

# The Effect of Skin Pigmentation on Pulse Oximeter Accuracy

Wednesday 22<sup>nd</sup> May 2024 - London

|       |       |   |
|-------|-------|---|
| 09:55 | 10:00 | <b>Welcome and Introductions</b>  |
|       |       | Peter Charlton, University of Cambridge   |
| 10:00 | 10:25 | <b>The History of Pulse Oximetry</b>  |
|       |       | Panicos Kyriacou, City University of London   |
| 10:25 | 11:00 | <b><i>Pulse Oximeter Accuracy: The Clinical Perspective</i></b>   |
|       |       | Dan Martin, Professor of Intensive Care Medicine, University of Plymouth  |
| 11:00 | 11:15 | <b><i>Does skin tone affect the accuracy of machine learning classification applied to photoplethysmography signals?</i></b>                          |
|       |       | Philip Aston  |
| 11:15 | 11:45 | <b>Coffee Break</b>   |
| 11:45 | 12:05 | <b><i>Monte Carlo Simulation of the Effect of Melanin Concentration on Light-Tissue Interactions for Transmittance Pulse Oximetry Measurement</i></b> |
|       |       | Raghda Al-Halawani; City, University of London  |
| 12:05 | 12:20 | <b><i>Investigating the effect of skin tones on pulse oximeters using laboratory bench tests and Monte Carlo simulations</i></b>                      |
|       |       | Suvvi Kuppur Narayana Swamy; University of Nottingham   |
| 12:20 | 12:40 | <b><i>Is the ear-canal the optimum site for racially equitable oximetry?: Discussion of EarMetrics</i></b>  |
|       |       | Nick Gompertz EarSwitch Ltd   |
| 12:50 | 13:50 | <b>Lunch</b>  |

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| 13:50 | 14:10 | <b><i>Opto-physiological monitoring sensor to directly detect all types of skin tones for physiological monitoring in real time</i></b> |
|       |       | Sijung Hu, Carelight  |
| 14:10 | 14:30 | <b>Panel Discussion and Q&amp;A Speakers</b>  |
|       |       | Chair - Panicos Kyriacou, City University of London   |
| 14:30 | 14:45 | <b>Racial bias in pulse oximetry: next steps</b>  |
|       |       | Peter Charlton, University of Cambridge   |
| 14:45 | 15:10 | <b>Breakout groups - discussion</b>   |
|       |       | All   |
| 15:10 | 15:25 | <b>Coffee break</b>   |
| 15:25 | 16:10 | <b>Group Feedback and wider discussion</b>  |
|       |       | Chairs: Peter Charlton, University of Cambridge & Panicos Kyriacou, City University of London   |
| 16:10 | 16:20 | <b>Final Thoughts &amp; next steps</b>  |
|       |       | Peter Charlton, University of Cambridge & Panicos Kyriacou, City University of London   |

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