

Pediatrics Grand Rounds

Text: 608-260-7097

Code: KEVRER

Please text to record your attendance and claim credit. If this session is for ABP MOC Part II you will receive an email with instructions to take the assessment for credit. Even if you do not need the credit, please text in to record your attendance!

Need support? Email Kate Dougherty at catherine.dougherty@wisc.edu



Department of Pediatrics
UNIVERSITY OF WISCONSIN
SCHOOL OF MEDICINE AND PUBLIC HEALTH

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**School of Medicine
and Public Health**
UNIVERSITY OF WISCONSIN-MADISON

UWHealth

 **UnityPoint Health**
Meriter



**Department of
Obstetrics and Gynecology**
UNIVERSITY OF WISCONSIN
SCHOOL OF MEDICINE AND PUBLIC HEALTH

Strengthening Pediatric and Ob-Gyn Research Through Shared Resources and Partnerships

Overview of the TCPC, Tissue
Bank, and Collaborative Research

Peds Grand Rounds 10/22/26

Conflict of Interest

The speakers of this CE activity have relevant financial relationships with ineligible companies to disclose.

Dr. McAdams

GE Healthcare (Independent Contractor - Consultant)

Dr. Singh

Eli Lilly and Company (Independent Contractor - Consultant),
Genentech (Independent Contractor - Consultant)

The speaker does not intend to discuss any unlabeled or unapproved use of drugs or devices.



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Dept of OBGyn Tissue Collections and Processing Core (TCPC)

- **TCPC established to support translational and clinical research by providing rapid access to high-quality human biospecimens in the fields of gynecology, obstetrics, and neonatology.**
- **Located at UnityPoint Health-Meriter Hospital, is available to academic and industry researchers seeking comprehensive biospecimen collection and processing services.**
- **Working closely with the Dept of OBGyn Human Subjects Core, we offer a full spectrum of support, including IRB protocol development, patient recruitment and consent, biospecimen collection and processing, specimen storage and shipping, and clinical data abstraction.**
- **Examples of biospecimens collected, processed, and banked by the TCPC include umbilical cord tissue and blood, maternal blood, placenta, ovarian tissue, uterine fibroids, endometriosis tissue, and follicular fluid.**
- **The laboratory houses a Luminex 200 multiplex platform, capable of simultaneously detecting and quantifying up to 80 analytes per sample well, with assay options covering more than 600 cytokines, chemokines, growth factors, and other protein targets across multiple species.**

Tissue Collections and Processing Core Facilities

Freezer and Ultra-Low Temperature Storage

- **-80C Freezers (3 with back-up), -20C Freezer, all monitored continuously with Sonicu.**
- **Cryogenic Storage with Liquid Nitrogen**

Luminex 200 Multiplex Assay System

- **Simultaneous detection and quantification of up to 80 secreted proteins in a single well**
- **With a selection spanning over 600 cytokine, chemokine, growth factors, and other protein targets from various species**

Tissue Processing Lab

- **2 BSCs for dissections/cell isolation**
- **Centrifuge, cell counter, tissue homogenizer**

Data Tracking System

- **Comprehensive sample tracking implemented in REDCap database**

TCPC Banked Samples

Tissue Types & Quantities For TCPC

- **Placentas: 233** Each placenta = 6 samples (3 in RNAlater + 3 flash frozen)
- **Umbilical Cord Tissue: 19**
- **Maternal Blood:**
 - Serum – 10
 - Plasma – 8
 - Buffy Coat – 0
 - PBMC – 4
- **Cord Blood Serum: 227**
- **Ovaries: 8 patients**
- **Fibroids: 4**
- **Endometrium: 2**
- **IVC-Ao: Plasma: 290 PBMC's: 173**
- **Deciph: Serum: 26 ISF: 27**

Tissue Types & Quantities Banked For Pediatrics

- **Cord Blood Serum: 193 collected, 169 Sent to Dr. McAdams for assay analysis.**

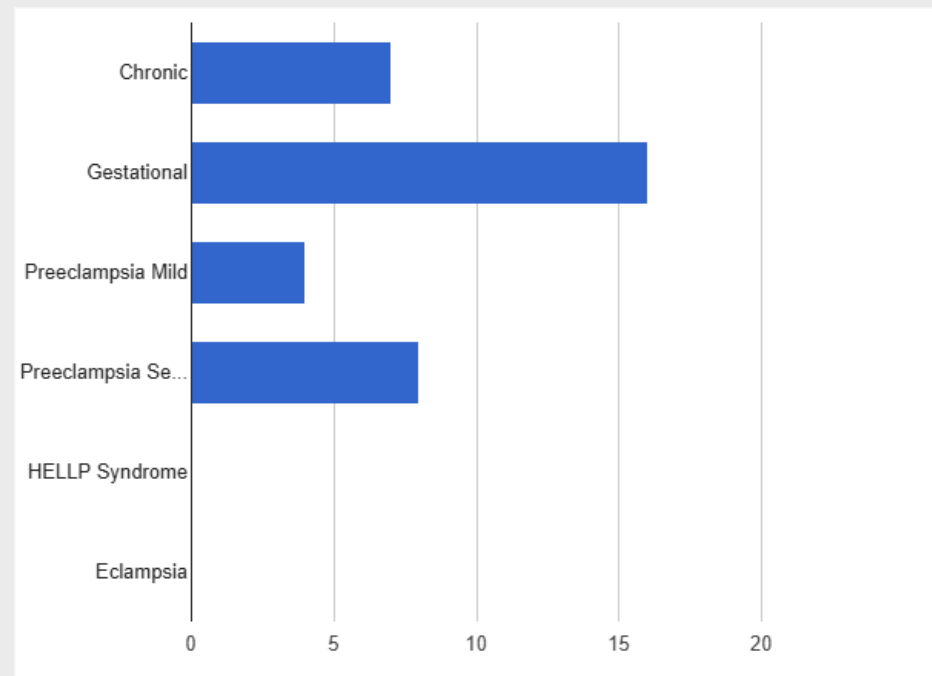


TCPC Placenta Samples Associated with Complicated Pregnancies

Placenta Breakdown (N=233)

Complication	# of Patients
Preeclampsia	35
Obesity	66
Hypertension	25
Type II diabetes	8
FGR	9
Anemia	37

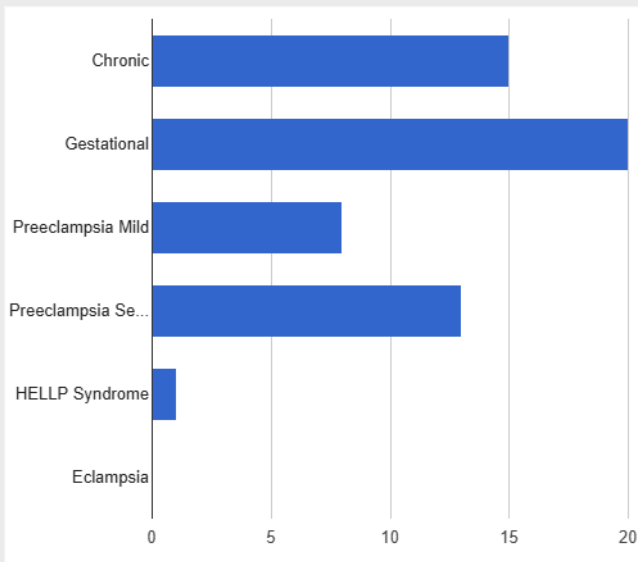
Preeclampsia Breakdown



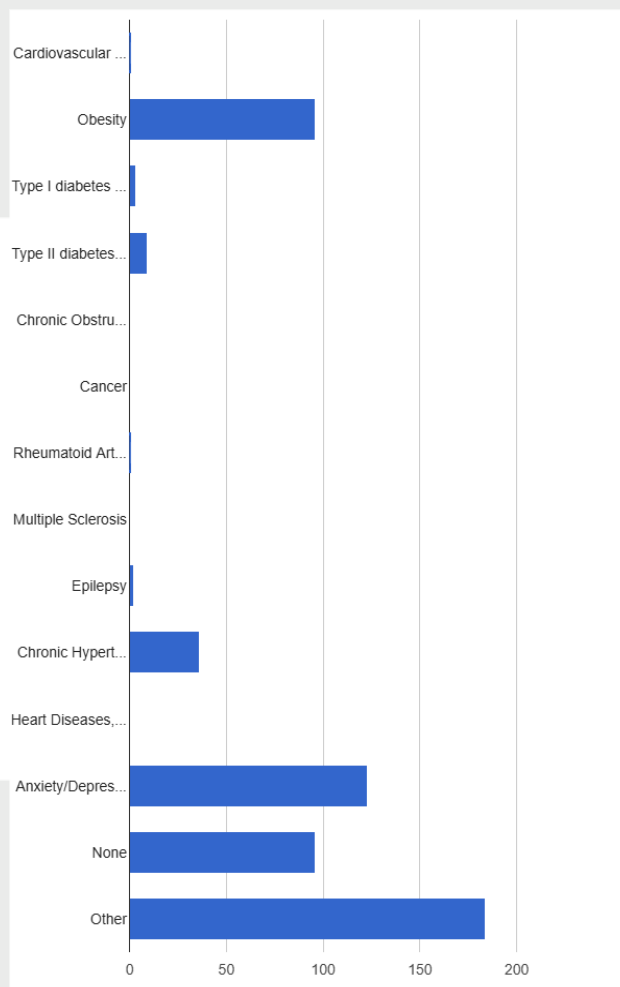
TCPC Cord Blood Samples Associated with Complicated Pregnancies

Cord Blood – Serum (N=227)

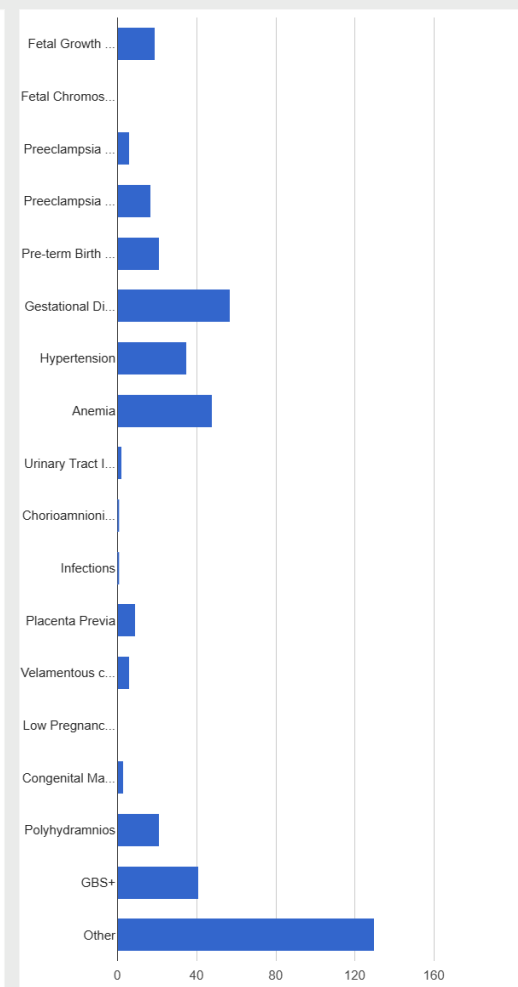
Hypertension



Pre-existing conditions



Pregnancy Complications



Tissue Collections and Processing Core Services

Study Activation Fees	UW-Madison	External
Simple Biospecimen Collection (1-2 collection sites)	\$300.00	\$400.00
Intermediate Biospecimen Collection (3-5 collection sites)	\$500.00	\$600.00
Complex Biospecimen Collection (more than 5 collection sites)	\$900.00	\$1,000.00
Tissues (Flash Frozen, Fresh)	UW-Madison	External
Tissue (per sample)	Consented: \$40.00	Consented: \$48.00
Blood (Cord or Maternal)	UW-Madison	External
Blood Serum (per sample) 0.2-1.0 mL	\$17.00	\$20.00
Blood Plasma (per sample) 0.2-1.0 mL	\$17.00	\$20.00
Blood Buffy Coat (per sample) 0.5 mL	\$25.00	\$30.00
PBMC Processing	\$45.00	\$55.00
Sample Storage	UW-Madison	External
Liquid Nitrogen Freezer Storage	\$100.00 per box/year or \$10.00 per month	\$120.00 per box/year or \$12.00 per month
-80°C Freezer Storage	\$75.00 per box/year or \$7.50 per month	\$90.00 per box/year or \$9.00 per month

General Tissue Bank Projects (OB/GYN & Collaborating Departments)

Pediatrics

- ECHO (Placenta and Cord Blood), 154 Patients, since start of ECHO 2 (May 2025) we processed 21 placentas and 31 cord blood samples
Environmental Influences on Child Health Outcomes
Pls: Drs. Baumann-Blackmore & Singh (Pediatrics)
- FAMC (Cord Blood)
PI: Dr. Ryan McAdams (Pediatrics) *Ended: September 1, 2025*

General Tissue Bank Projects (OB/GYN & Collaborating Departments)

- Cellular and Molecular Atlas of Pregnancy Complications
Dr. Stanic-Kostic – Placenta, Umbilical Cord, Maternal Blood, Cord Blood
- Function and Dysfunction of HUVEC in Normal and Preeclamptic Pregnancy *Dr. Bird*– Umbilical Cord
- Effect of Maternal Sera on Endothelial Cell Function *Dr. Bird*
- Cell-Cell Communication at the Maternal–Fetal Interface *Dr. Zheng* – Placenta, Umbilical Cord
- Kumar (Vet Sciences) – Placenta
- Distribution of Serotonin in Human Placenta *Dr. Hernandez*

General Tissue Bank Projects (OB/GYN & Collaborating Departments)

- Mechanisms of Pregnancy Vascular Adaptations – *Dr. Kumar*
- IVC–Ao Postpartum Ultrasound Evaluation – *Drs. Hoppe & Stanic*
- Deciphr ISF-Based Preeclampsia Biomarker Feasibility Study – *Dr. Hoppe*
- May Health Study – *Dr. Bhagavath*
- Placental & PBMC Maternal Blood Study – *Dr. Maria Virumbrales-Muñoz*
- Transgender Ovary Collection – *Drs. Stanic & Dr. Hanks*
- Fibroid Collection – *Dr. Bhagavath*
- Endometriosis Tissue Collection – *Dr. Bhagavath*
- Immune Response in Down Syndrome – *Dr. Matt Brown (Department of Surgery)*
- Cytokine and BDNF analysis – *Dr. Julia Gelissen (OBGYN-Onc)*
- Luminex analysis – *Dr. Marcela Ambrogi (UW Pediatric urology)*
- Maternal Serum IGF assay development – *Dr. Jenna Schmidt (Primate Center)*

Inactive / Possibly Pending:

- Surveillance Study – *Dr. Marie Daleo (State Lab of Hygiene)*
- Placenta Accreta Case – *Drs. Erin Bailey & Michael Beninati*
- Twin–Twin Transfusion Cases – *Drs. Erin Bailey & Michael Beninati*
(Investigating Amniotic Fluid for future inclusion)

Tissue Bank Projects (OB/GYN & Collaborating Departments)

NEWBORN HEALTH CONDITIONS- Ryan McAdams, MD



We want every baby to have the best possible chance at a healthy future. Current researcher Dr. Ryan McAdams in the Department of Neonatology uses samples of umbilical cord blood to understand how mast cells, a type of immune cell, might influence serious newborn health issues, such as when a baby does not receive enough oxygen to their brain. The information from these samples will help guide future treatment approaches that hopefully will help improve the health of at-risk newborns. Our goal is to develop better ways to predict and manage these conditions, ensuring healthier outcomes for all babies.

MICROBIOME- Aleks Stanic, MD; Irene Ong, PhD



The microbiome is known to be a key modulator of health. Dr. Aleks Stanic from the department of Reproductive Endocrinology and Infertility and Biostatistician Dr. Irene Ong are interested in seeing how imbalances in the microbiome during pregnancy may influence complications such as gestational diabetes, preterm delivery, and pre-eclampsia.



OBGYN

AT UW-MADISON

Hosted in OBGYN
Building on tradition.
Growing what's next.

Tissue Collection & Processing Core

From patients to possibility
High-quality specimens. Real-world impact.

Collaborative science
for healthier moms,
babies and families.

DISCOVERY
TODAY
BRIGHTER
TOMORROWS

Supporting Research Across the Spectrum



Basic Research
Understanding biology



Translational Research
Bridging discovery to impact



Clinical Research
Improving care



Industry Research
Partnering for real-world solutions

SPACE TO GROW



Our Patients



Obstetric patients



Neonatology patients



Pediatric patients

TISSUE COLLECTION & PROCESSING CORE

PEOPLE
SPECIMENS
COLLABORATION
BETTER HEALTH
TOGETHER

TODAY'S SPECIMENS
TOMORROW'S DISCOVERIES

Opportunities for Growth

1. Approach us early!



You can email VC's - we can help with:

- Budget planning
- Inclusion criteria
- Finding patients to recruit
- and more!

Let's plan together for success!



2. Take a tour!



- Meet the team
- See how L&D/TCPC and research works
- Get ideas to maximize workflows for success
- Build relationships and communication

Come see it in action!

3. Cross-departmental relationships



- We facilitate diads (e.g., peds/ob)
- Help build access to patients and study recruitment
- Stronger together!

Different departments. Shared goals. Healthier futures.

4. Industry projects



- We can support industry projects that are specimen based (e.g., EDEN)

Partnerships that move science forward.

5. Fresh tissue processing (overnight hours)



- Overnight hours not currently covered
- Could be creative!
- Consider training lab members for overnight collection/processing

Creative solutions keep the science going!

6. Pre-assembled kits for clinic or prenatal use



- Kits can be given in clinic or before delivery
- So we're not recruiting in the moment
- Helps identify and get specimens for unique populations (e.g., ECHO)
- Must be recruited prior to coming in (prenatal period)

Plan ahead. More options. More impact.

More Specimens. Stronger Collaborations. Healthier Tomorrows.



FOR GENERATIONS TO COME

Thank You

For more information,
please contact:

TCPC

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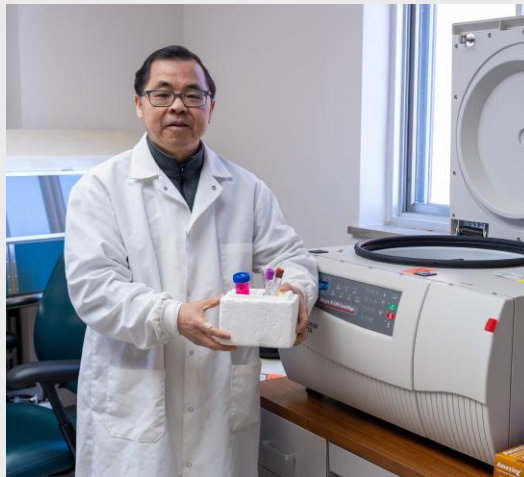
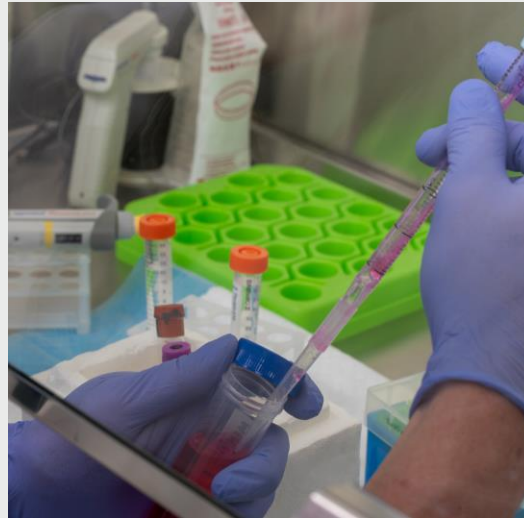
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