to study mathematics?

I grew up in a family where mathematics was a very natural part of life. My uncle used to give me small mathematical riddles.

Solved it already!

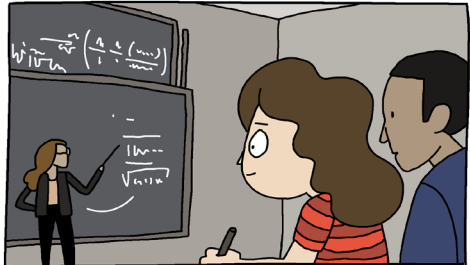
That's great!

This encouraged me to look for and solve new problems.

I was about 12 or 13 years old when I decided to deal with mathematics in the future. At the secondary school, I took part in so-called "corresponding seminars".

Here's your monthly list of mathematical problems.

In a group of friends we solved these problems and sent the solutions to the university. The best of us could meet at the colloquiums. Those were a lot of fun: we made tourist trips and solved funny brainteasers in group competitions.



The corresponding seminars were a very positive action to support a new generation of young mathematicians. It was a funny competition, mathematics and group building all together.

What kind of support did you receive (e.g. mentors, books, events) and which one was the most helpful to you?

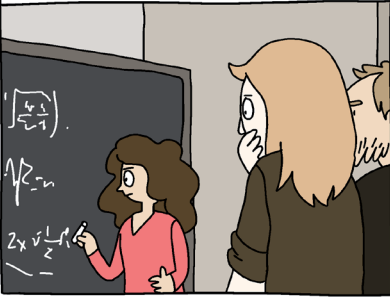
You should do your PhD at the Charles University in Prague.

I was lucky to get a lot of support: apart from the special university program, I had a very supportive Master thesis supervisor.

This place had the best experts in the country. As a postdoc in Germany I met my mentor who had a very strong influence on my future career.



I got in contact with well-known experts in my field and got the opportunity to work with them, e.g. at the Oxford University.



Sure it was hard to combine family and career. I worked partially in Germany and partially in the Czech Republic. Having a small daughter, this would not have been possible without the support of my family.



This was also not easy on our budget. The time-for-money tradeoff was worth it though.

What are the qualities and strengths required to have a successful career in mathematics and how can they be trained and improved?

I think one has to love their job.
This is the most important.



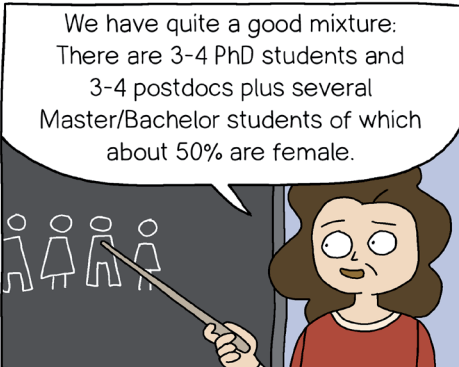
One should also be self-confident, consistent, and not hesitate to ask questions or take part in a discussion.

It is good when young students participate in international research groups and conferences: This gives them a broad view, independence and self-confidence.



How does your research group benefit from women researchers?

We have quite a good mixture:
There are 3-4 PhD students and
3-4 postdocs plus several
Master/Bachelor students of which
about 50% are female.



I think that this mixture makes
my group quite successful.



GAEDKE



The fact that she felt good in the group sent a positive signal to the community.



The atmosphere but also creativity and productivity were improved by gender diversity.



These groups discuss differently.

A good balance is needed, ideally 50/50 (or at least not worse than 66,6% men and 33,3% women.



They listen to each other better.

And tend to speak longer...



∴ until a decision is agreed on.

What matters is to actively communicate on this topic.

I'm hoping for more female candidates...



If a man and a woman are equally qualified, I will hire the woman.



Recently we had the opposite situation in Zurich: there were more female postdocs than male.

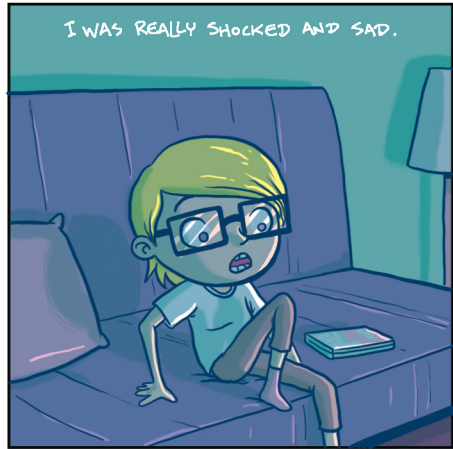
Well -

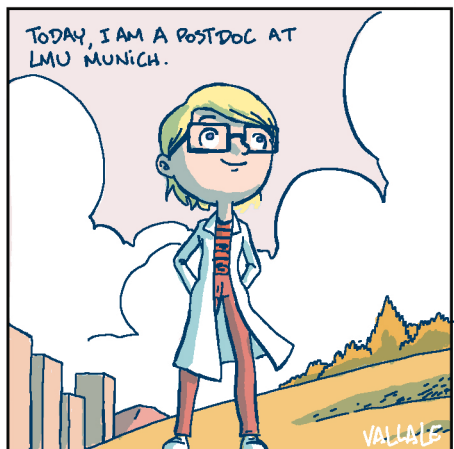


Next time men will have priority.

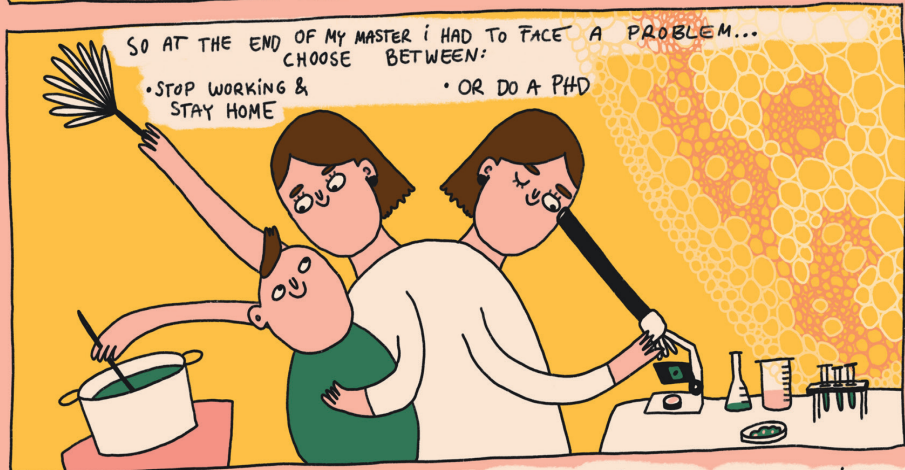
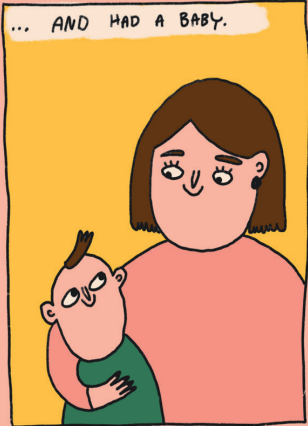
HILLERZEDER 20

Lotte's story by Vallale



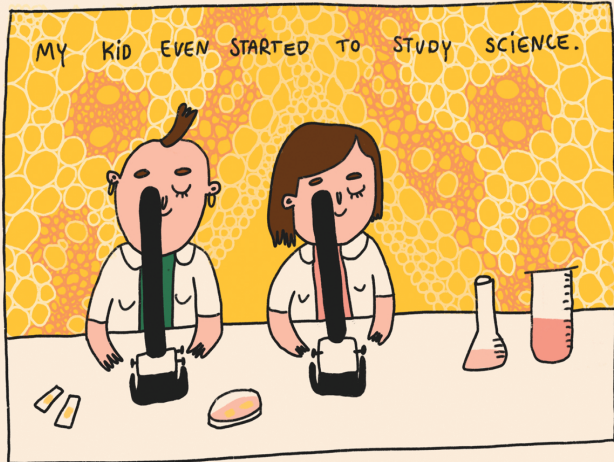


Sabine*'s story by Lea Hillerzeder



SLINGA illustration

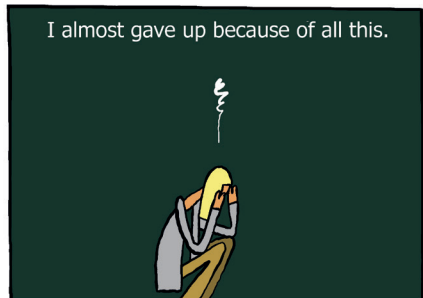
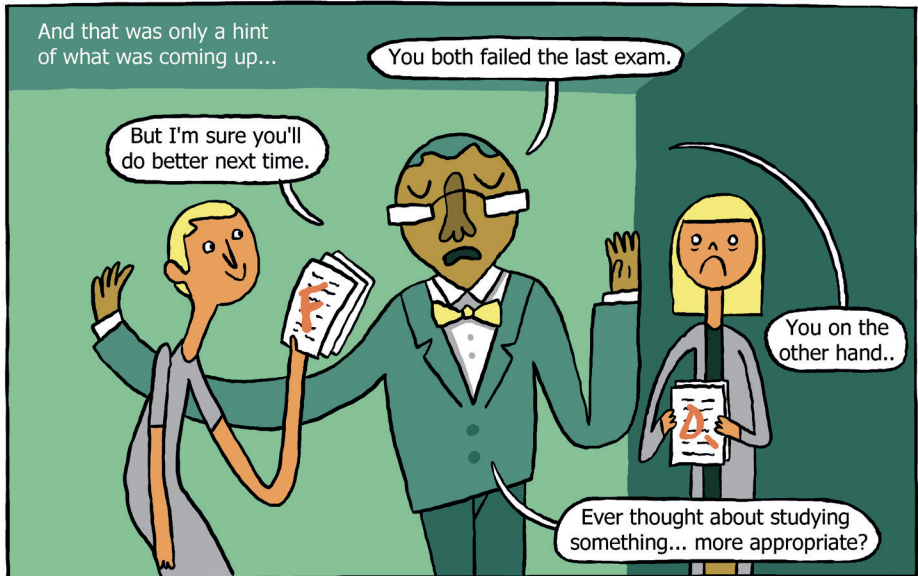
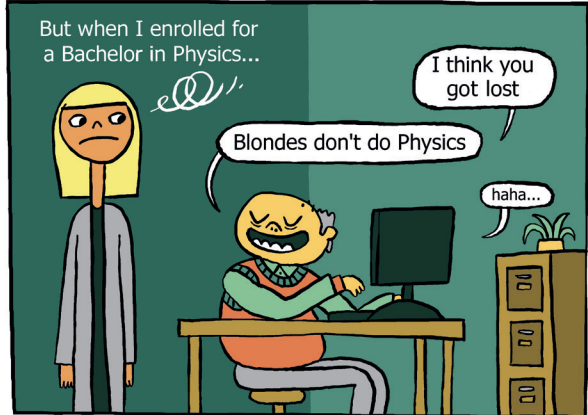
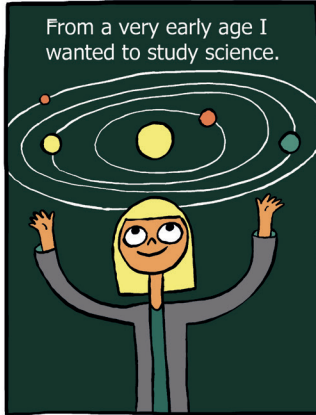
* The name has been changed.

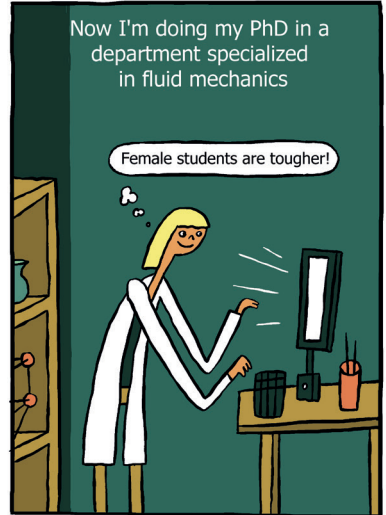


MY ADVICE FOR PEOPLE WHO GO THROUGH A SIMILAR SITUATION IS:

- ★ KNOW WHAT YOU WANT
- ★ BE CLEAR ABOUT WHAT'S IMPORTANT FOR YOU
- ★ EVEN IF PEOPLE AROUND YOU DO NOT SUPPORT YOUR CHOICES, YOU CAN FOLLOW YOUR DREAMS & FIND SUPPORT ON YOUR WAY.

SLINGA Illustration





WENDLAND

Nikki's story by Katja Klengel

SINCE HIGH SCHOOL, NIKKI HAS BEEN INTERESTED IN MATHEMATICS.



NIKKI IS ALSO PASSIONATE ABOUT ROWING AND ROWS 5-6 TIMES PER WEEK.



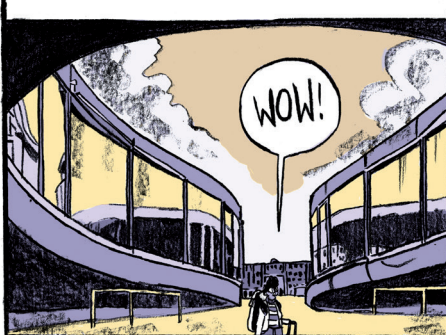
BECAUSE NIKKI IS A GOOD STUDENT, HER TEACHERS ADVISE HER TO PREPARE FOR EXAMS TO ENTER AN ELITE SCHOOL.



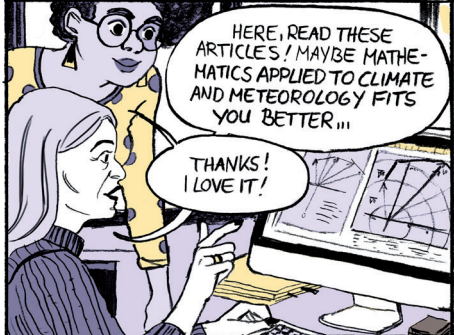
NOW SHE CAN ONLY ROW ON THE WEEKENDS. HER CLASSMATES THINK SHE IS CRAZY TO SPEND SO MUCH TIME ON HER HOBBY.



NIKKI DOESN'T LIKE THIS COMPETITIVE ENVIRONMENT. A FRIEND OF HERS MENTIONS THE EPFL* WHERE SHE FINDS AN INTERESTING BIOMATHEMATICS PROGRAM. SHE DECIDES TO MOVE TO LAUSANNE.



AFTER THAT SHE SPENDS A YEAR IN SWEDEN WITH ERASMUS. NIKKI CHOOSES MATH COURSES APPLIED TO FINANCE, WHICH DOES NOT INTEREST HER AT ALL.



*ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

NIKKI SPENDS A SEMESTER IN BERLIN, WHERE SHE MEETS THE PROFESSOR WHO WROTE THESE ARTICLES SHE FOUND SO INTERESTING.



SO NIKKI DOES HER PHD IN MATHEMATICS APPLIED TO SMALL-SCALE METEOROLOGY. HER PHD ADVISOR INVITES MANY INTERNATIONAL GUESTS. NIKKI LOVES THE GROUP DISCUSSIONS AND THE STRONG TEAM SPIRIT. FINALLY, A FRIENDLY ATMOSPHERE WITHOUT COMPETITION.



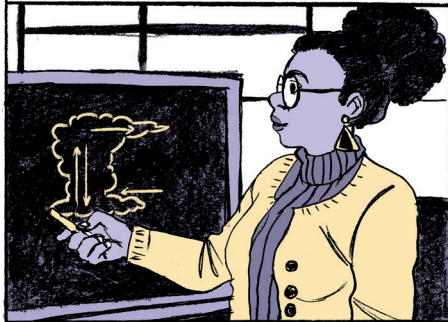
DURING HER POSTDOC ON HYDROLOGY IN SWEDEN, NIKKI IS MISSING THE NICE WORK ATMOSPHERE. EVERYONE IS JUST WORKING ALONE. NIKKI HAS THIS GREAT IDEA TO ORGANIZE A DISCUSSION GROUP - LIKE SHE USED TO HAVE.



SHE IS MISSING METEOROLOGY AND BOUNDARY LAYER DYNAMICS SO SHE DECIDES TO APPLY FOR FUNDING TO DO HER OWN RESEARCH. SHE OBTAINS THE FUNDING AND MOVES BACK TO BERLIN.



NOW NIKKI IS A JUNIOR PROFESSOR IN BERLIN. THIS POSITION WAS AVAILABLE WHEN SHE ARRIVED AND FIT PERFECTLY WITH HER EXPERIENCE. NIKKI WAS AT THE RIGHT PLACE AT THE RIGHT TIME.



NIKKI OFFERS A SEMINAR ON MODELING OF ROWING WITH A PRACTICAL PART. THE STUDENTS LOVE IT. NIKKI KNOWS WHAT SHE WANTS. SHE GOES HER WAY AND PURSUES HER CAREER, ALWAYS SURROUNDED BY NICE PEOPLE.



KATJA KIENGL

Find out more about the researchers



Lara (p. 4) is a PhD student at the Institute of Mathematics of the Freie Universität Berlin in Germany. She is part of the collaborative research center “Scaling Cascades in Complex Systems” (CRC 1114).



Lena (p. 6) is a PhD student in atmospheric science in the Department “Theory and Modeling” of the Leibniz-Institute of Atmospheric Physics at the University Rostock, Germany. She is part of the research group “MS-GWaves” (FOR 1898).



Maria (p. 8) is a professor for numerical mathematics at the Johannes Gutenberg University in Mainz, Germany. She is part of the collaborative research center “Waves to Weather” (CRC 165).



Heini (p. 10) is a professor of atmospheric dynamics and heads the Institute of Atmospheric and Climate Science at the Swiss Federal Institute of Technology Zurich (ETH Zurich).



Lotte (p. 12) is a PhD student in meteorology at the Ludwig Maximilian University in Munich, Germany. She is part of the collaborative research center “Waves to Weather” (CRC 165).



Costanza (p. 16) is a PhD student in the Department “Aerodynamics and Fluid Mechanics” at the Brandenburg University of Technology Cottbus-Senftenberg, Germany. She is part of the research group “MS-GWaves” (FOR 1898).

Sabine and Nikki prefer to remain anonymous.

Ka Schmitz is an illustrator and graphic recorder based in Darmstadt, Germany.

Web : www.ka-schmitz.de

Instagram : @schnellerzeichnen



Jeff Chi is a web developer at day and a cartoonist and a community manager at night. He lives in Nürnberg, Germany.

Web : <https://jeffchi.de>

Instagram : @kroko_dok

Lisa Frühbeis is a comic artist and a graphic recorder who made a name for herself in the world of feminist comics.

Web : <https://www.lisafuehbeis.de>

Instagram : @lisafuehbeis.draws



Tim Gaedke is an illustrator, a cartoonist and a video game programmer who lives in Berlin Germany.

Web : www.mondonauts.space/author/tim/
www.drawing-cards.com

Max Hillerzeder is an illustrator and a cartoonist who lives in Leipzig, Germany.

Web : www.hillerkiller.com

Instagram : @max.hillerzeder



Vallale is an office worker who draws and makes comic books in his free time. He lives in Paris, France.

Web : www.vallale.fr

Instagram : @super_vallale

Lea Hillerzeder is an illustrator and cartoonist who lives in Leipzig, Germany.

Instagram : @slinga.illustration



Dominik Wendland is a graphic designer and a cartoonist living in Munich, Germany.

Web : www.dominikwendland.de

Instagram : @dominikwendland

Katja Klengel is a freelance cartoonist and screenwriter who lives in Berlin. She also co-organises the scenic reading „Reading Panels“

Web : www.blatttonisch-diary.blogspot.com

Instagram : @leafvangelova



For more information on this project and additional inspiring stories, visit:
https://www.wavestoweather.de/equal_opportunity

Acknowledgments

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Collaborative Research Center "Scaling Cascades in Complex Systems" (CRC 1114)



Research Group "MS-GWaves" (FOR 1898)

ETH zürich ETH Zurich

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DFG Deutsche
Forschungsgemeinschaft

