

# Programmebooklet Studytrip 2019

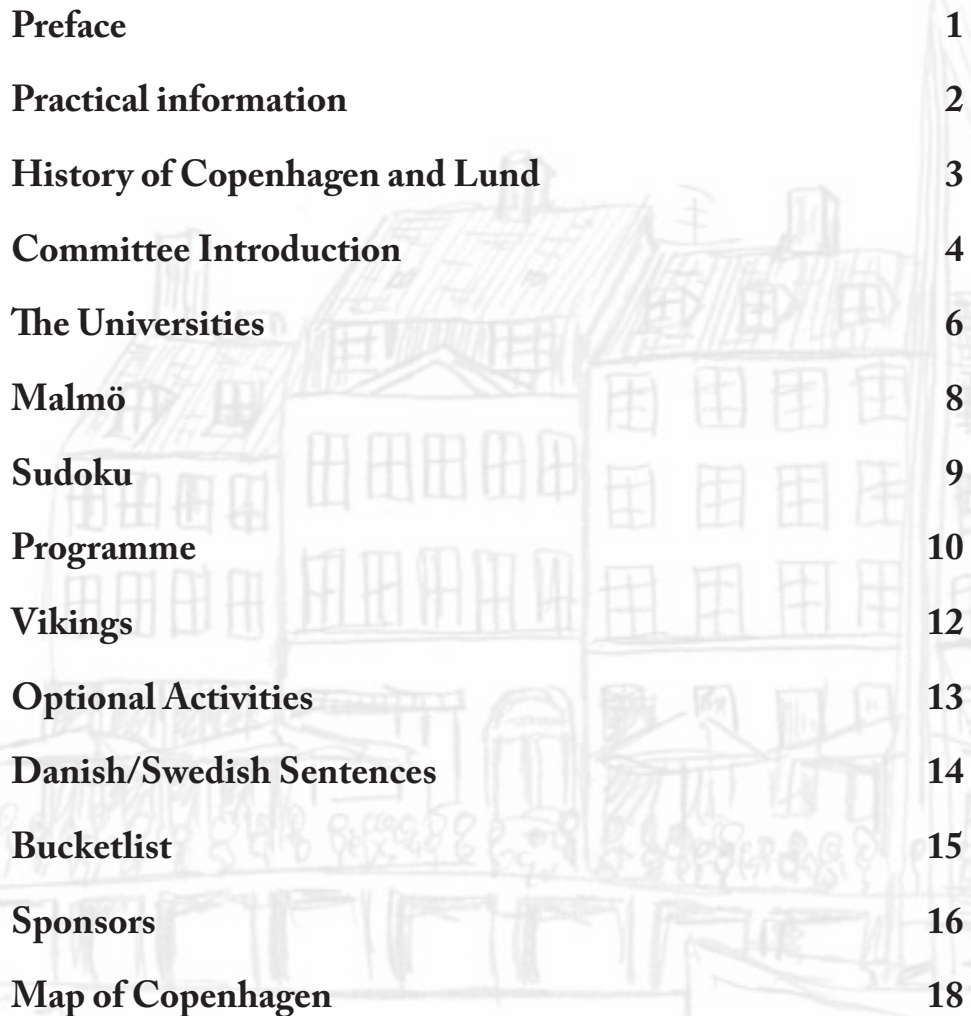
Copenhagen &  
Lund



natuurwetenschappelijke  
studievereniging amsterdam

# TABLE OF CONTENTS

<b>Preface</b>	<b>1</b>
<b>Practical information</b>	<b>2</b>
<b>History of Copenhagen and Lund</b>	<b>3</b>
<b>Committee Introduction</b>	<b>4</b>
<b>The Universities</b>	<b>6</b>
<b>Malmö</b>	<b>8</b>
<b>Sudoku</b>	<b>9</b>
<b>Programme</b>	<b>10</b>
<b>Vikings</b>	<b>12</b>
<b>Optional Activities</b>	<b>13</b>
<b>Danish/Swedish Sentences</b>	<b>14</b>
<b>Bucketlist</b>	<b>15</b>
<b>Sponsors</b>	<b>16</b>
<b>Map of Copenhagen</b>	<b>18</b>



# PREFACE

Dear students,

Here we go, on an expedition to the (not so) far north! Over the past few months, the committee and I have worked hard to make this study trip possible and I am very pleased to welcome you to this adventure.

We will stay in the beautiful Copenhagen for a week to admire the Scandinavian architecture, visit the universities and the oldest observatory in Europe. Copenhagen is known as the most bicycle-friendly city in the world, so I am completely confident that we will feel right at home. The limits of this voyage of discovery, however, extend beyond the land borders of Denmark; on Thursday we will visit Lund in Sweden and on Saturday a part of you will stay in Malmö.

Of course I hope that during this week you will have a lot of fun experiences, a great time together and gain interesting knowledge in the fields of physics and mathematics. Furthermore, I hope this is a journey that you will remember fondly. In any case, I know this will apply to me, because this will be my first official study trip!

Last but not least I want to thank my fellow committee members very much for the work they have done; the organization of this trip had its ups and downs, but there has not been a moment that I couldn't count on them! Furthermore, I wish all of us a great week; for questions, a chat or a drink you can always come to us!

Love,

Lois

## PRACTICAL INFORMATION

### **Departure:**

Tuesday April 30th at 7:30

Location: meeting point Schiphol

Flight: SK552 departing at 10:25

### **Return:**

Tuesday May 7th at 14:30

Location: Globalhagen Hostel

Flight: SK553 departing at 18:10

### **Hostel:**

Globalhagen Hostel

Adress: Ravnsborggade 11,

2200 København, Denmark

Tel. hostel: +45 7731 0077



*The front of Globalhagen Hostel*

### **Emergency phone numbers:**

Emergency number Denmark: +45 112

Phone number of Dutch embassy (Denmark): +45 3370 7200 (in case you steal a traffic sign)

Phone number of Dutch embassy (Sweden): +46 85569 3300

Non-emergency Police number: 114

### **Phone numbers of the committee:**

Loïs: +31 6 25593063

Peter: +31 6 49739768

Donna: +31 6 13889459

Tom: +31 6 10227896

Guido: +31 6 24485057

Quinten: +31 6 38312289



# HISTORY OF COPENHAGEN AND LUND

Copenhagen is the capital of Denmark. The name Copenhagen comes from Købmandshavn, which means “Koopmanshaven” (sort of “merchant harbor”). The city was founded around 1000 a.d. by Sven Gaffelbaard and Knoet de Grote. Copenhagen became the capital of Denmark in the first half of the 15th century.

In the harbor there is a statue of the little mermaid (Den lille Havfrue). This statue, possibly one of the biggest tourist attractions in the city, is inspired by the fairy tale of the Danish writer Hans Christian Andersen.



*Copenhagen*

The statue stands on a pedestal in the port of Copenhagen. It was made in 1913 and since that time she has been decapitated, painted and the right arm has broken off ... nothing has been spared. Furthermore, when you visit the statue, you will notice that it is so small in size that you wonder why on earth people take the trouble to make the walk to the statue.



*Lund*

Lund is the capital of the municipality of Lund in the Swedish province of Skåne. Lund has been around since around 990 and this makes it the oldest city in the country.

Lund is a student city and is best known for the Lundakarneval festival, which has been held every 4 years in May since the mid-19th century. Furthermore, Lund has a University that is among the top 100 in the world with 47,000 students. This gives Lund an active student life. Due to the young and healthy population, Lund has been named the city with the best living climate in Sweden. Cycling is very popular, the evidence for this is the 5000 bicycle parking spaces and 160 kilometers of cycle paths.

Lund has the most visited cathedral or church in Sweden. Since 1145 the mass is dedicated here every day. Which, with a small calculation, adds up to approximately 319,010 times !!



## COMMITTEE

The head of this committee is the wonderful Lois. Without her a lot of very important things would have been forgotten so we can safely say that this trip wouldn't have been here if not for her. She also has a lot of experience with organising studytrips, because she has organised the excursion twice. This is why Lois is the only person we can trust with the Stroopwafels for the professors and we named her the Commissioner of Stroopwafels.



Lois Blank  
*Commissioner Stroopwafels*



Peter Voerman  
*Calling Copenhagen*

Our BECra, the one who passes out after ten beers. You might know Peter Voerman as the commissioner of education of the NSA, but there is more than meets the eye. Prior to this trip, Peter has spoken to a lot of professors of the universities we are going to visit, the famous line “ff Kopenhagen bellen” is a clear example of this. Because of him, we can visit multiple wonderful universities and even a particle accelerator. “optioneel”: This father of the google form made sure you could fill in if you wanted to have a sweater or if you wanted to go on the trip to Malmö. As Peter described: “This google form is my baby”

Donna Sandtke  
*Bookletpolice*

This year Donna is our treasurer and book police, although you might know her better as the secretary of the NSA. She was the one responsible for this wonderful booklet and if you know the people in this committee, you know this was a hard task. As the treasurer she also was responsible for everything to do with money, which means she's the one who has get up early to pay for the hostel.





Guido Smit  
*Commissioner Culture*

Guido, the man, the myth, the legend. One of the more experienced KaC-members and our "Commissioner of Culture". As most of you probably already know his skills go far beyond parallel skiing and creating outstanding home-made pizzas. Fortunately for us, he has put these other skills to use researching all kinds of cultural activities we'll be able to do during our stay abroad. If there is any moment where you find yourself with nothing to do this trip, don't hesitate to go to Guido and ask if there's any culture in the neighbourhood to sniff!

The one and only Tom Konijn. You probably know him as ex-Praeses of the NSA. To describe a man as great as him, you should know where he grew up. He's born in a small town called "Spanbroek" which, directly translated to english, means "tights". And as weird as the name sounds, its craziness fits perfectly with the man I am trying to describe. With his beautiful brown blond manes he has accomplished much. For example, Tom already survived a whole year of babysitting the NSA, the association itself!!! And as far as I know the NSA room survived.



Tom Konijn  
*Also does things*

Quinten Coelho  
*Gets the money*



You may know Quinten as the vice president of the NSA, but this is not the only place where his job is to raise money. As the gold digger of the committee, he was responsible for bringing in the funds, to make the trip as cheap as possible for you. Furthermore he took care of the dinner that we organized for the whole group during this week. If you have any questions during the trip or you're looking for a chat, you can always go to Quinten; you'll recognize him by his big smile!

# THE UNIVERSITIES

The **University of Copenhagen**, founded back in 1479, is the oldest university in Denmark and the second oldest in Scandinavia. It has over 23.000 undergraduate students and over 9.000 employees. Notable scholars of the university include Tycho Brahe, H.C. Ørsted and Niels Bohr, which is why the physics department is still called the Niels Bohr Institute.



During our visit we'll go to the Department of Mathematical Sciences and the Niels Bohr Institute. Since these two departments are not at the same location, the visits will be on different days. The Niels Bohr Institute was inaugurated in 1921 and their research still consists of a broad spectrum of physics, ranging from quantum physics to geophysics and biophysics. During the visit, we'll be given talks about the research currently being done at the institute and we'll also visit the Nørrevold Observatory.

The Department of Mathematical Sciences was previously almost entirely focused on pure mathematics. Following three mergers since 1997, the focus has shifted to a more even distribution between pure and applied mathematics. During our visit to this department we'll be given a talk about differential geometry and a talk about numerical analysis.



**Lund University** was founded in 1666, although the roots of the university can be traced back to 1425. It has over 42.000 students and campuses in Lund, Malmö and Helsingborg. Notable discoveries made by research at Lund University are the ice age theory, the medical use of ultrasound waves and bluetooth technology. Lund University also has two major research facilities, the European Spallation Source and MAX IV Laboratory. We'll visit the MAX IV Laboratory, a synchrotron radiation laboratory.





*Observatory Lund*

We'll also visit three departments of Lund University: the department of astronomy and theoretical physics, the department of medical radiation physics and the centre for mathematical sciences. We'll be given talks from professors about their own research, ranging from topics about pure mathematics to theoretical particle physics. During the break we can also climb the old observatory!

The **Technical University of Denmark** is the youngest university we'll visit during the trip. Founded in 1829 as the College of Advanced Technology by H.C. Ørsted, the university is now one of the leading engineering institutions in Europe. The university is part of Eurotech Universities, along with the Eindhoven University of Technology. During our stay, we'll

visit three departments: DTU Space, DTU Physics and DTU Nanolab. Talks at this university will be about the ASIM mission, which will study the atmosphere from the ISS, as well



*Campus DTU*

as their work in the arctic and various other topics. During the lunch there will also be a chance to speak with some of the students at the Technical University of Denmark. Furthermore, the university has a 170-year-old student union of which students will be present at this lunch. Since it's a 40 minute trip to the Technical University of Denmark and we're arriving at 10am, we're probably going to have to get our nights rest in the bus.



## MALMO

On Saturday there is an optional trip to Malmö (in Sweden). We will depart by train in the morning around 9 a.m. Upon arrival there will be a city walk that will take you through all the highlights of the city. We will pass the town hall which was made in the sixteenth century. The town hall, however, is not the oldest building in Malmö. The St. Petri church is a church (wow) from the fourteenth century.

The castle park is on a small peninsula in the middle of Malmö. This place was originally built as a fortress, it was one of the most important defensive forts in Denmark, of which Malmö was still a part. Nowadays there are several museums, part of which are free !! They also have an aquarium here and the Castle of Malmö. Stortorget is the largest square in Malmö and has been around since 1530. At the square you will find the town hall, the Kram-

er Hotel and the Kockska huset. It is pretty clear but that city walk is not to be missed.

Furthermore, the city is full of nice colorful streets. Such as the very famous Gamla Väster (just look at the picture). The very low houses and the bricks in the colors of the rainbow ensures that you won't forget a visit to Gamla Väster. There are several parks to waste your entire day on. The Folkets Park in Malmö is the oldest public city park in the world. It is a green area with ponds, lawns and even a playground (typical park). The city walk will, of course, pass this place.

The Kallbadhuset on the Ribbersborg beach has a beautiful sauna experience which you don't want to miss. Kallbadhuset is a small wooden building at the end of the pier where you are able to lay back and relax in a sauna.



# SUDOKU

	4	6			5	7		
			9					
	9				1			6
						9		
	3							
4			5	2				8
	8						7	
5	7		3				8	2
2						3		

# PROGRAMME

	<b>April 30th</b> <i>Tuesday</i>	<b>May 1st</b> <i>Wednesday</i>	<b>May 2nd</b> <i>Thursday</i>	<b>May 3rd</b> <i>Friday</i>
08:00	Gather 7:30 at Schiphol	Technical University Denmark	Lund University	Niels Bohr Institut & Østervold observatory
09:00				
10:00				
11:00	Flight 10:25 - 11:45 SK552			
12:00				
13:00				
14:00	City walk			
15:00				
16:00				
17:00				
18:00				
19:00				
20:00		Rundetaarn		
21:00				
22:00				

**May 4th**

*Saturday*

**May 5th**

*Sunday*

**May 6th**

*Monday*

**May 7th**

*Tuesday*

May 4th <i>Saturday</i>	May 5th <i>Sunday</i>	May 6th <i>Monday</i>	May 7th <i>Tuesday</i>	
				08:00
				09:00
Trip to Malmö		University of Copenhagen		10:00
City walk				11:00
				12:00
				13:00
			Go to airport	14:00
				15:00
				16:00
				17:00
			Flight 18:10 - 19:35 SK553	18:00
		Dinner with whole group		19:00
				20:00
				21:00
				22:00



## MOM I FOUND A VIKING. WHAT NOW?

You're just casually walking around Copenhagen, maybe even getting a smørrebrød for lunch, and all of a sudden you're stopped by a large man with a beard, a large helmet with horns and two axes, you know the problem. Oh damn, you remember what this is, this is a viking! But what should you do?

Actually you're probably wrong. It's quite a well-known misconception that the vikings wore horns on their helmets and used axes as weapons. Think about it, it would be pretty awkward fighting in close combat with two horns sticking out of your head. Besides, most vikings actually used spears instead of axes in battle, so you're most probably fine. But let's just say one came shouting towards you swinging its weapons, here's what you should do.

Scandinavian folklore from the Viking Age often mention berserkers. These fabled Viking warriors are said to have spiritual magical powers from the god of war Odin that allowed them to become impervious to injuries on the battlefield. While these stories sound like they've been stolen right out of a movie, the term berserks is rooted in truths about Viking warriors who

were able to enter an intense, trance-like state whereupon they would engage in reckless fighting, or what some teenagers nowadays would call "berserk mode". Berserkers even wore different clothes than other Scandinavians so that they would be recognised. Then, friendly warmongers knew who to stay away from on the battlefield since berserkers didn't know friend from foe when in "berserk mode".



Berserkers could enter this state when they wounded themselves up into a trance of ecstasy, during a pre-war ritual. These rituals often included the use of hallucinogenic drugs like the mushroom *Amanita Muscaria* mixed with an alcoholic substance. So while most people feared the Scandinavian berserkers for their bravery, they were probably just trippin balls. So if you were to find a fearless berserker somewhere along the way in Copenhagen, don't try to fight it, you won't win. Give him a hug and a lollipop, look at the sky and tell him what a beautiful place this world is. You'll probably have a weird talk on a bench somewhere and maybe he'll even offer you some of those *Amanita Muscaria*.

## OPTIONAL ACTIVITIES

As you may have seen in the pretty schedule in this booklet, you will have some free time on your hands to spend any way you want to. We obviously understand that it may be hard to decide on what to do in this beautiful city. Therefore we will help you out a little bit by elaborating on some interesting places to visit!



*Marmorkirken*

If you are looking for a museum to visit you don't have to worry. **The Statens Museum for Kunst** is the National Gallery of Denmark. It's the largest art museum in the country and is situated in the heart of Copenhagen. Another museum you can visit is the **Ny Carlsberg Glyptotek**. It is filled with sculptures and paintings by the likes of Rodin and Van Gogh, along with historic artifacts. The museum is built around the collection of Carl

Jacobsen, the son of the founder of the **Carlsberg Breweries**.

If museums aren't really your thing, you can also visit the **Marmorkirken**. This is one of Copenhagen's most impressive pieces of architecture and has a gigantic dome which offers a great view of the city. **The Grundtvig's Church** is an impressive church with a gigantic facade. It is a good place to go to if you are looking for a stroll, since it is a 50 minute walk from the hostel. Another great place to visit is the **Kastellet**, one of the best preserved fortresses in Northern Europe. You can stroll the grounds for free and you will have time to go there on Wednesday.

If getting some fresh air sounds appealing you can visit the **Botanical Garden** of the University of Copenhagen. It is free and is research-based. Finally, you can visit the **King's Garden** or the **Rosenborg Garden**. These are the gardens of the **Rosenborg Castle** you can visit on Wednesday.



*Botanical Garden*

# DANISH/SWEDISH SENTENCES

English	Danish	Swedish
How much is a beer?	Hvor meget er en øl?	Vad kostar en öl?
Where can i find the mermaid?	Hvor kan jeg finde havfruen?	Var kan jag hitta sjöjungfrun?
Where is the nearest bar?	Hvor er den nærmeste bar?	Var ligger närmaste bar?
Where is a nice museum?	Hvor er et dejligt museum?	Var är ett trevligt museum?
Where is the supermarket?	Hvor er supermarkedet?	Var är stormarknaden?
Words to describe you're drunk...	spildt, beruset	förlorad, full
Good afternoon	God eftermiddag	God eftermiddag
Good evening	God aften	God kväll
How's it going?	Hvordan går det?	Hur är läget?
How much is this?	Hvor meget er det her?	Hur mycket är det här?

# BUCKETLIST

While some of you might see this study trip as a welcome intermezzo from your daily struggle with homework and tests, others might miss the challenging part of completing these exercises. That is why we would like to provide these people with a bucket list, as to quench this thirst.

- Dress as a mermaid
- Ask a stranger to take a silly picture of you
- Dress as Pippi Langkous in Sweden
- Build a sandcastle
- Dine in Noma (world's best restaurant in 2017)
- Eat köttbullar in Sweden (typical Swedish meatballs)
- Eat smørrebrød in a Kro (a Kro is a typical Danish inn)
- Tell someone "you look nice" in the language of the country you are in
- Skinny dip in the Frederiksberg garden
- Make a selfie in one of the roller coasters in Tivoli gardens
- Eat a snegl
- Visit Torvehallerne market
- Plant a leek
- Do a stretched Ad Fundum (adje gestrekt)
- Do a bodyshot on Jasper
- Do a shot with the bartender
- Drink with a stranger on the train
- Paint your face in the colours of the country you are in
- Place an NSA sticker in the weirdest place

# SPONSORS



**IOP** Institute of Physics





# Nederlandse Natuurkundige Vereniging

Tweedejaarsstudenten kunnen een jaar gratis lid worden. Alle andere studenten krijgen een flinke korting op de contributie.

## Voordelen van het NNV-lidmaatschap:

- Maandelijks het Nederlands Tijdschrift voor Natuurkunde in de bus
- Zeer aantrekkelijke ledenkorting op het jaarlijkse evenement FYSICA
- Optie op gratis lidmaatschap van de NNV-secties
- Toegang tot het complete digitale NTvN-archief
- Subsidie voor studiereizen en symposia van studieverenigingen
- Geassocieerd lidmaatschap van de European Physical Society
- Verbondenheid met de fysische gemeenschap!

Postbus 41882, 1009 DB Amsterdam

T: 020-5922211

E: [bureau@nnv.nl](mailto:bureau@nnv.nl)

De Nederlandse Natuurkundige Vereniging bestaat al sinds 1921 en is dé vereniging voor natuurkundigen in Nederland. De NNV is voor alle fysici: studenten, fysici werkzaam in het bedrijfsleven, onderwijs, academia...  
Immers:  
Eenmaal fysicus,  
altijd fysicus!

Gezicht van de natuurkunde

[www.nnv.nl](http://www.nnv.nl)

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