

HUMAN CELL ATLAS

HCA COMPUTATIONAL
METHODS
STOCKHOLM, SWEDEN

1–2 JUNE, 2017

Day 1: Thursday, 1 June, 2017

8:00–8:30 **Registration**

8:30–10:05 **Session 1: What is the point of the HCA?**
Session chair: Sten Linnarsson

Welcome

HCA update and vision statement for computation

What will you do with the cell atlas?

What will you do with the cell atlas?

A data platform to empower the HCA

CZI update

Sten Linnarsson

Aviv Regev, Sarah Teichmann

Padmanee Sharma

Garry Nolan

John Marioni

Cori Bargmann,
Jeremy Freeman

10:05–10:45 **Break**

10:45–12:30 **Session 2: Computational challenges**
Session chair: Dana Pe'er

The computational big picture

Experimental design

scRNA-Seq: Under the hood

Epigenetics state of the art

Lineage tracing and recording

Imaging: Current state of the art

Clustering and visualisation

Dana Pe'er

Oli Stegle

Nir Yosef

Amos Tanay

Fabian Theis

Prisca Liberali

Peter Kharchenko

12:30–14:00 **Lunch**

14:00–15:30 **Session 3: Breakout #1**

Working group I (Kongres Hall):

Normalisation, individual variation, multi-data set integration

Leader: John Marioni, Reporter: Roderic Guigo

Working group II (Room 300):

Cell types, clustering, and annotation

Leader: Rahul Satija, Reporter: Dominic Grun

Working group III (Room 307):

Continuous trajectories and lineage tracing

Leader: Dana Pe'er, Reporter: Alexander van Oudenaarden

Working group IV (Room 201):

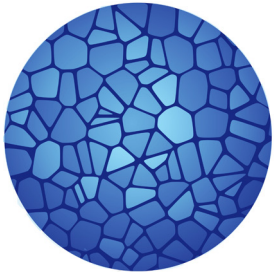
Foundational computational challenges, scalability, and imputation

Leader: Smita Krishnaswamy, Reporter: Alexis Battle

15:30–16:00 **Coffee break**

16:00–17:30 **Report back from Breakout #1**

18:00–20:00 **Dinner**



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Day 2: Friday, 2 June, 2017

8:30–10:00 Session 1: Breakout #2

Working group I (Room 307):

Context: Spatial data processing, modelling structure, integration with genomics, and cell–cell interactions

Leader: Aviv Regev, Reporter: Joakim Lundenberg

Working group II (Room 300):

Data organization, data exploration, multi-omic integration and visualisation

Leader: Piero Carninci, Reporter: Jeremy Freeman

Working group III (Kongres Hall):

Experimental design, how deep do we go (power), characterizing cell types beyond clusters

Leader: Oli Stegle, Reporter: Richard Sandberg

Working group IV (Room 201):

Using the Human Cell Atlas: Intra- and inter-cellular networks

Leader: Nir Yosef, Reporter: Jasmin Fisher

10:00–10:30 Coffee break

10:30–11:45 Report back from Breakout #2

11:45–12:15 Panel discussion

12:15–12:20 Ido Amit (welcome to Weizmann)

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