

# Lorentz Center Workshop:

## Connecting people to reverse vaccine hyporesponsiveness

### Programme

**Day 1: Monday 12 February 2024**      **Introduction to the Knowledge Hub scope**

**Main theme:** Introduction to the Leiden hyporesponsiveness Knowledge Hub and understanding the problem of vaccine hyporesponsiveness. The day will also cover an overview of high dimensional population-level immunology as well as the use of computational biology analysis tools.

#### **Morning**

##### ***Plenary I - Chair: Abena Amoah***

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|----------------------|---|
| 10:00 – 10:15        | Welcome from Lorentz Center   |
| 10:15 – 10:45        | Knowledge hub overview ( <b>Abena Amoah</b> )                                       |
| 10:45 – 11:30        | Ice-breaker Mixer   |
| 11:30 – 12:00        | Knowledge hub and link to high dimensional immunology ( <b>Maria Yazdanbakhsh</b> ) |
| <b>12:00 – 13:30</b> | <b>Lunch</b>  |

#### **Afternoon**

##### ***Plenary II – Chair: Abena Amoah***

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|---------------|--|
| 13:30 – 14:00 | Knowledge hub and link to computational biology analysis ( <b>John Tsang</b> ) |
| 14:00 – 14:30 | Knowledge hub and link to vaccine development ( <b>Julia Makinde</b> )         |
| 14:30 – 15:00 | <b>Coffee / Tea Break</b>  |

##### ***Plenary III - Chair: Jennifer Downs***

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|---------------|---|
| 15:00 – 15:30 | What is vaccine hyporesponsiveness? An epidemiological & clinical view ( <b>Alison Elliott</b> )  |
| 15:30 – 16:00 | Clinical trials and controlled human infection studies across populations and geographical areas: highlighting investigations into RTS,S and attenuated malaria vaccines ( <b>Said Jongu and Ally Olotu</b> ) |

##### ***Breakout and Plenary IV Facilitator: Mariateresa Coppola***

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|---------------|---|
| 16:00 – 17:00 | <u>Breakout session</u> – Early impressions: formation of breakout groups made up of diverse participants. Each group to discuss each participant's early reflections |
| 16:45 – 17:00 | <u>Plenary session</u> – Feedback from the breakout session   |
| 17:00 – 19:00 | <b>Welcome Reception</b>  |

**Day 2: Tuesday 13 February 2024      Key aspects and considerations in vaccine development**

**Main Theme:** An overview of vaccine development from the perspective of industry, funders and technology transfer experts as well as presentations on measuring population-level differences in immune response in different geographical locations.

**Morning**

**Plenary I - Chairs: Julia Makinde and Yaw Bediako**

- 9:30 – 10:00      Industry presentation on the vaccine development pipeline (**Syed Khalid Ali**)  
10:00 – 10:30      Maximising research impact – introduction to Luris (**Gerhild Zauner-Koudelka**)  
10:30 – 11:00      Funders' perspective on vaccine development (**Deeva Agravat / Jean-Luc Bodmer / Annie Mo**)
- 11:00 – 11:30      **Coffee / Tea Break**

**Breakout Facilitators: Julia Makinde and Yaw Bediako**

- 11:30 – 12:00      Breakout session – Question generation: Group breakout to generate questions for Industry, tech transfer experts & funders on viewpoints on variations in vaccine immunogenicity & efficacy
- 12:00 – 13:30      **Lunch**

**Afternoon**

**Plenary II Chairs: Julia Makinde and Yaw Bediako**

- 13:30 – 14:30      Plenary session – Round table discussion: Questions from the audience generated during the breakout directed towards Industry, tech transfer experts and funders

**Plenary III Chairs: Rolf Fendel and Bart Everts**

*Presentations on population-level differences in immune response in different geographical locations*

- 14:30 – 15:00      Variations in R21 malaria vaccine responses in Phase III Clinical Trials (**Lisa Stockdale**)
- 15:00 – 15:30      *Short Presentations on ongoing work (15 minutes each)*
- Immunogenicity of vaccines in rural and urban areas of Uganda (**Gyaviira Nkurunungi**)
  - Population differences in Gabon & early-life signatures (**Yianne Mouwenda**)
- 15:30 – 16:00      **Coffee / Tea Break**
- 16:00 – 17:00      *Continuation → Short Presentations on ongoing work (15 minutes each)*
- Measuring population differences in Indonesia & Senegal (**Mikhael Manurung**)
  - Measuring population differences in Tanzania (**Jeremia Pyuza and Marloes van Dorst**)
  - Immune profile variation in African children according to geographical location (**Gemma Moncunill**)
  - Immune responses to SARS-CoV-2 in Senegal & the Netherlands (**Moustapha Mbow**)

**Plenary IV Facilitator: Claudia Daubenberger**

- 17:00 – 17:30      Plenary session – End of the Day Summary

### Day 3: Wednesday 14 February 2024 Application of innovative tools and thinking

**Main Theme:** Application of innovative computational biology tools to the analysis of high throughput immunological data and the application of innovative thinking to the generation of ideas

#### Morning

**Session leaders:** *Ahmed Mahfouz, Simon Jochems, Koen Stam, Wouter Steenhuijsen Piters, Mikhael Manurung*

Introduction to data integration and data sharing platforms, including a hands-on session\*

**\*Laptop required for hands-on components**

9:30-10.30                      Workshop: CyTOF data integration                      **(Koen Stam & Wouter de Steenhuijsen)**

10.30 - 11.00                      **Coffee / Tea break**

11.00 - 11.20                      Storing and sharing data                      **(Koen Stam & Wouter de Steenhuijsen)**

11.20 - 11.40                      Case Studies in Multi-Omics Data Integration **(Mikhael Manurung)**

11:40 - 12:00                      Cross-Cohort Analysis of Olink Data **(Ahmed Mahfouz)**

12:00-13:30                      **Lunch**  
***Mini Workshop for 10 PhDs & early career participants***  
***Part 1: "How to present"***

13:30-13:45                      Introduction to breakout session **(Simon Jochems)**

13:45-14:15                      Breakout session : Integrative analysis of vaccine trial data

14:15-14:30                      Plenary session: Report back from breakout session

**Breakout and Plenary Facilitators: Rajagopal Murugan and Irene Nkumama**

"Moonshot" session – giant leap forward pitches on innovative approaches and out of the box thinking related to interventions for vaccine hyporesponsiveness

14:30 – 15:00                      Introduction to moonshot pitches - My Moonshot Pitch **(Meta Roestenberg)**

15:00 – 15:30                      **Coffee / Tea break**

15:30 – 16:30                      Breakout session – Moonshot pitch development: brainstorming novel ideas to tackle vaccine hyporesponsiveness (each group delivers a summary page)

16:30 – 17:30                      Plenary session: Moonshot pitch presentations and discussion

18:00 – 20:00                      **Workshop Dinner**

**Main Theme:** Interactive group breakout sessions to brainstorm together about charting the way forward in terms of research to reverse vaccine hypo-responsiveness

**Morning**

**Facilitator:** *Maria Yazdanbakhsh*

**Group leaders:** *Akim Adegnika, Carlota Dobaño, Meral Esen, Benjamin Mordmüller, Anna Roukens*

9:30 – 11:00            Breakout session: brainstorming in small groups about charting the way forward guided by questions provided

**11:00 – 11:30            Coffee / Tea break**

11:30 – 12:00            Continuation → Breakout session: brainstorming in small groups and charting the way forward guided by questions provided

12:00 – 13:30            **Lunch**  
***Mini Workshop for 10 PhDs & early career participants***  
***Part 1: “How to present”***

**Afternoon**

**Plenary Facilitators:** *Group Leaders*

13:30 – 14:30            Plenary session: Discussion of break-out ideas

15:30 – 17:30            Bonding session: Boat ride through Leiden

17:30 – 20:00            **Group Dinner**

**Day 5: Friday 15 February 2024 Wrapping up (Half Day)**

**Main Theme:** Collation of break-out discussion points and planning for consensus paper based on workshop. Wrapping up and closing of workshop.

**Facilitators:** Abena Amoah, Julia Makinde, Maria Yazdanbakhsh

**Morning**

10:00 – 11:30	<u>Plenary session</u> <ul style="list-style-type: none"><li>• Plans for the workshop consensus (roadmap) paper writing and submission</li><li>• Planning for future activities and meetings</li><li>• Road Map Poster Creation by participants</li></ul>
11:30 – 12:00	<u>Plenary session</u> - End of the Workshop Summary and Closing ( <b>Abena Amoah, Julia Makinde, Maria Yazdanbakhsh</b> )
12:00 – 13:00	<b>Lunch</b>
13:00 –	Departure