



6th Signal Processing and Monitoring (SPaM) in Labour International Workshop 2026

📍 Oxford, UK | 📅 June 25–27, 2026



Advancing science and technology to improve
intrapartum care for mothers and babies worldwide



THURSDAY (25TH JUNE)

8:15 REGISTRATION (COFFEE + PASTRIES)



8:50/9:00 WELCOME FROM THE ORGANISERS

9:00 – 9:20 WHERE ARE WE WITH INTRAPARTUM FETAL MONITORING?

Austin Ugwumadu, St George's Hospital, UK

9:20 – 10:30 THE INTRAPARTUM CTG AND ITS RELATION TO BIRTH OUTCOMES (PART 1)

Chair: Malin Holzmann

9:20-9:40 Masahiro Nakao, Mie University Graduate School of Medicine (Japan)

Timing and underlying cause of perinatal brain injury leading to severe cerebral palsy: data from a nationwide cohort

9:40-10:00 Mikko Tarvonen, University of Helsinki (Finland)

Chorioamnionitis and the fetal heart rate responses in the fetus during term labor

10:00-10:20 Tomoaki Ikeda, Mie University Graduate School of Medicine (Japan)

Circadian Modulation of Fetal Heart Rate Variability: Translational Evidence from Humans, Fetal Sheep, and Zebrafish

10:20-10:30 Whole workshop discussion

10:30 – 11:00 COFFEE BREAK

11:00 – 12:30 THE INTRAPARTUM CTG AND ITS RELATION TO BIRTH OUTCOMES (PART 2)

Chair: Martin Frasch

11:00-11:20 Mariana Tome & Antoniya Georgieva, Oxford Labour Monitoring, University of Oxford (UK)

Fit4Labour for simple triage at labour onset – development and validation with >147,000 births from 6 hospitals in 2 countries.

11:20-11:40 Alice Collier, University of Oxford (UK)

Antenatal mechanics informed machine-learning (MxL) model for predicting mechanical vaginal labour injuries from antenatal measurements.

11:40-11:55 Martin Daumer, Technical University of Munich & TRIUM (Germany)

Algorithms and software to predict fetal distress and short-term variation

11:55-12:10 Sophia Andres, University Hospital Ulm (Germany)

Neonatal outcomes improvement after implementation of physiological CTG interpretation

12:10-12:30 Barry Schifrin (US)

Not all hallucinations are generated by AI

12:30 – 14:00 LUNCH

14:00 – 15:45 TRANSABDOMINAL, WEARABLE AND HOME DEVICES & THEIR DATA

Chair: Martin Daumer

14:00-14:20 Nicolò Pini, Isabelle Mueller, and Bill Fifer (US)

Novel technological solutions for assessing antepartum maternal and fetal wellbeing using wearable technologies

14:20-14:40 Julian Penders, Bloomlife (US)

Remote maternal and prenatal care

14:40-15:00 Shantanu Pathak, CareMother/Doto Health (India)

Nurtura: dyadic monitoring and intelligent surveillance system in intrapartum and post-partum journey

15:00-15:20 Emerson Keenan, University of Melbourne and Kali Healthcare (Australia)

Real-time CTG classification using a low-power wearable device

15:20-15:35 Antoniya Georgieva, Oxford Labour Monitoring team, University of Oxford (UK)

UPatch: a novel wearable ultrasound patch for continuous and autonomous monitoring of fetal and cord vessels (includes heart rate)

15:35-15:45 Meryam Segul, Oslo University (Norway)

Updates from Oslo: challenges and plans around home monitoring

15:45 – 16:15 COFFEE BREAK

16:15 – LATE: JOINT SESSION WITH THE [WOLFSON'S CROSS-DISCIPLINARY MACHINE LEARNING \(XML\) RESEARCH CLUSTER](#) (FOCUSED ON AI & METHODS)

Chair: Csaba Botos ([XML Cluster](#))

16:15-16:35 Sheng Wong, University of Oxford (UK)

PRISM-CTG: A Foundation model for cardiotocography analysis with multi-view SSL

16:35-16:55 Maria Signorini, University Milano (Italy)

Analysis of Fetal Heart Rate antepartum: multiparametric methods and artificial intelligence contribution

16:55-17:15 Martin Frasch (US)

Pregnancy health monitoring: where are we headed? Experiences using the recently released 10M ECG foundation model and more

17:15-18:00 XML Cluster event: Peter Koepernik, OpenAI

Memory Learning under Partial Observability

Open end: Whole room discussion

18:30 – 20:00 SOCIAL PROGRAMME: TREASURE HUNT IN OXFORD

19:30/20:00 – INFORMAL DINNER/DRINKS, JUST TURN UP WHEN YOU ARE READY WITH THE TOUR: [RED LION'S WEBPAGE](#)

FRIDAY (26TH JUNE)

8:30 REGISTRATION (COFFEE + PASTRIES)

9:00 – 10:40 CAN TECHNOLOGY ENHANCE WOMEN'S EXPERIENCES IN LABOUR? ETHICAL, EQUITABLE AND RESPONSIBLE USE OF NEW TECHNOLOGIES IN MATERNITY CARE

Chair: Mariana Tome

9:00-9:20 Catherine Hopley, Sheffield Teaching Hospitals Trust (UK)

Maternal choice and consent when it comes to CTG vs intermittent auscultation, including case studies

9:20-9:40 Sahana Narayan, Oxford Labour Monitoring, University of Oxford (UK)

What the machine cannot hear: maternal testimony, clinical technology, and the limits of intrapartum risk recognition

9:40-10:00 Deborah Fox, University of Technology Sydney (Australia)

Technological mediation and the re-ordering of moral attention in labour and birth

10:00-10:20 Rachel Plachcinski, Patient, Public and Parents representative (UK)

Tool vs system - questions and concerns from parents

10:20-10:40 Whole workshop discussion

10:40 – 11:10 COFFEE BREAK

11:10 – 11:30 THE DIGITAL LANDSCAPE OF MATERNITY CARE - FIT FOR THE FUTURE?

Hsu Chong, Birmingham Women's Hospital (UK)

11:30 – 12:30 CHRIS REDMAN MEMORIAL LECTURE, Sir Sabaratnam Arulkumaran (UK)

12:30 – 14:00 LUNCH

14:00 – 15:10 ELECTROPHYSIOLOGICAL SIGNAL PROCESSING AND MODELLING, UPDATES FROM EINDHOVEN UNIVERSITY (NL)

Chair: Danilo Pani

Flash talks (7min each):

Alessandra Galli

Advancing Non-Invasive Fetal Monitoring through Electrophysiological Signals

Swedha Sankaranarayanan

Synthesis of Multi-Channel Intrapartum Fetal ECG Signals with Deep Generative Modelling

Irene Lensen

Automatic Extraction of Cardiac Time Intervals from Fetal ECG Using a Personalized Dictionary Approach

Busra Ünlü

The Impact of Missing FHR Values on the Accuracy of Heart Rate Variability Features

Giulia Acquaviva

Toward Non-Invasive Fetal Brain Monitoring through Multimodal Integration of Electrophysiological Measures

Milad Mazaheri

A Comparative Study of Intrapartum and Postpartum Electrohysterography (EHG) Activity: Towards Prediction of Postpartum Hemorrhage

Giulio Steyde

Does Maternal Respiration Drive Fetal–Maternal Cardiovascular Coupling?

14:50-15:10 Q & A to all presenters & whole workshop discussion

15:10 – 15:40 COFFEE BREAK

15:40 – 17:15 HIE RISK ASSESSMENT FROM CTG: RATIONALE AND PREDICTIVE MODELS

Chair: Antoniya Georgieva

15:40-16:00 Philip Warrick, PeriGen and McGill University (Canada)

Clinical Insights for HIE Risk Detection from Transfer-Entropy-based Latent Representations of CTG Signals

16:00-16:20 Robert Kearney, McGill University (Canada)

Trajectories of Contractions and Decelerations Throughout Labor

16:20-16:40 Michael Kuzniewicz, Kaiser Permanente Northern California (US)

Beyond pH: why predicting fetal acidemia is not the same as preventing brain injury

16:40-16:55 Cassandra Heiselman, Cleveland Clinic Foundation (US)

Labour outcomes and the role of pH

16:55-17:15 Marie-Coralie Cornet, UCSF (US)

Etiologies of neonatal encephalopathies and HIE

17:15 – 18:10 PANEL: TRENDS, CHALLENGES AND OPPORTUNITIES ON THE FETAL MONITORING COMMERCIAL FRONT

Chair: Rakesh Roshan

Flash talks / introductions from each panellist (3min)

- **Tatiana Lashina**, Philips (NL)
- **Philip Warrick**, PeriGen (Canada)
- **James Bushby**, GE Healthcare (UK/US)
- **Sofia Blad**, Neoventa (Sweden)

Questions to the panel:

- 1) Have progressed with continuous intrapartum fetal monitoring in the past decade?
- 2) What was the most interesting thing or two you learned on this last workshop?
- 3) What is your advice to the community?
- 4) How will intrapartum fetal monitoring look like in 2035 worldwide?

20:00 – 23:00 OFFICIAL WORKSHOP DINNER – [CHERWELL BOATHOUSE](#)

SATURDAY (27TH JUNE)

8:30 COFFEE + PASTRIES

9:00 – 10:00 THE CLINICAL PERSPECTIVES

Chair: Mikko Tarvonen

9:00-9:20 Susana Pereira, on behalf of Barts Health Perinatal Research Team, The Royal London Hospital (UK)

How neonatal biodata can inform CTG interpretation?

9:20-9:40 Sheng Wong, University of Oxford (UK)

Overview of the current landscape of antepartum CTG analysis

9:40-10:00 Migle Semenaite, Lithuanian University of Health sciences (Lithuania)

Computerized CTG during labor: first experience in Lithuania

10:00 – 11:00 COMPUTER-BASED ANALYSIS FOR FETAL ECG AND CTG

Chair: Ivan Jordanov

10:00-10:20 Malin Holzmänn and Farhad Abtahi, Karolinska Institutet (Sweden)

Making the Hidden Choices in CTG Signal Processing Visible and Reportable.

10:20-10:40 Peter Djuric, Stony Brook University (US)

A Generative Approach to Fetal Heart Rate Monitoring via Flow Matching

10:40-11:00 Giulia Baldazzi, University Cagliari, Italy (Italy)

Unveiling fECG morphology from non-invasive trans-abdominal recordings by a data-driven framework

11:00 – 11:30 COFFEE BREAK

11:30 – 12:45 BIG DATASETS FOR CTG RESEARCH / FEDERATED LEARNING POSSIBILITIES

Chair: Emerson Keenan

11:30-11:50 Martin Daumer on behalf of the EB-CTG Working Group (Germany/EU)

Towards a CTG data hub

11:50-12:10 Imane Ben M'Barek, APHP (France)

A new CTG multicenter open dataset (APHP-CTG) from Assistance Publique des Hôpitaux de Paris

12:10-12:30 Samuel Boudet, University of Lille (France)

AIM-CTG: a kaggle data challenge for CTG pattern recognition

12:30-12:45 Whole workshop discussion

12:45 REFLECTIONS FROM THE WORKSHOP, IMPLICATIONS FOR FUTURE WORK AND CLOSING REMARKS