Dissertation:
Zheng Ning

THE FIRST EIGHT MONTHS OF SWEDEN’S COVID-19 STRATEGY

NEW FACES

MEB summer photo exhibition
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Front page photo: Jiayao Lei “North”
The picture was taken along Kungsleden. We were hiking towards Kebnekaise from Singi. The scenery was extraordinary. Even though I couldn't wait to reach Kebnekaise, for a short moment, I didn't want to continue forward, because I enjoyed the nature and the beauty of the north so much. The companionship of friends throughout the whole adventure was also one of the best, so I took out my phone and recorded all these elements in one photo.

Editorial board: Anna Berglund, Vivekananda Lanka, Jonas Ludvigsson, Erika Nordenhagen, Ami Rönnberg, Gunilla Sonnebring

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Graphic design: Erika Nordenhagen
Since Zheng became my first PhD student, sometimes I liked to imagine that one day he was going to finish. Finally, it happened, exactly on my 35th birthday. However, it was impossible for me to imagine that it would eventually take place virtually during such a pandemic.

Zoom gave us a new approach to participate in Zheng’s public defense. For instance, one audience could “whisper” to me in private: “Feeling more nervous than at your own PhD defense?” Before this day, I did imagine for a few times how nervous I would be when Zheng defends. But actually, I was only a bit nervous (or worried) that the Zoom features or internet connection might fail. After Zheng’s presentation, I became quite relaxed because I knew one could hardly attack or hurt him by throwing questions.

The defense turned out extremely good. A member of the audience messaged me in private afterward: “The best dissertation in recent years”. The opponent Prof. Jian Yang asked a series of carefully constructed questions, and the discussion was scientifically intriguing. As the chair Patrik Magnusson said, many of us MEBers are users and fans of Jian’s work. I feel highly grateful that Jian accepted my invitation, as I knew it would be difficult to find an opponent better than Jian for Zheng’s thesis.

During these years, Zheng gave many of us the impression that he is a cheerful person. Still, an excellent PhD thesis never comes easy. Not everyone can take the challenge to transform from a pure mathematician into an expert in statistical
Zheng did it, and he was capable of filling all the gaps, making us a great team for research. Zheng’s thesis ended up with four papers covering distinct topics in quantitative genetics, where two were published in the world’s most prestigious genetics journals (https://openarchive.ki.se/xmlui/handle/10616/47311).

Zheng was the first to implement LASSO regression using summary-level data (Paper 1), developed the most powerful genetic correlation estimation method to date (Paper 2), contributed to multi-trait genotype-phenotype map replication (Paper 3), and was the first to introduce causality implied by sex difference in genetic correlation (Paper 4).

Due to the crazy year of 2020, we missed the crowded Atrium, full of people who would be interested in Zheng’s work. We also missed the populated Ljusgården, where many more of us could share the cake and drinks. We even missed the real party! Such a pity that we couldn’t make our toasts face to face.

Despite these unforeseen events, Zheng’s hard work has got rewarded with a well-deserved PhD degree. As I said in the virtual “party”, words simply can’t describe how proud I am of Zheng. He is so talented, kind, and entertaining that he could even turn me, the supervisor, into a better person. It was a fantastic journey we shared together with the co-supervisor Yudi Pawitan and the rest of our co-authors. No doubt that Zheng will be successful regardless of what he chooses to do in his bright future!

Xia Shen, main supervisor

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Telephone counselling is offered to all employees, scholarship-funded doctoral and post-doctoral students, for quick access to professional support. The service is available around the clock, where a social worker is on hand to provide direct initial advice with regard to any psychosocial issue. This service do not cover other affiliated co-workers.

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July 1
MEB is really quiet today, but that’s normal for July 1 – people have started going on holiday and would not normally be here. I’m taking a wild guess that this year’s photo exhibition will have more photos from Sweden than usual.

Looking back, life at MEB has continued despite all the restrictions. Looking forward, it’s hard to imagine when everybody will be back on site. I guess we will have to take one step at a time and trust that there won’t be any big flareups of infection. For now, I’m happy to leave Stockholm for a bit of archipelago life.

Sep 22
Wow, there’s been a good long gap since my last posting in the June issue and now. It seems the summer is quite long ago now and we’re back at work, with some restrictions still in place. MEB is still fairly quiet, but there are more people out and about in general and that’s true for MEB too. Some of our working groups have started to come in on the same weekdays to meet in person, while some haven’t set foot in MEB since March. The research administrators are mainly working from MEB with some variation and the staff of the Twin Registry are here most days too, so there are some groupings for lunch and coffee breaks – just wider circles and not so many at each table as before.

The photo exhibition was just as beautiful as ever and as I predicted, contained mainly photos taken in Sweden. I hope my colleagues had a good summer and the photos indicate that many did. Now, a few weeks into autumn, it seems everyone is really busy and things are back to “normal” in terms of projects going in, funding being applied for and new staff coming in. Life goes on with the restrictions we now take for granted.

Gunilla Sonnebring

We’re looking for new editorial members!

If you are interested to contribute by joining the editorial committee, please contact Gunilla.Sonnebring@ki.se. We have short and fun brainstorming sessions as we plan the issues about 5 times per year so if you like to write, take pictures, draw or work with design, come and join us!
Sweden chose a different pandemic strategy than its peer nations. This included the timing of pandemic-related actions, how parts of the healthcare system reacted to the pandemic, the legal framework for the relationship between the Government and other actors and actions taken with regard to schools.

In a paper in the journal Acta Paediatrica I tried to summarise data on Sweden’s strategy and constructed a detailed timeline on how Sweden tackled COVID-19 during the eight months up to 1 September, 2020 (Figure).

I believe Sweden’s strategy has a number of key components;

- First, Sweden aimed for mitigation, rather than suppression of disease, by minimising COVID-19 transmission to flatten the curve and ensure that large numbers of people were not ill at the same time.
- Second, the country wanted to protect those groups at greatest risk [i.e. not everyone], who were mainly individuals aged 70 years or above. Here my personal opinion is that Sweden was not very successful, but this was nevertheless the country’s strategy.
- Third, Sweden wanted to safeguard other health determinants and health outcomes, including keeping schools for children up to 16 open. Looking back, this seems to have been fairly successful.
- Fourth, to ensure that health and medical care resources were available in all regions and to avoid a healthcare collapse. Here I think Sweden did succeed (this can however be discussed endlessly).
- Fifth, we wanted to ensure that society could continue to function, including healthcare, the police, energy supplies, communications, transport and food supply systems. In contrast with many other countries, Sweden did not apply any general lockdown, and is not considering any lockdown now.
- Sixth, the responsible politicians and governments wanted to ease public concerns and communicate with all residents through official website information and regular press conferences.
- Seventh, government agencies aimed to explain the underlying reasons for the measures taken.

Last, but not least, it was seen as important to implement the right measures at the right time. I believe Sweden was late in implementing some measures. That is a price our country has to pay for "not over-reacting". Sometimes it is wise to react strongly, but sometimes an over-reaction can be worse than the initial threat. Only in the longterm perspective can this be evaluated.

Finally, it is worth noting that the Public Health Agency has repeatedly denied that attaining herd immunity was part of Sweden’s strategy.

I hope my review paper will help people to better understand the Swedish strategy, with its strengths and limitations.

First published: 20 September 2020
**Global**

- **30 Jan**: WHO defines COVID-19 as a threat to human health.
- **21 Jan**: First case of COVID-19 in Sweden.
- **1 Feb**: COVID-19 classified as disease dangerous to the public and to society.
- **24 Feb**: High alert at The National Board of Health and Welfare (NBHW).
- **4 March**: Healthcare encouraged to increase testing.
- **9 March**: Karolinska Institute asked to create online education about COVID-19 (available from March 18).
- **11 March**: WHO declares COVID-19 a pandemic.
- **13 March**: Information pamphlet about mitigation and testing.
- **17 March**: COVID-19 diagnostics established at all university hospitals in Sweden.
- **26 March**: Swedish military deploys first field hospital.
- **17 March**: COVID-19 diagnostics established at all university hospitals in Sweden.

**Healthcare**

- **17 Jan**: Diagnostics for COVID-19 established.
- **19 Jan**: Medical health institute (SMI) advises against unnecessary travel in Sweden.

**Mitigation and testing**

- **18 Feb**: Report that there is personal protective equipment in Swedish healthcare regions for 5000 patient visits and 1400 days of inpatient care.
- **3 March**: Risk of imported cases deemed high. Risk of general transmission in Sweden deemed moderate.
- **6 March**: Healthcare encouraged to increase testing.
- **10 March**: Advice to the public: avoid unnecessary visits to healthcare and elderly care.
- **11 March**: WHO declares COVID-19 a pandemic.
- **13 March**: Advice, stay at home if sick.
- **16 March**: Government requests the NBHW to assure access to protective equipment and distribute this.
- **19 March**: Avoid unnecessary travel.
- **23 March**: National school examinations canceled.
- **26 March**: Restaurants: physical distance between guests. Guests to be served at their table.
- **27 March**: Gatherings of more than 50 people forbidden.
- **30 March**: Visits to the elderly care are banned. Mission: to increase testing. Advice: physical distancing and personal responsibility.

**Schools**

- **18 Feb**: Report that there is personal protective equipment in Swedish healthcare regions for 5000 patient visits and 1400 days of inpatient care.
- **3 March**: Risk of imported cases deemed high. Risk of general transmission in Sweden deemed moderate.
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Early detection has the potential to reduce cancer mortality, but an effective screening test must demonstrate asymptomatic cancer detection years before conventional diagnosis in a longitudinal study. In the Taizhou Longitudinal Study (TZL), 123,115 healthy subjects provided plasma samples for long-term storage and were then monitored for cancer occurrence. Here we report the preliminary results of PanSeer, a noninvasive blood test based on circulating tumor DNA methylation, on TZL plasma samples from 605 asymptomatic individuals, 191 of whom were later diagnosed with stomach, esophageal, colorectal, lung or liver cancer within four years of blood draw. We also assay plasma samples from an additional 223 cancer patients, plus 200 primary tumor and normal tissues. We show that PanSeer detects five common types of cancer in 88% (95% CI: 80-93%) of post-diagnosis patients with a specificity of 96% (95% CI: 93-98%). We also demonstrate that PanSeer detects cancer in 95% (95% CI: 89-98%) of asymptomatic individuals who were later diagnosed, though future longitudinal studies are required to confirm this result. These results demonstrate that cancer can be non-invasively detected up to four years before current standard of care.
Nora Döring
My name is Nora Döring and I am happy to be joining MEB as Post-Doc. Originally I come from Germany but moved to the Netherlands after finishing high school to study both Public Health and Epidemiology at Maastricht University. In 2013, I moved to Sweden to start my PhD at the Department of Public Health Sciences here at KI. Whereas my PhD was about a large cluster-randomized trial aiming at the prevention of childhood obesity, I was fast completely fascinated (I guess as many foreign researchers?) when I found out about the Swedish registers and wanted learn more about them in my Post-Doc. After a 1-year Post-Doc at the Department of Public Health Sciences, where I did research on the bi-directional association between school and labor market environment and mental health using Swedish register data, I am now very exciting to start working together Sven Sandin on the RECAP project (Research on European Children and Adults Born Preterm). With the Corona pandemic ongoing, it may not be as easy as in normal times, yet, I look forward to hopefully meeting many of you in person soon!

Ying Xiong
Hi everyone! My name is Ying and I am a new research assistant in Lu Yi’s group. I have completed my master program in public health sciences – Epidemiology at KI in June this year. Currently I am working on projects in genetic epidemiology in major depressive disorder. In my spare time, I love traveling, playing tennis and badminton, and exploring nice restaurants. I really look forward to meeting everyone after COVID-19 pandemic and working with you all!
Chenxi Qin
Hey, everyone! I’m Chenxi Qin from China and happy to join the MEB department as a postdoc researcher. I got my master and PhD degree in epidemiology from Peking University Health Science Center in Beijing, and have experience of cardiovascular and nutritional epidemiology. From now on, I’ll be working on drug repurposing in age-related diseases with Sara Hägg. Should anyone be interested in hiking, swimming or just casual chatting, I would be very glad to join you! I hope we could have a great time to work together!

Gustav Jonzon
Hi everyone! My name is Gustav and for the next 6 months I will be working at MEB with Michael Sachs on some R-package development as well as trying to learn as much as possible about data analysis and related subjects as I can during my stay here. My academic background is a master’s degree in mathematics from Uppsala University, but since 2007 I have been working at the Department of Mathematics at Stockholm University as an educational coordinator. A couple of years ago I began getting into computer science with the aim of getting into more practical applications, and I hope to be able to contribute in some ways to medical research. Also, I am looking forward to learning about the many research projects that you are involved in here. I hope to meet you all soon!
Monica Persson
My name is Monica Persson and I am a postdoctoral researcher working with Sven Sandin. Using the Nordic registers, I will be looking at the risk of cancer according to gestational age. I have a medical degree and PhD from the University of Nottingham. My PhD was in rheumatology and involved conventional, network, and individual patient data meta-analyses of two commonly used painkillers. More recently, I worked as a Research Fellow in dermatology at the University of Nottingham, using routinely collected health data (Clinical Practice Research Datalink) to examine a rare blistering skin disease. In my spare time, I enjoy climbing, ultimate Frisbee, softball, and sewing. So if you're looking for a belay buddy, team mate, or just a chat, do get in touch.

Natassia Robinson
Hi everyone! I’m a new post-doc here at MEB working in Sarah Bergen’s team. I’m originally from Manchester (UK) and my background is in Biomedicine, Nutrition and Genetics. I obtained my PhD in Molecular Epidemiology from Newcastle University and my research interests are broadly in the relationship between environmental factors, epigenetics/genetics, and various diseases. My project at MEB will investigate gene-environment interactions in Schizophrenia and Bipolar disorder. In my free time I enjoy reading, going to gigs, running, going out for food/drinks, cooking and travelling.
Rena Siopi
Hi everyone! My name is Rena Siopi and I work as a project coordinator for Anders Målarstig, in Prof. Per Hall’s group. I am the project coordinator of SCALLOP, an international consortium that focuses on proteomics and genomics integration for the discovery of biomarkers that are causal in diseases. I am originally from Greece and that is where I received my PhD before moving to Stockholm. My research background is in nutrition and exercise metabolism. I am also a dietitian - nutritionist by training, with a master’s degree in clinical nutrition. In my free time, I work on my Swedish skills, play percussion and take long walks in nature in this beautiful green city! I am very happy to be part of MEB and look forward to meeting you all!

Zahra Golabkesh
My name is Zahra Golabkesh and I am a new postdoctoral researcher in Kamila Czene’s research group at MEB. I have a background in molecular biology and received my PhD degree in June 2020, at IMM, Karolinska Institutet. My thesis included epidemiological studies evaluating molecular biomarkers in chronic inflammatory diseases. I love interdisciplinary approaches to redefine biomedical problems outside of normal boundaries and reach solutions based on a new understanding of complex situations.

I am a nature lover and spend most of my leisure time outdoor with my family. I have traveled to 68 countries so far and would love to be surprised with diverse cultures and foods across the globe. Now during the pandemic I became a personal chef at home and enjoy cooking foods from different part of Iran and other countries. Looking forward to see you all and learn from you scientifically as well as culturally!
This year we did a COVID-19 adapted photo exhibition, but we also have our usual Ljusgården setup. We wanted to share a little bit more about a few of the images so we asked some of our colleagues to tell us some more.

Jay Achar: All was still
The photo was taken from Monteliusvägen on Södermalm and is actually a panorama of 3 images stitched together. It was taken on an autumn evening following a few days of stormy weather. I remember the evening well since most other people watching the sunset had left as soon as the sun dipped below the horizon. Thankfully, we were a little more patient and were treated to a very colourful and peaceful display.
Fredrik Nilsson "Early morning at the boat club in Edsviken".
The photo was taken in the beginning of August at 05.30 in the morning as Fredrik arrived so early. The place is in Edsviken, Sollentuna and it was a lovely morning with the rising sun, perfect for a photo.

Erika Nordenhagen: Långgränd in Sigtuna
I love to wander down the alleys in old towns like Sigtuna looking into the gardens where old garden plants still grow, where the paint flakes on worn porches and I imagine people, now long gone, sitting and enjoying the summerday while drinking coffee or tea, and I wonder what was on their minds.

Erik Pettersson: “Dopping – Great Crested Grebe”
The picture was taken quite undramatically I was on a walk along Karlbergskanalen. The grebe was resting close to the footpath so it must have been used to people passing by and it was easy to capture it with my telephoto lens.
Gunilla Sonnebring: Sunset stillness
This picture was taken on the island Östra Eknö in Västervik archipelago in late July. I had just said good-bye to Marie Jansson and her family who had sailed down from Stockholm and made a stop on my island. Walking home it was a perfect summer night.

Shadi Azam: Quiet evening (right)
This picture was taken at Laduviken in Norra Djurgården during April. I did not wait for the bird; I took a few photos and suddenly I saw a bird was building a nest. In the photo you can see it has a piece of branch while flying.

Joar Franzén: Sunkissed sky
This picture was taken at my partner’s summer house at Vinterhälla. We were sitting outside eating one summer’s night and suddenly this gorgeous sky appeared. Everyone stood up and admired the sky and I took some pictures. It felt like a work of art appeared in the sky as we were watching. A beautiful summer moment.
I met up with Erika who is an integral part of MEB for an interview. I don’t think any daily activity goes unnoticed by her and she never fails to inform us about what is going on in the building.

How would you describe your work on a daily basis?
In my work my goal is to create and maintain an internal service with quality and a good working environment for you all! I always consider what is best for all of us, I want everyone to feel welcome and at home so to speak. I mostly work strategically, making plans and decisions and also with developing new routines etc. All the ground work is excellently performed by our janitor Frank and our receptionist Frida.

It sounds like an interesting job you have, how did you land here at MEB? And what is the favorite part of your work according to you?
I came to MEB 10 years ago wanting to just putter about changing lamp bulbs and fix jamming copy machines but was then overwhelmed with the need for structure and maintenance at MEB. The kitchens for example where a complete mess where a few female employees tried to keep some order while grinding their teeths. My favorite part of work I think is working with a project, it can be the graphic design for Praesepe which I do, planning how to best do a purchase, how to rebuild and refurnish certain areas. I like design in all forms but I also like to think strategically and solve problems. Actually I think I could sit all day and just ponder, I should let myself do that sometime. Meeting KI colleagues outside of the department and entrepreneurs are also interesting.

It is a research environment you are working everyday with, have you worked in other environments before MEB? What is the main difference you see?
The main difference, as I see it is that people at MEB are very intelligent and with that comes individuality, humanity and open mindedness. It creates the MEB spirit, fairness, curiosity and working for the greater good. I have worked in many different areas before, as a gardener, as a repairman helping tenants with clogging kitchen sinks for example, in a bookstore and at care facilities. My very first summer job was cleaning closed wards at Huddinge hospital.

It’s amazing that internservice takes care of MEB and makes sure it is working so good every day, who else is in your team?
Frank and Frida are my team. They are the ones, as I said before, that provide you with the everyday internal service. We have worked together for many years now.

Is what you do when taking care of the facility more like interior design? If you are given a chance to be an interior designer which place would you design?
Thera are some parts involving interior design. When it comes to new buildings such as house 8, KI used professional interior designers, I just try to make them design according to our needs and wishes. There is a lot to consider such as fire safety and accessibility when designing our areas. I really enjoy interior design, I am not very innovative but more of a traditionalist where my aim is to create a place that is both functional and relaxing. Hotels would be my preferred area for interior design but more challenging would be common areas such as waiting rooms, hospitals, areas that need to be easy to clean but still pleasant and comfortable.

In these covid times what are your main concern when it comes to MEB?
That we take care of ourselves and each other during this time. Follow the recommendations, keep in touch with your workgroup, talk to your boss if you don’t feel well or call staff support 0200-216300 or our new occupational health care provider Avonova 08-120 124 80. I think things will be back to normal soon, but then I am not an expert.


Lambert PC, Andersson TM, Rutherford MJ, Myklebust TA, Möller B. Reference-adjusted and standardized all-cause and crude


New books in the library


A tip from Catarina Almqvist Malmros

Catarina writes to recommend the walks described in the book "Kulturvandringar i Stockholm" – she has tried the first out of fourteen. Walk number 2 (Brunnsviken – Hagastaden) leads past KI, SciLifeLab and NKS and there are some good photos and nice text so it’s a recommendation if you want to get out walking during these times.