

28-29 April 2021

# Organ-on-chip

Putting Science into Standards

#Standards4OoC



# Organ-on-chip

## Putting Science into Standards

- Attendees should stay **muted at all times**. If for some reason their audio is ON we will kindly mute them again to avoid disruptions.
- Attendees will only be able to use the Zoom chat for technical problems. All other interaction (Q&A and polls) will happen on **Slido**.
- Make sure to select the **slido room** corresponding to our track.
- The three sessions that are part of the track will take place in the **same meeting room** (from 9h to 13h). Hence, there is no need to leave the room, even during breaks!

# Sensing and integration: Panelists



Dries Braecken (imec)



Jannis Meents (MCS)



Marco Rasponi (POLIMI)



# Organ on chip: Definition

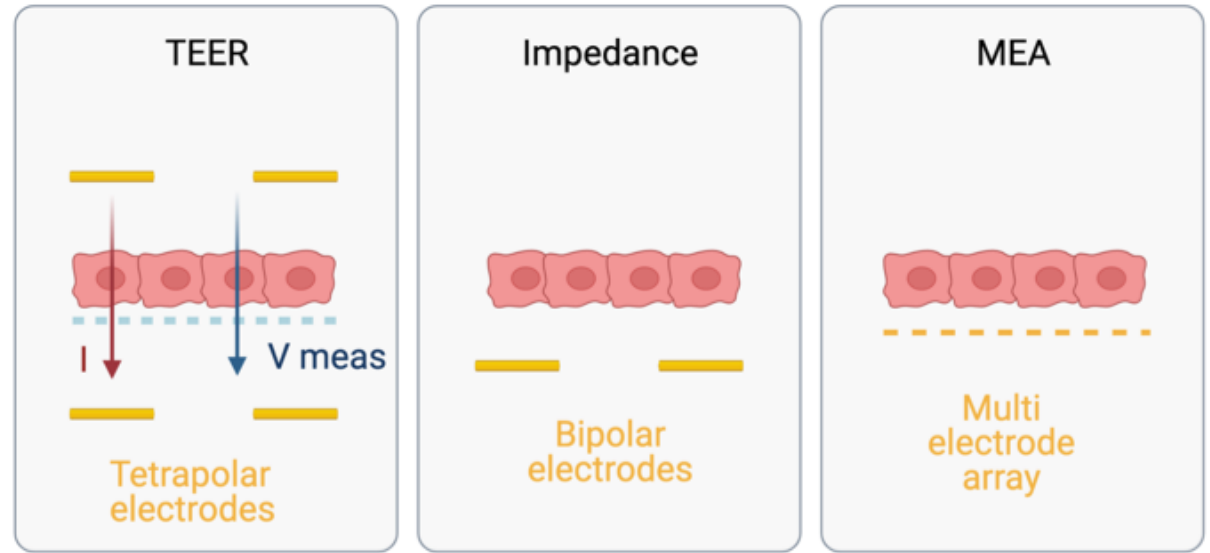
“An Organ-on-Chip is a fit for purpose fabricated **microfluidic**-based device, containing living engineered organ substructures in a controlled **micro- or nanoenvironment**, that **recapitulate** one or more aspects of the dynamics, functionality and (patho)physiological response of an organ in vivo, in real-time **monitoring mode**.”



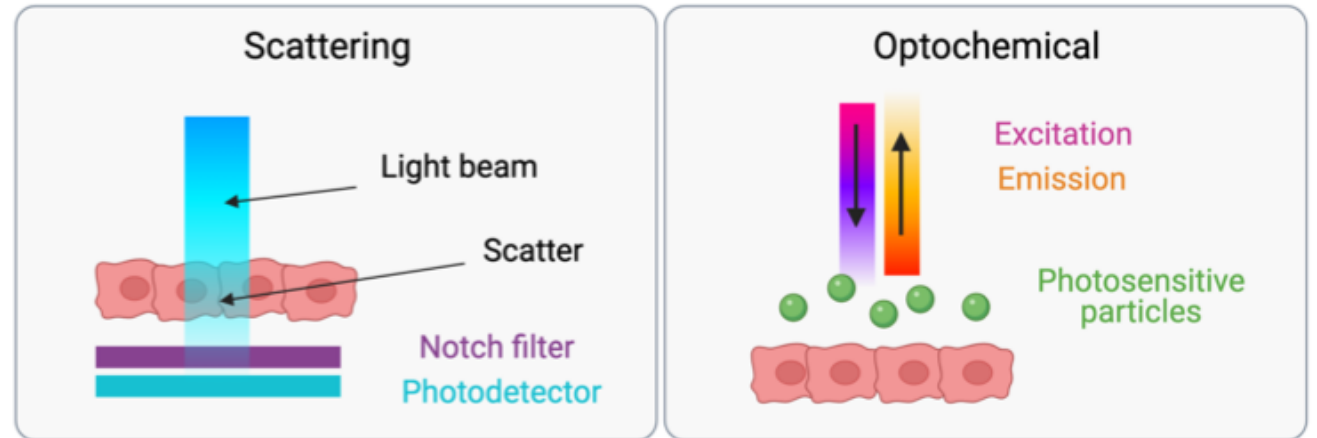
Consensual working definition established by the European ORCHID vision group on 23 May 2018 in Stuttgart.



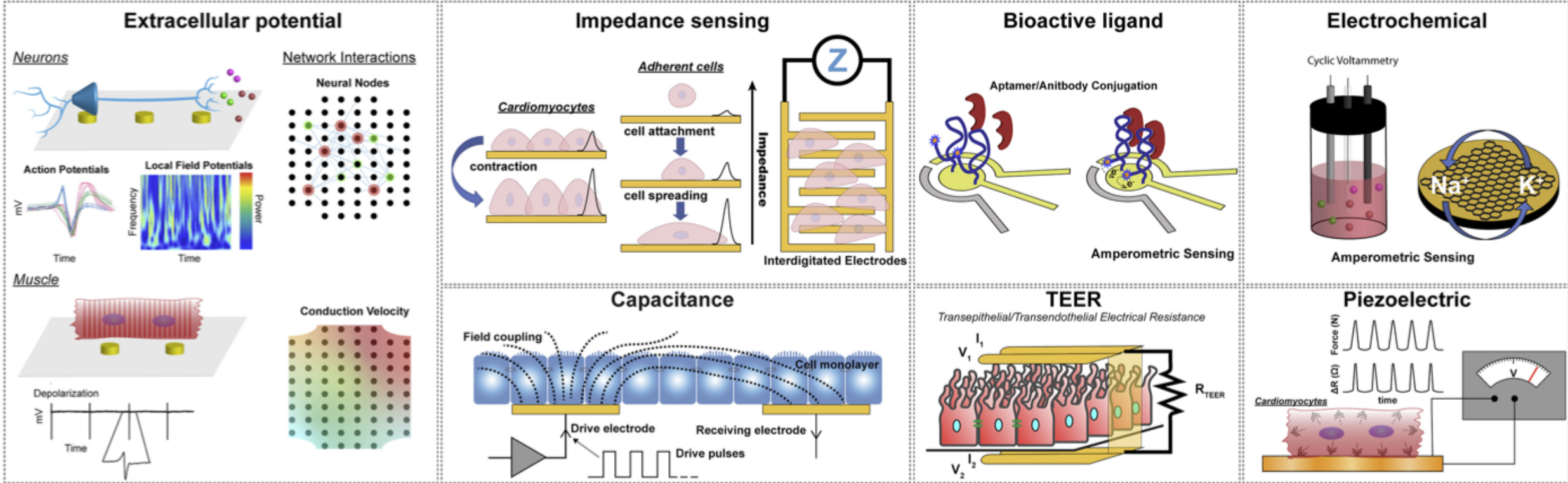
a) Electrochemical sensing techniques



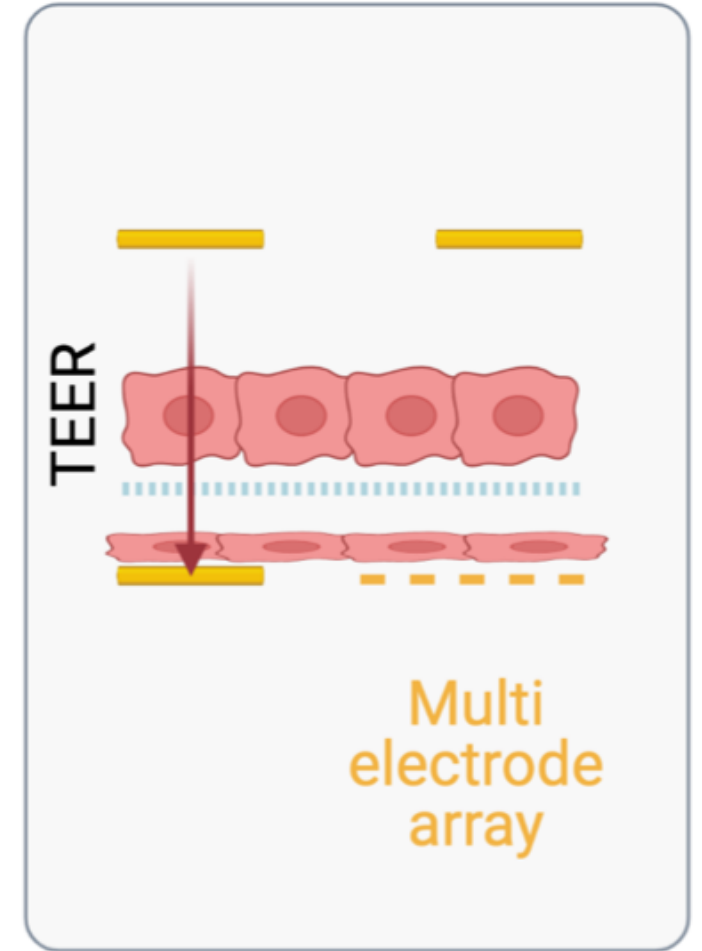
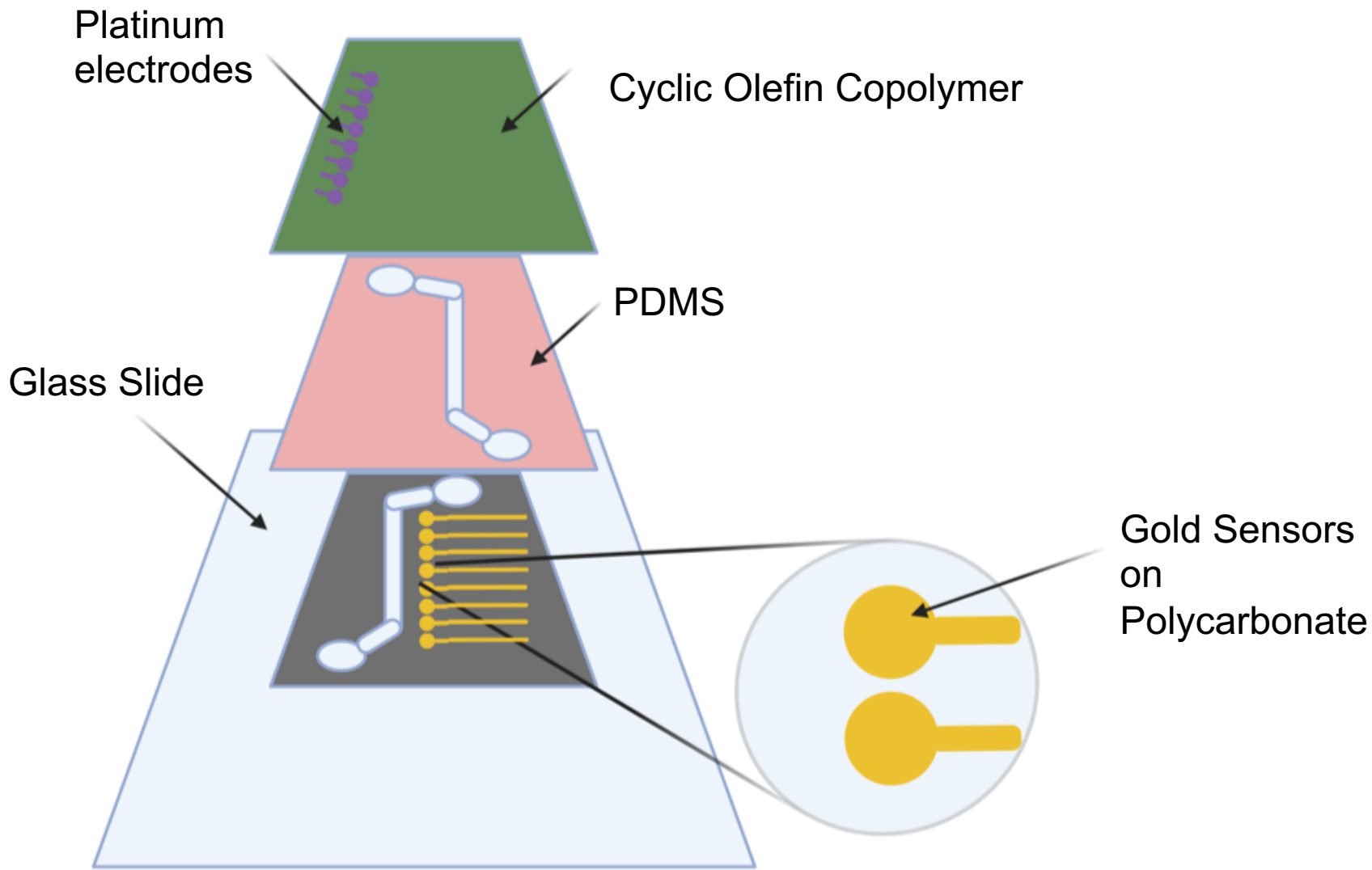
b) Optical sensing techniques



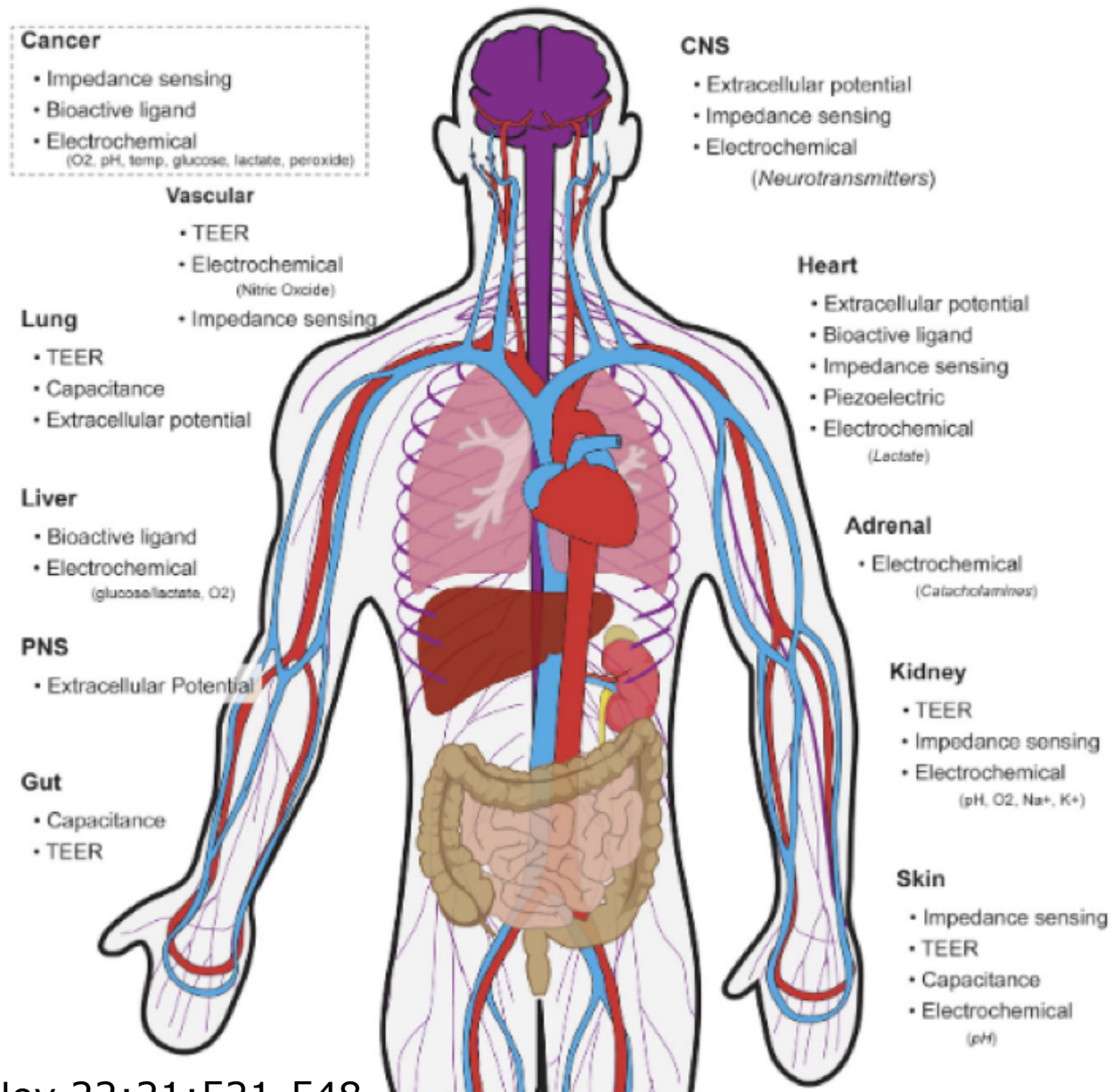
Inspired by Mario Rothbauer, Peter Ertl; Adv Biochem Eng Biotechnol. 2020 Jul 26. Emerging Biosensor Trends in Organ-on-a-Chip



Soucy et al. iScience. 2019 Nov 22;21:521-548

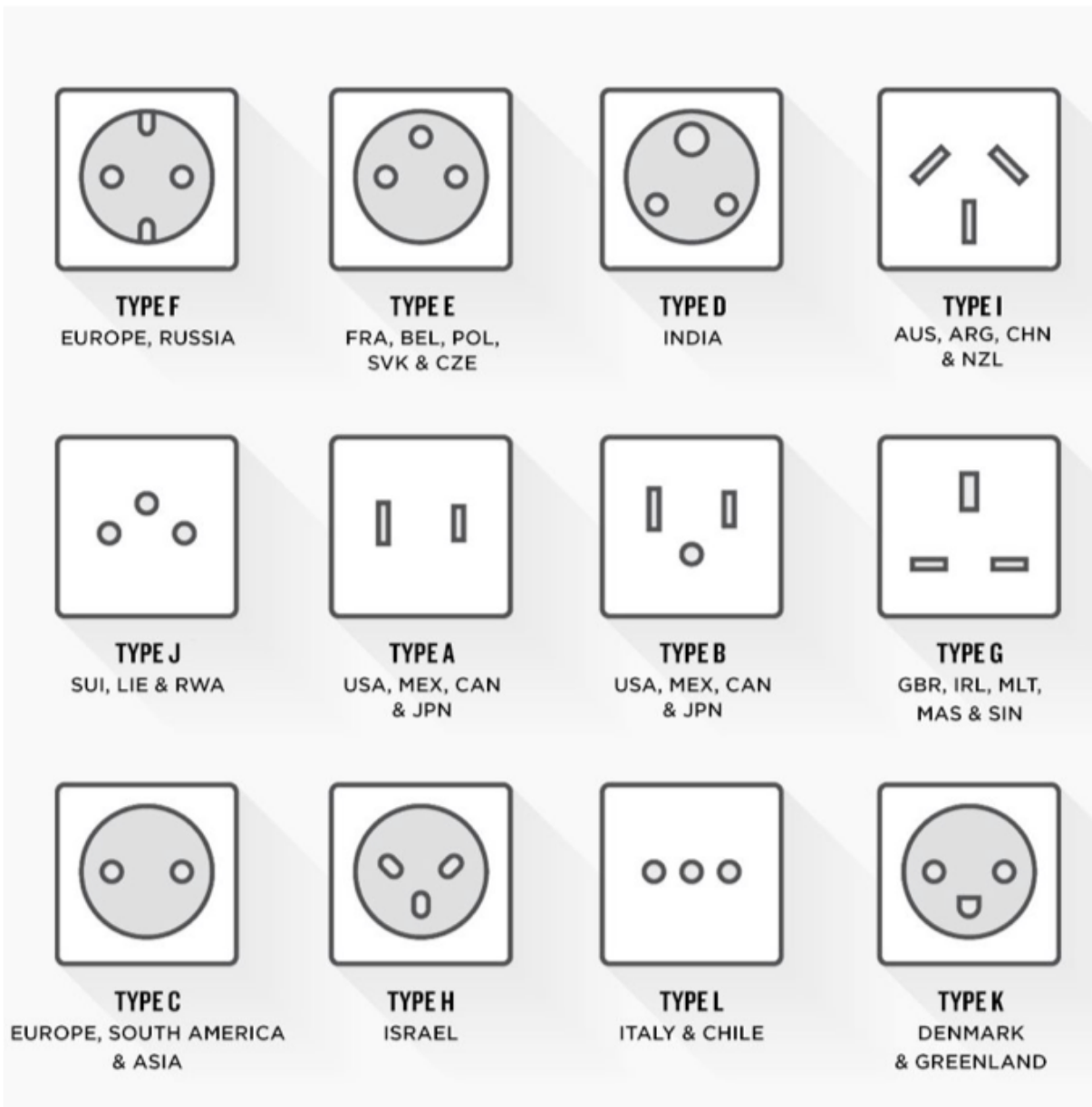


Inspired by Maoz et al. Lab Chip, 2017,17, 2294-2302



Soucy et al. iScience. 2019 Nov 22;21:521-548





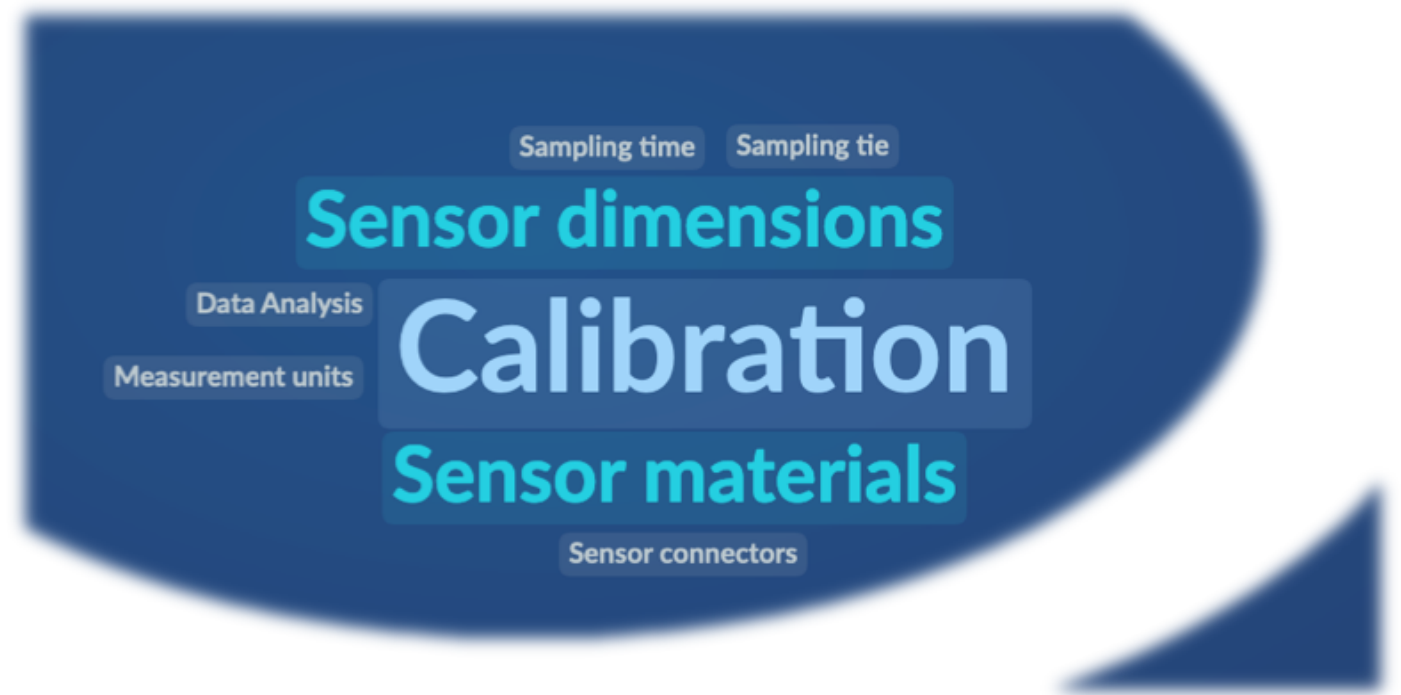
Innovation



Standardization

# Relevant aspects that need standardization

- OoC Integration
  - Number of sensors
  - Type of sensors
- Sensor related aspects
  - Sensor dimensions
  - Materials
- Sensor Usability
  - Sampling time
  - Data processing
  - Calibration requirements



as open as possible as closed as necessary



as standard as possible as versatile as necessary



28-29 April 2021

# Organ-on-chip

Putting Science into Standards

#Standards4OoC

