

## **BERTHA Summer School 2019: “Personalised Sensors”**



**29 August - 3 September 2019**

BERTHA – Big Data Centre for Environment and Health is hosting the 1<sup>st</sup> annual summer school out of five: A 5-day course on this year’s theme “Personalised Sensors”.

The summer school venue is located at Sandbjerg Estate in the Southern part of Jutland in Denmark. Close to the coast with beautiful beaches and impressive forests.

The focus of this year’s summer school is to introduce the participants to state-of-the-art in personalised sensors measuring environmental exposures, fitness, health, and wellbeing, and to basic knowledge of the properties of the variables measured and potential health impact. On introductory level, the students will receive a basic understanding of the applied measuring techniques used in state-of-the-art research using personalised sensors. The course also provides an excellent opportunity to understand the responsibility and ethical considerations in research involving protection of personal data and the involvement of participants in campaigns or fieldwork. Likewise,

The course will be an assortment of advanced lectures combined with hands-on sensor exercises taught by experts in environmental and social sciences. The exercises will include training of the participants in designing field work studies, measuring the data while taking the strength and limitations of the device and ‘the human factor’ into consideration, and in presenting research by giving short oral presentations daily of their study designs, results and ethical considerations from their daily field work.

The summer school is organised by BERTHA – Big Data Centre for Environment and Health ([www.bertha.au.dk](http://www.bertha.au.dk)), Aarhus University, Denmark, funded by the Novo Nordisk Foundation Challenge Programme.

**novo nordisk fonden**



# Participants & Prerequisites

## Participants

The summer school provides the opportunity for intellectually curious PhD students, Post Docs, and other professionals to explore new knowledge, advance their skills and exchange experience.

In order to meet our quality requirements, the number of participants is limited to approximately 20 participants.

Credits for full participation in the Summer School: 2 ECTS, Aarhus University.

## Prerequisites

The participants need to have a background in natural, environmental or social science at MSc level. The Summer School is held in English. In order to participate, doctoral students should have sufficient language skills.

Course participants are encouraged to bring their own laptops and to have read pre-requisite material related to the class lectures. Additionally, the participant is expected to present his/her own research project on a poster on the first day of the course.

## Lecturers

Lecturers at the BERTHA Summer School 2019 are:

- Doctor Peter James, Assistant Professor, Dept. Population Medicine, Harvard Medical School and Harvard Pilgrim Health Care Institute, USA
- Doctor José Guillermo “Memo” Cedeño Laurent, Associate Director of the Healthy Buildings Program, Harvard T.H. Chan School of Public Health, USA
- Doctor Martine van Poppel, VITO, Flemish Institute for Technological Research, Belgium
- Doctor Rasmus Østergaard, Research Coordinator and Daily Leader of RUNSAFE, Department of Public Health - Sport Science, Aarhus University, Denmark
- Asbjørn Kloppenborg, PhD student, RUNSAFE, Department of Public Health - Sport Science, Aarhus University, Denmark
- Doctor Christian Erikstrup, Professor and Head of the Danish Blood Donor Cohort in Region Midtjylland, Dept. Clinical Immunology, Aarhus University Hospital Skejby, Denmark
- Doctor Ole Hertel, Professor and Deputy Head of Department, Dept. Environmental Science, Aarhus University Roskilde, Denmark
- Doctor Clive Sabel, Professor and Director of BERTHA, Dept. Environmental Science, Aarhus University Roskilde, Denmark

# Program at a glance

	Thursday 29 Aug	Friday 30 Aug	Saturday 31 Aug	Sunday 1 Sept	Monday 2 Sept	Tuesday 3 Sept
		Gas and Particle Sensors	Sensors in your smartphone	Fitness Sensors	Field work	Ethics
09.00-09.15		Introduction to program of the day	Introduction to program of the day	Introduction to program of the day	Introduction to program of the day	Introduction to program of the day
09.15-10.00		<b>Lecture:</b> Introduction to Air Pollution, Ole Hertel, Aarhus University, DK	<b>Lecture:</b> Incorporating Mobile Health Technology into Prospective Cohort Studies to Measure Environmental Factors, Physical Activity, and Sleep, Peter James, Harvard Medical School, US	<b>Lecture:</b> Introduction to Fitness Sensor Projects, Rasmus Østergaard, Aarhus University, DK	<b>Excursion:</b> Field studies in groups with the chosen sensor type	<b>Panel discussion:</b> Responsibility and Ethics in Research using Personalised Sensors, chaired by Christian Erikstrup, Aarhus University Hospital, DK
10.00-10.30		Coffee break	Coffee break	Coffee break		Coffee break
10.30-11.15		<b>Application example:</b> Title to be announced, Martine van Poppel, Flemish Institute for Technological research, BE	<b>Application example:</b> Scalable research through research apps, José Guillermo "Memo" Cedeño Laurent, Harvard Chan University, US	<b>Application example:</b> The RUNSAFE study, Asbjørn Kloppenborg, Aarhus University, DK		Closing remarks and certificates
11.15-12.00		"Design your own sensor project" in groups	"Design your own sensor project" in groups	"Design your own sensor project" in groups		End of Summer School 2019 See you again next year!
12.00-13.00		Lunch break	Lunch break	Lunch break		
13.00-14.30		Field study in groups	Field study in groups	Field study in groups		
14.30-15.00	Welcome reception	Coffee break	Coffee break	Coffee break	Return to Sandbjerg Estate	
15.00-15.45	Welcome, introduction and goal, Clive Sabel. Aarhus University, DK	Analysis of data and design presentation of the field study	Analysis of data and design presentation of the field study	Analysis of data and design presentation of the field study	Analysis of data and design presentation of the field study	
15.45-17.15	Students' poster presentations of their own research projects	Presentation and discussion of the groups' sensor projects	Presentation and discussion of the groups' sensor projects	Presentation and discussion of the groups' sensor projects	Presentation and discussion of the groups' sensor project	
17.15-17.30	Wrap-up	Wrap-up	Wrap-up	Wrap-up		
17.30-18.00	Sensor of the day: Presentation to and hands-on the sensor to use Friday, including a problem to solve, in groups, Ole Hertel	Sensor of the day: Presentation to and hands-on the sensor to use Saturday, including a problem to solve, in groups, Peter James	Sensor of the day: Presentation to and hands-on the sensor to use Sunday, including a problem to solve, in groups, Rasmus Østergaard	Design your own sensor project: Choice of the preferred type of sensor to use on Monday's field trip, in groups	Wrap-up	
18.00	Dinner and get-together, Sandbjerg Estate	Gala dinner and group photo, Sandbjerg Estate	Dinner and get-together, Sandbjerg Estate	Dinner and get-together, Sandbjerg Estate	Dinner and get-together, Sandbjerg Estate	

# Registration

Deadline for registration and payment of course fee: 26 June 2019.

## Registration

For registration, please send an e-mail to Centre Manager Rikke Dalgaard (rikkedalgaard@envs.au.dk) before 26 June with information on your name, education, and affiliation (university, organisation, company). You will receive a reply by e-mail including the final registration and bank details for course fee payment.

The registration for the BERTHA Summer School is only considered complete, when the course fee is paid. After we have received your payment, we will send you an acceptance letter. You cannot attend the BERTHA Summer School if you have not paid the course fee and received the acceptance letter.

The number of participants is limited to approximately 20 participants. If the course is full, it is possible to be added to a waiting list.

If you are not sure about your application status or have any other questions regarding the Summer School, please contact Centre Manager Rikke Dalgaard, rikkedalgaard@envs.au.dk.

## Course fee

The course fee includes:

- Full tuition
- Five-night stay at Sandbjerg Estate in Sønderborg\*
- Breakfast, lunch, dinner, tea/coffee, cake, and fruit from Thursday afternoon 29 August to Tuesday morning 3 September and a complimentary gala dinner at Friday 30 August
- Course certificate

\* Participants will stay in private rooms. Rooms are available from 29 August at 2:30 pm and must be vacated on 3 September at 11:00 am.

All course participants cover their own travel expenses.

Early bird offer before 12 June 2019:      Euros 100 excl. 25% VAT (Euros 125 incl. 25% VAT)

Course fee before 26 June 2019:          Euros 150 excl. 25% VAT (Euros 188 incl. 25% VAT)

For BERTHA members participation in the BERTHA Summer School is free of charge.

# Travel information

## Time

From 29<sup>th</sup> August 2019 at 3pm to 3<sup>rd</sup> of September 2019 at 11am

## Venue

Sandbjerg Estate, Sandbjergvej 102, 6400 Sønderborg, Denmark.

Website: [www.sandbjerg.dk](http://www.sandbjerg.dk).

## How to get to Sandbjerg Estate in Sønderborg



Sandbjerg Estate is located only 6 km by car from Sønderborg Station and 10 km from Sønderborg Airport. We recommend taking a taxi the rest of the way from the train station or the airport to the summer school venue.

Useful links for further guidance on how to get to there:

- Sandbjerg Estate website: [www.sandbjerg.dk](http://www.sandbjerg.dk)
- Plan your travel in Denmark: [www.rejseplanen.dk](http://www.rejseplanen.dk)
- Train tickets: [www.dsb.dk](http://www.dsb.dk)
- Sønderborg Airport: [www.sonderborg-lufthavn.dk](http://www.sonderborg-lufthavn.dk)

## Cancellation and refund policy

The registration for the BERTHA Summer School is considered complete, when the course fee is paid and you have received an email to confirm your place. After that time, you may only cancel your participation in accordance with our cancellation policy:

- If a participant is unable to attend for any reason, they may substitute someone else eligible from the same institute/organisation
- Where the participant is unable to attend, and is not in a position to transfer his/her place to another person, then the following refund arrangements apply:
  - If the participant cancels before 26 June 2019 the cancellation is free of charge
  - If the participant cancels within 26 June – 28 July 2019 he/she will have to pay 50 % of the full course fee
  - If the participant cancels on 29 July 2019 or later he/she will have to pay the full course fee
  - The refund will be made by bank transfer and all bank charges will be for the registrants account
  - Notification must be received by us in writing (email) for refunds to be eligible.

The same policy applies if you are forced to cancel because you did not receive a visa.

The full course fee is refunded if the summer school is cancelled.

## Insurance

The organisers of the course cannot accept liability for personal accident or loss or damage to private property of attending students/participants, which may occur during or arise from the course. Therefore, participants are advised to arrange their own appropriate insurance coverage.

## Contact

If you have any questions concerning the course, please contact BERTHA Centre Manager Rikke Dalgaard ([rikkedalgaard@envs.au.dk](mailto:rikkedalgaard@envs.au.dk)).