



**International Fetal Medicine and Surgery Society
Annual Meeting 2023, September 4-9
Visby – Stockholm, Sweden
Scientific Program**

Tuesday, 5 September. *Venue Donners event.*

8.00 AM Welcome and Opening Remarks
Carmen Mesas Burgos & Peter Lindgren

8.15-10.00 Session 1: Fetal Center Organization/ Risk Stratification / Counseling
Moderators: Charlotta Ingvoldstad Malmgren & Julie Moldenhauer

8.15-8.23 Counseling and multidisciplinary family-centered fetal care: Lessons from advocacy and education
Jonathan Castillo

8.23-8.31 Understanding provider perspectives on prenatal decision-making related to congenital anomalies
Jessica Fry

8.31-8.39 Innovative delivery of resuscitation guidelines for newborns with congenital anomalies
Natalie Rintoul

8.39-8.47 Developing a person-centered care scale for fetal centers
Abigail Wilpers

8.47-8.55 The compassion in that room was palpable.”: Patients’ experiences in U.S. fetal care centers
Katie Francis

8.55-9.03 Specialized childbirth classes for pregnant persons with diagnosis of fetal anomalies
Bonnie Zapolin

9.03-9.13 Short break

9.13-9.21 When fetal therapies create unpredictable outcomes: ethical considerations in formulating a response
Janyne Althaus

9.21-9.29 Supporting patients & families with a fetal spina bifida advanced practice nurse program coordinator
Katie Schmidt

9.29-9.37 A delivery room learning health system

Anna Ades

9.37-9.45 Identification of perinatal mental health and maternal risks among BIPOC women carrying fetuses with congenital anomalies

Joanna C.M. Cole

9.45-9.53 Development of Machine learning algorithms for Antenatal risk StratificatiON (MASON) using large datasets from Sweden and Chile

Mahesh Choolani

9.53-10.01 An innovative data management platform for fetal care: a focus on efficiency and validity

Tom Reynolds

10.01-10.05 Before and after the implementation of an innovative data management platform in a fetal center

Tom Reynolds

10.05-10.35 BEVERAGE BREAK *Hotel Wisby*

10.35-12.00 Session 2: Genetic & Stem cell therapy

Moderators: *Mahesh Choolani & Erik Iwarsson*

10.35-10.43 The value of exome sequencing in investigating the genetic causes of NIHF - A single-center experience

Xing Wei

10.43-10.51 Repeated fetal hydrops with fetal and neonatal death associated with RYR1 gene mutation

Ricardo Barini

10.51-10.59 The Performance of the Expanded Non-invasive Prenatal Testing (NIPT) in High-risk Twin Pregnancy

Meng Meng

10.59-11.07 How to support the profession in prenatal diagnostic counseling in Sweden

Charlotta Ingvaldstad Malmgren

11.07-11.15 A case of Schuurs-Hoeijmakers syndrome presenting as hydrops fetalis

Wen-wei Hsu

11.15-11.23 Impact of fetal genomic result availability on initial neonatal care of inborn errors of metabolism

Richard Parad

11.23-11.31 Bidirectional traffic of donor mesenchymal stem cells in transamniotic stem cell therapy (TRASCET)

Kamila Moskowitzova

11.31-11.39 Postnatal Fate of Donor Hematopoietic Stem Cells after Syngeneic Transamniotic Stem Cell Therapy

Kamila Moskowitzova

11.39-11.47 Screening protocol for myogenic stem cell differentiation: The first steps

Monalisa Attif Hassan

11.47-11.55 Unravelling heterogeneity of human amniotic fluid stem cells subpopulations

Agnes Klar

11.55-12.05 “I feel good that we did it”- Experiences of parents & stakeholders involved in the BOOSTB4-study
Charlotta Ingvoldstad Malmgren

12.05-1.35 LUNCH *Hotel Wisby*

1.35-3.00 Session 3: Innovative biomolecular therapies
Moderators: *Alan Flake & Joanne Verweij*

- 1.35-1.43 Trials and tribulations of reproducing a retinoic-induced myelomeningocele model for in utero repair**
Zoe Saenz
- 1.43-1.51 Transamniotic fetal immunotherapy (TRAFIT) with secretory IgA: A potential novel strategy for the prevention of necrotizing enterocolitis**
Ashlyn E Whitlock
- 1.51-1.59 Lipid nanoparticles for in utero base editing of surfactant protein disorders**
Nicole Kus
- 1.59-2.07 In utero lipid nanoparticle targeting of the fetal skin for mRNA therapies**
William Johnston
- 2.07-2.15 Optimizing prenatal and postnatal therapeutic base editing for hereditary tyrosinemia type 1**
Ana Maria Dumitru
- 2.15-2.22 Characterizing pre-existing maternal immunity as a potential barrier to CRISPR-Cas9 in utero gene editing for metabolic liver diseases**
William Peranteau
- 2.23-2.31 Increased efficiency of CRISPR-mediated homology directed repair in the fetus compared to the adult**
Nicole Kus
- 2.31-2.39 Prenatal stress modifies maternal circulating small extracellular vesicles and enhances their targeting to the fetoplacental unit**
Sebastián Illanes
- 2.39-2.47 Transamniotic delivery of surfactant protein B mRNA in a healthy model**
Kamila Moskowitzova
- 2.47-2.55 Vascular dysregulation via NF-κB in fetal growth restriction**
Timothy M Crombleholme
- 2.55-3.05 Ionizable lipid nanoparticles for therapeutic base editing of congenital brain disease**
Rohan Palanki

3.05-3.35 BEVERAGE BREAK *Hotel Wisby*

3.35-5.45 Session 4: Artificial Placenta, Fetal Therapy
Moderators: *Ganesh Acharya & George Mychaliska*

3.35-3.55 Keynote: Update on Artificial Placenta
Alan Flake

3.55-4.03 The role of fetal hemoglobin in the artificial placenta

- George Mychaliska*
- 4.03-4.11** Characterizing patterns of fetal response to physiologic stress
Steven Papastefan
- 4.11-4.19** Multiparameter continuous probe monitoring of fetal physiologic derangement in fetal surgery
Steven Papastefan
- 4.19-4.27** Rodent model demonstrates reduced collagen synthesis in uterine scar
Anisha Apte
- 4.27-4.35** The Vortex shunt – short-term feasibility studies in the fetal ovine lower urinary tract obstruction and pleural effusion model
Enrico Danzer

4.35-4.45 *Short break*

- 4.45-4.53** The impact of in-utero OSB closure on intra-operative fetal perfusion and maternal vital signs
Sami Backley
- 4.53-5.01** Fetoscopic lysis of amniotic band sequence using a 2-port technique: report of four cases
Sami Backley
- 5.01-5.09** Successful open fetal surgery resection of intrapericardial teratoma
Darrell L. Cass
- 5.09-5.17** Stitching of fetal membrane defects in vivo to minimize iPPROM rate
Yannick Devaud
- 5.17-5.25** Needle fetoscopy: a technique for placement of challenging thoracoamniotic and vesicoamniotic shunts
Steven Papastefan
- 5.25-5.45** The US Supreme Court sabotaging prenatal diagnosis and fetal therapy in America
Mark Evans

Wednesday, 6 September. *Venue Donners event.*

07.00 AM Fetal Diagnosis & Therapy Editorial Meeting
(By invitation only. Location: hotel Wisby)

08.00 AM Housekeeping Carmen Mesas Burgos & Peter Lindgren

8.10-10.00 Session 5: Thoracic, Airway, Cardiac
Moderators: *Anita Moon-Grady & Holly Hedrick*

8.10-8.18 Perinatal airway management in a birth cohort with goiter
Michael Puricelli

8.18-8.26 Congenital lung malformation, Lessons from the last 30 years
Reuven Achiron

- 8.26-8.34 Multifocal congenital thoracic lesions**
Anthony di Natale
- 8.34-8.42 Prenatal measurements of congenital lung malformations: can they predict postnatal size?**
Erin Perrone
- 8.42-8.50 Utility of 3-Dimensional modeling in prenatally diagnosed large fetal neck mass**
Inna Lobeck
- 8.50-8.58 Fetal intervention for giant congenital cystic adenomatoid malformation with fetal hydro: Case seria**
Gongli Chen
- 8.58-9.06 Prenatally diagnosed large lung lesions: Timing of resection and perinatal outcome**
Sourav Bose

9.06-9.16 Short break

- 9.16-9.24 Detection of fetal hydrothorax associated with mucopolysaccharidosis VII for fetal therapy**
Haruhiko Sago
- 9.24-9.32 Comparison of best landmarks for fetal jaw index by ultrasound and MRI to predict postnatal outcome**
Bailey Lyttle
- 9.32-9.40 Fetal pleural effusions and hydrops: Cause and effect determines prognosis**
Kristen Gosnell
- 9.40-9.48 Improving prenatal detection of heart disease scalable analysis of six fetal cardiac biometrics**
Anita Moon-Grady
- 9.48-9.56 Direct fetal amiodarone administration for fetal supraventricular tachycardia: a case series**
Irvan Adenin
- 9.56-10.05 Modulation of the amniotic fluid protein corona on polymeric nanoparticles by varying pegylation**
Anna Lynn

10.05-10.35 BEVERAGE BREAK *Hotel Wisby*

10.35-12.00 Session 6: Congenital Diaphragmatic Hernia, Fetal Tracheal Occlusion

Moderators: *Carmen Mesas Burgos & Philip DeKoninck*

- 10.35-11.05 Keynote Innovation: Smart balloon from an engineer's perspective**
Nicolas Sananès
- 11.05-11.13 Association between initial mode of ventilation & NICU outcomes for infants with severe CDH**
K Taylor Wild
- 11.13-11.21 Increased alveolar deposits of fibronectin may be responsible for the pathophysiology of CDH and it may be a potential target for future therapy**

Carolina Pinzon Guzman

11.21-11.29 On-ECMO muscle flap CDH repair associated with fewer bleeding complications and improved survival

Alyssa E Vaughn

11.29-11.37 Bleeding on ECMO: does anticoagulation agent matter in neonates with congenital diaphragmatic hernia

Caroline Credille

11.37-11.45 Prenatal recognition of hepatopulmonary fusion in right-sided CDH for successful operative planning

Timothy Crombleholme

11.45-11.53 Video review of delivery room resuscitation of neonates with congenital diaphragmatic hernia

K Taylor Wild

11.53-12.00 Delivery room resuscitation of infants treated with FETO: beyond the balloon

K Taylor Wild

12.00-1.15 LUNCH *Hotel Wisby*

1.15-2.45 Session 7: Fetal tumours and abnormalities, CNS, Abdominal, Urogenital

Moderators: *Shinjiro Hirose & Stephen Emery*

1.15-1.23 Revisiting an ovine model for in utero repair of gastroschisis

Emily Byrd

1.23-1.31 Antenatal risk factors for fetal MP: New insights from a 10-year case-control study

Yan Feng

**1.31-1.39 Congenital Extrahepatic Portosystemic Venous Shunt from Fetus to Neonate
A Need for a New Paradigm**

Reuven Achiron

1.39-1.47 Obstetric risk profile of serial amnioinfusions for renal anhydramnios

Jena Miller

1.47-1.55 Consensus diagnosis, management, and core outcomes set of fetal LUTO: a Delphi procedure

Hiba Mustafa

1.55-1.03 Transperineal sagittal view for the diagnosis of Posterior Urétral Valves

Jonathan Rosenblatt

1.03-1.11 The "Halo Sign" of cystic renal dysplasia on fetal MRI

Judy Estroff

1.11-2.19 Postnatal management and variation in care among neonates in the RAFT trial

Ellen Bendel-Stenzel

**2.19-2.27 Amniotic band syndrome with complete extracephalic brain development:
The math of morphology**

Christian Macedonia

2.27-2.35 Novel ventriculo-amniotic shunt for treatment of fetal aqueductal stenosis

Stephen P Emery

**2.35-2.43 Neurodevelopmental Outcomes in Complicated Twin Pregnancies:
Prospective Observational Study**
Asma Khalil

Thursday, 7 September. Venue Donners event.

**07.00 AM IFMSS Executive Board Meeting
(By invitation only. Location: hotel Wisby)**

08.00 AM Housekeeping Carmen Mesas Burgos & Peter Lindgren

08.10-10.00 Session 8: MMC part 1
Moderators: *Peter Conner & Scott Adzick*

**8.10-8.18 Characterization of amniotic fluid stem cells obtained from pregnancies with
spina bifida aperta**

Katarzyna Micka

**8.18-8.26 Neonatal outcomes within the Children's Hospitals Neonatal Consortium
following fetal MMC surgery**

Stefanie Riddle

**8.26-8.34 Open spina bifida prenatal repair exclusion criteria in a Chilean
reference center**

Edgardo Corral

**8.34-8.42 Does the psychosocial profile influence the results of open spina bifida
surgery?**

Silvana Echeverria

**8.42-8.50 MCA Doppler around fSB repair: an indirect sign of hindbrain compression
and decompression?**

Ladina Vonzun

**8.50-8.58 Sleep-Disordered Breathing in Neonates with Myelomeningocele: Fetal vs
Postnatal Surgery**

Ellen Bendel-Stenzel

**8.58-9.06 Pain scores after open spina bifida repair in comparison to caesarean
sections**

Nele Strübing

9.06-9.16 Short break

**9.16-9.24 Maternal obesity in fetal spina bifida repair: is maternal and fetal safety
warranted?**

Julia Zepf

**9.24-9.32 Absence of hindbrain herniation in myelomeningocele/myeloschisis: A closer
look**

Gregory Heuer

- 9.32-9.40 Fetal surgery for MMC: favorable results with expanded indications and refined surgical technique**
Darrell L. Cass
- 9.40-9.48 Transient pseudocyst after open fetal myelomeningocele repair**
Amanda Kalan
- 9.48-9.56 Differences between Myeloschisis and Myelomeningocele in patients undergoing prenatal repair of OSB**
Jose Müller
- 9.56-10.04 Importance of long-term follow-up to the management of myelomeningocele study (MOMS)**
Katie Schmidt

10.05-10.40 BEVERAGE BREAK *Hotel Wisby*

10.40-12.00 Session 9: MMC part 2
Moderators: *Martin Meuli & Gregory Heuer*

- 10.40-10.48 Heterotopia and neurodevelopmental outcomes: Prenatal myelomeningocele or myeloschisis**
Gregory Heuer
- 10.48-10.56 Neurodevelopmental outcomes of 5-year old patients after open prenatal spina bifida aperta repair**
Beth Padden
- 10.56-11.04 Fetoscopic myelomeningocele repair is associated with less fetal bradycardia compared to open repair**
Steven Papastefan
- 11.04-11.12 Impact of universal fetal myofascial flap in maternal-fetal surgery for myelomeningocele closure**
Julie Moldenhauer
- 11.12-11.20 Fetal spina bifida repair – case one in 2010, case 200 in 2023: The Zurich center’s biography from fetal to adult life**
Martin Meuli
- 11.20-11.28 Gestational diabetes in women with fetal spina bifida repair - influence of perioperative management**
Ladina Rueegg
- 11.28-11.36 Level dependent outcome after fetal spina bifida repair**
Ueli Moehrlen
- 11.36-11.44 Measuring physical functioning in the MOMS3 Fetal Surgery Study: An interprofessional collaboration**
Janet Jackson-Coty
- 11.44-11.52 Global folate fortification efforts**
Gregory Heuer
- 11.52-12.00 Perinatal mood and anxiety in women undergoing open maternal-fetal surgery for myelomeningocele**
Nina Paidas Teefey

12.00-1.30 LUNCH Hotel Wisby

1.30-3.00 Session 10: Multiple Pregnancies

Moderators: *Sverker Ek & Mark Johnson*

- 1.30-1.38 Association of fetal growth restriction and stillbirth in twin compared to singleton pregnancies**
Asma Khalil
- 1.38-1.46 Prediction of stillbirth and adverse perinatal outcomes in dichorionic twin pregnancies**
Asma Khalil
- 1.46-1.54 Perinatal outcomes in twin reversed arterial perfusion sequence with early or late intervention**
Luming Sun
- 1.54-2.02 Management of twin-reversed arterial perfusion sequence: a systematic review and meta-analysis**
Inna Lobeck
- 2.02-2.10 Consensus protocol for the management of early and late twin-twin transfusion syndrome: Delphi study**
Asma Khalil
- 2.10-2.18 Machine-Learning prediction of gestational hypertension and preeclampsia in twin pregnancies**
Hiba J. Mustafa
- 2.18-2.26 Machine-Learning early pregnancy risk prediction model for gestational diabetes in twin pregnancies**
Hiba J. Mustafa
- 2.26-2.34 Modified selective fetal reduction by radiofrequency ablation in twin-twin transfusion syndrome**
Zhiyang Hu
- 2.34-2.42 Early unfavorable outcomes of umbilical cord occlusion for complicated monochorionic twins**
Tuangsit Wataganara
- 2.42-2.50 Twin Reversed Arterial Perfusion Sequence Indonesia Single Center Experiences in Fetal Interventions**
Dudy Aldiansyah

3.00-3.30 BEVERAGE BREAK Hotel Wisby

3.30-5.45 Session 11: TTTS, Intra Uterine Transfusions

Moderators: *Ken Moise & Enrico Lopriore*

- 3.30-3.38 Placental panorama picture generated by a magnetically assisted robotic surgery system for the treatment of twin-to-twintransfusion syndrome**
Ueli Moehrlen
- 3.38-3.46 Stitch it up! Trans-amniotic membrane closure of fetoscopic site in laser photocoagulation for TTTS**
Foong Yen Lim

- 3.46-3.54 Long-term outcomes in children treated with laser therapy for TTTS in a U.S. cohort**
Eric Bergh
- 3.54-4.02 Amniotic fluid biomarkers of fetal stress response to cardiac dysfunction in TTTS**
Steven Papastefan
- 4.02-4.10 The impact of cannula diameter on preterm prelabor rupture of membranes after laser surgery**
Anouk van der Schot
- 4.10-4.18 M-sign in middle cerebral artery Doppler in twin-to-twin transfusion syndrome**
Ladina Rueegg
- 4.18-4.26 Rapidly progressive TTTS despite fortnightly US surveillance**
Greg Ryan
- 4.26-4.34 Changes in hematocrit following uncomplicated laser ablation for TTTS**
Martin Walker

4.34-4.44 Short break

- 4.44.4.52 Perinatal survival following intrauterine transfusion for red cell alloimmunized pregnancies**
Alireza Shamshirsaz
- 4.52-5.00 Atrioventricular plane displacement in fetuses before and after intrauterine blood transfusion**
Aikaterini Zamprakou
- 5.00-5.08 Utility of fetal antigen testing in the management of hemolytic disease of the fetus and newborn**
TBA
- 5.08-5.16 Clinical outcomes of standard of care for early-onset severe HDFN**
Dick Oepkes
- 5.16-5.26 Nipocalimab in pregnancies at high risk for early-onset severe HDFN**
Kenneth J. Moise Jr
- 5.26-5.34 Phase 3 study design of nipocalimab in pregnancies at risk for severe HDFN**
Dick Oepkes
- 5.34-5.42 Postnatal management and outcome in hemolytic disease of the fetus and newborn (HDFN): results from an international registry (Dionysus study)**
Enrico Lopriore

Friday, 8 September. *Stockholm Theater Ship 1.30-4 pm*

Lunch 12 – 1.30 PM

1.30-2.30 Session 12: Special lectures and business meeting

Moderators: *Peter Lindgren & Greg Ryan*

1.30-1.40 Growth in children with Osteogenesis Imperfecta type III after prenatal treatment with fetal mesenchymal stem cells

Magnus Westgren

1.40-1.50 The contribution of genetics to Cerebral Palsy

Mark Evans

1.50-2.00 IFMSS at 40: You heard it here first

Francois I. Luks

2.00-2.10 What happens in Cabo shouldn't stay in Cabo: our lessons learned

Amy B Powne

2.10-2.40 Behind the scenes at the Nobel festivities

Tobias Degsell

2.45-4.00 Business meeting and meeting closing