AIKOU OKAMOTO

Chair, IFPA 2018
Chief Professor, Chairman
Department of Obstetrics and Gynecology, The Jikei University School of Medicine

Welcome to the Jikei University School of Medicine in Tokyo. We are honored to be given the chance to organize and host the IFPA 2018 Conference. Our university is located in the center of Tokyo, a city ripe with a rich academic atmosphere, Japanese tradition, and the liveliness of an economic and cultural mecca. Although your days will filled with exciting academic discourse, we are sure that you will find time to enjoy delicious Japanese meals, traditions, and culture at night.

Although I am a gynecologic oncologist, I was charmed by the fascinating work being done in placenta research. It is my hope that the basic research on the placenta shared at this conference will soon be translated into clinical practice. That is why I designated the theme for IFPA 2018 to be “Clinical Growth via Placenta”.

We think we have been able to design a program in which you will be very satisfied. A Keynote Lecture will be delivered by Professor Dennis Lo. Professor Lo is the Director of the Li Ka Shing Institute of Health Sciences and the Li Ka Shing Professor of Medicine at The Chinese University of Hong Kong and recipient of the prestigious Future Science prize. He will present on “Non-invasive Prenatal Testing (NIPT)”.

We have also arranged for a Keynote Lecture to be given by Dr. Akihiro Umezawa, the director of Regenerative Medicine Center, and vice director of National Center for Child Health and Development. Dr. Umezawa will present on his ground-breaking work in stem cell research.

We have organized multiple symposiums covering topics ranging from genomic sequencing of placental tissue to tissue engineering. We have also set up 9 workshops entitled, “Extracellular vesicles in pregnancy”, “Pre-eclampsia and the placenta”, “Drug delivery in pregnancy”, “Reproduction and placentation among ocean-living species”, “Abnormally Invasive Placenta”, “Impact of infection on placental biology”, “Imaging of the Placenta”, “Epigenetics” and “Gestational Trophoblastic Disease (GTD)”.

Additionally, we have arranged a “Trophoblast Research Award Lecture”, “NIH Award Lecture”, “IFPA Andree Gruslin Award Lecture”, “IFPA Senior Award Lecture”, “Gabor Than Award Lecture”, “New Investigator Presentations”, “Early Career Session”, and a newly designed “Mid Career session”.

In addition to scientific content, we have prepared a fantastic Japanese style Welcome Reception, Early Career Researcher’s (ECR) Social Meeting, and Gala Dinner. We hope you will make a lot of discoveries, learn valuable knowledge, and exchange interesting opinions among many researchers from many countries.

For those also interested in some sightseeing, Tokyo is full of charms. From the Jikei University, you can visit attractive areas including Ginza, Roppongi, Akihabara, Shibuya, Asakusa and Shinjuku etc., very easily. You can arrive at the Jikei University from Haneda Airport within 30 min., and from Narita Airport in 80 min.

We hope that the IFPA 2018 Tokyo conference will be one you will never forget.

Claire Roberts

President, IFPA

It is with great pleasure that I welcome you to IFPA 2018 in Tokyo. IFPA meets in Japan just every six years so it is wonderful to be here once again. This year the Japan Placenta Association is hosting the meeting and we meet with members of the Japan Trophoblastic Diseases Society.

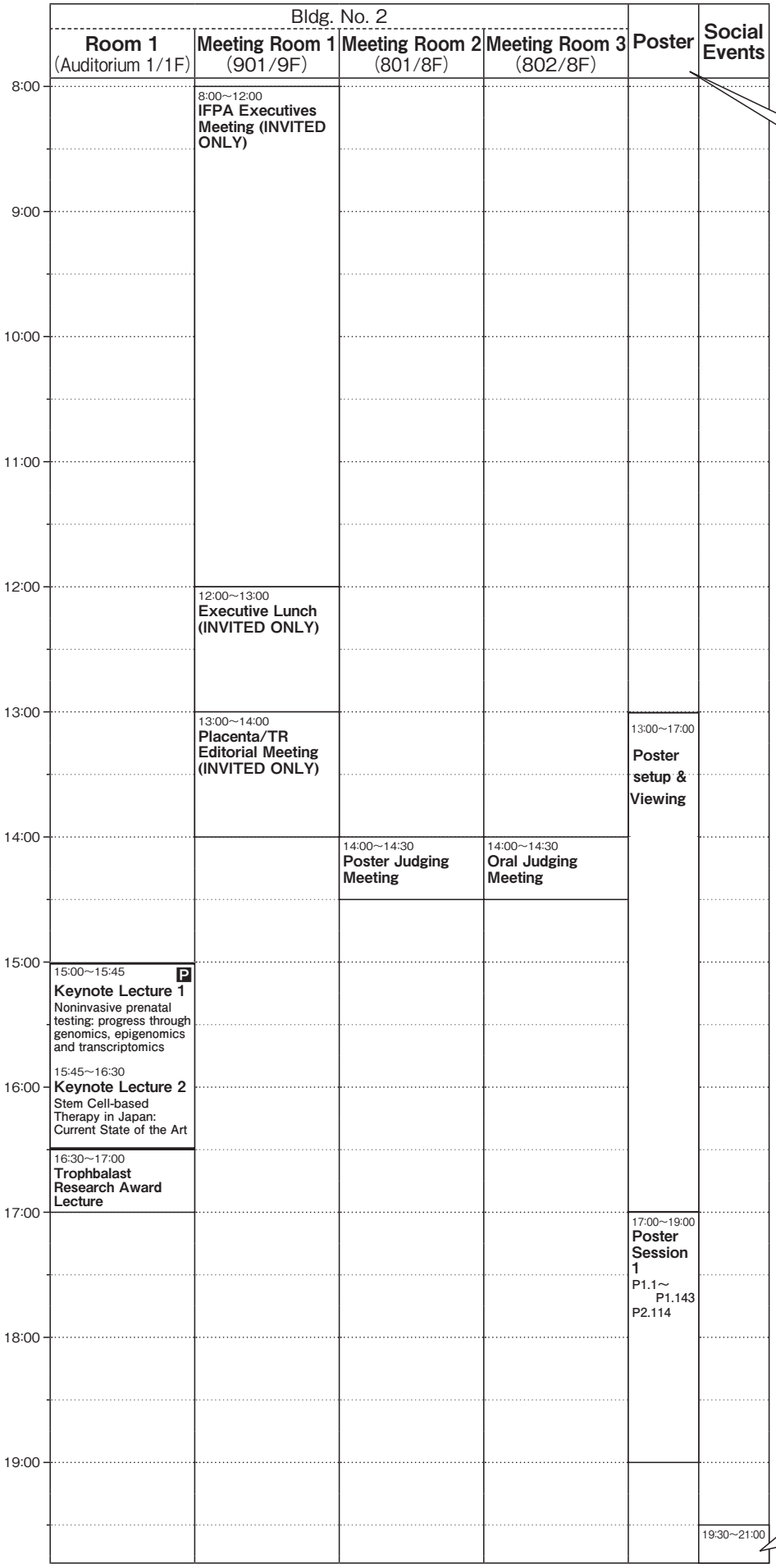
The placenta was known in Ancient times. We are likely familiar with the image of the Pharoah in ancient Egypt with his attendants carrying placentas with umbilical cords attached atop long stakes in a ceremonial procession or with accounts of Aristotle's view of the nutritive function of the placenta. We are far less familiar with ancient knowledge of the placenta in Japan. Clearly the importance of the placenta was known and it was revered. For example, the Hakozaki Shrine, a Shinto shrine in Fukuoka City, was founded in 921. The placenta and umbilical cord of the shrine's guardian deity, the spirit of Emperor Ojin, born in Umimachi, Fukuoka Prefecture, were placed in a box (hako) and buried in Hakozaki. A pine tree was planted on the site as a symbol of it. It is now known as the Box Pine and is adjacent to the Shrine.

We now live in exciting times for placenta research. Technological innovations in recent years are enabling unprecedented acquisition of data. Placental differentiation, growth and function are being explored using state of the art cellular, molecular and imaging modalities. Non-invasive screening of the placenta in real time is becoming a reality and will be increasingly used to identify and monitor pregnancies at risk.

At this meeting we look forward to the opportunity to hear from senior Japanese scientists on the best of placenta research in this country, as well as from senior and new investigators from around the world. I look forward, as always, to hearing from our New Investigators and Early Career Researchers who will be the future leaders in placenta research around the world.

Finally, I take this opportunity to thank Professor Aikou Okamoto and his team for organising this wonderful meeting. I look forward to seeing old friends, making new friends and greeting the IFPA community in Tokyo, Japan.

September 21 (Fri)



Room 2 (Auditorium 2/1F, Bldg. No. 2)
Room 4 (3F, Bldg. No. 1)
Room 7 (6F, Bldg. No. 1)
Room 8 (7F, Bldg. No. 1)

Poster Sessions

Room 2 (Auditorium 2/1F, Bldg. No. 2)
Anatomy and pathology
Angiogenesis/vasculature
Cell culture/cell lines
Room 4 (3F, Bldg. No. 1)
Cell signaling
Comparative/animal models
Diabetes/obesity
Room 7 (6F, Bldg. No. 1)
Fetal growth restriction
Gene expression
Genomics/Epigenomics
Hormones/growth factors
Imaging
Room 8 (7F, Bldg. No. 1)
Immunology
Implantation and invasion
Infection and inflammation
Metabolism/mitochondria
Metabolomics/proteomics
Oxidative stress
Placental dysfunction
Preeclampsia
Prenatal diagnosis
Preterm labour and birth
Stem cells
Transport
Trophoblast biology

※Please refer to page P53~P79 for finding your poster number.

P 日本専門医機構認定講習 (for Japanese participants)

September 22 (Sat)

	Bldg. No. 2	Bldg. No. 1			Bldg. No. 2		
	Room 1 (Auditorium 1/1F)	**Room 3** (3F)	**Room 5** (5F)	**Room 6** (6F)	**Room 9** (1001/10F)	**Poster**	**Social Events**
8:00							
9:00	8:30～10:00 **New Investigator Presentation 1**					8:30～17:00 **Poster Viewing**	
10:00	10:00～10:30 **Coffee Break**				10:00～10:30 **Board of Councilors Meeting (JPA)**		
11:00	10:30～12:00 **Symposium 1** Sequencing the placenta P						
12:00	12:00～13:00 **Luncheon Seminar 1** Co-sponsor: Toitu Co., Ltd.	12:00～13:00 **Luncheon Seminar 2** Co-sponsor: Chugai Pharmaceutical Co., Ltd.					
13:00							
14:00	13:15～14:45 **Workshop 1** Extracellular vesicles in pregnancy	13:15～14:45 **Workshop 2** Pre-eclampsia and the Placenta: What's new?	13:15～14:45 **Workshop 3** Drug delivery in pregnancy: overcoming problems and developing new technologies	13:15～14:45 **Workshop 4** Reproduction and placentation among ocean-living species	13:15～14:45 **Workshop 5** Abnormally Invasive Placenta (AIP): An interactive, international perspective		
15:00	14:45～15:00 **Coffee Break**						
	15:00～16:00 **IFPA Senior Award Lecture**						
16:00		16:00～17:00 **Regional Association Business Meeting (ANZPRA)**	16:00～17:00 **Regional Association Business Meeting (EPG)**	16:00～17:00 **Regional Association Business Meeting (PAA)**			
	16:10～16:25						
	16:25～16:40						
17:00	**Regional Association Business Meeting (JTD)**					17:00～19:00 **Poster Session 2** P2.1～P2.142 P1.7 P1.8	
	Regional Association Business Meeting (JPA)						
18:00							
19:00							19:30～21:00 **ECR Social Meeting**

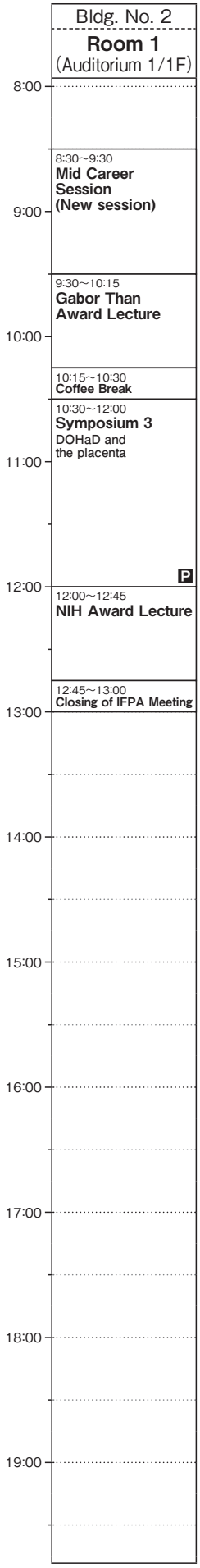
P 日本専門医機構認定講習 (for Japanese participants)

September 23 (Sun)

	Bldg. No. 2	Bldg. No. 1			Bldg. No. 2			
	Room 1 (Auditorium 1/1F)	**Room 3** (3F)	**Room 5** (5F)	**Room 6** (6F)	Meeting Room 3 (802/8F)	Meeting Room 4 (803/8F)	**Poster**	**Social Events**
8:00								
	8:30～10:00 **New Investigator Presentation 2**						＊～14:30 **Poster Remove and Setup TR Award Poster Finalists** (Room4)	
9:00								
10:00		10:00～10:05 **A word from our journal: Placenta**						
	10:05～10:30 **Coffee Break**							
	10:30～12:00 **Symposium 2** Making better placentas and healthy pregnancies FGR DM P							
11:00								
12:00	12:00～13:00 **Luncheon Seminar 3** Co-sponsor: Mochida Pharmaceutical Co., Ltd.	12:00～13:00 **Luncheon Seminar 4** Co-sponsor: GeneTech, Inc.				12:00～13:00 **Soma Award Meeting**		
13:00	13:00～13:30 **IFPA Annual Meeting**							
	13:30～15:00 **Workshop 6** Impact of infection on placental biology	13:30～15:00 **Workshop 7** Imaging of the Placenta	13:30～15:00 **Workshop 8** Epigenetics	13:30～15:00 **Workshop 9** Gestational Trophoblastic Disease (GTD)				
14:00								
15:00	15:00～15:30 **Coffee Break**				15:00～15:30 **Oral Judging Meeting**		15:00～16:30 **TR Award Poster Finalists** (Room 4)	
	15:30～16:30 **Early Career Session**							
16:00								
	16:30～17:15 **IFPA Andree Gruslin Award Lecture**							
17:00								
18:00								
19:00						Gala Dinner and Dance at Tokyo Prince Hotel (2F)		19:00～22:30

P 日本専門医機構認定講習 (for Japanese participants)

September 24 (Mon)



P 日本専門医機構認定講習 (for Japanese participants)

Dates and Venue

● Dates: September 21 (Fri) - 24 (Mon), 2018

● Venue: **The Jikei University School of Medicine, Building No.1 & No.2**
3-25-8, Nishi-Shimbashi, Minato-ku, Tokyo, 105-8461, Japan
Tel: +81-(0)3-3433-1111 (Main)

Official Website of the Congress

http://ifpa2018.umin.jp/

Registration

Registration Desk is open as follows:

Sep. 21 (Fri)	Sep. 22 (Sat)	Sep. 23 (Sun)	Sep. 24 (Mon)
13:00 - 19:00	8:00 - 19:00	8:00 - 18:00	8:00 - 12:45

・Registration includes access to all IFPA 2018 sessions/exhibition.
・All registrants are invited to the Welcome Reception on September 21 (Fri).

PC Preview Opening Time

PC Preview Desks are open as follows:

Sep. 21 (Fri)	Sep. 22 (Sat)	Sep. 23 (Sun)	Sep. 24 (Mon)
13:00 - 19:00	8:00 - 19:00	8:00 - 18:00	8:00 - 12:45

・There are two different locations for PC Preview.
・PC Preview ① is only for the speakers who present at Room 1.

Lunch

Lunch boxes are provided free of charge at all luncheon seminars. Lunch boxes are served at each Room for each luncheon seminar on a first-come, first-served basis.

Catering

Complimentary tea, coffee, and water will be served in the same area during the scheduled breaks.

Prayer Room

A prayer room is available on request. Please contact the General Information Desk at Registration Area.

Information for Participants

1) Participants are responsible for making their own travel arrangement. If there are any questions regarding travel arrangements, please contact our official travel agency, JTB.
ifpa2018@gmt.jtb.jp
2) If there are any questions regarding the congress and its scientific program, please contact the Congress Secretariat.
ifpa2018@macc.jp
3) Visa may be necessary for citizens of certain countries to enter Japan. Please refer to your local embassy or travel agency.

Wi-Fi

Free Wi-Fi is available ONLY in Room 1 and Room 2 (Auditorium/1F, Bldg. No.2).

Social Events

[Welcome Reception]

・Date and Time: 19:30 - 21:00, Sep. 21 (Fri)
・Venue: Magnolia Hall, 2F, Tokyo Prince Hotel
3-3-1 Shiba-koen, Minato-ku Tokyo, 105-8560, Japan
Tel: +81-(0)3-3432-1111

・Dress code: Informal (A buffet style dinner will be served.)
・All registrants are invited to the Welcome Reception with free of charge.

[ECR Social Meeting]

※Only pre-registered delegates can participate.
・Date and Time: 19:30 - 21:00, Sep. 22 (Sat)
・Venue: Japanese style bar/Sake to Nagomi to Niku to Yasai Shimbashi
Please contact the General Information Desk at Registration Area to get detail.

[Gala Dinner and Dance]

※Only pre-registered delegates can participate.
・Date and Time: 19:00 - 22:30, Sep. 23 (Sun)
・Venue: Providence Hall, 2F, Tokyo Prince Hotel
3-3-1 Shiba-koen, Minato-ku Tokyo, 105-8560, Japan
Tel: +81-(0)3-3432-1111

・Dress code: Informal (A Seated style dinner will be served.)

IFPA 2018 CONGRESS APP

The official IFPA 2018 Congress App is available as a free download for iPhone, Android and all tablets, and in a web version for all other devices.

- View all meeting information on your mobile device (program, abstracts, speakers, etc.)
- Browse the program by date and time, theme, and track
- Search for individual abstracts, sessions and speakers
- View full abstracts without the abstract booklet
- Build a personalized schedule with built-in reminders
- Receive important conference-related notifications and updates

Works across devices

- Mobile App for iPhone, Android and tablets
- Web App for all other devices
- Multi-device sync

Download the IFPA 2018 Congress App

- To download Mobile App, search *IFPA 2018* in your Mac App store/Google Play store.

Download on the Mac App Store　GET IT ON Google Play

- Web version is linked from our official website.

http://ifpa2018.umin.jp/

[Speaker Presentation Guidelines]

Due to strict time constraints between sessions, it will not be possible to amend slides in the meeting rooms. All speakers must ensure that any amendments are completed at PC Preview prior to the start of their session.

1) All speakers are requested to bring their presentation data on USB Flash Drive, CD-R or their own computer to PC Preview (See details below) and to upload their presentation data at least **60-min before** their session.
2) All speakers are requested to be seated at the Next Speaker's seats located in the left front row **30-min before** their session starts.

Guidelines for PowerPoint Presentations

- Accepted application format is Windows PowerPoint 2007/2010/2013/2016.
- Recommended typefaces are Century, Century Gothic, Arial, and Times New Roman. Please avoid special characters.
- To clearly identify your presentation, please save it with your given & family name as part of the file name i.e. jane_smith.ppt.; with any additional information required following EG: john_smith_paper2.ppt
- Please ensure your first slide is a title slide stating-your name, presentation title and affiliation.
- Please choose the "On screen show" output within the "slide set up" menu when creating your presentation: this option will be checked by the preview technician and may alter the formatting or layout of your slides.
- Video files should ideally be saved within PPT if you have 2010 or later otherwise it should be saved to the same storage media as the main ".ppt" file.
- Non-standard codecs used to render and playback video files should also be included with the presentation.
- Graphics, written or tabular material must be of adequate size to be clearly visible to all delegates, even at the back of the hall. In general, it should not exceed 5-6 lines of bold print containing 6-7 words per line. If a larger amount of information needs to be presented, it should be split into several slides.
- Keep your material simple.
- Essential information and font should be large and bold.
- Line graphs and simple drawings are more effective than tables of figures.
- Keep slide transitions simple and consistent.
- Slides are easier to read when there is a high contrast between the text and the background (e.g. white/yellow letters on a black/dark blue/dark green background). Avoid using black text.

Notes:

- Speakers will not be permitted to use their own laptops for their presentations, as there will be insufficient time between papers to connect and disconnect individual computers: speakers must use the supplied computer hardware.
- The presentation will be saved to the show computer during check-in at the preview room.
- **If you create your presentation using a Macintosh and/or moving images, please bring your own computer.**
- The presentation laptop will be connected at the lectern and the room technician will have a back up to switch to if needed.
- A technician will be available at PC Preview to assist with any final enquiries, please attend at least **60-min** prior to the session start.

Information for Chairs of Oral sessions

All chairs of oral sessions are requested to be seated at the Next Chair's seats located in the right front row **30-min** before their session starts.

[Poster Preparation Guidelines]

All posters should be on display from 14:00, Sep. 21 (Fri) until 19:00, Sep. 22 (Sat). Posters left in-situ after 14:30, Sep. 23 (Sun) will be discarded unless collected.

IMPORTANT: PLEASE NOTE THAT YOUR FINAL ABSTRACT NUMBER IS THE SAME AS YOUR POSTER BOARD NUMBER. THIS NUMBER WILL BE AFFIXED TO THE BOARD ALLOCATED TO YOU AT THE CONFERENCE.

Please stay in front of your poster within the time Poster Session in order to encourage sufficient discussion.

Poster Finalists

The finalists will be announced by the morning, Sep. 23 (Sun). If you are nominated as a finalist, **please bring your poster to Room 4 before 14:30, Sep. 23 (Sun) by yourself**.

Poster Scheme of Presentation

1) Each abstract will be allocated one numbered board. The boards are covered in fabric to which the display material must be affixed using Velcro: this will be affixed to the poster-boards by the Secretariat. No drawing pins, staples, sticky pads or any other form of adhesive should be used.
2) A presentation number to be placed at the top left of the poster will be provided by the Secretariat. Each author is requested to indicate the "Title", "Authors' names" and "Authors' affiliations", "City, Country" at the top right of the panel within an area measuring 70 cm wide by 20 cm high.
3) The poster contents should be arranged to describe the "Objective", "Methods", "Results" and "Conclusion" of the presentation.
4) The usable area of the contents is the size measuring 90 cm wide by 180 cm high. The layout of the presentation contents is at the authors' discretion.
5) Drawings, diagrams and photos are extremely helpful and often necessary to display results and conclusions. Make sure that your illustrations are easy to understand; do not overload any chart or drawing with information.
6) If the first author is not able to attend the Meeting, then a co-author will be able to represent on your behalf.
7) The Secretariat will be responsible for providing the poster board number and the presenter will be responsible for preparing their title, which must correspond with the title already submitted. Please allow 20cm wide by 20cm high approx. for the poster board number, which will be placed in the top left-hand corner of the board. The title should be placed alongside the number.
8) Adequate lighting will be provided. Film projectors, video-tapes and recorders, computer equipment and any other free standing exhibits will not be permitted.

Recommended Font Sizes And Styles:

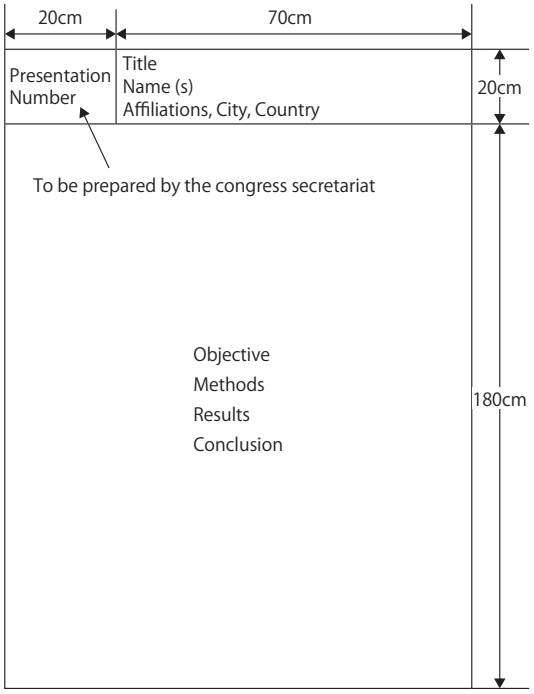
You should use dark text colours on a light background, or vice versa. Recommended fonts are Times New Roman, Calibri, Ventana and Arial, as these are easy to read.

Title: 80-100 pt (font size).

Authors and institutions: 30-40 pt.

Main text: 32-40 pt, although 28 pt or even 24 pt could be used in isolated areas, or if you have a very large amount of text.

References/Bibliography: 24-32 pt.



Disclaimer/Liability

The Organizing Committee cannot accept liability for injuries or losses of whatever nature incurred by participants, nor for loss of or damage to their luggage and/or personal belongings. Please check the validity of your own travel insurance.

All reasonable endeavors will be made to hold IFPA 2018 and to present its program as scheduled under circumstances which assure the comfort and safety of all participants. However, neither IFPA nor its committees, representatives or agents, shall be held liable by any person as a result of the cancellation of IFPA 2018 or of any of the arrangements, programs or plans connected therewith, or for any injury, damage or inconvenience which may be suffered by any person while travelling to or from, or during such person's presence in Japan in connection with this Meeting.

Participants are fully liable for damages caused to third parties and property.

All delegates shall have a valid, fully comprehensive third party travel and/or liability insurance.

Emergency Phone Numbers

In an emergency, please dial 110/119, from any phone, dial 110 is to contact the police, dial 119 is to fire or ambulance services. Any emergencies that occur whilst onsite at IFPA 2018 must be reported to the Congress at Registration Desk.

First Aid Room

If you are in need of medical attention, please make yourself known to any member of the Congress Secretariat.

Recording

Recording by any means (photograph, audio or video) of any presentations or sessions at IFPA 2018 is strictly forbidden. First Authors who wish to photograph their own poster presentations are allowed to do so.

Security

Please wear your name badge at all times. Entrance will not be permitted to delegates who are not wearing their badge.

Smoking Policy

This is a non-smoking event. Designated smoking areas will be situated outside of the venue.

General Information about Japan

Passport & Visa

To visit Japan, visitors must have a valid passport. A visa is required for citizens of countries that do not have visa exemption agreements with Japan. Please contact your nearest Japanese Embassy or Consulate for visa requirements.

Duty Free Imports

Personal effects and professional equipment can be brought into Japan duty free as long as the items and quantities are deemed reasonable by the customs officer. Visitors can also bring in 400 cigarettes, 500g of tobacco or 100 cigars; 3 bottles of alcoholic beverages; 2oz of perfume; and gifts and souvenirs with a total market price of less than 200,000 yen or equivalent.
There is no allowance for tobacco or alcoholic beverages for persons aged 19 years or younger.
Firearms and other types of weapons and narcotics are strictly prohibited.

Insurance

The organizer accepts no responsibility for accidents that might occur. Delegates are encouraged to purchase travel insurance before leaving their home countries. Insurance plans typically cover accidental loss of belongings, medical costs in case of injury or illness, and other risks of international travel.

Climate

Heat exceeding 30 degrees can linger into September, and this time of year is punctuated by typhoons meaning that travel and outdoor events can be disrupted, however, the temperature and humidity gradually drops ushering in gloriously crisp and comfortable autumn.

Currency Exchange

Only Japanese yen (¥) is acceptable at regular stores and restaurants. Certain foreign currencies may be accepted at a limited number of hotels, restaurants and souvenir shops. You can buy yen at foreign exchange banks on presentation of your passport.

Credit Cards

VISA, MasterCard, Diners Club and American Express are widely accepted at hotels, department stores, shops, restaurants and nightclubs.

Tipping

In Japan, tips are not necessary anywhere, even at hotels and restaurants.

Electricity

Electric current is uniformly 100 volts AC throughout Japan. However, electricity is provided at either 50 or 60 cycles, depending on location: 50 cycles in eastern Japan (including Sendai and Tokyo); and 60 cycles in western Japan.

Leading hotels in major cities often provide two types of electrical outlets (100 volts and 220 volts), but their sockets usually accept only two pronged plugs.

Travel IC Card

Suica/PASMO

Purchase a Suica/PASMO card from one of the JR or other lines' station ticket machines—500 yen deposit is required. After charging it up, you can begin using it immediately. It is generally accepted all over Tokyo and throughout Japan. Suica/PASMO cards are accepted on most buses in the Tokyo area and also some taxis, vending machines, coin lockers, convenience stores and in other retailers. Return your card at the end of your stay to reclaim your deposit.

日本人参加者の皆さまへ

1. 専門医等の出席証明について（e 医学会カードでの受付）

・日本産科婦人科学会会員の方は，研修出席証明の単位が付与されます．（会期中 1 回）
・日本産婦人科医会会員の方は，研修参加証が発行されます．（1 日 1 枚）

2. 日本専門医機構　単位付与講習について

IFPA2018 では，下記のセッションにおいて日本専門医機構の単位を付与いたします．

9 月 21 日（金）			
15:00 - 16:30	第 1 会場（2 号館　1 階講堂）	Keynote Lecture 1&2	産婦人科領域講習（1 単位）

9 月 22 日（土）			
10:30 - 12:00	第 1 会場（2 号館　1 階講堂）	Symposium 1	産婦人科領域講習（1 単位）

9 月 23 日（日）			
10:30 - 12:00	第 1 会場（2 号館　1 階講堂）	Symposium 2	産婦人科領域講習（1 単位）

9 月 24 日（月）			
10:30 - 12:00	第 1 会場（2 号館　1 階講堂）	Symposium 3	産婦人科領域講習（1 単位）

各講習会場で対象セッション開始の 10 分前から講習参加受付を開始します．
開始時間 10 分を過ぎた場合，聴講は可能ですが，機構専門医単位付与はされません．

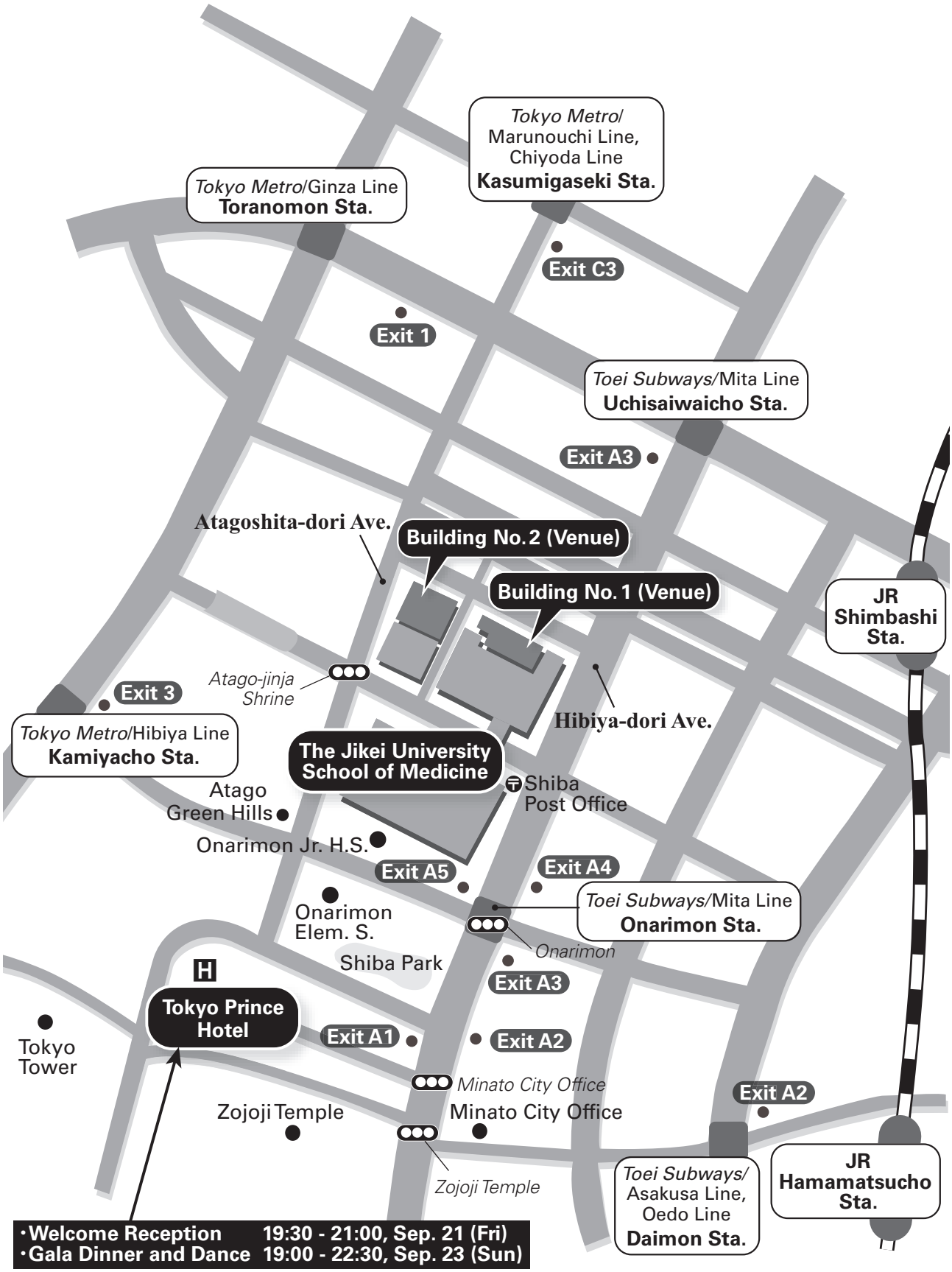
・e 医学会カードで参加登録を行いますので必ずお持ちください．
・ご出席の先生はご自身の責任で e 医学会カードで参加登録を行ってください．

関連会議一覧

9 月 20 日（木）		
16:30 - 17:30	会議室 1（2 号館　9 階 901）	日本絨毛性疾患研究会　世話人会
17:30 - 18:30	会議室 1（2 号館　9 階 901）	日本胎盤学会　理事会

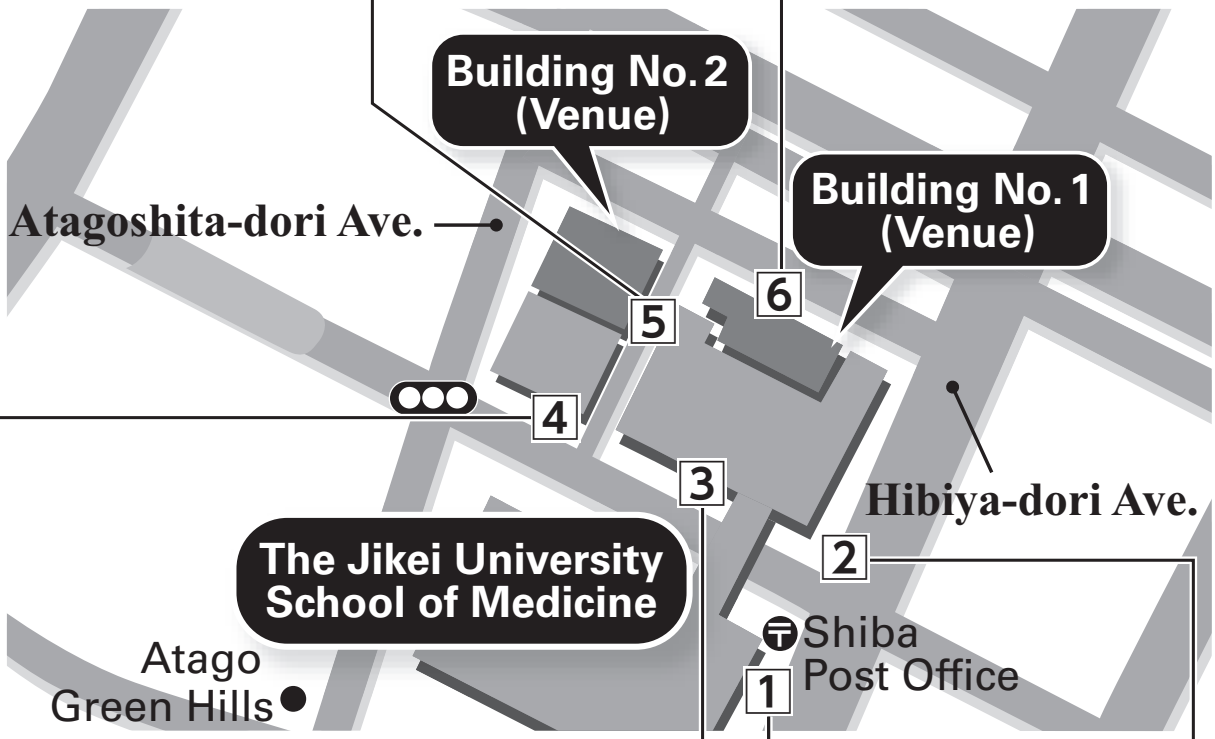
9 月 22 日（土）		
10:00 - 10:30	第 9 会場（2 号館　10 階 1001）	日本胎盤学会　評議員会
16:10 - 16:25	第 1 会場（2 号館　1 階講堂）	日本絨毛性疾患研究会　総会
16:25 - 16:40	第 1 会場（2 号館　1 階講堂）	日本胎盤学会　総会

SITE MAP


Tokyo Metro/
Marunouchi Line,
Chiyoda Line
Kasumigaseki Sta.
Tokyo Metro/Ginza Line
Toranomon Sta.
Exit C3
Exit 1
Toei Subways/Mita Line
Uchisaiwaicho Sta.
Exit A3
Atagoshita-dori Ave.
Building No. 2 (Venue)
Building No. 1 (Venue)
JR
Shimbashi
Sta.
Atago-jinja
Shrine
Exit 3
Hibiya-dori Ave.
Tokyo Metro/Hibiya Line
Kamiyacho Sta.
The Jikei University
School of Medicine
Shiba
Post Office
Atago
Green Hills
Onarimon Jr. H.S.
Exit A5
Exit A4
Toei Subways/Mita Line
Onarimon Sta.
Onarimon
Elem. S.
Onarimon
Shiba Park
Exit A3
H
Tokyo Prince
Hotel
Exit A1
Exit A2
Tokyo
Tower
Minato City Office
Minato City Office
Exit A2
Zojoji Temple
Zojoji Temple
Toei Subways/
Asakusa Line,
Oedo Line
Daimon Sta.
JR
Hamamatsucho
Sta.
・Welcome Reception 19:30 - 21:00, Sep. 21 (Fri)
・Gala Dinner and Dance 19:00 - 22:30, Sep. 23 (Sun)


5


6


Building No. 2
(Venue)
Building No. 1
(Venue)
Atagoshita-dori Ave.
5
6
4
3
Hibiya-dori Ave.
The Jikei University
School of Medicine
2
Shiba
Post Office
1
Atago
Green Hills


4


1


3


2

■ Subway

Line	Station	Exit	Access
Toei Subways			
Toei Mita Line	Onarimon Sta.	Exit A5	Approx. 3 minutes on foot
	Uchisaiwaicho Sta.	Exit A3	Approx. 10 minutes on foot
Toei Asakusa Line	Shimbashi Sta.	Exit 8	Approx. 12 minutes on foot
Toei Asakusa Line, Toei Oedo Line	Daimon Sta.	Exit A2	Approx. 13 minutes on foot
Tokyo Metro			
Hibiya Line	Kamiyacho Sta.	Exit 3	Approx. 7 minutes on foot
Ginza Line	Toranomon Sta.	Exit 1	Approx. 10 minutes on foot
	Shimbashi Sta.	Exit 8	Approx. 12 minutes on foot
Marunouchi Line, Chiyoda Line	Kasumigaseki Sta.	Exit C3	Approx. 13 minutes on foot

■ Train (JR)

- 12 minutes on foot from JR Shimbashi Station. (5 minutes by taxi)
- 15 minutes on foot from JR Hamamatsucho Station. (8 minutes by taxi)
- 12 minutes by taxi from JR Tokyo Station.

■ From Haneda Airport

By Tokyo Monorail

Haneda Airport
・Terminal 1 Sta.
・Terminal 2 Sta.
・Int'l Terminal Sta.

→ Tokyo Monorail

Hamamatsucho Sta.
(transfer to JR Yamanote Line)

・8 minutes by taxi from Hamamatsucho Sta. to the venue.

→ JR

JR Shimbashi Sta.

・5 minutes by taxi from Shimbashi Sta. to the venue.

By Train (Keikyu Line & Toei Mita Line)

Haneda Airport
・Domestic Terminal Sta.
・Int'l Terminal Sta.

→ Keikyu Line

Mita Sta.

→ Toei Mita Line

Onarimon Sta.

■ From Narita Airport

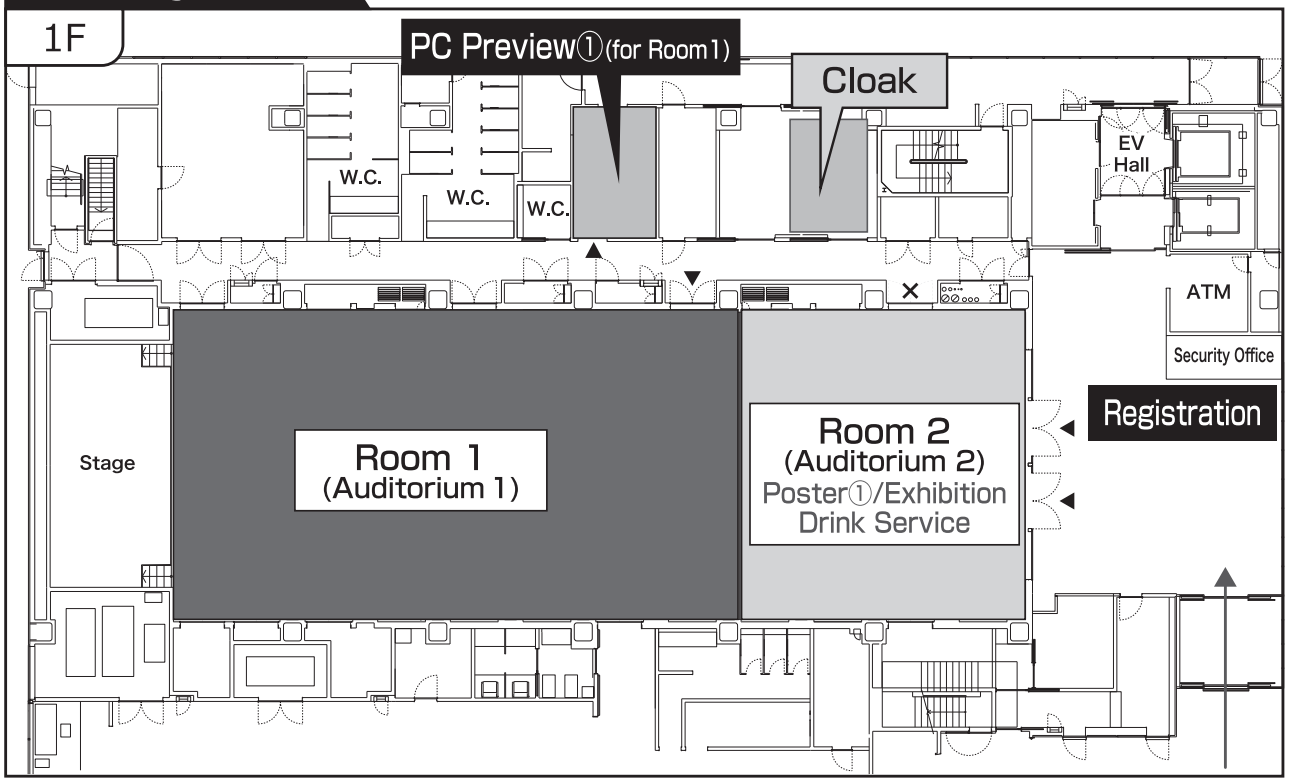
By Train Approx. 80 minutes to Daimon Station, Toei Asakusa Line (via Narita Sky Access Line, Keisei Line, Toei Asakusa Line)

By Car Approx. 90 minutes by taxi during off-peak hours (Express highway, via Shibakoen Ramp)

By Bus Approx. 120 mintues by Airport Limousine Bus (bound for Shiba area)

Building No.2

1F



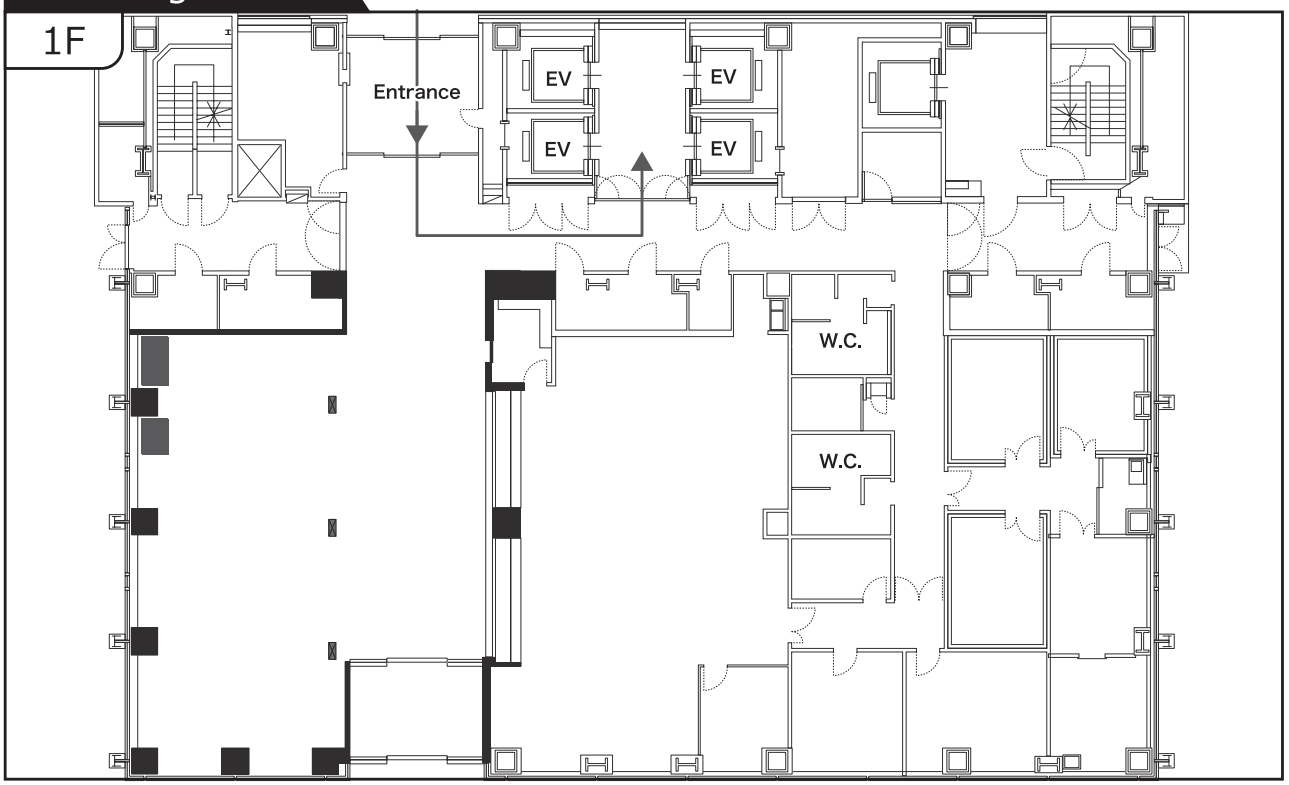
Building No.2
(Other Rooms)

Room 9	1001 / 10F, Bldg. No.2
Meeting Room 1	901 / 9F, Bldg. No.2
Meeting Room 2	801 / 8F, Bldg. No.2
Meeting Room 3	802 / 8F, Bldg. No.2
Meeting Room 4	803 / 8F, Bldg. No.2

FLOOR MAP

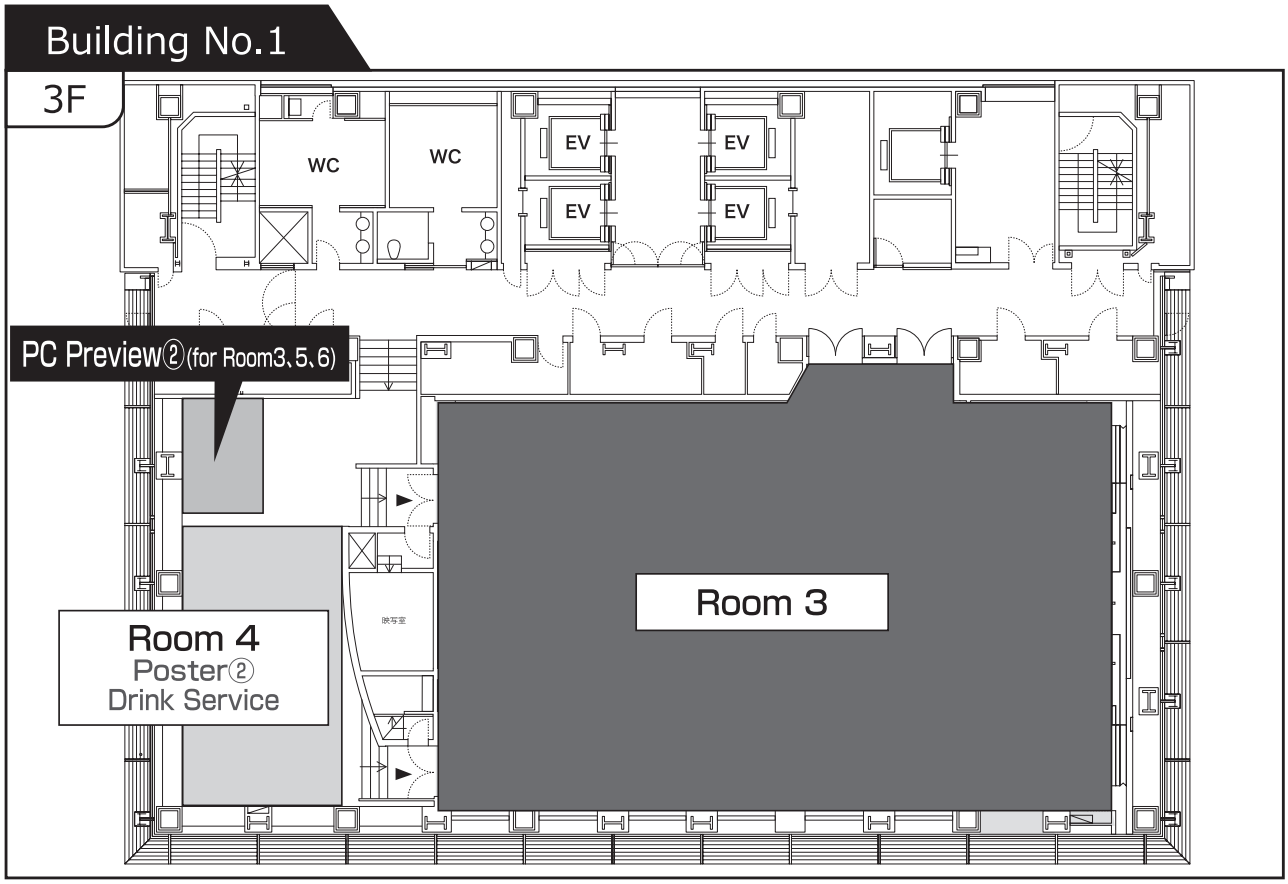
Building No.1

1F



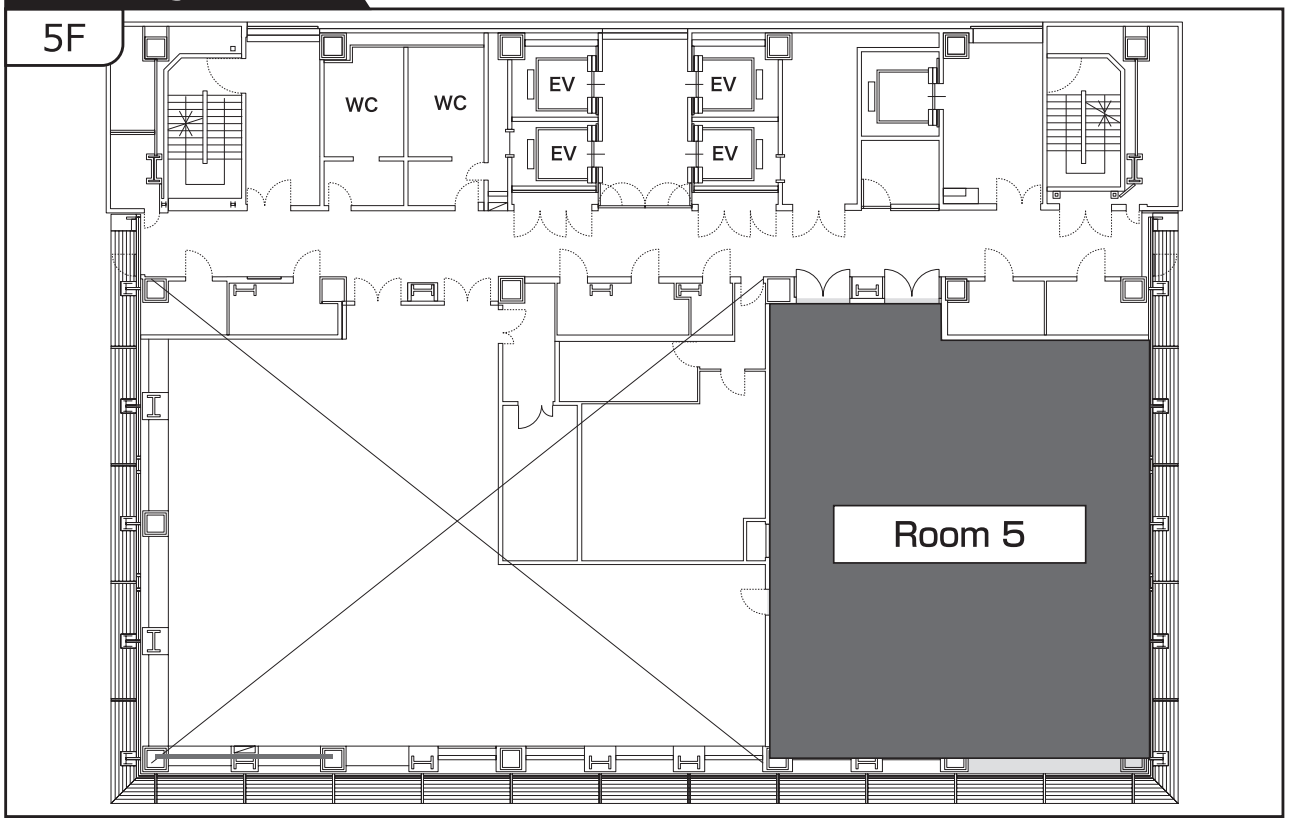
Building No.1

3F



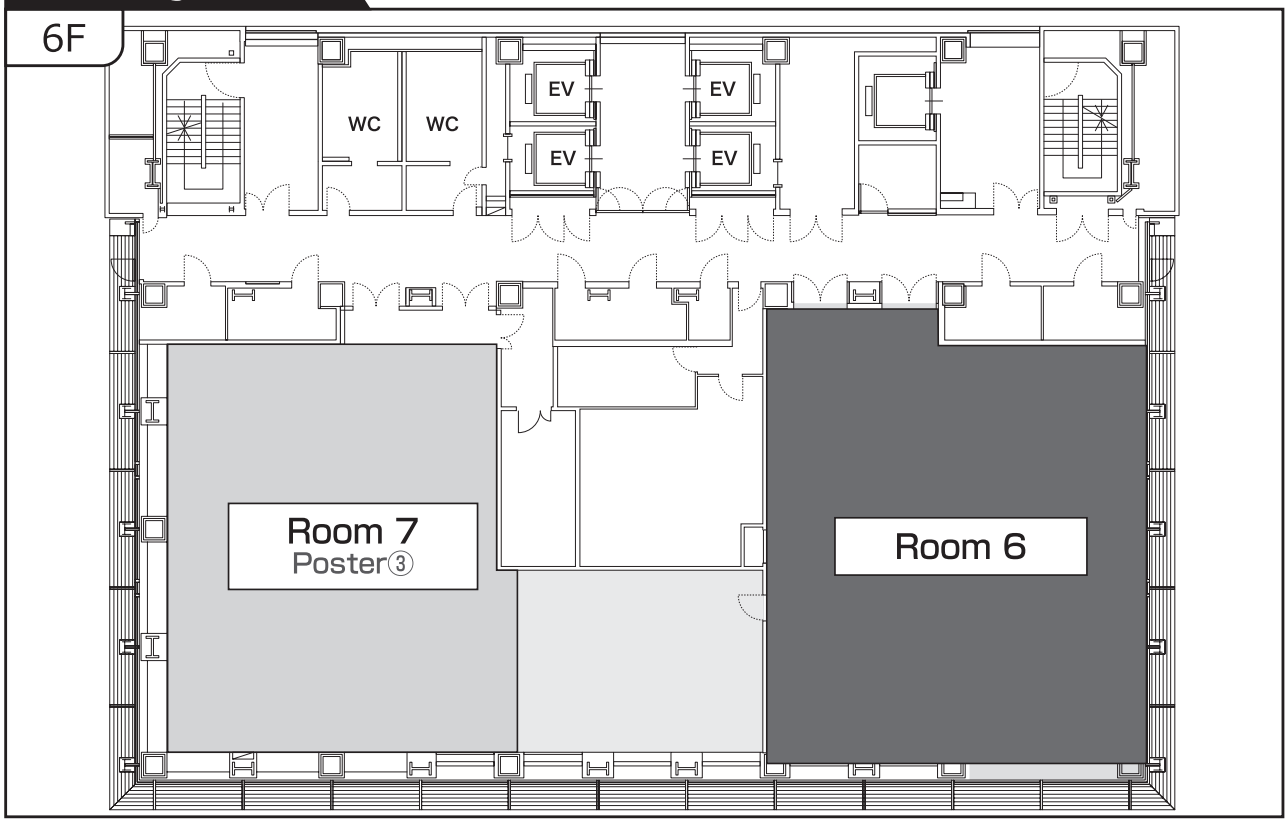
Building No.1

5F



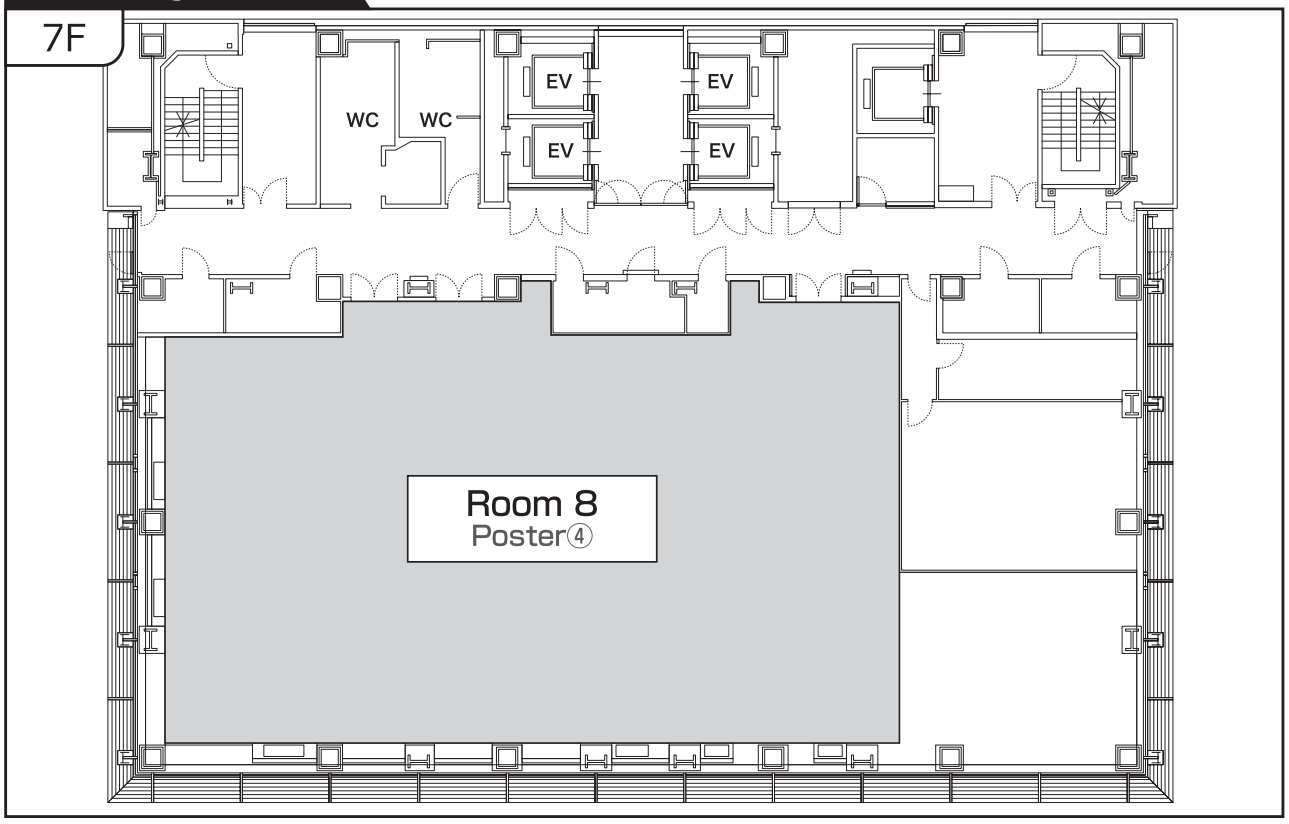
Building No.1

6F



Building No.1

7F



IFPA 2018 Local Committee (Japan)

Sadakazu Aiso
Daisuke Aoki
Tomoyuki Fujii
Hiroshi Fujiwara
Kazuhiko Ino
Atsuo Itakura
Mitsutoshi Iwashita
Naohiro Kanayama
Hidetaka Katabuchi
Kiyoko Kato
Fumitaka Kikkawa
Tadashi Kimura
Ikuo Konishi
Masayasu Koyama
Toshiro Kubota
Yoshiki Kudo
Hideaki Masuzaki
Aikou Okamoto
Norimasa Sagawa
Shigeru Saito
Kouichiro Shimoya
Makio Shozu
Satoru Takeda
Toshiyuki Takeshita
Toshihiro Takizawa
Kazuhiro Tamura
Norio Wake
Tatsuo Yamamoto
Jun Yoshimatsu

IFPA 2018 International Scientific Advisory Committee

Ganesh Acharya (Sweden)
Willam Ackermann III (USA)
Christiane Albrecht (Switzerland)
Nadia Alfaidy (France)
Graham Burton (UK)
Larry Chamley (New Zealand)
Steven Charnock-Jones (UK)
Pascale Chavatte-Palmer (France)
Chie-Pein Chen (Taiwan)
Vicki Clifton (Australia)
Sally Collins (UK)
Brian Cox (Canada)
Jan-Jaap Erwich (The Netherlands)
Marijke Faas (The Netherlands)
Sylvie Girard (Canada)
Thaddeus Golos (USA)
Natalie Hannan (Australia)
Debra Heller (USA)
Sebastian Ilanes (Chile)
Nicholas Illsley (USA)
Joanna James (New Zealand)
Thomas Jansson (USA)
Alicia Jawerbaum (Argentina)
Helen Jones (USA)
Martin Knöfler (Austria)
Yoshiki Kudo (Japan)
Martha Lappas (Australia)
Rohan Lewis (UK)
Terry Morgan (USA)
Padma Murthi (Australia)
Leslie Myatt (USA)
Aikou Okamoto (Japan)
Mana Parast (USA)
Claudia Perez-Leiros (Argentina)
Anthony Perkins (Australia)
Margaret Petroff (USA)
Jürgen Pollheimer (Austria)
Claire Roberts (Australia)
Wendy Robinson (Canada)
Julienne Rutherford (USA)
Yoel Sadovsky (USA)
Richard Saffery (Australia)
Carlos Salomon (Australia)
Marie van Dijk (The Netherlands)
Christian Wadsack (Austria)
Melissa Westwood (UK)
Guy Whitley (UK)
Stacy Zamudio (USA)

Chair of IFPA Awards Committee

Padma Murthi (Australia)

Chairs of Trophoblast Research Award Committee

Mark Dilworth (UK)
Theresa Powell (USA)

Dennis Lo

Dennis Lo is the Associate Dean (Research) of the Faculty of Medicine, the Director of the Li Ka Shing Institute of Health Sciences and Chairman of the Department of Chemical Pathology of The Chinese University of Hong Kong. He received his undergraduate education from the University of Cambridge, and his Doctor of Medicine and Doctor of Philosophy degrees from the University of Oxford. He discovered the presence of cell-free fetal DNA in maternal plasma in 1997 and is a key driver of non-invasive prenatal diagnosis. He has also pioneered many non-invasive approaches for detecting cancer-associated molecular aberrations in blood. He is a Fellow of the Royal Society (UK) and a Foreign Associate of the US National Academy of Sciences, and has been awarded the King Faisal International Prize in Medicine in 2014 and the Future Science Prize in 2016.

Akihiro Umezawa

Position :

Deputy Director
Research Institute
National Center for Child Health and Development

Education and Professional Career :

1985 Keio Univ School of Medicine, MD, Japan
1990 Keio Univ School of Medicine, PhD, Japan
1991 Postdoctoral Fellow, UCSD, USA
1992 Postdoctoral Fellow, The Burnham Institute, USA
1995 Assistant Professor, Keio Univ School of Medicine, Japan
1999 Associate Professor, Keio Univ School of Medicine, Japan
2002 Department Head and Chairman, Department of Reproductive Biology, National Center for Child Health and Development, Japan
2011 Deputy Director, National Center for Child Health and Development, Japan

Claire Roberts

Professor Claire Roberts Bio IFPA 2018

Professor Claire Roberts is the Deputy Director of the Robinson Research Institute at the University of Adelaide and leads its Pregnancy and Birth Theme. She is President of the International Federation of Placenta Associations and past President of the Australian and New Zealand Placenta Research Association. Claire has won over $22 million in research funding. She has significant expertise in cellular and molecular mechanisms in placental development and using the SCOPE Pregnancy cohort has identified genetic, clinical and lifestyle factors that influence pregnancy outcome in women. She has lead the development of patented algorithms for use as screening tools to predict which women in their first pregnancy are at risk of developing the four main complications of pregnancy, preeclampsia, preterm birth, intrauterine growth restriction and gestational diabetes. Claire has NIH Human Placenta Project funding to non-invasively monitor placental health across gestation using multi-omics.

Kenichiro Hata

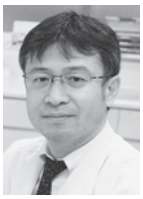
Kenichiro Hata M.D., Ph.D.

Academic Background:

1. Clinical fellow, Department of Gynecology and Obstetrics, Kyushu University, Japan, 1992-1999
2. Postdoctoral research fellow, Massachusetts General Hospital, MA, 1999-2002
3. Assistant professor, National Institute of Genetics, Japan, 2002-2007
4. Director, Department of Maternal-Fetal Biology, National Center for Child Health and Development, Japan (2007-present)

Wendy Robinson

Wendy Robinson earned a PhD in Genetics at the University of California, Berkeley CA USA in 1989, specializing in population genetics and genetic epidemiology related to the human histocompatibility complex (HLA) multigene family. Her research as a postdoctoral fellow at the Medical Genetics Institute at the University of Zurich, Switzerland from 1989-1994, focused on the origin and consequences of chromosomal abnormalities in humans and the mechanisms underlying disorders of genomic imprinting, such as Prader-Willi and Angelman syndromes. Since 1994, Dr. Robinson has been a faculty member of the Department of Medical Genetics, University of British Columbia in Vancouver, Canada, where she is currently full professor. She is also a senior scientist at the BC Children's Hospital Research Institute and is the Asst. Dean of Graduate and Postdoctoral Education in the UBC Faculty of Medicine. Her current research focuses on genetic and epigenetic aspects of placental and fetal development. Areas include the role confined placental mosaicism in pregnancy complications and fetal growth restriction; the application of omics technologies to understand placental pathologies including preeclampsia, fetal growth restriction and acute chorioamnionitis; and an assessment of normal variability in placental development. Dr. Robinson's research is funded by grants from the Canadian Institutes of Health Research (CIHR) and National Institutes of Health Research (NIH). She has published over 200 manuscripts and book chapters (h-index=57, i10 index=151).



Daisuke Tachibana

PROFESSION: Associate Professor, Osaka City University Graduate School of Medicine
OFFICE ADDRESS: Women's Lifecare Medicine, Department of Obstetrics and Gynecology, Graduate School of Medicine, Osaka City University

BOARD CERTIFICATION
Japan Society of Obstetrics and Gynecology, Board Certified; No.N0111 (October, 2001)
Japan Society of Perinatal and Neonatal Medicine, Board Certified; No 0475 (December, 2006)

EDUCATION: Graduated from Osaka City University Medical School in 1996
POST-GRADUATE EDUCATION: May 1996 to June 1998: general OB-GYN medical training in Osaka City Univ. Hospital and affiliated hospitals. July 1998 to June 2002: perinatological training and research in Osaka City University, Osaka

PROFESSIONAL ACTIVITIES: Board member of the Japan Society of Nutrition and Metabolism in Obstetrics and Gynecology, the Japan Society of Obstetrical, Gynecological and Neonatal Hematology, Osaka Society of Maternal Health, the Obstetrical Gynecological Society of Kinki District Japan

RESEARCH INTERESTS:
Fetal circulation research of fetal growth restriction
Postpartum hemorrhage and disseminated intra-vascular coagulation in maternal medicine

Padma Murthi

Dr. Padma Murthi, MSc., MPhil., PhD

Senior Research Fellow, Monash University & The Ritchie Centre, Hudson Institute of Medical Research

Dr. Murthi's research interest lies primarily in understanding the molecular mechanisms of placental insufficiency leading to human fetal growth restriction. Her research focusses on comprehensive functional analyses of developmentally important growth control genes called the homeobox genes, their down-stream targets, and novel biological pathways that are abnormal in placentas affected by human fetal growth restriction. Dr. Murthi has produced more than 90 publications in this field. Her current interest is in placental tryptophan metabolism, which is a metabolic pathway regulated by the novel homeobox gene, MEIS2. Using animal models, Dr. Murthi and her team have recently shown that maternal vitamin D deficiency during pregnancy and in embryonic development contributes to disruption in the placental tryptophan metabolic pathway leading to neurocognitive deficiencies in the offspring.

Dr. Murthi also serves on the editorial boards of *Scientific Reports, J of Pregnancy* and *International Journal of Reproductive Sciences*. She also serves as secretary of the International Federation of Placental Associations (IFPA), and acts as the Chair of the IFPA award committee.

Vicki Clifton

Professor Vicki Clifton is a National Health and Medical Research Council Senior Research Fellow who is currently the Program leader of Mothers and Babies Theme at Mater Medical Research Institute in Brisbane Australia. Prof Clifton was employed at the Robinson Research Institute, School of Paediatrics and Reproductive Health at the University of Adelaide from January 2008 to April 2015 after many years at the Mothers and Babies Research Centre in Newcastle, Australia. While at the Robinson Research Institute she was Director of Clinical Research at the Lyell McEwin Hospital in Adelaide, Australia (2009-2014) and leader of the Allergy Research Priority. Prof Clifton spent many years as Treasurer and then President of the Endocrine Society of Australia (2004-2013). She is a graduate of the Australian Institute of Company Directors and obtained a Diploma of Management from the University of Adelaide. Prof Clifton is internationally recognized for her research into the human placenta and is currently Editor of the Placenta Journal (2012-present). She is also an Executive member of the International Society of Endocrinology Board that oversees and supports the activities of the national societies of endocrinology in 80 countries around the world. Her current research focusses on the impact of maternal asthma and other health complications during pregnancy on placental function, fetal growth and childhood development. She has a specific interest in the sex specific differences in the fetal-placental response to a complication of pregnancy understanding the different strategies male and female fetuses institute to cope with an adverse event in pregnancy and how this ensures their survival in early life.

Julienne N. Rutherford

Dr. Rutherford is an Associate Professor of Women, Children, and Family Health Science in the College of Nursing at the University of Illinois at Chicago (UIC), serving masters level midwifery and women's health nurse practitioner students as well as PhD students. Dr. Rutherford is a biological anthropologist whose work integrates evolutionary theory with biomedical science. Her research program revolves around a central interest in the dynamic maternal environment in which a fetus develops, with a primary focus on the primate placenta as a signaling interface between mother and fetus. She works predominantly with marmoset monkeys, a litter-bearing nonhuman primate that produces variable intrauterine environments, to address how the period of prenatal development impacts reproductive development and function into adulthood, and that of subsequent generations. Additionally, Dr. Rutherford is part of a four-woman team that published the groundbreaking SAFE study about sexual harassment and assault in the field sciences. She has been a Robert Wood Johnson Future of Nursing mentor, and she is the recipient of many awards including the UIC Researcher of the Year Rising Star in Clinical Sciences, American Society of Primatologists Legacy Award, National Academy of Science Kavli Foundation Fellow, the American College of Nurse Midwives Excellence in Teaching Award and an NIH Loan Repayment Program Award.

Katsuhiko Naruse

Katsuhiko Naruse, MD, PhD
St. Barnabas' Hospital, Osaka, Japan

Katsuhiko "Katsu" Naruse is one of the well-known obstetricians of his generation in Japan, as well as having a research interest in preeclampsia and placental biology. He graduated from Nara Medical University (NMU) on 1999 and finished his Ph.D. thesis on 2005 alongside his obstetrics, gynecology, and perinatal care training. From 2005 to 2007, he was a visiting lecturer in Newcastle, UK, performing research in trophoblast invasion and spiral artery remodeling in the research group of Drs. Judith Bulmer and Gendie Lash. During that time he received Y.W.Loke travel Award and presented his research on workshops of IFPA meetings (2006, 2007). After his return to Nara, he continued his research in preeclampsia and other pregnancy complications from the view of placentation, inflammation and adipokines. Concurrently he served as the obstetrician-in-chief of NMU hospital, a tertiary center of Prefecture, until 2016. He is currently temporarily seconded to St. Barnabas' Hospital, Osaka, as a Hospital Director and Mid-wifely School Headmaster to reconstruct the 145th Anniversary maternity hospital. He has published over 50 papers and textbook chapters. He also works as a core member of many research and professional societies in Japan, that write official guidelines or produce international congresses in Japan, such as ISIR 2019 (Nara), ISSHP 2020 (Nara) and FAOPS 2020 (Tokyo).

Kent Thornburg

Kent L. Thornburg, Ph.D.
M. Lowell Edwards Chair
Professor of Medicine
Director, Center for Developmental Health, Knight Cardiovascular Institute
Director, Bob and Charlee Moore Institute for Nutrition & Wellness

Kent L. Thornburg, Ph.D., is the M. Lowell Edwards Chair of Cardiovascular Research and Professor of Medicine in the Knight Cardiovascular Institute at the Oregon Health & Science University (OHSU). He holds joint professorships in the Departments of Physiology & Pharmacology, Medical Informatics and Clinical Epidemiology and Obstetrics & Gynecology. He directs the Center for Developmental Health in the Knight Cardiovascular Institute, the OHSU Bob and Charlee Moore Institute for Nutrition & Wellness and co-directs the Epigenetics Consortium. Dr. Thornburg studies how women adapt to pregnancy and the roles of maternal diet and body composition in regulating fetal growth and lifelong health. He oversees clinical studies in rural Oregon and Alaska and collaborates with scientists in 5 countries. Dr. Thornburg serves regularly on advisory panels at the NIH, the American Heart Association and the Children's Heart Foundation and serves on the scientific advisory board of the Preeclampsia Foundation. He served as co-chair for the 10 year vision on programming for the National Institute of Child Health and Human Development and for the recent strategic conference on the genetic and epigenetic underpinnings of child health in the NIH ECHO program. He is committed to community service across the state of Oregon and among Native Americans in Alaska.

Jaime Gutierrez

Jaime Gutiérrez, PhD

Jaime Gutiérrez (1979) graduated in biochemistry (2005) and PhD in Molecular and Cellular Biology (2009) from the Pontificia Universidad Católica de Chile (PUC). My actual position is Assistant Professor at Health Science Faculty, Universidad San Sebastián (USS), Santiago, Chile and Research Associate in the Division of Obstetrics and Gynecology, Faculty of Medicine, School of Medicine, PUC.

After obtaining the PhD degree, I started a postdoctoral position (2010-2013) at the Center of Aging and Regeneration (CARE), PUC whit a research grant from the National Agency of Science and Technology FONDECYT (Chile) under the program of Initiation in Research, which was granted for the period of 2011 to 2014. This postdoctoral research focused in the study of cell migration/invasion and survival of intramuscular injected stem cells for the Stem Cell Therapy for the treatment skeletal muscle dystrophies and regarded particularly on the role of RECK, a novel cell membrane associated inhibitor of different matrix metalloproteinases (MMP) and a-disintegrin and metalloproteinases (ADAMs), in these processes. Since 2013 I started a collaboration with Dr. Luis Sobrevia at Faculty of Medicine, School of Medicine, PUC participating in the characterization of pathophysiological mechanisms and detection of common therapeutic targets in placental dysfunction in pathologies of the human pregnancy. This activity, certainly favored the development of my own research line mainly focused in the study of placental development and vascular biology. Thus, I started as a principal investigator a research line focused in the study of the early events associated to the human placental development and preeclampsia. This year (2018) my research proposal was founded for a research grant from the National Agency of Science and Technology FONDECYT (Chile) under the program of Initiation in Research, which was granted for the period of 2018 to 2022, and entitled "Role of RECK in preeclampsia development: as a key regulator of cytotrophoblast invasiveness and spiral arteries remodeling"

I have communicated the results of my results in national and international conferences (Chile, Argentina, Italy and USA). Within the development of my career as independent researcher I have published 34 articles in specialized journals. Additionally, I have had the opportunity of training students of medical technology and biochemistry (undergraduate thesis direction) from PUC and Universidad San Sebastián (Chile).

Kazuhiro Kajiwara

Kazuhiro Kajiwara graduated from the Jikei University School of Medicine, Japan, in 2007. He is now a medical doctor working as a medical director in the obstetrics and gynecology at the Jikei University. He completed postgraduate course in 2017 and received Ph.D. degree from the Jikei University. He has been at the Center for Regenerative Medicine, National Center for Child Health and Development from 2014-2017. His research used amniotic fluid-derived iPS cells to generate three-dimensional skin for coverage of a skin defect site in patients with myelomeningocele in rat model (Kajiwara, et al., Stem Cell Reports, 2017). He received a Congress Award from the Japan Society of Obstetrics and Gynecology in 2017. His recent work is focused on exploring the placental morphology and vasculature in the developing placenta by maternal retinoic acid exposure in rat model.

Prabha Andraweera

Dr. Prabha Andraweera obtained her medical degree (MBBS) from the University of Colombo, Sri Lanka in 2001. She received her postgraduate training in Clinical Genetics and worked as a lecturer in Anatomy and Human Genetics at the University of Colombo, Sri Lanka from 2006-2008. She received an Australian Leadership Award to pursue Doctoral research and obtained her PhD from the University of Adelaide in 2012 with the thesis by publication entitled: *Angiogenesis regulating gene polymorphisms in adverse pregnancy outcomes.* Her Doctoral research identified a genetic association between pregnancy complications and later life vascular and metabolic diseases. Her published papers are among the first few to demonstrate a genetic link between pregnancy complications and later life vascular diseases and to show a paternal genetic contribution to pregnancy complications. Dr. Andraweera is currently a NHMRC Australia Peter Doherty Postdoctoral Fellow in the Discipline of Obstetrics and Gynaecology, Adelaide Medical School and the Robinson Research Institute at the University of Adelaide, Australia. Her current research focuses on exploring the risk for cardiovascular disease among women who experience pregnancy complications and their children. Dr. Andraweera has received many research awards including the prestigious Frederick P Zuspan award for her research in preeclampsia and the Dean's commendation for Doctoral thesis excellence. She has received competitive grant funding > $750,000. She has 21 publications in high impact journals and has presented over 50 conference papers.

Rodolfo Favaro

After graduating in Biomedicine (2000-2004) at the State University of Londrina, Brazil, he received a Ph.D. degree (2005-2011) and postdoctoral training (2012-2017) in Cell and Tissue Biology at the University of São Paulo, Brazil. During this period, he studied the influence of type 1 diabetes on the uterine environment and the role of estrogen and progesterone on endometrial extracellular remodeling. Part of the results has been published in two articles in the Placenta Journal. Currently, he integrates the Placenta Lab at the University Hospital Jena, Germany. His studies are focused on different aspects of endometrial and trophoblast biology, including the functional characterization of non-coding RNAs expressed by endometrial and trophoblast cells as well as the role of extracellular vesicles in intercellular communication.

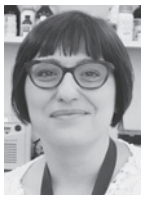
Andrea Loewendorf

I was born and raised in cold war Berlin, Germany, and studied biology in a small town in former East Germany where my Master's thesis focused on mRNA trans-splicing in *Drosophila melanogaster*. I received my PhD in of virology exploring immunomodulatory genes in mouse cytomegalovirus (MCMV) before moving to the United States. At the La Jolla Institute in San Diego, I continued working with MCMV, specifically the atypical immune responses toward and their modulation by the virus. Then, I realized that while herpesviruses cause clinical problems, patients weren't receiving better treatment due to my personal work. Making a difference in patient's lives was important to me and thus I decided on a second postdoc working on the immune basis of preeclampsia under the mentorship of Dr. Kahn at UCLA. When Dr. Kahn sadly decided to close his lab, I moved to the Huntington Medical Research Institutes to build my own program.

My Lab of Reproductive and Vascular Immunology focuses on treatments of the main acute and long-term threat of preeclampsia: clot formation. As clot formation involves the immune system and vascular endothelium, successful protection must likely involve both. I believe collaborations are essential to tackle such complex problems; a fluid dynamics engineer, Dr. Pahlevan from USC and radiologist colleague at HMRI, Dr. King are currently part of this endeavor. In my free time, I enjoy cooking, watching standup comedy, and exploring the California State Parks by hiking or on my motorcycle.

Title of the talk

The long-term effects of preeclamptic pregnancy: the search for disease drivers, monitoring strategies and treatments



Francesca Gaccioli

Francesca obtained her Master's degree in Biology and PhD in Molecular Biology and Pathology from the University of Parma (Italy). She worked as a postdoctoral fellow at Case Western Reserve University (Cleveland) and the University of Texas Health Science Center (San Antonio). She currently works in the Department of Obstetrics and Gynaecology at the University of Cambridge with Profs Gordon Smith and Steve Charnock-Jones. Using multi-omics approaches to study placental and maternal blood samples, her research aims at understanding how altered placental development and function contribute to pregnancy complications, such as fetal growth restriction and preeclampsia. The overarching goal of her work is to identify novel circulating biomarkers for predicting these adverse pregnancy outcomes. Her work is based on the data and samples collected during the Pregnancy Outcome Prediction (POP) study, a prospective cohort study of 4,212 first pregnancies.

Sandra Haider

Sandra Haider studied applied biosciences (1994-1997) and molecular biology at the University of Vienna (2004-2010). In 2010 she received her master's degree in molecular biology and subsequently obtained her PhD from the Medical University of Vienna in 2015 for her thesis on Notch signalling in placental development. Since 1997 she is working with Prof. Martin Knöfler at the Department of Obstetrics & Gynaecology at the Medical University of Vienna. Her research interests are different areas of human trophoblast biology including signalling pathways regulating trophoblast physiology and establishment of novel trophoblast model systems. Her current research focus is the investigation of mechanisms controlling human trophoblast progenitor development and cell fate determination. So far, she published 6 and 27 articles as first and co-author, respectively. For her investigations on the role of Notch Receptor 1 in extravillous trophoblast lineage formation she received the Society of Reproductive Investigation's Giorgio Pardi Foundation Junior Scientist Award in 2016 and was recently honoured with the "Researcher of the Month" of the Medical University of Vienna. Besides studying trophoblast development and differentiation, she established 3D organoid culture model systems of human and murine decidual glands to study physiological and pathophysiological processes of the endometrium.

Y. W. (Charlie) Loke New Investigator Awards

Supported by the generous endowment of Y.W. (Charlie) Loke, Emeritus Professor of Reproductive Immunology at the University of Cambridge and member of the IFPA and EPG. It offsets travel expenses for approximately 40 young investigators per meeting.

NAME	COUNTRY	INSTITUTION
Natalia Anahí Juiz	Argentina	Instituto de Investigaciones en Ingeniería Genética y Biología Molecular “Dr. Héctor N. Torres”
Wendi Bacon	UK	University of Cambridge
Nirav Barapatre	Germany	Ludwig Maximilian University of Munich
Marie-Eve Brien	Canada	Ste-Justine Hospital Research Center
Sarah Cartland	UK	University of Leeds
Giulia Del Gobbo	Canada	The University of British Columbia
Joshua Fisher	Australia	Griffith University
Daiana Fornes	Argentina	Centro de Estudios Farmacológicos y Botánicos
Kiichiro Furuya	Japan	Osaka University Graduate School of Medicine
Manjot Gill	UK	University of Oxford
Hildegunn Horne	Norway	University of Oslo
Andrée-Anne Hudon-Thibeault	Canada	Institut National de la Recherche Scientifique
Mai Inagaki	Japan	Keio University
Naoyuki Iwahashi	Japan	Wakayama Medical University
Neva Kandzija	UK	University of Oxford
Shrey Kohli	Germany	Otto-von-Guericke University
Hager M. Kowash	UK	The University of Manchester
Oddrun Kristiansen	Norway	Oslo University Hospital
Liyang Ma	China	Chinese Academy of Sciences
Teruyuki Mizutani	Japan	Nagoya University Graduate School of Medicine
Alexander Mocker	Germany	Friedrich-Alexander University Erlangen-Nuremberg
Yoko Nagayasu	Japan	Osaka Medical College
Gareth Nye	UK	The University of Manchester
Manabu Ogoyama	Japan	Nippon Medical School
Helen Palaiologou	UK	University of Southampton
Lishay Parhi	Israel	Hebrew University of Jerusalem
Lewis Renshall	UK	The University of Manchester
Magdalena M. Rose	Germany	University Hospital Jena
Mai Sato	Japan	Kyoto University Graduate School of Medicine
Marius Schmidt	Germany	Friedrich-Alexander University Erlangen-Nuremberg
Ortal Tamam	Israel	Ben-Gurion University of the Negev
Yunhui Tang	China	Fudan University

Lucie Valero	France	Unité de Technologies Chimiques et Biologiques pour la Santé (UTCBS)
Natasha E Walker	UK	University of Aberdeen
Kirsten White	UK	University of Oxford
Hannah Ee Juen Yong	UK	University of Cambridge
Victor Yuan	Canada	The University of British Columbia
Rachel R. Zabel	Germany	University Hospital Jena
Jonas Zaugg	Germany	University of Bern
Joyue Zhang	China	Guangzhou Women and Children's Medical Center

National Institutes of Health New Investigator Travel Awards

Supported by R13 Conference grant awarded to the International Federation of Placenta Associations by the Eunice Kennedy Shriver National Institute of Child Health and Human Development to enable US-based new investigators in any aspect of placental research to attend the annual IFPA meeting.

NAME	COUNTRY	INSTITUTION
Sonia C. DaSilva-Arnold	USA	Hackensack University Medical Center
Marlee Elston	USA	John A. Burns School of Medicine
Mike Guernsey	USA	Stanford University School of Medicine
Lauren Johnson	USA	The Ohio State University
Anna Marie Rowell	USA	University of Wisconsin
Nicholas Maurice	USA	Fred Hutchinson Cancer Research Center
Adam Mischler	USA	NC State University
Mancy Tong	USA	Yale School of Medicine
Bryce Wolfe	USA	Wisconsin National Primate Research Center

Elsevier Travel Awards

Generously supported by Elsevier Ltd., Publishers of Placenta and Trophoblast Research, to allow new investigator in any aspect of placental research to attend the annual IFPA meeting.

NAME	COUNTRY	INSTITUTION
Sruthi Alahari	Canada	Lunenfeld-Tanenbaum Research Institute
Hanna Allerkamp	Germany	University of Veterinary Medicine
Minji Choi	Korea	Samsung Medical Center
Teena KJB Gamage	New Zealand	The University of Auckland
Ramin Khanabdali	Australia	The Royal Women's Hospital

Chaini Konwar	Canada	BC Children's Hospital Research Institute
Daniel McKeating	Australia	Griffith University
Lara Morley	UK	University of Leeds
Sydney Nguyen	USA	Wisconsin National Primate Research Center
Samantha Rodrigues	Australia	The University of Newcastle
Julien Sallais	Canada	Lunenfeld Tanenbaum Research Institute
Taisuke Sato	Japan	The Jikei University School of Medicine
Daisuke Suzuki	Japan	Tokyo University of Agriculture
Amy Valent	USA	Oregon Health and Science University
Lisa Vrooman	USA	University of Pennsylvania

8：00—12：00 Meeting Room 1 (901 / 9F, Bldg. No. 2)

IFPA Executives Meeting (INVITED ONLY)

12：00—13：00 Meeting Room 1 (901 / 9F, Bldg. No. 2)

Executive Lunch (INVITED ONLY)

13：00—14：00 Meeting Room 1 (901 / 9F, Bldg. No. 2)

Placenta/TR Editorial Meeting (INVITED ONLY)

13：00—19：00 Lobby, 1F, Bldg. No. 2

Registration

14：00—14：30 Meeting Room 2 (801 / 8F, Bldg. No. 2)

Poster Judging Meeting

14：00—14：30 Meeting Room 3 (802 / 8F, Bldg. No. 2)

Oral Judging Meeting

15：00—15：45 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Keynote Lecture 1

Cell free DNA

Chair: **Aikou Okamoto** *(Tokyo, Japan)*

Noninvasive prenatal testing: progress through genomics, epigenomics and transcriptomics

Y. M. Dennis Lo *(Li Ka Shing Institute of Health Sciences, The Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, New Territories, Hong Kong, China)*

15：45—16：30 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Keynote Lecture 2

Stem cell research

Chair: **Aikou Okamoto** *(Tokyo, Japan)*

Stem Cell-based Therapy in Japan: Current State of the Art

Akihiro Umezawa *(National Center for Child Health and Development, Tokyo, Japan)*

16：30—17：00 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Trophbalast Research Award Lecture

Moderator: **Alicia Jawerbaum** *(Buenos Aires, Argentina)*

Stephanie Worton *(Manchester, UK)*

17：00—19：00 Room 2, Room 4, Room 7, Room 8 (Auditorium 2 / 1F, Bldg. No. 2・Poster 2 - 4 / 3F, 6F, 7F, Bldg. No. 1)

Poster Session 1

19：30—21：00

Welcome Reception at Tokyo Prince Hotel (Magnolia Hall, 2F)

8：30—10：00 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

New Investigator Presentation 1

Moderators: **Larry Chamley** *(Auckland, New Zealand)* & **Kazuhiro Tamura** *(Tokyo, Japan)*

NI1.1 Maternal circulating levels of syncytiotrophoblast vesicles expressing Dipeptidyl Peptidase IV (DPPIV) are increased in Gestational Diabetes Mellitus
Neva Kandzija *(University of Oxford, Oxford, UK)*

NI1.2 Convergence and divergence: The story of placenta evolution as told by *Poeciliopsis* fishes
Mike Guernsey *(Stanford University School of Medicine, CA, USA)*

NI1.3 Evaluation of liposomes as gene silencing vectors for the treatment of preeclampsia
Lucie Valero *(Unité de Technologies Chimiques et Biologiques pour la Santé (UTCBS), Université Paris Descartes, Paris, France)*

NI1.4 Vitamin D mediates morphological changes in vascular smooth muscle cells during early spiral artery remodeling in human pregnancy
Joyue Zhang *(Guangzhou Women and Children's Medical Center, Guangzhou, China)*

NI1.5 Placental oxygen consumption as a determinant of oxygen gradient within the perfused intervillous space
Gareth Nye *(University of Manchester, Manchester, UK)*

NI1.6 Endoplasmic reticulum molecular chaperone calreticulin plays a key role in human placentation
Naoyuki Iwahashi *(Department of Obstetrics and Gynecology, Wakayama Medical University, Wakayama, Japan)*

10：00—10：30 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Coffee Break

10：30—12：00 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Symposium 1

Sequencing the placenta

Moderators: **Yoel Sadovsky** *(PA, USA)* & **Tadashi Kimura** *(Osaka, Japan)*

SYM1.1 Placental Non-coding RNA expression changes dynamically across gestation
Claire T. Roberts *(Robinson Research Institute/Adelaide Medical School, Adelaide, Australia)*

SYM1.2 Assessing genomic variation in the human placenta: potential and limitations
Wendy Robinson *(University of British Columbia/BC Children's Hospital Research, Vancouver, Canada)*

SYM1.3 Genetic and epigenetic analysis of the placenta
Kenichiro Hata *(National Research Institute for Child Health and Development, Tokyo, Japan)*

12：00—13：00 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Luncheon Seminar 1

Moderator: **Makio Shozu** *(Department of Reproductive Medicine, Graduate School of Medicine, Chiba University, Chiba, Japan)*

Management of oligohydramnios in the late gestation and during labor
～The effectiveness of the amnioinfusion～

Hirokazu Tanaka *(Department of obstetrics and Gynecology, International University of Health and Welfare, Chiba, Japan)*

Co-sponsor: Toitu Co., Ltd.

12：00—13：00 Room 3 (3F, Bldg. No. 1)

Luncheon Seminar 2

Moderator: **Kiyoko Kato** *(Department of Gynecology and Obstetrics Kyushu University Graduate School of Medical, Fukuoka, Japan)*

Vascular promotion and normalization in the tumor microenvironment for drug delivery and immune-therapy
Nobuyuki Takakura *(Department of Signal Transduction, Research Institute for Microbial Diseases, Osaka University, Osaka, Japan)*

Combination approaches of immunotherapy and targeted therapy in cancer treatment
Kosei Hasegawa *(Department of Gynecologic Oncology, Saitama Medical University International Medical Center, Saitama, Japan)*

Co-sponsor: Chugai Pharmaceutical Co., Ltd.

13：15—14：45 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Workshop 1

Extracellular vesicles in pregnancy
Organizers: **Carlos Salomon** *(Brisbane, Australia)* & **Hirotaka Nishi** *(Tokyo, Japan)*
Please refer to page 47 for further information about this workshop

13：15—14：45 Room 3 (3F, Bldg. No. 1)

Workshop 2

Pre-eclampsia and the Placenta: What's new?
Organizers: **Christopher Redman** *(Oxford, UK)* & **Mitsutoshi Iwashita** *(Tokyo, Japan)*
Please refer to page 47 for further information about this workshop

13：15—14：45 Room 5 (5F, Bldg. No. 1)

Workshop 3

Drug delivery in pregnancy: overcoming problems and developing new technologies
Organizers: **Lynda Harris** *(Manchester, UK)* & **Masatoshi Tomi** *(Tokyo, Japan)*
Please refer to page 48 for further information about this workshop

13：15—14：45 Room 6 (6F, Bldg. No. 1)

Workshop 4

Reproduction and placentation among ocean-living species
Organizers: **Anthony M. Carter** *(Copenhagen, Denmark)* & **Hiroaki Soma** *(Saitama, Japan)*
Please refer to page 48 for further information about this workshop

13：15—14：45 Room 9 (1001 / 10F, Bldg. No. 2)

Workshop 5

Abnormally Invasive Placenta (AIP): An interactive, international perspective
Organizers: **Sally Collins** *(Oxford, UK)* & **Kiyotake Ichizuka** *(Kanagawa, Japan)*
Please refer to page 49 for further information about this workshop

14：45—15：00 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Coffee Break

10：00—10：30 Room 9（1001 / 10F, Bldg. No. 2）

Board of Councilors Meeting (JPA)

15：00—16：00 Room 1（Auditorium 1 / 1F, Bldg. No. 2）

IFPA Senior Award Lecture

Moderator: Claire Roberts *(Adelaide, Australia)*
Hiroaki Soma *(Saitama, Japan)*

16：00—17：00 Room 3（3F, Bldg. No. 1）

Regional Association Business Meeting (ANZPRA)

16：00—17：00 Room 5（5F, Bldg. No. 1）

Regional Association Business Meeting (EPG)

16：00—17：00 Room 6（6F, Bldg. No. 1）

Regional Association Business Meeting (PAA)

16：10—16：25 Room 1（Auditorium 1 / 1F, Bldg. No. 2）

Regional Association Business Meeting (JTD)

16：25—16：40 Room 1（Auditorium 1 / 1F, Bldg. No. 2）

Regional Association Business Meeting (JPA)

17：00—19：00 Room 2, Room 4, Room 7, Room 8（Auditorium 2 / 1F, Bldg. No. 2・Poster 2 - 4 / 3F, 6F, 7F, Bldg. No. 1）

Poster Session 2

19：30—21：00

ECR Social Meeting at Japanese style bar, “Sake to Nagomi to Niku to Yasai Shimbashi”

※Only pre-registered delegates can participate.

8：30—10：00 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

New Investigator Presentation 2

Moderators: **Lynda Harris** *(Manchester, UK)* & **Kirsty Pringle** *(Newcastle, Australia)*

NI2.1 The distance between nuclei of neighboring villous trophoblasts is a highly sensitive measure of 3D microscopic placental architecture
Nirav Barapatre *(LMU Munich, Faculty of Medicine, Institute of Anatomy II, Chair of Neuroanatomy, Munich, Germany)*

NI2.2 Gal-GalNAc - Fap2 interactions mediate placenta colonization by *Fusobacterium nucleatum*
Lishay Parhi *(Institute of Dental Sciences, The Hebrew University- Faculty of Dental Medicine, Jerusalem, Israel)*

NI2.3 Thrombomodulin regulates platelet and extracellular vesicle mediated sterile inflammation in the placenta
Shrey Kohli *(Otto-von-Guericke University, Magdeburg, Germany)*

NI2.4 Establishment of advanced maternal age model mice: analysis of placental senescence
Kiichiro Furuya *(Osaka University Graduate School of Medicine, Department of Obstetrics and Gynecology, Osaka, Japan)*

NI2.5 Maternal adiponectin is inversely correlated to syncytiotrophoblast basal plasma membrane GLUT 1 expression
Oddrun Kristiansen *(Department of Obstetrics, Division of Obstetrics and Gynecology, Oslo University Hospital/Institute of Clinical Medicine, Faculty of Medicine, University of Oslo, Oslo, Norway)*

NI2.6 Abnormal placental development in a mouse model of Assisted Reproductive Technologies (ART)
Lisa Vrooman *(University of Pennsylvania, PA, USA)*

10：00—10：05 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

A word from our journal: Placenta

10：05—10：30 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Coffee Break

10：30—12：00 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Symposium 2

Making better placentas and healthy pregnancies FGR DM

Moderators: **Helen Jones** *(OH, USA)* & **Tomoyuki Fujii** *(Tokyo, Japan)*

SYM2.1 The metabolic components of serotonin synthesising pathway is expressed across gestation and are altered in human fetal growth restriction
Padma Murthi *(Monash University/Hudson Institute of Medical Research, Melbourne, Australia)*

SYM2.2 The role of placental sex steroid receptors in modulating the fetal response to a stress in pregnancy
Vicki Clifton *(Mater Medical Research Institute - University of Queensland, Brisbane, Australia)*

SYM2.3 Time interval analysis of ductus venosus flow velocity waveforms in growth restricted fetuses
Daisuke Tachibana *(Osaka City University Graduate School of Medicine, Osaka, Japan)*

12：00—13：00 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Luncheon Seminar 3

Moderator: **Mikio Momoeda** *(Department of Integrated Women's Health, St. Luke's International Hospital, Tokyo, Japan)*

Beyond infertility: Obstetrical Complications associated with endometriosis and adenomyosis
Kaori Koga *(Department of Obstetrics and Gynecology, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo, Japan)*

Co-sponsor: Mochida Pharmaceutical Co., Ltd.

12：00—13：00 Room 3 (3F, Bldg. No. 1)

Luncheon Seminar 4

Moderator: **Nobuhiro Suzumori** *(Department of Obstetrics and Gynecology, Nagoya City University Graduate School of Medical Sciences, Aichi, Japan)*

Clinical application of genome-wide cfDNA screening
Ron McCullough *(Sequenom Laboratories, CA, USA)*

Co-sponsor: GeneTech, Inc.

12：00—13：00 Meeting Room 4 (803 / 8F, Bldg. No. 2)

Soma Award Meeting

13：00—13：30 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

IFPA Annual Meeting

13：30—15：00 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Workshop 6

Impact of infection on placental biology

Organizers: **Gendie Lash** *(Guangzhou, China)* & **Shigeru Saito** *(Toyama, Japan)*

Please refer to page 50 for further information about this workshop

13：30—15：00 Room 3 (3F, Bldg. No. 1)

Workshop 7

Imaging of the Placenta

Organizers: **Ganesh Acharya** *(Stokholm, Sweden)* & **Junichi Hasegawa** *(Kanagawa, Japan)*

Please refer to page 51 for further information about this workshop

13：30—15：00 Room 5 (5F, Bldg. No. 1)

Workshop 8

Epigenetics

Organizers: **Leslie Myatt** *(OR, USA)* & **Kiyonori Miura** *(Nagasaki, Japan)*

Please refer to page 52 for further information about this workshop

13：30—15：00 Room 6 (6F, Bldg. No. 1)

Workshop 9

Gestational Trophoblastic Disease (GTD)

Organizers: **Kazuhiko Ino** *(Wakayama, Japan)* & **Eiko Yamamoto** *(Aichi, Japan)*

Please refer to page 52 for further information about this workshop

15：00—15：30 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Coffee Break

15：00—16：30 Room 4 (3F, Bldg. No. 1)

TR Award Poster Finalists

15：00—15：30 Meeting Room 3 (802 / 8F, Bldg. No. 2)

Oral Judging Meeting

15：30—16：30 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Early Career Session

Moderators: **Priya Pantham** *(IL, USA)* & **Toshiyuki Takeshita** *(Tokyo, Japan)*

EC.1 Preeclampsia associates with increased RECK expression in trophoblast and reduced migration, invasion, and endothelial-like differentiation of first trimester human trophoblast cells
Jaime Gutierrez *(Celluar Signaling and Differentiation Laboratory (CSDL), Faculty of Health Sciences, Universidad San Sebastián/Cellular and Molecular Physiology Laboratory (CMPL), Division of Obstetrics and Gynaecology, School of Medicine, Faculty of Medicine, Pontificia Universidad Católica de Chile, Santiago, Chile)*

EC.2 Maternal birthweight, early pregnancy body mass index and risk of pregnancy complications
Prabha Andraweera *(Adelaide Medical School and The Robinson Research Institute, The University of Adelaide, Adelaide, Australia)*

EC.3 Retinoic acid-induced placental vascular hypoplasia with Patched-1 up-regulation in rats
Kazuhiro Kajiwara *(Department of Obstetrics and Gynecology, The Jikei University School of Medicine/Department of Reproductive Biology, Center for Regenerative Medicine, National Research Institutes for Child health and Development, Tokyo, Japan)*

EC.4 **Development of a 3D in vitro model for the assessment endometrium—trophoblast interactions**
Rodolfo R. Favaro *(University Hospital Jena, Jena, Germany)*

16：30—17：15 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

IFPA Andree Gruslin Award Lecture

Moderator: **Isabella Caniggia** *(Toronto, Canada)*

Volume & vascularity: using ultrasound to unlock the secrets of the first trimester placenta
Sally Collins *(Oxford, UK)*

19：00—22：30

Gala Dinner and Dance at Tokyo Prince Hotel (Providence Hall, 2F)

※Only pre-registered delegates can participate.

8：30—9：30 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Mid Career Session (New session)

Moderators: **Natalie Hannan** *(Melbourne, Australia)* & **Gen Ishikawa** *(Chiba, Japan)*

MC.1 The hypertensive pregnancy disease preeclampsia causes lingering vascular stiffening and brain abnormalities indicative of neuronal damage
Andrea Loewendorf *(Reproductive and Vascular Immunology, Huntington Medical Research Institutes, CA, USA)*

MC.2 Placental antecedents of preeclampsia and small for gestational age
Francesca Gaccioli *(University of Cambridge, Cambridge, UK)*

MC.3 Derivation of mouse and human uterine organoids
Sandra Haider *(Department of Obstetrics and Gynecology, Medical University of Vienna, Vienna, Austria)*

9：30—10：15 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Gabor Than Award Lecture

Moderator: **Nick Illsley** *(NJ, USA)*

New diagnostics for placenta insufficiency
Tu'uhevaha Kaitu'u-Lino *(Melbourne, Australia)*

10：15—10：30 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Coffee Break

10：30—12：00 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Symposium 3

DOHaD and the placenta

Moderators: **Rohan Lewis** *(Southampton, UK)* & **Keiichi Isaka** *(Tokyo, Japan)*

SYM3.1 Paternal-maternal-fetal genetic conflict on placenta: Imprinting disorders may effect on generation-wide hypertensive disorders
Katsuhiko Naruse *(Nara Medical University, Nara, Japan/St. Barnabas' Hospital, Osaka, Japan)*

SYM3.2 What does cardiovascular disease have to do with the placenta?
Kent Thornburg *(Oregon Health & Science University, OR, USA)*

SYM3.3 Womb to Womb: Programming Reproductive Development in the Female Common Marmoset Monkey
Julienne Rutherford *(University of Illinois at Chicago, IL, USA)*

12：00—12：45 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

NIH Award Lecture

Moderator: **Leslie Myatt** *(OR, USA)*

Placental epigenetic regulation in development and under adverse environmental conditions
Marisa Bartolomei *(PA, USA)*

12：45—13：00 Room 1 (Auditorium 1 / 1F, Bldg. No. 2)

Closing of IFPA Meeting

Keynote Lecture 1

Noninvasive prenatal testing: progress through genomics, epigenomics and transcriptomics

Y. M. Dennis Lo
Li Ka Shing Institute of Health Sciences, The Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, New Territories, Hong Kong, China

Noninvasive prenatal testing (NIPT) is now globally adopted and used by millions of pregnant women every year. In this lecture, I shall review recent developments in this field using genomics, epigenomics and transcriptomics approaches. In the area of genomics, my group has constructed a second generation noninvasive fetal genome through very deep genome sequencing of maternal plasma DNA. Through this effort, we have shown that fetal de novo mutations can be detected noninvasively from maternal plasma. Furthermore, we have identified the presence of preferred DNA ends for circulating DNA of fetal and maternal origin. In the area of epigenomics, we have developed a technology that we have called plasma DNA tissue mapping that allows one to elucidate the tissue of origin of circulating DNA species. In the area of transcriptomics, we have shown that single cell transcriptomics can be used to develop plasma RNA markers for NIPT. These synergistic developments in the field of NIPT have enhanced our understanding of the biology of circulating nucleic acids and have increased the spectrum of diagnostics applications.

Keynote Lecture 2

Stem Cell-based Therapy in Japan: Current State of the Art

Akihiro Umezawa
National Center for Child Health and Development, Tokyo, Japan

Regenerative medicine has started by using epidermal cells, chondrocytes and mesenchymal stem cells in Japan, and cell sources as a raw material of cellular products include bone marrow, skeletal muscle, skin, amnion and umbilical cord. Regenerative medicine using human pluripotent stem cells has also been developed, and the public anticipates the regenerative medicine using these pluripotent stem cells. iPS cell research has indeed progressed rapidly to reach clinical application, and outcome is expected from patient groups. Two different systems to review a protocol of clinical trial of regenerative medicine, that are “Act on the Safety of Regenerative Medicine” and “Pharmaceuticals, Medical Devices and Other Therapeutic Products Act (PMD Act)”, are present and commercial products, i.e. products of epidermal cells, chondrocytes, skeletal myocytes and mesenchymal stem cells, have been approved under the PMD Act at present in Japan. I herewith introduce novel strategies such as organoid formation and compound device using different types of stem cells for future clinical application.

Extracellular vesicles in pregnancy

Organizers: Carlos Salomon（Brisbane, Australia）& Hirotaka Nishi（Tokyo, Japan）

During the past decade, there has been an extraordinary explosion of research in the field of extracellular vesicles (EVs), especially in a specific type of EVs originating from endosomal compartments called exosomes. EVs are release from a wide range of cell including the human placenta and are capable of transferring their contents (e.g., proteins and miRNAs) to other cells, a process that is thought to be essential to several biological processes including immune response, cell metabolism and intercellular communication during pregnancy. Unfortunately, even with the high focus on the EVs field in the recent years, progress in the field has been hindered by a lack of standardised protocols relating to the taxonomy and isolation of exosomes. This has confounded data interpretation within the current body of literature. This workshop will discuss the Heterogeneity, Isolation, Purification, and Characterisation of placental exosomes and their capacity to interact and deliver bioactive molecules to target cells during pregnancy.

Pre-eclampsia and the Placenta: What's new?

Organizers: Christopher Redman（Oxford, UK）& Mitsutoshi Iwashita（Tokyo, Japan）

Aims of the workshop

Pre-eclampsia is caused by the presence of the placenta although maternal factors are critical for development of the maternal syndrome. In this workshop four speakers describe new developments which enlarge the bigger picture of this complex disorder.

Four presentations

1. Early onset pre-eclampsia is associated with poor placentation and deficient spiral artery remodeling. Dr Akitoshi Nakashima (Toyama, Japan) describes use of a trophoblast－specific, mouse-knock out model for a key autophagosome factor (Atg7). The ensuing inhibition of trophoblast autophagy affects trophoblast invasion, vascular remodeling and causes maternal hypertension. Human studies suggest that these autophagy mechanisms are also involved in human pre-eclampsia.

2. Maternal anti-phospholipid autoantibodies are rare but a potent risk factor for pre-eclampsia that can be easily studied in model systems. Professor Chamley (Auckland, New Zealand) describes how autoantibodies interact with the syncytiotrophoblast mitochondria and activate the cell death machinery. However, the syncytiotrophoblast does not die. Instead dangerous extracellular microvesicles are released into the maternal circulation that activate maternal endothelial cells, a hallmark of preeclampsia.

3. Dr Manu Vatish (Oxford, UK) then reviews the complexity and variety of human syncytiotrophoblast derived microvesicles and their potential to communicate with maternal systems under physiological or pathological conditions. His view is based on omic analyses of preparations from dual perfusion of isolated, normal and pre-eclampsia placental lobes.

4. Finally Professor Charnock-Jones (Cambridge, UK) introduces a new aspect of trophoblast metabolism, namely of polyamines, and its contribution to pre-eclampsia. Placental specific escape from X-chromosome inactivation of spermine synthase reveals a novel maternal biomarker with divergent associations with pre-eclampsia and fetal growth restriction.

Workshop 3

Drug delivery in pregnancy: overcoming problems and developing new technologies

Organizers: Lynda Harris（Manchester, UK）& Masatoshi Tomi（Tokyo, Japan）

The aim of this workshop is to raise awareness of the technical problems and barriers associated with drug delivery in pregnancy, and to discuss current advances in the field. The workshop is designed for delegates who are considering undertaking drug delivery-based research projects, and those who wish to troubleshoot current strategies. We will offer advice and share best practise through a combination of short presentations and group discussion. We will have 10-15 minute presentations on a variety of topics, including:

- Physiological changes in pregnancy that affect drug delivery
- The placenta as a barrier to drug delivery
- Transporter mediated-drug transfer across the placenta
- Novel therapies and drug repositioning
- Methods for targeted drug delivery

The workshop organisers will moderate the session, making sure that the discussions remain on topic and that audience questions and concerns are sufficiently addressed. Delegates are encouraged to submit additional ideas for discussion by contacting the organisers prior to the workshop.

Workshop 4

Reproduction and placentation among ocean-living species

Organizers: Anthony M. Carter（Copenhagen, Denmark）& Hiroaki Soma（Saitama, Japan）

Many teleosts and a majority of sharks are viviparous. This workshop will explore various strategies for the supply of nutrition to the embryos of marine vertebrates. They range from histotrophic nutrition - as in the brood pouch of male sea horses and pipefish and the uterus of the great white shark - to true placentation as in requiem sharks. The maintenance of an adequate oxygen supply to the developing embryo will be discussed with reference to remarkable findings in dogfish and other sharks.

1) The Sea Horse Brood Pouch and the Evolution of Male Pregnancy
2) Reproduction in Pipe Fish and Sea Horses
3) Acquired Immunization and Placentation in the Requiem Shark *Carcharhinus*
4) Ultrasound Findings of the Respiratory System in Embryonic Sharks
5) Reproduction in the Great White Shark *Carcharodon carcharias*
   a) Lipid histotrophy in early gestation
   b) Fine structure of the pregnant uterus
   c) Oxygen supply to the embryo

Abnormally Invasive Placenta (AIP): An interactive, international perspective

Organizers: Sally Collins（Oxford, UK）& Kiyotake Ichizuka（Kanagawa, Japan）

Synopsis: This is a fully interactive workshop therefore the audience are requested to bring their smartphones or tablets. Using *Mentimeter* (https://www.mentimeter.com/) we will enable the audience to ask and answer questions in real-time on their smartphones with the results immediately displayed. This will allow the workshop to engage with the participants and move in a direction guided by them. The aim will be to bring together both clinicians and basic science researchers to discuss difficult issues surrounding this rare but growing pathology.

There will be four parts to the workshop:

1. A starting poll of the participants to establish the skills mix present. Followed by a short introduction to the International Society for AIP (http://www.is-aip.org/). This is an organisation which was formed from the European Working Group on AIP (EW-AIP) and currently consists of 42 Obstetricians, Gynecologists, Pathologists, Anaesthesiologists and Basic-Science Researchers from 13 European countries. The aim of the group is to establish international co-operation in the study AIP, to improve knowledge and management, and to inform healthcare decision makers worldwide on the importance of the condition.

The discussion around it will focus on the relevance of this society for the audience present and any questions or suggestions regarding its future direction.

2. A short talk regarding diagnostic techniques used for AIP both imaging based (Ultrasound and MRI) and clinical diagnosis at the time of delivery.

The audience based discussion will include potential difficulties that they have experienced including any questions they wish to pose to the speaker or suggestions for alternative diagnostic techniques.

3. A short talk on surgical techniques and methods used to manage AIP at delivery.

The audience based discussion will include discussing different surgical techniques including possible expectant management and any interesting cases, or questions they wish to pose to the speakers.

4. A short talk on lab-based research into the pathology behind AIP.

The audience will lead the discussion potentially in the direction of what are we looking for in cell-based or animal models, how clinicians and researchers interact to advance this work and discussion of ideas behind ways forward.

Impact of infection on placental biology

Organizers: Gendie Lash（Guangzhou, China）& Shigeru Saito（Toyama, Japan）

Objectives: The establishment of a successful pregnancy involves invasion of the maternal uterine tissues by fetal extravillous trophoblast cells (EVT) and remodeling of the uterine spiral arteries. Both of these processes are tightly regulated by a range of cell types, most notably the uterine natural killer (uNK) cells and uterine macrophages, which play important 'non-immune' roles in establishment of pregnancy. But what happens when the pregnancy is compromised by an infectious agent? Do the immune cells become repurposed so that they are no longer able to perform their tissue remodeling roles? Does the immunosuppressed environment of the fetal-maternal interface allow for a greater degree of viral/bacterial infection? On infection is placental function compromised?

This workshop will explore some of these questions using emerging knowledge from studies on viral (Zika, CMV) and bacterial (Listeria) infection during pregnancy. Speakers will be limited to 3 information and 1 discussion points slides to facilitate wide ranging discussion. It is hoped that new avenues of study and new research collaborations will emerge from such discussions.

Imaging of the Placenta

Organizers: Ganesh Acharya（Stokholm, Sweden）& Junichi Hasegawa（Kanagawa, Japan）

Aim: Different modalities of placental imaging are used to study its structure and function from molecular/subcellular to organ/system level. Some of them are emerging new techniques, whereas others are refinement of conventional imaging modalities that has been possible with the advancement in technology. This workshop aims to present recent advances in some of the most important aspects of placental imaging (ultrasound, magnetic resonance imaging and microscopy) applicable to basic, clinical and translational research in placentology.

Following topics will be introduced:

1. Placental blood flow and morphometry: How do they correlate?
2. Application of superb micro-vascular imaging (SMI) with high frequency ultrasound transducer in placental evaluation.
3. T2* weighted placental MRI - a promising marker of placental dysfunction.
4. Investigation of human placental and fetal brain oxygenation during maternal hyperoxia using functional magnetic resonance imaging (fMRI).
5. Application of high resolution live cell imaging in placental research.

Structure: The workshop will be interactive. All the participants will have opportunity and are expected to contribute to the discussion after the speakers have introduced the topics using short presentations. Critical analysis of the added value and limitations of these imaging modalities compared to alternative methods/approaches with regards to their potential application to help understand placental pathophysiology will be the focus of discussion.

Expected outcome: The participants of this workshop will improve their knowledge in different aspects of placental imaging by interacting with experts in the respective fields. This will also help them to identify strengths, limitations and pit-falls of using different imaging techniques. The workshop is also expected to help identify interest groups and experts who may wish to get involved in developing consensus guidelines on use of certain imaging modalities in research and clinical practice.

Epigenetics

Organizers: Leslie Myatt（OR, USA）& Kiyonori Miura（Nagasaki, Japan）

Placental function is known to be affected significantly by the intrauterine environment that is generated by the mother. That environment is influenced in several ways, by amount and type of nutrition, by maternal stress, hormonal and inflammatory milieu among many others. These varying environmental signals are known to influence the placenta epigenome but as yet we lack detailed information related to effects on specific placental cell types, differences across gestational age and whether or how the changes seen at the epigenetic level relate mechanistically to differences in transcription and ultimately in placental function. In this workshop we will discuss in an interactive manner between featured presentations and audience participation our current knowledge related to interpretation of epigenetic data, and the influence of sex, ethnicity, cellular composition, gestational age and different environmental conditions on placental epigenetics and how this relates to placental function.

Workshop 9

Gestational Trophoblastic Disease (GTD)

Organizers: Kazuhiko Ino（Wakayama, Japan）& Eiko Yamamoto（Aichi, Japan）

Gestational trophoblastic disease (GTD) is a group of diseases characterized by abnormal cellular proliferation of atypical trophoblasts, including hydatidiform mole, invasive mole, choriocarcinoma, placental site trophoblastic tumor (PSTT) and epithelial trophoblastic tumor (ETT). Hydatidiform mole is an abnormal pregnancy caused by genetic fertilization disorders, which have higher potential to develop to gestational trophoblastic neoplasia (GTN) than normal trophoblasts. However, the involvement of the genetic origin of trophoblastic cells in the characteristics of GTN remains unclear. PSTT and ETT are rare tumors occurred from extravillous trophoblasts and have poor prognosis in metastatic cases because of low sensitivity to chemotherapy. Approximately 15% of choriocarcinomas become chemo-resistant and the factors for developing malignant potential of trophoblasts should be identified.
In this workshop, we will discuss novel therapeutic strategies for GTN in terms of management, diagnosis and treatment for achieving 100% survival.

1) Clinical features of gestational trophoblastic diseases in Japan
2) Application of DNA polymorphisms for gestational trophoblastic disease
3) Glycosyltransferases regulate malignant potential of trophoblasts
4) Laeverin as a possible marker of PSTT

POSTER SESSION 1

September 21 (Fri)

Anatomy and pathology — Room 2 (1F, Bldg. No. 2)

P1.1 Intrauterine growth retardation extinguishes sexual dimorphism of human villous trophoblast
Eva Häußner[1], **Nirav Barapatre**[1], David Grynspan[2], Christoph Schmitz[1], Franz Edler von Koch[3], Hans-Georg Frank[1]
[1]LMU Munich, Faculty of Medicine, Institute of Anatomy II, Chair of Neuroanatomy, Munich, Germany, [2]University of Ottawa, Department of Pathology and Laboratory Medicine, Ottawa, Canada, [3]Clinic for Obstetrics and Gynecology Dritter Orden, Munich, Germany

P1.2 Study on effect of severity of maternal iron deficiency anaemia on morphology and regulators of angiogenesis in placenta
Mullapudi Venkata Surekha, Putcha Uday Kumar, Sapna Singh, M Srinivas, K Sharada, N Balakrishna, G Sailaja
National Institute of Nutrition, Hyderabad, India

P1.3 Increased placental venous vessel diameters in pre-gestational diabetes
Matina Hakim, John Aplin, Susan Greenwood, Tristan Lowe, Jenny Myers
The University of Manchester, Manchester, UK

P1.4 Histological assessment of a developing placenta *in utero* - what we can learn from archival first trimester material
Gerit Moser, Monika Sundl, Desiree Forstner, Martin Gauster, Berthold Huppertz
Medical University of Graz, Graz, Austria

P1.5 A case of complete hydatidiform mole coexistent with a fetus treated by simple hysterectomy
Tomona Matsuoka, Hiroaki Aoki, Ritsuko Kobayashi, Natsuki Matsumoto, Akihiro Ikenaga, Wakiko Shimomai, Kana Hirayama, Keiko Yabuzaki, Taisuke Sato, Michihiro Yamamura, Haruhiko Udagawa, Kazuhiro Kajiwara, Yuki Ito, Taizan Kamide, Osamu Samura, Aikou Okamoto
The Jikei University School of Medicine, Tokyo, Japan

P1.6 Placental pathology predicts infantile physical development during first 18 months in Japanese population
Chizuko Yaguchi, Naomi Isomura, Masako Matsumoto, Yoshimasa Horikoshi, Kazuhiro Sugihara, Hiroaki Itoh, Naohiro Kanayama
Hamamatsu University School of Medicine, Shizuoka, Japan

P1.9 Development of urogenital system in the Spix cavy: a model for studies on sexual differentiation
Amilton Santos[1], Alan Conley[2], Moacir Oliveira[3], **Antonio Assis Neto**[1]
[1]University of Sao Paulo, Sao Paulo, Brazil, [2]University of California, CA, USA, [3]Universidade Federal Rural do Semiarido, Mossoro, Brazil

P1.10 Clinicopathogical features of chronic histiocytic intervillositis
Yuichiro Sato, Kazunari Maekawa, Atsushi Yamashita, Yujiro Asada, Hiroshi Sameshima
University of Miyazaki, Miyazaki, Japan

Angiogenesis/vasculature — Room 2 (1F, Bldg. No. 2)

P1.11 Piezo1 mechanosensitive ion channels are required for shear stress sensing in placental vasculature
Lara Morley[1,2], Jian Shi[1], Hannah Gaunt[1], Adam Hyman[1], Peter Webster[1], Karen Forbes[1], James Walker[2], Nigel Simpson[2], David Beech[1]
[1]Leeds Institute of Cardiovascular and Metabolic Medicine, University of Leeds, [2]Academic Unit of Obstetrics and Gynaecology, Leeds Teaching Hospitals Trust, Leeds, UK

P1.12 Evaluation of optoacoustic imaging for analysis of placental villous vascularization
H. Huebner[1], F. Knieling[2], F. Faschingbauer[1], M. Ruebner[1], S. Kehl[1], M.W. Beckmann[1], W. Rascher[2], A. Hartner[2], F.B. Fahlbusch[2]
[1]Department of Gynaecology and Obstetrics/Comprehensive Cancer Center Erlangen-EMN, Friedrich-Alexander University Erlangen-Nuremberg, [2]Department of Pediatrics and Adolescent Medicine, Friedrich-Alexander University Erlangen-Nuremberg, Erlangen, Germany

P1.13 Nondestructive biomechanical testing of chorionic plates using vibrational optical coherence tomography
Ruchit Shah[1], **Carolyn Salafia**[1,2], Anubha Arora[2]
[1]Placental Analytics, LLC, New Rochelle, [2]Queens Hospital Center, NY, USA

P1.14 Does feto-placental micro-vascular shear stress negatively impact on vascular structure in fetal growth restriction?
Win Tun[1], Joanna James[2], Alys Clark[1]
[1]Auckland Bioengineering Institute, University of Auckland, [2]Obstetrics & Gynaecology, University of Auckland, Auckland, New Zealand

P1.15 Extracellular matrix of canine placenta as biomaterial for use in regenerative medicine
Paula Fratini[1], **Nathia Nathaly Rigoglio**[1], Gustavo de Sá Schiavo Matias[1], Ana Claudia Oliveira Carreira[1,2], Rose Eli Grassi Rici[1], Maria Angelica Miglino[1]
[1]School of Veterinary Medicine and Animal Science, University of São Paulo, [2]School Medicine, Nucel (Cell and Molecular Therapy Center, Sao Paulo, Brazil

P1.16 Hypoxia and preeclampsia increase RECK expression in umbilical vein endothelial cells
Leila Fernandez[1,2], Jorge Maldonado[1,2], Luis Sobrevia[2,3,4], **Jaime Gutierrez**[1,2]
[1]Cellular Signaling and Differentiation Laboratory (CSDL), Faculty of Health Sciences, Universidad San Sebastián, Santiago, Chile, [2]Cellular and Molecular Physiology Laboratory (CMPL), Division of Obstetrics and Gynaecology, School of Medicine, Faculty of Medicine, Pontificia Universidad Católica de Chile, Santiago, Chile, [3]Department of Physiology, Faculty of Pharmacy, Universidad de Sevilla, Sevilla, Spain, [4]University of Queensland Centre for Clinical Research (UQCCR), Faculty of Medicine and Biomedical Sciences, University of Queensland, Queensland, Australia

Cell culture/cell lines — Room 2 (1F, Bldg. No. 2)

P1.17 Optimization of culturing conditions to maintain mononuclear human trophoblast cells in in vitro culture
Frances Wong, Brian Cox
University of Toronto, Toronto, Canada

P1.18 Effect of glycosaminoglycans on growth factor-stimulated trophoblast invasion
Imeobong Antia[1], Zoe Rodd[2], Frank Hills[1]
[1]Middlesex University, [2]Imperial College, London, UK

Cell signaling — Room 4 (3F, Bldg. No. 1)

P1.19 Expression of extracellular signal-regulated kinases 1/2, p38 mitogen-activated protein kinase and p90 ribosomal protein S6 kinase in HIV associated pre-eclampsia
Margaret Olutayo Alese[1], Jagidesa Moodley[2], Thajasvarie Naicker[1]
[1]Optics and Imaging Center, Nelson R Mandela School of Medicine, University of KwaZulu-Natal, [2]Women's Health and HIV Research Group, Nelson R Mandela School of Medicine, University of KwaZulu-Natal, Durban, South Africa

P1.20 Activating protein-1 (AP-1) signaling pathway in trophoblastic cells: characterization of a novel isomerase protein on its regulation
María Fernanda Camisay[1], Sonia De Leo[1], Gisela Mazaira[1], Vanina Fontana[1], Mario Galigniana[2], **Alejandra Erlejman**[1]
[1]Department of Biological Chemistry, School of Sciences, University of Buenos Aires. IQUIBICEN-CONICET, [2]Department of Biological Chemistry, School of Sciences, University of Buenos Aires. IByMe-CONICET, Buenos Aires, Argentina

P1.21 Proteomic analysis of cell- and size-specific extracellular vesicles isolated by high resolution flow cytometry compared with density gradient ultracentrifugation
Mayu Morita, Terry Morgan
OHSU, OR, USA

Comparative/animal models — Room 4 (3F, Bldg. No. 1)

P1.22 Mouse placental scaffolds: A three-dimensional environment model for recellularization
Patricia Romagnolli[1], Rodrigo da Silva Nunes Barreto[2], Paula Fratini[2], Andrea Maria Mess[2], **Maria Angelica Miglino**[2]
[1]Federal University of South Frontier, Realeza, Brazil, [2]University of Sao Paulo, Sao Paulo, Brazil

P1.23 Concentration of testosterone and estradiol in pregnancy and steroidogenesis in the placenta, ovaries and testes of Spix cavies conceptus
Amilton Cesar Santos[1], Moacir Franco Oliveira[2], Antônio Chaves Assis-neto[1]
[1]University of Sao Paulo, Sao Paulo, Brazil, [2]Federal Rural University of Semiarid, Mossoro, Brazil

P1.24 Effects of dietary arginine supplementation to primiparous mares in the last third of gestation on foal birthweight and placental function
Emilie Derisoud[1], Morgane Robles[1], Geveerding Audrey[1], Josiane Aïoun[1], Cédric Dubois[2], Christophe Richard[1], Michèle Dahirel[1], Julianne Calvez[3], Delphine Ralliard-Rousseau[1], Laurence Wimel[2], Anne Couturier-Tarrade[1], **Pascale Chavatte-Palmer**[1]
[1]UMR BDR, INRA, ENVA, Université Paris Saclay, Jouy en Josas, France, [2]IFCE, Station Experimentale de la Valade, Chamberet, France, [3]AgroParisTech, Paris, France

Diabetes/obesity — Room 4 (3F, Bldg. No. 1)

P1.25 Maternal diets enriched in olive oil prevent lipid accumulation in the fetal liver
Daiana Fornes, Veronica White, Evangelina Capobianco, Alicia Jawerbaum
CEFYBO - UBA - CONICET, Buenos Aires, Argentina

P1.26 Impaired decidual PPAR signaling in diabetic rats at early pregnancy
Sabrina Roberti, Hugo Sato, Florencia Heinecke, Romina Higa, **Alicia Jawerbaum**
CEFYBO - UBA - CONICET. School of Medicine, University of Buenos Aires, Buenos Aires, Argentina

Fetal growth restriction — Room 7 (6F, Bldg. No. 1)

P1.27 Coup de T-Cell: defective placentation impedes neonatal immunity
Wendi Bacon[1,2], Jens Kieckbusch[1,2], Russell Hamilton[2], Delia Hawkes[1], Ziyi Yu[3], Chris Abell[3], Francesco Colucci[1,2], D. Stephen Charnock-Jones[1,2]
[1]Department of Obstetrics & Gynaecology, University of Cambridge, [2]Centre for Trophoblast Research, University of Cambridge, [3]Department of Chemistry, University of Cambridge, Cambridge, UK

P1.28 Reduced numbers of side-population trophoblasts in fetal growth restriction provide clues to placental dysfunction
Teena KJB Gamage, Lawrence W Chamley, Joanna L James
The University of Auckland, Auckland, New Zealand

P1.30 A single neonatal death in an MCDA twin gestation complicated by TAPS and a giant chorioangioma: A case report
Seika Nagae[1], Hiroaki Aoki[2], Miki Muto[2], Keisuke Tomita[2]
[1]Chigasaki Municipal Hospital, [2]Chigasaki Municipal Hospital, Kanagawa, Japan

P1.31 Drug repositioning for search the drug to support placental growth
Masataka Nomoto, Tomomi Kotani, Teruyuki Mizutani, Yoshinori Moriyama, Takefumi Ushida, Kenji Imai, Tomoko Nakano, Fumitaka Kikkawa
Nagoya University, Aichi, Japan

P1.32 Ezrin deficiency induces inflammatory markers in mouse placenta
Tomohiro Nishimura, Masaya Takahashi, Hikari Araki, Saki Noguchi, Masatoshi Tomi
Keio University, Tokyo, Japan

P1.33 Is there a sex specific difference in placental pathology of pregnancies complicated with small for gestational age?
Liliya Tamayev, Letizia Schreiber, Jacob Bar, **Michal Kovo**
Wolfson Medical Center, Holon, Israel

P1.140 The placental pathology in pregnancy with Fontan circulation
Tae Yokouchi Konishi[1], Keiko Ohta Ogo[2], Hatsue Ishibashi Ueda[2], Chizuko A Kamiya[1], Masami Sawada[1], Tadasu Shionoiri[1], Atsushi Nakanishi[1], Chinami Horiuchi[1], Mitsuhiro Tsuritani[1], Naoko Iwanaga[1], Reiko Neki[1], Jun Yoshimatsu[1]
[1]Department of Perinatology and Gynecology, National Cerebral and Cardiovascular Center, [2]Department of Pathology, National Cerebral and Cardiovascular Center, Osaka, Japan

Gene expression — Room 7 (6F, Bldg. No. 1)

P1.34 Placental and yolk sac growth is reduced and associated with altered system L amino acid transporter gene expression in a rat model of maternal immune activation
Hager M. Kowash[1], Xie Yinou[1], Harry G. Potter[2], Syeda T.M. Munni[3], Reinmar Hager[2], Joanna C. Neill[3], Jocelyn D. Glazier[1]
[1]Division of Developmental Biology and Medicine, Faculty of Biology, Medicine and Health, University of Manchester, [2]Division of Evolution and Genomic Sciences, Faculty of Biology, Medicine and Health, University of Manchester, [3]Division of Pharmacy & Optometry, Faculty of Biology, Medicine and Health, University of Manchester, Manchester, UK

P1.35 Minimally invasive, *in vivo* gene expression modification in the placenta by ultrasound sonoporation
Marlee Elston, Haide Razavy, Kainalu Matthews, Johann Urschitz
John A. Burns School of Medicine, HI, USA

P1.36 Differentiated potential of trophoblast stem cells derived from androgenetic embryos
Daisuke Suzuki, Hiromu Morimoto, Tomohiro Kono, Hidehiko Ogawa
Department of Bioscience, Tokyo University of Agriculture, Tokyo, Japan

P1.37 Kruppel-like factor (KLF) 5 is involved in miscarriage and decidualization
Shigehiro Hayashi
Tokyo Medical University, Tokyo, Japan

P1.38 Oxygen-induced regulation of placental microRNA and renin-angiotensin system expression in first trimester chorionic villi
Sarah Delforce, Anya Arthurs, Hannah Drury, Rikki Quinn, Eugenie Lumbers, Kirsty Pringle
University of Newcastle, Newcastle, Australia

P1.39 Withdraw

P1.40 Expression of retinoic acid-inducible gene I (RIG-I)-like receptors (RLRs) following vesicular stomatitis virus infection in third-trimester chorionic villi and deciduas
Agnieszka Jabłońska[1], Mirosława Studzińska[1], Jarosław Kalinka[2], **Edyta Paradowska**[1]
[1]Laboratory of Molecular Virology and Biological Chemistry, Institute of Medical Biology of the Polish Academy of Sciences, [2]Department of Perinatology, First Chair of Gynecology and Obstetrics, Medical University of Lodz, Lodz, Poland

P1.142 Marked time-of-day variation in expression of clock genes near term in the spiny mouse placenta
Peter J Mark[1], Celeste, H Wale[1], Karen, M Moritz[2], David, W Walker[3], Brendan, J Waddell[1], Hayley Dickinson[3]
[1]School of Human Sciences, The University of Western Australia, Nedlands, Australia, [2]School of Biomedical Sciences, The University of Queensland, Australia, [3]The Richie Centre, Hudson Institute of Medical Research, Victoria, Australia

Genomics/Epigenomics — Room 7 (6F, Bldg. No. 1)

P1.41 The role of genetic imbalances in intrauterine growth restriction: Investigations of confined placental mosaicism and placental copy number variation
Giulia Del Gobbo[1,2], Ryan Yuen[3,4], Wendy Robinson[1,2]
[1]Department of Medical Genetics, University of British Columbia, Vancouver, Canada, [2]BC Children's Hospital Research Institute, Vancouver, Canada, [3]Department of Molecular Genetics, University of Toronto, Toronto, Canada, [4]The Centre for Applied Genomics, The Hospital for Sick Children, Toronto, Canada

P1.42 Accounting for population structure in placental DNA methylation studies: a novel method for inferring ethnicity from microarray data
Victor Yuan[1,2], Magda Price[2,3], Giulia Del Gobbo[2,3], Alexandra Binder[4], Karin B. Michels[4], Brian Cox[5], Carmen Marsit[6], Wendy Robinson[2,3]
[1]Department of Genome Sciences, University of British Columbia, Vancouver, Canada, [2]BC Children's Hospital Research Institute, Vancouver, Canada, [3]Department of Medical Genetics, Vancouver, Canada, [4]Department of Epidemiology, Fielding School of Public Health, University of California, LA, USA, [5]Department of Physiology, University of Toronto, Toronto, Canada, [6]Department of Environmental Health, Rollins School of Public Health, Emory University, GA, USA

P1.43 The possibility of using placenta-specific interindividual differences in genome-wide DNA methylation profiles to assess intrauterine environments
Taisuke Sato[1,2], Tomoko Kawai[2], Kohei Kashima[2,3], Isaku Omori[4], Mitsumasa Shimizu[4], Riki Nishimura[3], Hironobu Hyodo[5], Koji Kugu[5], Takeshi Nagamatsu[6], Tomoyuki Fujii[6], Naoto Takahashi[3], Aikou Okamoto[1], Kenichiro Hata[2]
[1]Department of Obstetrics and Gynecology, The Jikei University School of Medicine, [2]Department of Maternal-Fetal Biology, National Research Institute for Child Health and Development, [3]Department of Pediatrics, The University of Tokyo Hospital, [4]Department of Neonatology, Tokyo Metropolitan Bokutoh Hospital, [5]Department of Obstetrics and Gynecology, Tokyo Metropolitan Bokutoh Hospital, [6]Department of Obstetrics and Gynecology, The University of Tokyo Hospital, Tokyo, Japan

P1.44 Altered transcriptome and methylome profiles in placenta from complicated pregnancies
Cyntia Duval[1,2], Ines Boufaeid[2], Lisa-Marie Legault[1,2], Maxime Caron[1,2], Serge McGraw[1,2], Daniel Sinnett[1,2], Sylvie Girard[1,2]
[1]Universite de Montreal, [2]CHU Sainte-Justine Research Center, Montreal, Canada

P1.45 On the cross-road of soil and placental microbiome
Natalia Schlabritz-Loutsevitch[1], Stacy Martinez[1], Kameswara Rao Kottapalli[2], Hannah Kodeih[1], Gary Ventolini[1], James Maher[1]
[1]TTUHSC at the PB, [2]TTU, TX, USA

P1.46 Correlation between DNA double strand break repair and RAGE in pathological placentas
Paul Reynolds
Brigham Young University, UT, USA

Hormones/growth factors — Room 7 (6F, Bldg. No. 1)

P1.47 Influence of intrauterine growth restriction on the neuroplacental corticosterone axis in the low protein rat model
Marius Schmidt[1], Manfred Rauh[1], Hanna Huebner[2], Rainer Wachtveitl[1], Nada Cordasic[1], Wolfgang Rascher[1], Carlos Menendez-Castro[1], Andrea Hartner[1], Fabian Fahlbusch[1]
[1]Department of Pediatrics and Adolescent Medicine, Friedrich-Alexander University Erlangen-Nuremberg, [2]Department of Gynaecology and Obstetrics/Comprehensive Cancer Center Erlangen-EMN, Erlangen, Germany

P1.48 Synergistic effects of tumor necrosis factor-α and insulin-like growth factor-I on BeWo cells survival
Kei Tanaka, Yoichi Kobayashi, Mitsutoshi Iwashita
Kyorin University School of Medicine, Tokyo, Japan

P1.49 Placental androgen receptor AR45 variant may be central to mediating male growth
Ashley Meakin, Zarqa Saif, Vicki Clifto
Mater Medical Research Institute - University of Queensland, Brisbane, Australia

P1.50 LC-MS/MS analysis of 11beta-hydroxysteroid dehydrogenase type 2 (11bHSD2) steroid metabolism in placentas from spontaneous birth versus cesarean section
Fabian Fahlbusch[1], Marius Schmidt[1], Hanna Huebner[2], Kirsten Heussner[1], Matthias Ruebner[2], Matthias Schmid[3], Jennifer Nadal[3], Wolfgang Rascher[1], Andrea Hartner[1], Sven Kehl[2], Florian Faschingbauer[2], Manfred Rauh[1]
[1]Department of Pediatrics and Adolescent Medicine, University of Erlangen-Nürnberg, Erlangen, Germany, [2]Department of Gynecology and Obstetrics, University of Erlangen-Nürnberg, Erlangen, Germany, [3]Institute of Medical Biometry, Informatics and Epidemiology (IMBIE), Rheinische Friedrich-Wilhelms-University, Bonn, Germany

Imaging — Room 7 (6F, Bldg. No. 1)

P1.51 Extracellular vesicles comprise 5% of the villous stromal volume in terminal villi from term human placenta
Helen Palaiologou, Rohan Lewis
University of Southampton, Southampton, UK

P1.52 Relationship between placenta occupancy ratio in the uterine isthmus and the amount of bleeding during Cesarean section
Yoko Nagayasu, Daisuke Fujita, Misa Nunode, Atsuko Okamoto, Takumi Sano, Yoshito Terai, Masahide Ohmichi
Osaka Medical College, Osaka, Japan

P1.53 A case study on low-lying placenta and previa with caesarean section
Yuichi Shouburu[1], Keiji Morimoto[1], Miwako Shimzaki[1], Akari Nakajima[1], Ryousuke Saito[1], Noriko Yamaguchi[1], Ryusuke Kaya[1], Hiroko Takanashi[1], Seiji Isonishi[1], Aikou Okamoto[2]
[1]The Jikei University Daisan Hospital, [2]The Jikei University Hospital, Tokyo, Japan

P1.54 Optic tissue clearing in combination with perfusion and immunofluorescence for placental vascular imaging
Maira Carrillo[1], Marcel Chuecos[1], Kushal Gandhi[1], Andrey Bednov[1,2], Lee David Moore[1], James Maher[1], Gary Ventolini[1], Guangchen Ji[1], **Natalia Schlabritz-Loutsevitch**[1]
[1]TTUHSC at the PB, [2]UTPB, TX, USA

P1.55 Trophoblast and macrophage change their sub-cellular structures in response to externally induced inflammation as shown by structured illumination microscopy and quantitative phase microscopy
Purusotam Basnet[1,2], Rajwinder Singh[3], Deanna L. Wolfson[3], Vishesh Dubey[3,4], Azeem Ahmad[4], Ganesh Acharya[1,5], Dalip S. Mehta[4], Balpreet S. Ahluwalia[3]
[1]Department of Clinical Medicine, UiT-The Arctic University of Norway, Tromsø, Norway, [2]Department of Obstetrics and Gynecology, University Hospital of North Norway, Tromsø, Norway, [3]Department of Physics and Technology, UiT-The Arctic University of Norway, Tromsø, Norway, [4]Department of Physics, Indian Institute of Technology, New Delhi, India, [5]Department of Clinical Science Intervention and Technology, Karolinska Institutet, Stockholm, Sweden

P1.137 Superb microvascular imaging and magnetic resonance imaging/ultrasound fusion for diagnosis of subchorionic hematoma in a pregnant woman with chronic abruption of the placenta
Masahiro Yamaguchi, Takeshi Umazume, Mamoru Morikawa, Hidemichi Watari
Hokkaido University, Obstetrics, Hokkaido, Japan

P1.139 Three-dimensional visualization of intrauterine conceptus through the uterine wall by tissue clearing method
Kyosuke Kagami[1], Yohei Shinmyo[2], Takashi Izuka[1], Takeo Matsumoto[1], Takeshi Obata[1], Ayumi Matsuoka[1], Shunsuke Orisaka[1], Junpei Iwadare[1], Rena Yamazaki[1], Masanori Ono[1], Hiroshi Kawasaki[2], Hiroshi Fujiwara[1]
[1]Department of Obstetrics and Gynecology, Graduate School of Medical Sciences, Kanazawa University, [2]Department of Medical Neuroscience, Graduate School of Medical Sciences, Kanazawa University, Ishikawa, Japan

P1.141 Quantitative analysis by image processing of differentiation to extravillous cytotrophoblast in human embryonic stem cell derived trophoblast
Victoria M Karakis
North Carolina State University, NC, USA

Immunology — Room 8 (7F, Bldg. No. 1)

P1.56 LPS-exposed fetal membranes activate neutrophils in a TNF-α and p38 MAPK dependent mechanism
Mancy Tong, Julie A Potter, Gil Mor, Vikki M Abrahams
Yale School of Medicine, CT, USA

P1.57 Decidual natural killer cells regulate trophoblast stem cell differentiation
Liyang Ma[1,2], Zhilang Li[1,2], Guanlin Li[1], Wentong Jia[1,2], Yanlei Liu[1,2], Yuxia Li[1], Yanling Wang[1,2]
[1]State Key Laboratory of Stem cell and Reproductive Biology, Institute of Zoology, Chinese Academy of Sciences, [2]University of the Chinese Academy of Sciences, Beijing, China

P1.58 Role of core 2β1, 6-N acetylglcosaminyl transferase in evasion mechanism through NK cell immunity
Kenichi Nakamura, Kaoru NIimi, Yoshinori Ikeda, Kimihiro Nishino, Eiko Yamamoto, Fumitaka Kikkawa
Nagoya University, Aichi, Japan

P1.59 Fetal macrophages in amniotic fluid assist the healing of ruptured membranes
Yosuke Kawamura, Haruta Mogami, Yusuke Ueda, Mai Sato, Yoshitsugu Chigusa, Eiji Kondoh, Masaki Mandai
Kyoto University, Kyoto, Japan

P1.60 Histochemical analysis of Slc2a1 (glucose transporter type I) in uterine natural killer cells during mouse pregnancy
Chaw Kyi-Tha-Thu, Toshihiro Takizawa
Department of Molecular Medicine and Anatomy, Nippon Medical School, Tokyo, Japan

Implantation and invasion — Room 8 (7F, Bldg. No. 1)

P1.62 Regulation of primary trophoblast differentiation by the ZEB2 transcription factor
Sonia C. DaSilva-Arnold, Stacy Zamudio, Abdulla Al-Khan, Nicholas P. Illsley
Hackensack University Medical Center, NJ, USA

P1.63 Stage-specific downregulation of progesterone receptor membrane component 1 (PGRMC1) during the menstrual cycle stimulates human endometrial stromal cells decidualization
Ryo Yonekawa[1], Mikihiro Yoshie[1], Kazuhiro Tamura[1], Junya Kojima[2], Hirotaka Nishi[2], Keiichi Isaka[2]
[1]Department of Endocrine and Neural Pharmacology, Tokyo University of Phamacy and Life Sciences, [2]Department of Obstetrics and Gynecology, Tokyo Medical University, Tokyo, Japan

P1.64 Five cases of cesarean scar pregnancy
Shiho Takeuchi[1,2], Makiko Egawa[1], Nobuyuki Kidera[3], Ayako Fudono[1], Asuka Hirose[1], Takashi Nakasuji[1], Naoyuki Miyasaka[1]
[1]Tokyo Medical and Dental University, Tokyo, Japan, [2]Moriya Daichi General Hospital, Ibaraki, Japan, [3]Denentoshi Ladies Clinic Reproductive Center, Kanagawa, Japan

P1.65 Does oncostatin M affecton theinvasiveness of primary trophoblasts under normoxia and hypoxia conditions?
Hyun Sun Ko, Jeong Ha Wie, Ahyoung Kim, Sae Kyung Choi, In Yang Park, Jong Chul Shin
Catholic University of Korea, Seoul, Korea

P1.66 The regulation of utero-placental blood flow by trophoblast plugs: Insights from computational modelling
Joanna James[1], Rojan Saghian[2], Rebecca Perwick[3], **Alys Clark**[2]
[1]Obstetrics & Gynaecology, University of Auckland, [2]Auckland Bioengineering Institute, University of Auckland, [3]University of Auckland, Auckland, New Zealand

P1.67 Pro-inflammatory cytokine inhibition of matrix metalloproteinase-2 activity is mediated by endoplasmic reticulum stress; implications for insufficient trophoblast invasion in pre-eclampsia
Cheuk-Lun Lee[1,2], Jan H.W. Veerbeek[3], Tirtha Rana[1], William S.B. Yeung[2,4], Philip C.N. Chiu[2,4], Graham Burton[1], Hong Wa Yung[1]
[1]University of Cambridge, Cambridge, UK, [2]The University of Hong Kong, Hong Kong, [3]Utrecht University, Utrecht, Netherlands, [4]The University of Hong Kong-Shenzhen Hospital, Shenzhen, China

Infection and inflammation — Room 8 (7F, Bldg. No. 1)

P1.68 Human endometrial epithelial cells resist Internalin A, but not Internalin B- deficient *Listeria monocytogenes* (Lm) infection *in vitro*
Anna Marie Rowell, Troy Thoong, Bryce Wolfe, Greg Wiepz, Ted Golos
University of Wisconsin, WI, USA

P1.69 Role of cell fusion in protection of the placenta against infection
Lauren Johnson, Siavash Azari, Joanna Marshall, William Ackerman, Stephen Thung, Kara Rood, John Robinson, Stephanie Seveau
The Ohio State University, OH, USA

P1.70 Placental histology and neonatal outcome in cases of persistent seropositive immunoglobulin M antibodies against cytomegalovirus
Masako Matsumoto, Chizuko Yaguchi, Yoshimasa Hrikoshi, Naomi Isomura, Kazuhiro Sugihara, Hiroaki Itoh, Naohiro Kanayama
Hamamatsu University School of Medicine, Shizuoka, Japan

P1.71 Clinical and pathological findings in 28 cases of high grade VUE
Naomi Isomura, **Chizuko Yaguchi**
Hamamatu University School of Medicine, Shizuoka, Japan

P1.72 Suppression of galectin-3 prevents the preterm-birth induced by odontogenic infection of *Porphyromonas gingivalis*
Hisako Furusho[1], Mutsumi Miyauchi[1], Satoshi Urabe[2], Haruhisa Konishi[2], Yoshiki Kudo[2], Takashi Takata[1]
[1]Department of Oral and Maxillofacial and Pathobiology, Hiroshima University, [2]Department of Obstetrics and Gynecology, Hiroshima University, Hiroshima, Japan

P1.73 Placental pathology of congenital cytomegalovirus infection
Mizuki Uenaka[1], Mayumi Morizane[1], Kenji Tanimura[1], Masashi Deguchi[1], Maki Kanzawa[2], Hideto Yamada[1]
[1]Department of Obstetrics and Gynecology, Kobe University Graduate School of Medicine, [2]Department of Diagnostic Pathology, Kobe University Graduate School of Medicine, Hyogo, Japan

Metabolism/mitochondria — Room 8 (7F, Bldg. No. 1)

P1.75 Increased respiration and ATP production in cytotrophoblast compared to syncytiotrophoblast mitochondria
Joshua Fisher[1], Daniel McKeating[1], Evan Pennell[1], Jessica Vanderlelie[2], James Cuffe[3], Olivia Holland[1], Anthony Perkins[1]
[1]Griffith University, Gold Coast, Australia, [2]La Trobe, Melbourne, Australia, [3]University of Queensland, Brisbane, Australia

P1.76 Sexual dimorphism in activation of the placental inflammation/NFkB p50/miR-210 pathway in relation to increasing birthweight centiles
Yu Wang[1], Matthew Bucher[1], Alina Maloyan[2], **Leslie Myatt**[1]
[1]Oregon Health & Sciences University, Obstetrics and Gynecology, [2]Oregon Health & Sciences University, Knight Cardiovascular Institute, OR, USA

Metabolomics/proteomics — Room 8 (7F, Bldg. No. 1)

P1.77 Elemental analysis for the determination of micronutrient status in biological samples: applications for pregnancy research
Daniel McKeating[1], William Bennett[2], Jessica Vanerlelie[3], Anthony Perkins[1]
[1]Griffith University, Southport, Australia, [2]Environmental Futures Centre, Southport, Australia, [3]La Trobe University, Melbourne, Australia

Oxidative stress — Room 8 (7F, Bldg. No. 1)

P1.78 HIF2A, but not HIF1A, mediates regulation of trophoblast syncytialization under hypoxia
Kaiyu Kubota, Junya Kojima, Osamu Akutagawa, Hirotaka Nishi
Tokyo Medical University, Tokyo, Japan

P1.79 First trimester oxygen rising increases the antioxidant defenses and impacts p38 MAPK activation in human villous cytotrophoblast
Isabelle Hernandez[1,2], Sylvie Pinto[1,2], Audrey Chissey[1,2], **Thierry Fournier**[1,2], Jean-Louis Beaudeux[1,2], Amal Zerrad-Saadi[1,2]
[1]Paris Descartes University, [2]INSERM, Paris, France

Placental dysfunction — Room 8 (7F, Bldg. No. 1)

P1.80 Urban particulate matter $PM_{2.5}$ exerts negative effects on trophoblast cells in vitro
Åsa Nääv[1], Lena Erlandsson[1], Christina Isaxon[2], Ebba Malmqvist[3], Stefan Hansson[1]
[1]Institute of Clinical Sciences, Department of Obstetrics and Gynaecology, Lund University, [2]Faculty of Engineering LTH, Aerosol Technology, Lund University, [3]Institute of Laboratory Sciences, Occupational and Environmental Medicine, Lund University, Lund, Sweden

P1.81 Impaired expression of CRH, UCN, and WFS1 in pregnant rats with 17 α -ethynylestradiol-induced intrahepaticcholestasis under acute hypoxia stress
Tingting Xu[1,2], Fan Zhou[1,2], Zhiyi Zhou[1,2], Na Liu[1,2], Danni Liu[1,2], Chunyan Deng[1,2], Guiqiong Huang[1,2], Xiaodong Wang[1,2]
[1]Department of Obstetrics and Gynecology, West China Second University Hospital, Sichuan University, [2]Key Laboratory of Birth Defects and Related Diseases of Women and Children (Sichuan University), Ministry of Education, Chengdu, China

P1.82 Histopathological findings of chronic abruption-oligohydramnios sequence: A clinical report of four cases
Michihiro Yamamura[1], Hiroaki Aoki[1], Keiko Yabuzaki[1], Akihiro Hasegawa[1], Taisuke Sato[1], Tomona Matsuoka[1], Haruhiko Udagawa[1], Yuki Ito[1], Kazuhiro Kajiwara[1], Taizan Kamide[1], Kentaro Matsuoka[2], Osamu Samura[1], Aikou Okamoto[1]
[1]Department of Obstetrics and Gynecology, The Jikei University School of Medicine, Tokyo, Japan, [2]Dokkyo Medical University Saitama Medical Center, Saitama, Japan

P1.83 Fine particulate matter air pollution causes inflammation, ER stress and activates cell death in cultured first trimester trophoblast
Stefan R. Hansson[1], Mary Familari[2], Åsa Nääv[3], Lena Erlandsson[3], Robb de Longh[4], Christina Isaxon[5], Ebba Malmqvist[6]
[1]Lund University, Skane University Hospital, Division of Obstetrics and Gynecology, Department of Clinical Sciences Lund, Lund, Sweden, [2]School of BioSciences, University of Melbourne, Parkville, Australia, [3]Lund University, Division of Obstetrics and Gynecology, Department of Clinical Sciences Lund, Lund, Sweden, [4]School of BioMedical Sciences, University of Melbourne, Parkville, Australia, [5]Department of Ergonomics and Aerosol Technology, Lund University, Lund, Sweden, [6]Division of Occupational and Environmental Medicine, Lund University, Lund, Sweden

P1.84 Clinicopathological features and genomic/epigenetic aspects of placental mesenchymal dysplasia
Chisato Kodera[1], Saori Aoki[1], Takashi Ohba[1], Ken Higashimoto[2], Hidenobu Soejima[2], Hidetaka Katabuchi[1]
[1]Department of Obstetrics and Gynecology, Faculty of Life Sciences, Kumamoto University, Kumamoto, Japan, [2]Division of Molecular Genetics and Epigenetics, Department of Biomolecular Sciences, Faculty of Medicine, Saga University, Saga, Japan

P1.85 Impact of sickle cell disease (SCD) on gene and protein expression in human placenta
Anne Gael Cordier[1,2], Anne Sophie Bouvier[1], Francoise Vibert[1], **Thierry Fournier**[1], Alexandra Benachi[2], Sophie Gil[1]
[1]INSERM UMR S 1139, Paris Descartes University, Paris, France, [2]Antoine Beclere Hospital, Clamart, France

P1.86 Placenta accreta management with uterine artery embolization to preserve the uterus - a case report
Yuto Tsuruoka, Yuka Akiyama, Rie Saitou, Junki Onishi, Yuko Tanaka, Suguru Odajima, Eitarou Suzuki, Akiko Nakamura, Akina Tsuda, Hiromi Komasaki, Motoaki Saitou, Shigeki Niimi, Aikou Okamoto
The Jikei University School of Medicine, Tokyo, Japan

P1.135 Polymer-based, biodegradable nanoparticles for the treatment of placental dysfunction
Rebecca Wilson[1], Jennifer Courtney[1], Kathryn Owens[1], Marcel Chuecos[2], Maira Carrillo[2], Natalia Schlabritz-Lutsevich[2], Helen Jones[1]
[1]Center for Fetal and Placental Research, Cincinnati Children's Hospital Medical Center, OH, USA, [2]Texas Tech University Health Sciences Center at the Permian Basin, TX, USA

P1.138 Determination of the diagnosis and management of retained placenta
Natsumi Furuya, Junichi Hasegawa, Nao Suzuki
Department of Obstetrics and Gynecology, St. Marianna University School of Medicine, Kanagawa, Japan

Preeclampsia — Room 8 (7F, Bldg. No. 1)

P1.87 Defects in lysosomal degradation contribute to impaired fibronectin matrix assembly in preeclampsia
Sruthi Alahari[1,2], Leonardo Ermini[1], Isabella Caniggia[1,2]
[1]Lunenfeld-Tanenbaum Research Institute, Sinai Health System, [2]University of Toronto, Toronto, Canada

P1.88 Procoagulant extracellular vesicles impair trophoblast function by a thrombo-inflammatory pathway in preeclampsia
Shrey Kohli, Paulina Markmeyer, Franziska Lochmann, Moh'd Mohanad Al-Dabet, Satish Ranjan, Berend Isermann
Otto-von-Guericke University, Magdeburg, Germany

P1.89 Chloroquine modifies features of preeclampsia (PE) in phenotype in L-nitro-arginine methyl ester (L-NAME) induced-PE rat model
Minji Choi[1,2], Jae Ryoung Hwang[1], Minji Yoon[1,2], Suk-Joo Choi[2], Soo-young Oh[2], Jung-Sun Kim[3], Cheong-Rae Roh[2]
[1]Samsung biomedical research institute, Samsung Medical Center, [2]Department of Obstetrics and Gynecology, Samsung Medical Center, Sungkyunkwan University School of Medicine, [3]Department of Pathology and Translational Genomics, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea

P1.90 Autophagy insufficiency is a novel feature of preeclampsia with fetal growth restriction
Tae Kusabiraki, Akitoshi Nakashima, Aiko Aoki, Shigeru Saito
Department of Obstetrics and Gynecology, University of Toyama, Toyama, Japan

P1.91 Aspirin inhibit hypoxia induced sFlt1 release through Activator Protein-1 in human endothelial and trophoblast
Li Lin[1,2], Guanlin Li[1,2], Huixia Yang[1,2]
[1]Peking University First Hospital, Beijing, China, [2]Beijing Key Laboratory of Maternal Fetal Medicine of Gestational Diabetes Mellitus, Beijing, China

P1.92 Trophoblast-specific gene expression driven by endogenous retrovirus LTRs in normal vs pre-eclamptic (PE) pregnancy
Rabia Anwar[1], Manvendra Singh[1], Florian Herse[2], Ralf Dechend[2], Zsuzsanna Izsvák[1]
[1]MDC, [2]ECRC, Berlin Buch, Germany

P1.93 Can quantification of serum glycans predict pre-eclampsia?
Imeobong U Antia[1], Ajit J Shah[1], Darshna R Yagnik[1], Argyro Syngelaki[2], Kypros Nicolaides[2], **Frank A Hills**[1]
[1]Middlesex University, [2]King's College Hospital, London, UK

P1.94 Syncytialisation of primary human trophoblast and BeWo choriocarcinoma cells: do the prorenin receptor and soluble prorenin receptor play a role?
Saije Morosin, Sarah Delforce, Eugenie Lumbers, Kirsty Pringle
Hunter Medical Research Institute and the University of Newcastle, Newcastle, Australia

P1.96 Withdraw

P1.97 Withdraw

P1.98 Expression of placental alpha-1-antitrypsin and high-temperature requirement protein A1 (HTRA1) in the placentas of hypertensive disorders of pregnancy
Kazuhiro Tamura[1], Mikihiro Yoshie[1], Takako Ohmaru[2], Kiyoko Kato[2], Gen Ishikawa[3], Toshiyuki Takeshita[3], Junya Kojima[4], Hirotaka Nishi[4], Keiichi Isaka[4]
[1]Department of Endocrine and Neural Pharmacology, Tokyo University of Pharmacy and Life Sciences, Tokyo, Japan, [2]Department of Obstetrics and Gynecology, Graduate School of Medical Sciences, Kyushu Univ., Fikuoka, Japan, [3]Department of Obstetrics and Gynecology, Nippon Medical School, Tokyo, Japan, [4]Department of Obstetrics and Gynecology, Tokyo Medical University, Tokyo, Japan

P1.99 Sterile inflammatory molecules: potential biomarkers for preeclampsia
Abhirup Bandhapadhaya[1], William May[2], Saumaya Bhagat[3], Iqbal Alam[4], **Gausal Khan**[2,3]
[1]Murshidabad Medical College & Hospital, Berhampore, India, [2]Fiji School of Medicine, Fiji National University, Suva, Fiji, [3]DIPAS, Delhi, India, [4]University of Jamia Hamdard, New Delhi, India

P1.100 Altered regulation of placental sialyltransferases in early-onset preeclampsia
Charlotte Burrin[1], Klaudia Toczyska[1,2], Graham Burton[1], **Hong wa Yung**[1]
[1]University of Cambridge, Cambridge, UK, [2]King College London, London, UK

P1.101 Placental complement activation and antiangiogenic milieu in preeclampsia
Manu Banadakoppa, Meena Balakrishnan, **Chandra Yallampalli**
Baylor College of Medicine, TX, USA

P1.102 COL17A1 is a syncytial trophoblast extracellular specific marker significantly elevated in preeclampsia
Wei Zhang, Gavin Collett, Adam Cribbs, Dionne Tannetta, Rebecca Dragovic, Sofia Cerdeira, Ian Sargent, Christopher Redman, Manu Vatish
Oxford University, Oxford, UK

P1.103 SerpinA5, a potential preeclampsia biomarker, may contribute to pathogenesis of disease by inhibiting trophoblast cell invasion
Hong-Ling Yang, Yan Long, Jiang Min, Fang-Ling Zeng, Gendie Lash
Guangzhou Women and Children's Medical Center, Guangzhou, China

P1.136 Politics and the placenta
Priscilla Boyd, Adama Kasongo
Kongo University, Kinshasa, Congo

P1.143 Serum levels of nitric oxide synthase, proangiogenic and antiangiogenic factors in HIV infected pre-eclamptic women
I Ajadi[1], K Maduray[1], S Eche[2], I Mackraj[1]
[1]Department of Human Physiology, School of Laboratory Medicine and Medical Sciences, University of KwaZulu-Natal, [2]KwaZulu-Natal Research and Innovation Sequence Platform (KRISP), School of Laboratory Medicine and Medical Sciences, University of KwaZulu-Natal, South Africa

Prenatal diagnosis — Room 8 (7F, Bldg. No. 1)

P1.104 Evaluation of risk factors for massive postpartum hemorrhage in placenta previa
Naoya Kitamura[1], Madoka Horiya[1], Satoru Tsuda[1], Kazuhiko Oka[1], Shingo Horikawa[1], Ruriko Ejima[1], Yusuke Mori[1], Nami Yamamura[1], Junya Tabata[1], Daito Noguchi[1], Yukihiro Hirata[1], Hiroshi Kuroda[1], Masahiro Ezawa[1], Hirokazu Ozone[1], Hirokuni Takano[1], Aikou Okamoto[2]
[1]The Jikei University Kashiwa Hospital, Chiba, Japan, [2]The Jikei University School of Medicine, Tokyo, Japan

P1.105 Non-invasive prenatal testing in Japan
Osamu Samura[1], Akihiko Sekizawa[2], Nobuhiro Suzumori[3], Fumiki Hirahara[4], Takahiro Yamada[5], Kiyonori Miura[6], HIdeaki Masuzaki[6], Yoshimasa Kamei[7], Haruhiko Sago[8]
[1]Department of Obstetrics and Gynecology, The Jikei University School of Medicine, Tokyo, Japan, [2]Department of Obstetrics and Gynecology, Showa University School of Medicine, Tokyo, Japan, [3]Division of Clinical and Molecular Genetics, Department of Obstetrics and Gynecology, Nagoya City University, Aichi, Japan, [4]Department of Human Genetics, Yokohama City University Graduate School of Medicine, Kanagawa, Japan, [5]Department of Obstetrics and Gynecology, Hokkaido University Graduate School of Medicine, Hokkaido, Japan, [6]Department of Obstetrics and Gynecology, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan, [7]Departments of Obstetrics and Gynecology, Saitama Medical University School of Medicine, Saitama, Japan, [8]Center of Maternal-Fetal, Neonatal and Reproductive Medicine, National Center for Child Health and Development, Tokyo, Japan

Preterm labour and birth — Room 8 (7F, Bldg. No. 1)

P1.106 The role of Wls in placental development and birth timing
Ortal Tamam[1,2,3], Debora Sinner[4], Kaulini Burra[4], Kelli Ryckman[5], Frans Bødker[6], Kaare Christensen[6], John Dagle[7], Ruti Parvari[1], Louis J Muglia[3,4]
[1]The Shraga Segal Department of Microbiology, Immunology & Genetics; Faculty of Health Sciences (A.B.), Ben-Gurion University of the Negev, Beer Sheva, Israel, [2]National Institute of Biotechnology in the Negev, Ben-Gurion University of the Negev, Beer Sheva, Israel, [3]Center for Prevention of Preterm Birth, Cincinnati Children's Hospital Medical Center, OH, USA, [4]Neonatology and Pulmonary Biology, Perinatal Institute, Cincinnati Children's Hospital Medical Center, OH, USA, [5]Department of Epidemiology; College of Public Health, University of Iowa, IA, USA, [6]Univ. of Southern Denmark, Odense, Denmark, [7]Department of Pediatrics, Carver College of Medicine, University of Iowa, IA, USA

P1.107 Collagen gel stimulates healing of ruptured amnion in mouse PROM model
Haruta Mogami[1], Yosuke Kawamura[1], Mai Sato[1], Hiroshi Takai[1], Eiji Kondoh[1], Masaki Mandai[1], R. Ann Word[2]
[1]Kyoto University Graduate School of Medicine, Kyoto, Japan, [2]UT Southwestern Medical Center, TX, USA

P1.108 Complications and fertility after uterine artery embolization for retained products of conception
Takako Ohmaru-Nakanishi, Kazutaka Kuramoto, Haruka Goto, Atsushi Takasugi, Miyako Maehara, Reiko Takeuchi, Hiroko Oishi, Yosuke Ueoka
Hamanomachi Hospital, Fukuoka, Japan

Stem cells — Room 8 (7F, Bldg. No. 1)

P1.109 Sphingosine-1-Phosphate (S1P) signaling mediated by S1P receptors causes differentiation of human embryonic stem cells to the trophoblast lineage in a completely defined medium
Adam Mischler, **Balaji Rao**
NC State University, NC, USA

P1.110 The role of ageing in *decidua basalis*-derived mesenchymal stem/stromal cells from early term labour, not in labour and late/post term placentas
Ramin Khanabdali[1,2], Harry Georgiou[1,2], Bill Kalionis[1,2]
[1]Department of Maternal-Fetal Medicine, Pregnancy Research Centre, The Royal Women's Hospital, [2]Department of Obstetrics and Gynaecology, The University of Melbourne, Melbourne, Australia

P1.111 Placenta derived mesenchymal stem cells increase invasion ability of trophoblast (HTR-8/SVneo) via alteration of mitochondrial function
Jin Seok, Hyun Sook Jung, Jae Yeon Kim, **Gi Jin Kim**
Department of Biomedical Science, CHA University, Seongnam, Korea

P1.112 Amniotic fluid cell-derived Down syndrome induced pluripotent stem cells exhibited reversion to intact disomy 21
Momoko Inoue[1,2], Kazuhiro Kajiwara[2], Osamu Samura[2], Hidenori Akutsu[1], Haruhiko Sago[3], Akihiro Umezawa[1], Aikou Okamoto[2]
[1]Department of Reproductive Biology, National Research Institute for Child Health and Development, [2]Department of Obstetrics and Gynecology, The Jikei University School of Medicine, [3]Maternal-Fetal, Neonatal and Reproductive Medicine, National Research Institute for Child Health and Development, Tokyo, Japan

P1.113 Characterization and differentiation of placenta-derived mesenchymal stem cells from GDM women into insulin producing cells for personalised medicine
Liyun Chen[1], Marwan Merkhan[1], Nicholas R. Forsyth[1], Pensee Wu[1,2]
[1]Guy Hilton Research Centre, Keele University, [2]Academic Obstetrics and Gynaecology, University Hospital of North Midlands, Stoke-on-Trent, UK

Transport — Room 8 (7F, Bldg. No. 1)

P1.114 Sex-specific disturbance of early-mid pregnancy placental transporter protein expression associated with maternal overweight/obesity
Natasha E Walker[1], Michelle Bellingham[2], Peter J O'Shaughnessy[2], Paul A Fowler[1], Panagiotis Filis[1]
[1]Institute of Medical Sciences, University of Aberdeen, Aberdeen, UK, [2]Institute of Biodiversity, Animal Health and Comparative Medicine, University of Glasgow, Glasgow, UK

P1.115 Mass of cholesterol taken up by the term human fetus in vivo and its relationship to maternal cholesterol levels
Hildegunn Horne[1], Ane Moe Holme[2,3], Maia Blomhoff Holm[2,3], Marie Cecilie Paasche Roland[2,4], Guttorm Haugen[1,5], Tore Henriksen[1,2], Trond Michelsen[2,4]
[1]Institute of Clinical Medicine, University of Oslo, [2]Department of Obstetrics, Oslo University Hospital, [3]University of Oslo, [4]Norwegian Advisory Unit on Women's Health, Oslo University Hospital, [5]Department of Fetal Medicine, Oslo University Hospital, Oslo, Norway

P1.116 Induction mechanism of MDR1 in mouse trophoblast stem cell differentiation
Minako Tanabe, Saki Noguchi, Tomohiro Nishimura, Masatoshi Tomi
Faculty of Pharmacy, Keio University, Tokyo, Japan

P1.117 Transcriptional regulatory element for the placental expression of organic anion transporter 4
Saki Noguchi, Kanako Furugori, Tomohiro Nishimura, Emi Nakashima, Masatoshi Tomi
Faculty of Pharmacy, Keio University, Tokyo, Japan

P1.118 Ex vivo effects of valproic acid on the main efflux carriers in human placental barrier: early vs late pregnancy
Nino Tetro[1], Tal Imbar[2], Debra Wohl[2], Iris Eisenberg[2], Simcha Yagel[2], David Mankuta[3], Miri Shmuel[1], Sara Eyal[1]
[1]Institute for Drug Research, School of Pharmacy, The Hebrew University of Jerusalem, [2]The Magda and Richard Hoffman Center for Human Placenta Research, Hadassah Hebrew University Medical Center, [3]Department of Obstetrics and Gynecology, Hadassah Medical Center, Jerusalem, Israel

P1.119 A computational model of placental oxygenation to predict the impact of cord insertion location on exchange
Alys Clark[1], Rory McKay[1], Mabelle Lin[1], Win Tun[1], Joanna James[2]
[1]Auckland Bioengineering Institute, University of Auckland, [2]Obstetrics & Gynaecology, University of Auckland, Auckland, New Zealand

P1.120 Expression and function of nucleoside transporters in the placenta; role in materno-fetal disposition of nucleoside-derived antivirals
Lukas Cerveny, Zuzana Ptackova, Sara Karbanova, Lucie Jiraskova, Rona Karahoda, Martina Ceckova, **Frantisek Staud**
Department of Pharmacology and Toxicology Faculty of Pharmacy in Hradec Kralove, Charles University, Hradec Kralove, Czech Republic

Trophoblast biology — Room 8 (7F, Bldg. No. 1)

P1.121 A novel regulatory mechanism of Mcl1 stability by sumoylation
Julien Sallais[1,2], Isabella Caniggia[1,2]
[1]Lunenfeld Tanenbaum Research Intitute, Sinai Health System, [2]University of Toronto, Toronto, Canada

P1.122 Extravillous trophoblasts accumulate cholesterol, upregulate HSD3B1 and secrete progesterone
Victoria Kunihs[1], Sigrid Vondra[1], Peter Haslinger[1], Sandra Haider[1], Martin Knöfler[1], Clemens Röhrl[2], Jürgen Pollheimer[1]
[1]Department of Obstetrics and Gynaecology, Reproductive Biology Unit, Medical University of Vienna, [2]Center for Pathobiochemistry and Genetics, Medical University of Vienna, Vienna, Austria

P1.123 Oxyquinoline derivative activates HIF-1 and increases transepithelial resistance of BeWo b30 monolayer
Evgeny Knyazev[1], Andrey Poloznikov[1,2], Diana Maltseva[1], Anna Khristichenko[2]
[1]Scientific research center BioClinicum, Moscow, [2]D. Rogachev Federal Scientific and Clinical Center for Pediatric Hematology, Oncology, and Immunology, Moscow, Russian Federation

P1.124 Circulating syncytiotrophoblast-derived extracellular vesicles exhibit variation in release between night and day
William Cooke, Ana Sofia Cerdeira, Carolina Motta Mejia, Neva Kandzija, Manjot Gill, Kirsten White, Boonyakiat Thammasate, Rannya Ri, Wei Zhang, Christopher Redman, Manu Vatish
University of Oxford, Oxford, UK

P1.125 The health effects of real-life exposure to per- and polyfluoroalkyl substances (PFAS) - Multi-omics analyses of human blood and placenta
Martin Forsthuber[1,2], Raimund Widhalm[1], Sebastian Granitzer[1,3], Christine Giuffrida[1,3], Bettina Grasl-Kraupp[4], Isabella Ellinger[5], Karl Zwiauer[6], Markus Hengstschläger[1], Maria Uhl[7], Harald Zeisler[5], Hans Salzer[8], Hanns Moshammer[2], Claudia Gundacker[1]
[1]Center of Biochemistry and Genetics, Medical University of Vienna, Vienna, Austria, [2]Center for Public Health, Medical University of Vienna, Vienna, Austria, [3]Karl Landsteiner University of Health Science, Krems an der Donau, Austria, [4]Institute of Cancer Research, Medical University of Vienna, Vienna, Austria, [5]Vienna General Hospital, Vienna, Austria, [6]Universitätsklinikum St. Pölten, St. Pölten, Austria, [7]Environment Agency Austria, Vienna, Austria, [8]Universitätsklinikum Tulln, Tulln, Austria

P1.126 Circulating sFlt-1 is placentally derived in normal pregnancycirculating sFlt-1 is placentally derived in normal pregnancy
Ana Sofia Cerdeira, Neva Kandzija, Alexandra Burdujan, Wei Zhang, Carolina Motta-Mejia, Kirsten White, Manjot Gill, William Cooke, Boonyakiat Thammasate, Rannya Ri, Pille Pargmae, Tim James, Christopher Redman, Manu Vatish
University of Oxford, Oxford, UK

P1.127 Molecular signaling controlling syncytiotrophoblast development
Bhaswati Bhattacharya, **Soumen Paul**
University of Kansas Medical Center, KS, USA

P1.128 The (un)usual suspects - in situ characterization of human placental iron transport
Isabella Ellinger[1], Raimund Widhalm[2], Katharina Gelles[3], Lena Walch[3], Victoria Podgorzak[3], Verena Huber[3], Kathrin Riegler[3], Julia Aigelsreiter[3], Markus Hengstschläger[2], Claudia Gundacker[2]
[1]1Institute of Pathophysiology and Allergy Research; Medical University Vienna, [2]Institute of Medical Genetics, Medical University Vienna, [3]Institute of Pathophysiology and Allergy Research, Medical University Vienna, Vienna, Austria

P1.129 Consequences of nanoparticle exposure on the integrity and functions of the human placental barrier
Margaux Nedder[1], Sonja Boland[2], Xavier Coumoul[3], Karine Andreau[3], Amal Zerrad-Saadi[1], Audrey Chissey[1], Céline Tomkiewicz[3], Françoise Vibert[1], **Thierry Fournier**[1], Sophie Gil[1], Ioana Ferecatu[1]
[1]INSERM UMR-S 1139 Paris Descartes University, [2]CNRS UMR 8251 Paris Diderot University, [3]INSERM UMR-S 1124 Paris Descartes University, Paris, France

P1.130 Risk factors of post-molar gestational trophoblastic neoplasia: prospective observational cohort study
Hirokazu Usui, Asuka Sato, Zijun Pan, Makio Shozu
Department of Reproductive Medicine, Graduate School of Medicine, Chiba University, Chiba, Japan

P1.131 Deciphering the role of iron transporters in the human placenta
Raimund Widhalm[1], Sebastian Granitzer[1,2], Christine Giuffrida[1,2], Martin Forsthuber[1], Isabella Ellinger[1], Markus Hengstschläger[1], Claudia Gundacker[1]
[1]Medical University Vienna, Vienna, Austria, [2]Karl-Landsteiner Privatuniversität, Krems, Austria

P1.133 Mono-2-ethylhexyl phthalate (MEHP) impairs PPAR γ activity and human villous cytotrophoblast differentiation in a non-monotonic dose-response manner
Shoaito Hussein[1], Julia Petit[2], Audrey Chissey[1], Nicolas Auzeil[2], Jean Guiburdenche[1], Sophie Gil[1], Olivier Laprévote[2], **Thierry Fournier**[1], Severine Degrelle[1]
[1]INSERM, UMR-S1139, Faculté de Pharmacie de Paris, [2]UMR CNRS 8638, Faculté de Pharmacie de Paris, Paris, France

P1.134 Macrophage Migration Inhibitory Factor (MIF) and CD44 expression in lipopolysaccharide (LPS)-stimulated on Human Trophoblast Derived Cells (JEG-3 and ACH-3P cells): Relevance for Human Feto- Maternal Tolerance
Waleed Alabdulmonem[1], Homaidan Al-Homaidan[2], Hussain Al Ssadh[3]
[1]Pathology Department, College of Medicine, Qassim University, Buraydah, Saudi Arabia, [2]Family Medicine, College of Medicine, Qassim University., Buraydah, Saudi Arabia, [3]School of Biological sciences, University of Essex, Colchester, Colchester, UK

POSTER SESSION 2

September 22 (Sat)

Anatomy and pathology — Room 2 (1F, Bldg. No. 2)

P2.1 Pathological perspectives of abnormal prenatal ultrasound imaging analysis: representative case reports
Eun Na Kim[1,2], Jae-Yoon Shim[2,3], Chong Jai Kim[1,2]
[1]Department of Pathology, University of Ulsan College of Medicine, Asan Medical Center, [2]Asan Laboratory of Perinatal Science, Asan Medical Center, [3]Department of Obstetrics and Gynecology, University of Ulsan College of Medicine, Seoul, Korea

P2.2 A Twisted Tale - Gross and histological features of equine placentae from abortions attributed to umbilical cord torsion
Jessica Roach[1], Matthew Molyneux[2], Jill Bryan[2], Ken Smith[3], Alastair Foote[2], Amanda de Mestre[1]
[1]Department of Comparative Biomedical Sciences, Royal Veterinary College, London, UK, [2]Rossdales Laboratories, Newmarket, UK, [3]Department of Pathobiology and Population Sciences, Royal Veterinary College, London, UK

P2.3 From start to end: Linking maternal early life characteristics to placental structure and perinatal mortality
Julienne Rutherford[1], Victoria deMartelly[1], Corinna Ross[2], Laren Riesche[3], Toni Ziegler[4], Suzette Tardif[5]
[1]University of Illinois at Chicago, IL, USA, [2]Texas A&M University San Antonio, TX, USA, [3]University of Pennsylvania, PA, USA, [4]University of Wisconsin, WI, USA, [5]Southwest National Primate Research Center, TX, USA

P2.4 Placenta increta presenting as retained placenta
Stewart F Cramer[1,2], Fadi Hatem[2], **Debra S. Heller**[3]
[1]Rochester General Hospital, NY, USA, [2]University of Rochester, NY, USA, [3]Rutgers-New Jersey Medical School, NJ, USA

P2.5 Serial block-face scanning electron microscopy demonstrates that placental microvesicles form on the tips of microvilli
Rebecca Davis, Helen Palaiologou, Pstricia Goggin, David Chatelet, Bram Sengers, Christopher Torrens, Jane Cleal, Anton Page, **Rohan Lewis**
University of Southampton, Southampton, UK

P2.6 Retrospective analysis of the association of opaque fetal membrane with chorioamnionits and early neonatal complications: Importance of gross screening of the placenta
Yoshimasa Horikoshi, Masako Matsumoto, Naomi Furuta-Isomura, Kazunao Suzuki, Chizuko Yaguchi, Kazuhiro Sugihara, Hiroaki Itoh, Naohiro Kanayama
Hamamatu University School of Medicine, Shizuoka, Japan

P2.7 The frequency of fetal inflammatory response syndrome and the intensity of fetal inflammatory response are positively correlated with the severity of chorionic plate inflammation: another example of evidence showing that chorionic plate is the playground for the progression of ascending intra-uterine infection in preterm gestation
Chan-Wook Park, Kyung Chul Moon, Joong Shin Park, Jong Kwan Jun
Seoul National University College of Medicine, Seoul, Korea

P2.8 The relationship between the frequency of fetal inflammatory response syndrome or the intensity of fetal inflammatory response and the severity of funisitis in patients with either preterm labor or preterm-PROM
Chan-Wook Park, Kyung Chul Moon, Joong Shin Park, Jong Kwan Jun
Seoul National University College of Medicine, Seoul, Korea

P2.9 Inflammation in the connective-tissue of chorionic-plate and the Wharton's jelly of umbilical cord is similar in the severity of inflammation in extra-placental membranes and the intensity of intra-amniotic inflammatory response: the role of inflammation in the connective-tissue of chorionic-plate as another manifestation of final stage in ascending intra-uterine infection
Chan-Wook Park, Kyung Chul Moon, Joong Shin Park, Jong Kwan Jun
Seoul National University College of Medicine, Seoul, Korea

P2.135 Whole slide analysis of placental hematoxylin and eosin stained slides
Harriet Pais[1], Ruchit Shah[1], Phillip Necaise[1], Emily Barret[2], Tom O'Connor[3], **Carolyn Salafia**[1,4]
[1]Placental Analytics, LLC, NY, USA, [2]Rutgers University, NJ, USA, [3]University of Rochester, NY, USA, [4]New York State Institute for Basic Research for Developmental Disabilities, NY, USA

Angiogenesis/vasculature — Room 2 (1F, Bldg. No. 2)

P1.7 Isolated acute funisitis in the absence of acute chorioamnionitis. An indicator of non-infectious pathology?
Rebecca Baergen[1,2], Tracy Grossman[1,2], Debra Heller[3]
[1]Weill Cornell Medicine, NY, USA, [2]New York Presbyterian Hospital, NY, USA, [3]Rutgers New Jersy Medical School, NJ, USA

P1.8 Chorion laeve accreta - another manifestation of morbid adherence
T.Y. Khong[1], Stewart F. Cramer[2,3], **Debra S. Heller**[4]
[1]University of Adelaide, Adelaide, Australia, [2]Rochester General Hospital, NY, USA, [3]University of Rochester, NY, USA, [4]Rutgers-New Jersey Medical School, NJ, USA

P2.10 Alterations of placenta and litter in porcine von willebrand disease
Hanna Allerkamp[1,2], Stefanie Lehner[2], Mahnaz Ekhlasi-Hundrieser[2], Carsten Detering[2], Mario von Depka Prondzinski[2], Christiane Pfarrer[1]
[1]University of Veterinary Medicine, Department of Anatomy, [2]Werlhof-Institute, Hannover, Germany

P2.11 The status of anti-angiogenesis in the internal uterine os in patients with placenta previa
Michiko Yamashita[1], Keiichi Kumasawa[1,2], Hitomi Nakamura[1], Tadashi Kimura[1]
[1]Osaka University, Osaka, Japan, [2]The University of Tokyo, Tokyo, Japan

P2.12 Fractal dimensions of chorionic surface vessel networks
Ruchit Shah, **Carolyn Salafia**, Theresa Girardi
Placental Analytics, LLC, NY, USA

P2.13 Aldosterone reduces sFlt1 secretion in the human dual placenta perfusion system
Rahel Klossner[1,2], Markus Mohaupt[1,2], Paula Scaife[3], Lesia Kurlak[3], Michael Luthi[4], Sampada Kallol[4], Christiane Albrecht[4], **Hiten Mistry**[3]
[1]Department of Internal Medicine, Sonnenhof, Lindenhofgruppe, Bern, Switzerland, [2]Department of Clinical Research, University of Bern, Bern, Switzerland, [3]Divison of Child Health, Obstetrics & Gynaecology, University of Nottingham, Nottingham, UK, [4]Institute for Biochemistry and Molecular Medicine, University of Bern, Bern, Switzerland

P2.14 Upregulation of angiogenic factors via protein kinase C and hypoxia-induced factor-1 α pathways under high-glucose conditions in the placenta
Takashi Mitsui, Kazumasa Tani, Jota Maki, Takeshi Eguchi, Shoko Tamada, Eriko Eto, Kei Hayata, Hisashi Masuyama
Department of Obstetrics and Gynecology, Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama, Japan

P2.15 Simulations of the placental vascular network growth process for studying placental structure and function
Catalina Angel[1], Kellie Archer[2], Jen-Mei Chang[3], Amy Cochran[4], Anca Radulescu[5], Rebecca Turner[6], Karamatou Yacoubou Djima[7], Lan Zhong[8], **Carolyn Salafia**[9]
[1]University of California Davis, CA, USA, [2]The Ohio State University, OH, USA, [3]California State University Long Beach, CA, USA, [4]University of Michigan, MI, USA, [5]SUNY New Paltz, NY, USA, [6]The University of Auckland, Auckland, New Zealand, [7]Amherst College, MA, USA, [8]University of Delaware, DE, USA, [9]Placental Analytics, LLC, NY, USA

P2.16 Withdraw

Cell culture/cell lines — Room 2 (1F, Bldg. No. 2)

P2.17 The (pro)renin receptor alters the cell cytoskeleton to promote cell migration and invasion
Samantha Rodrigues[1,2], Trisha Al Mazi[1], Nikki Verrils[1], Eugenie Lumbers[1,2], Kirsty Pringle[1,2]
[1]The University of Newcastle, Newcastle, Australia, [2]Hunter Medical Research Institute, New Lambton Heights, Australia

P2.18 A novel 3D cell culture model system for endoglandular trophoblast invasion
Gerit Moser, Julia Fuchs, Dagmar Pfeiffer
Medical University of Graz, Graz, Austria

Cell signaling — Room 4 (3F, Bldg. No. 1)

P2.19 The transcription factor NF κ B is involved in estradiol leptin induction in placental cells
Malena Schanton[1,2], María Fernanda Camisay[1,2], Antonio Pérez-Pérez[3], Bernardo Maskin[4], Víctor Sánchez-Margalet[3], **Alejandra Erlejman**[1,2], Cecilia Varone[1,2]
[1]Departamento de Química Biológica, FCEN-UBA, [2]IQUIBICEN, CONICET, [3]Universidad de Sevilla, Sevilla, Spain, [4]Hospital Nacional Profesor Alejandro Posadas, Buenos Aires, Argentina

P2.20 Low-density lipoprotein receptor-related protein 5/6 is a novel co-receptor of Protease-activated receptors-1 and 2 in early human placenta formation
Sorina Grisaru Granovsky[1,2], Liat Zakar[3,4], Myriam Maoz[5], Jeetendra K. Nag[2,5], Daria Kozlova[1], Rachel Bar-Shavit[2,5]
[1]Shaare Zedek MC, Jerusalem, Israel, [2]The Hebrew University, Jerusalem, Israel, [3]Tel Aviv MC, Tel Aviv, Israel, [4]Tel Aviv University, Tel Aviv, Israel, [5]Hadassah Ein Kerem Hospital, Jerusalem, Israel

Comparative/animal models — Room 4 (3F, Bldg. No. 1)

P2.21 Regulation of retinoic acid receptor responder 1 in a rat model of intrauterine growth restriction
Alexander Mocker[1], Marius Schmidt[1], Hanna Huebner[2], Rainer Wachtveitl[1], Nada Cordasic[1], Wolfgang Rascher[1], Carlos Menendez-Castro[1], Andrea Hartner[1], Fabian Fahlbusch[1]
[1]Department of Pediatrics and Adolescent Medicine, Friedrich-Alexander University Erlangen-Nuremberg, [2]Department of Gynaecology and Obstetrics/Comprehensive Cancer Center Erlangen-EMN, Friedrich-Alexander University Erlangen-Nuremberg, Erlangen, Germany

P2.22 Mouse placental scaffolds: A model to culture hepatocyte-like cells induced from mouse embryonic stem cells in a three-dimensional dynamic and rotating system
Patricia Romagnolli[1], Rodrigo da Silva Nunes Barreto[2], Rose Eli Grassi Rici[2], **Maria Angelica Miglino**[2]
[1]Federal University of South Frontier, Realeza, Brazil, [2]University of Sao Paulo, Sao Paulo, Brazil

P2.23 Withdraw

P2.141 Evolution of progesterone withdrawal in strepsirrhine primates
Priyadarshini Pantham[1], Saravanan Devendran[1,2], Michelle Goettge[1,3], Jonathan Bodnariuc[1,6], Owen Haupt[1,6], Priya Karkhanis[1,6], Martin Malik[1,6], Loni Sneed[1,6], Jason Ridlon[1,2], Louis Muglia[4], Erin Ehmke[5], Derek Wildman[1,6]
[1]Carl R. Woese Institute for Genomic Biology, University of Illinois at Urbana-Champaign, [2]Department of Animal Sciences, University of Illinois at Urbana-Champaign, [3]Department of Microbiology, University of Illinois at Urbana-Champaign, [4]Department of Pediatrics, University of Cincinnati, [5]Duke Lemur Center, [6]Department of Molecular & Integrative Physiology, University of Illinois at Urbana-Champaign, IL, USA

Diabetes/obesity — Room 4 (3F, Bldg. No. 1)

P2.24 Impact of gestational diabetes mellitus on transplacental iron transport
Jonas Zaugg[1,2], Hassan Melhem[1,2], Thuvaraga Kalakaran[1,2], Malgorzata Wegner[1,2], Xiao Huang[1,2], Marc Baumann[3], Daniel Surbek[3], Meike Körner[4], Christiane Albrecht[1,2]
[1]Institute of Biochemistry and Molecular Medicine, University of Bern, [2]Swiss National Centre of Competence in Research (NCCR) TransCure, University of Bern, [3]Department of Obstetrics and Gynaecology, University Hospital of Bern, [4]Pathologie Länggasse, Bern, Switzerland

P2.25 Effects of trophoblast-derived exosomes produced under high and low glucose conditions upon endometrial epithelial cell behavior
Rachel R. Zabel, Leopold Böhm, Megdalena M. Rose, Diana M. Morales-Prieto, Ekkehard Schleussner, Udo R. Markert, Rodolfo R. Favaro
University Hospital Jena, Jena, Germany

P2.26 A short periconceptional exposure to maternal type-1 diabetes is sufficient to disrupt the feto-placental phenotype in a rabbit model
Delphine Rousseau-Ralliard[1], Anne Couturier-Tarrade[1], René Thieme[2,3], Roselyne Brat[1], Audrey Rolland[1], Pascal Boileau[4], Marie-Christine Aubrière[1], Nathalie Daniel[1], Michèle Dahirel[1], Emilie Derisoud[1], Natalie Fournier[5], Maria Schindler[2], Véronique Duranthon[1], Bernd Fischer[2], Anne Navarrete Santos[2], **Pascale Chavatte-Palmer**[1]
[1]UMR BDR, INRA, ENVA, Université Paris Saclay, Jouy en Josas, France, [2]Department of Anatomy and Cell Biology, Martin Luther University Faculty of Medicine, Halle, Germany, [3]Department of Visceral, Transplant, Thoracic and Vascular Surgery, University Hospital Leipzig, Leipzig, Germany, [4]UVSQ (University of Versailles-Saint Quentin), Neonatal Medicine-CHIPS, Poissy, France, [5]European Georges Pompidou Hospital, Biochemistry unit, Paris, France

Fetal growth restriction — Room 7 (6F, Bldg. No. 1)

P2.27 Targeting the dysfunctional placenta: novel peptides to deliver drugs to specific uteroplacental compartments
Lewis Renshall, Mark Wareing, Paul Brownbill, Frances Beards, Susan Greenwood, Edward Johnstone, Colin Sibley, John Aplin, Lynda Harris
The University of Manchester, Manchester, UK

P2.28 Placental endocrine Igf2 deficiency impairs intrauterine growth with consequences for insulin sensitivity and adiposity in adult offspring

Hannah Ee Juen Yong[1], Jorge Lopez-Tello[1], Ionel Sandovici[2,3], Miguel Constancia[2,3], Amanda Sferruzzi-Perri[1]

[1]Centre for Trophoblast Research, University of Cambridge, [2]Metabolic Research Laboratories, and MRC Metabolic Diseases Unit, Wellcome Trust-Medical Research Council Institute of Metabolic Science, University of Cambridge, [3]Department of Obstetrics and Gynaecology, University of Cambridge, Cambridge, UK

P2.29 Neurodevelopmental impact of prenatal exposure to non-infectious inflammation

Marie-Eve Brien[1,2,3], Ines Boufaied[1], Sylvie Girard[1,2,3]

[1]Ste-Justine Hospital Research Center, [2]Department of Obstetrics and Gynecology, Universite de Montreal, [3]Department of microbiology, infectiology and immunology, Universite de Montreal, Montreal, Canada

P2.30 A case report of expectant management after 34 weeks of gestation for monochorionic diamniotic twin after septostomy during fetal laser photocoagulation

Akihiro Hasegawa[1], Michihiro Yamamura[1], Keiko Yabuzaki[1], Tomona Matsuoka[1], Yuki Ito[1], Haruhiko Udagawa[1], Kazuhiro Kajiwara[1], Taizan Kamide[1], Hiroaki Aoki[1], Seiji Wada[2], Haruhiko Sago[2], Osamu Samura[1], Aikou Okamoto[1]

[1]Department of Obstetrics and Gynecology, The Jikei University School of Medicine, [2]National Center of Child Development and Health, Tokyo, Japan

P2.31 The duration of sexual relationship and its effects on adverse pregnancy outcomes

Prabha Andraweera[1], Claire Roberts[1], Shalem Leemaqz[1], Lesley McCowan[2], Jenny Myers[3], Louise Kenny[4], James Walker[5], Lucilla Poston[6], Gus Dekker[1,7]

[1]Adelaide Medical School and The Robinson Research Institute, The University of Adelaide, Adelaide, Australia, [2]Department of Obstetrics and Gynaecology, The University of Auckland, Aucklan, New Zealand, [3]Maternal and Fetal Health Research Centre, University of Manchester, Manchester, UK, [4]The Irish Centre for Fetal and Neonatal Translational Research (INFANT) and Department of Obstetrics and Gynaecology, University College Cork, Cork, Ireland, [5]Department of Obstetrics and Gynaecology, Leeds Institute of Biomedical and Clinical Sciences, University of Leeds, Leeds, UK, [6]Division of Women's Health, King's College London and St Thomas' Hospital, London, UK, [7]Division of Women's Health, Lyell McEwin Hospital, Elizabeth Vale, Australia

P2.32 Withdraw

Gene expression — Room 7 (6F, Bldg. No. 1)

P2.33 Antenatal depression and placental function; a protein validated gene expression study

Åsa Edvinsson[1], Jocelien Olivier[2], Charlotte Hellgren[1], Theodora Kunovac Kallak[1], Helena Åkerud[3], Alkistis Skalkidou[1], Elisabeth Stener Victorin[4], Romina Fornes[5], Olav Spigset[5,6], Susanne Lager[1], Inger Sundström Poromaa[1]

[1]Department of Women's and Children's Health, Uppsala University, Uppsala, Sweden, [2]Department of Neurobiology, Unit Behavioral Neuroscience, Groningen Institute for Evolutionary Life Sciences, University of Groningen, Groningen, Netherlands, [3]Department of Immunology, Genetics and Pathology, Uppsala University, Uppsala, Sweden, [4]Department of Physiology and Pharmacology, Karolinska Institute, Stockholm, Sweden, [5]Department of Clinical Pharmacology, St. Olav University Hospital, Trondheim, Norway, [6]Department of Clinical and Molecular Medicine, Norwegian University of Science and Technology, Trondheim, Norway

P2.34 Alterations in placental gene expression of pregnant women with chronic chagas disease

Natalia Anahí Juiz[1], Irma Torrejón[2], Miriam Salvo[3], Ana María Fernanda Torres[2], Tomás Duffy[4], Nelly Melina Cayo[2], Silvia Andrea Longhi[1], Alejandro Gabriel Schijman[1], Anahi Tabasco[1]

[1]INGEBI-CONICET, Caba, Argentina, [2]Universidad Nacional de Jujuy, Jujuy, Argentina, [3]Hospital Nacional Profesor Alejandro Posadas, Buenos Aires, Argentina, [4]The Scripps Research Institute, CA, USA

P2.35 Aurora Kinase expression is not altered in growth restricted or preeclamptic placentas, and is not changed with placental aging

Natasha Pritchard, Sally Beard, Natalie Binder, Tu'uhevaha Kaitu'u-Lino, Stephen Tong, Natalie Hannan

University of Melbourne, Melbourne, Australia

P2.36 Extracellular vesicles miR-21 derived from trophoblastic cells regulate immune cell and their original cell functions

Wittaya Chaiwangyen[1,2], Diana M. Morales-Prieto[1], Ekkehard Schleussner[1], Udo R. Markert[1]

[1]Placenta Lab, Department of Obstetrics, University Hospital Jena, Jena, Germany, [2]Division of Biochemistry and Nutrition, School of Medical Sciences, University of Phayao, Phayao, Thailand

P2.37 Placental miRNAs that target the renin-angiotensin system, and their effect on trophoblast proliferation

Anya L Arthurs[1,2], Sarah J Delforce[1,2], Eugenie R Lumbers[1], Kirsty G Pringle[1,2]

[1]University of Newcastle, [2]Hunter Medical Research Institute, Newcastle, Australia

P2.38 Global survey of escape from X chromosome inactivation in the human placenta
Irving Aye, Sungsam Gong, Francesca Gaccioli, Michelle Johnson, Justyna Dopierala, D Stephen Charnock-Jones, Gordon Smith
University of Cambridge, Cambridge, UK

P2.39 Insight into the expression of DNA sensors, IFI16 and cGAS, in human third-trimester placentas following cytomegalovirus infection
Agnieszka Jabłońska[1], Mirosława Studzińska[1], Jarosław Kalinka[2], **Edyta Paradowska**[1]
[1]Laboratory of Molecular Virology and Biological Chemistry, Institute of Medical Biology of the Polish Academy of Sciences, [2]Department of Perinatology, First Chair of Gynecology and Obstetrics, Medical University of Lodz, Lodz, Poland

P2.40 Gestational changes in placental PRMT1 expression
Anna Sato[1], Jun-Dai Kim[2], Akiyoshi Fukamizu[2], Atsuo Itakura[1], Satoru Takeda[1]
[1]Juntendo University, Tokyo, Japan, [2]University of Tsukuba, Ibaraki, Japan

Genomics/Epigenomics — Room 7 (6F, Bldg. No. 1)

P2.41 Global DNA methylation levels are comparable between trophoblast populations and many somatic cells
Teena KJB Gamage[1], William Schierding[1], Peter Tsai[1], Jackie L Ludgate[2], Lawrence W Chamley[1], Robert J Weeks[2], Erin C Macaulay[2], Joanna L James[3]
[1]The University of Auckland, Auckland, New Zealand, [2]University of Otago, Dunedin, New Zealand, [3]The Universality of Auckland, Auckland, New Zealand

P2.42 Epigenetic, genetic and miRNA variation associated with acute chorioamnionitis affected placentas
Chaini Konwar[1,2], E Magda Price[2,3], Giulia Del Gobbo[1,2], Samantha Wilson[1,2,4], Irina Manokhina[1,2], Terry Jefferson[1,5], Wendy Robinson[1,2]
[1]BC Children's Hospital Research Institute (BCCHR), Vancouver, Canada, [2]Department of Medical Genetics, University of British Columbia (UBC), Vancouver, Canada, [3]Department of Pediatrics, University of British Columbia (UBC), Vancouver, Canada, [4]Princess Margaret Cancer Centre, Department of Research, Toronto, Canada, [5]Department of Pathology, BC Children's Hospital, Vancouver, Canada

P2.43 25(OH)D treatment alters DNA methylation, RNA expression and protein expression in human term placenta
Brogan Ashley, Claire Simner, Faisal Rezwan, Cory White, Antigoni Manousopoulou, John Holloway, Spiros Garbis, Rohan Lewis, Nick Harvey, Jane Cleal
University of Southampton, Southampton, UK

P2.44 Uptake of trophoblast extracellular vesicles by autologous and heterologous cells
Wittaya Chaiwangyen, Priska E Streicher, Ruby N Gutierrez-Samudio, Jose M Murrieta-Coxca, Udo R Markert, **Diana M Morales-Prieto**
Placenta Lab. Department of Obstetrics. University Hospital Jena, Jena, Germany

P2.45 LINE-1 retrotransposition: mediators of variation in pre-eclampsia?
Katarina Mitic
Max-Delbrück-Center for Molecular Medicine, Berlin, Germany

Hormones/growth factors — Room 7 (6F, Bldg. No. 1)

P2.46 Placental endocrine malfunction leads to altered maternal hepatic metabolism during pregnancy in mice
Jorge Lopez-Tello[1], **Hannah Ee Juen Yong**[1], Ionel Sandovici[2,3], Miguel Constancia[2,3], Amanda Sferruzzi-Perri[1]
[1]Centre for Trophoblast Research, University of Cambridge, [2]Metabolic Research Laboratories, and MRC Metabolic Diseases Unit, Wellcome Trust-Medical Research Council Institute of Metabolic Science, University of Cambridge, [3]Department of Obstetrics and Gynaecology, University of Cambridge, Cambridge, UK

P2.47 Selective serotonin-reuptake inhibitors alter aromatase activity in trophoblast cells
Andrée-Anne Hudon-Thibeault, J Thomas Sanderson, Cathy Vaillancourt
INRS-Institut Armand Frappier, QC, Canada

P2.48 Expression of vitamin D metabolizing enzymes in spontaneous miscarriage and spontaneous preterm birth
Yang Li, Joyue Zhang, Danyang Chen, Fang Deng, Abraham N. Morse, Gendie E. Lash
Guangzhou Women and Children's Medical Center, Guangzhou, China

P2.49 Clinicopathological e valuation of two cases of gestational diabetes insipidus: Elucidation of pathogenesis
Miwa Nakamura[1], Munekage Yamaguchi[1], Tatsuya Kondo[2], Takashi Ohba[1], Eiichi Araki[2], Hidetaka Katabuchi[1]
[1]Department of Obstetrics and Gynecology, Faculty of Life Sciences, Kumamoto University, [2]Department of Medicine, Faculty of Life Sciences, Kumamoto University, Kumamoto, Japan

P2.50 Cord blood adiponectin and leptin are associated with a lower risk of stunting during infancy
Sangshin Park[1,2], Zorimel Vargas[2], Anne Zhao[1], Palmera Baltazar[3], Remigio Olveda[3], Jennifer Friedman[1,2], **Emily McDonald**[1,2]
[1]Brown University, RI, USA, [2]Rhode Island Hospital, RI, USA, [3]Research Institute of Tropical Medicine, Manila, Philippines

Imaging — Room 7 (6F, Bldg. No. 1)

P2.51 MRI with ferumoxytol iron oxide nanoparticles does not alter iron content in fetal or maternal-fetal interface tissues
Sydney Nguyen[1], Michele Schotzko[1], Kai Ludwig[2], Ante Zhu[2], Diego Hernando[2], Kevin Johnson[2], Dinesh Shah[2], Oliver Wieben[2], Thaddeus Golos[1]
[1]Wisconsin National Primate Research Center, [2]University of Wisconsin - Madison, WI, USA

P2.52 Clinical characteristics oftrophoblastic diseaseover 40 years old
Takayuki Takahashi, Eiichiro Tominaga, Miho Iida, Kousuke Tsuji, Yusuke Kobayashi, Kouji Banno, Daisuke Aoki
Keio University, Tokyo, Japan

P2.53 Prediction of term small for gestational age babies using first trimester placental volume; a comparison of a novel, fully automated technique, OxNNet with a commercially available, semi-automatic tool, VOCAL™
Padraig Looney[1], Gordon Stevenson[2], Kypros Nicolaides[3], Walter Plasencia[4], Malid Molloholli[5,6], Stavros Natsis[5], **Sally Collins**[1,5]
[1]Nuffield Department of Women's and Reproductive Health, University of Oxford, Oxford, UK, [2]School of Women's and Children's Health, University of New South Wales, Sydney, Australia, [3]Harris Birthright Research Centre of Fetal Medicine, King's College Hospital, London, UK, [4]Fetal Medicine Unit, Hospiten Group, Tenerife, Spain, [5]Fetal Medicine Unit, John Radcliffe Hospital, Oxford, UK, [6]Department of Obstetrics and Gynaecology, Wexham Park Hospital, Slough, UK

P2.54 Estrogen-progestin therapy conservatively contributes to expulsion of uterine contents in women with retained products of conception
munekage yamaguchi, Takashi Ohba, Ritsuo Honda, Hidetaka Katabuchi
Kumamoto University, Kumamoto, Japan

P2.55 Dilatation and evacuation for retained products of conception with hypervascularity without uterine artery embolization
Asuka Sato, Hirokazu Usui, Jun Okayama, Yoshiya Suzuki, Akiko Omoto, Makio Shozu
Chiba University, Chiba, Japan

Immunology — Room 8 (7F, Bldg. No. 1)

P2.56 Gene expression analysis of peripheral and decidual natural killer cells in early miscarriage using microarray analysis
Manabu Ogoyama[1,2], Akihide Ohkuchi[2], Tomoko Shima[3], Shigeru Saito[3], Toshihiro Takizawa[1]
[1]Department of Molecular Medicine and Anatomy, Nippon Medical School, Tokyo, Japan, [2]Department of Obstetrics and Gynecology, Jichi Medical University, Tochigi, Japan, [3]Department of Obstetrics and Gynecology, University of Toyama, Toyama, Japan

P2.57 Effector regulatory T cells in the decidua decrease in labor
Teruyuki Mizutani, Tomomi Kotani, Takafumi Ushida, Kenji Imai, Tomoko Nakano, Yoshinori Moriyama, Masataka Nomoto, Fumitaka Kikkawa
Nagoya University Graduate School of Medicine, Aichi, Japan

P2.58 Expression of IL-36 cytokine family in trophoblastic cells
Murrieta-Coxca José M[1,2], Favaro Rodolfo[1], Markert Udo R[1], Rodríguez-Martínez Sandra[2], Morales-Prieto Diana M[1]
[1]Placenta Lab. Department of Obstetrics, University Hospital Jena, Jena, Germany, [2]Laboratory of Innate Immunology, Immunology Department, National School of Biological Sciences-IPN, Mexico, Mexico

P2.59 Defining phenotypes of human placental leukocytes with 30-parameter flow cytometry
Nicholas Maurice[1,2], Florian Mair[1], Stephen McCartney[3], Jami Erickson[1], Caitlin Laughney[3], Hilary Gammill[3], Martin Prlic[1]
[1]Fred Hutchinson Cancer Research Center: Vaccine and Infectious Disease Division, [2]University of Washington: Molecular and Cellular Biology Program, [3]University of Washington: Department of Obstetrics and Gynecology, Division of Maternal-Fetal Medicine, WA, USA

P2.60 Distribution and kinetics of immune cells in decidua for extreme to moderate preterm births without acute chorioamnionitis
Yasuyuki Negishi[1,2], Masahiko Kato[2], Yoshio Shima[3], Yoshimitu Kuwabara[2], Hidemi Takahashi[1], Toshiyuki Takeshita[2]
[1]Department of Microbiology and Immunology, Nippon Medical School, Tokyo, Japan, [2]Department of Obstetrics and Gynecology, Nippon Medical School, Tokyo, Japan, [3]Department of Pediatrics, Nippon Medical School Musashikosugi Hospital, Kanagawa, Japan

Implantation and invasion — Room 8 (7F, Bldg. No. 1)

P2.61 Expression and localization of specific miRNAs in human term placenta by in situ hybridization
Magdalena M. Rose[1], Diana M. Morales-Prieto[1], Ekkehard Schleußner[2], Udo R. Markert[1], Rodolfo R. Favaro[1]
[1]Placenta-Lab, Department of Obstetrics, University Hospital Jena, [2]University Hospital Jena, Jena, Germany

P2.62 Tissue stiffness at the maternal-fetal interface
Yassen Abbas, Alejandro Carnicer, Kristian Franze, Michelle L. Oyen, Graham Burton
University of Cambridge, Cambridge, UK

P2.63 Placental development and tumorigenesis share hypoplasia and invasiveness mechanisms
Nathia Nathaly Rigoglio, Rodrigo da Silva Nunes Barreto, Paula Fratini, Gustavo de Sá Schiavo Matias, Maria Angelica Miglino
School of Veterinary Medicine and Animal Science, University of Sao Paulo, Sao Paulo, Brazil

P2.64 Peptide hormone ELABELA promotes extravillous trophoblast differentiation
Danae Georgiadou[1], Souad Boussata[1], Willemijn Ranzijn[1], Sanne Hillenius[1], Bruno Reversade[1,2], **Marie van Dijk**[1]
*[1]Academic Medical Center, Amsterdam, Netherlands, [2]Institute of Medical Biology, A*STAR, Singapore, Singapore*

P2.65 Viral-single stranded RNA (ssRNA) and Lipopolysaccharide (LPS) alter extravillous trophoblast (EVT) function through modulation of Breast Cancer Resistance Protein (BCRP)
Phetcharawan Lye[1], Enrrico Bloise[2], Lubna Nadeem[3], Chun Peng[4], William Gibb[5], Tania Ortiga-Carvalho[6], Stephen Lye[3,7,8], Stephen Matthews[3,7,8]
[1]University of Toronto, Toronto, Canada, [2]Department of Morphology, Federal University of Minas Gerais, Belo Horizonte, Brazil, [3]Lunenfeld-Tanenbaum Research Institute, Toronto, Canada, [4]Department of Biology, York University, Toronto, Canada, [5]Department of Obstetrics and Gynaecology, University of Ottawa, Ottawa, Canada, [6]Biophysics Institute Carlos Chagas Filho, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil, [7]Department of Obstetrics and Gynaecology, University of Toronto, Toronto, Canada, [8]Department of Physiology, University of Toronto, Toronto, Canada

P2.66 Implications of 5 α -reductase-mediated progesterone metabolism for decidualization of human endometrial stromal cells
Mikihiro Y oshie[1] , Kazuhiro Tamura[1], Tsubasa Chiba[1], Sayaha Nakajima[1], Junya Kojima[2], Hirotaka Nishi[2], Keiichi Isaka[2]
[1]Department of Endocrine and Neural Pharmacology, Tokyo University of Pharmacy and Life Sciences, [2]Department of Obstetrics and Gynecology, Tokyo Medical University, Tokyo, Japan

P2.67 Paternal short-term alcohol consumption alters mouse embryo-trophoblast differentiation during peri-implantation *in vitro* via programming embryo death
Lucila Gotfryd[1], Gabriela Salamone[2], Federico Fuentes[2], **Alejandra Erlejman**[3], Juan Carlos Calvo[4], Elisa Cebral[5], Vanina Fontana[4]
[1]Depertament of Biological Chemistry, School of Science, University of Buenos Aires, [2]IMEX-CONICET, [3]Depertament of Biological Chemistry, School of Science, University of Buenos Aires- IQUIBICEN, CONICET, [4]Depertament of Biological Chemistry, School of Science, University of Buenos Aires- IBYME, CONICET, [5]IBBEA-CONICET, Buenos Aires, Argentina

Infection and inflammation — Room 8 (7F, Bldg. No. 1)

P2.68 *Listeria monocytogenes* triggers a cellular defense response and impacts pregnancy-specific processes at the maternal-fetal interface in nonhuman primates early in infection
Bryce Wolfe[1], Megan Murphy[1], Greg Wiepz[1], Michele Schotzko[1], Andres Mejia[1], Heather Simmons[1], Charles Czuprynski[2], Thaddeus Golos[1,2]
[1]Wisconsin National Primate Research Center, [2]University of Wisconsin School of Veterinary Medicine, WI, USA

P2.69 Endothelial activation by peripheral immune cells from women with PE-complicated pregnancies
Cyntia Duval[1,2], Ines Boufaied[2], Sylvie Girard[1,2]
[1]Universite de Montreal, [2]CHU Sainte-Justine Research Center, Montreal, Canada

P2.70 Withdraw

P2.71 A case of thymoma complicated pure red cell aplasia and candida funisitis during pregnancy. A case of thymoma complicated pure red cell aplasia and candida funisitis during pregnancy
Hitoshi Matsui[1], Nagayoshi Umehara[2], Satoru Funaki[2], Megumi Shibata[2], Michiko Miya[2], Seiji Wada[2], Takako Yoshioka[2], Haruhiko Sago[2]
[1]Natinal Center for Child Health and Development, [2]Natinal Center for Child Health and Development, Tokyo, Japan

P2.72 Viral nucleic acids in human placenta and pregnancy complications
Susanne Lager[1], Marcus C. de Goffau[2], Judith Breuer[3], Sharon J. Peacock[1,4], Julian Parkhill[2], D. Stephen Charnock-Jones[1], Gordon C.S. Smith[1]
[1]University of Cambridge, Cambridge, UK, [2]Wellcome Trust Sanger Institute, Hinxton, UK, [3]University College London, London, UK, [4]London School of Hygiene & Tropical Medicine, London, UK

P2.73 The case of metastatic choriocarcinoma treated with paclitaxel and carboplatin cionbination after EMA/CO-induced interstitial lung disease
Wataru Kudaka, Hisako Yagi, Tadaharu Nakasone, Yoshihisa Arakaki, Yusuke Taira, Rie Nakamura, Tomoko Nakamoto, Takuma Oyama, Chiaki Urasoe, **Yoichi Aoki**
University of the Ryukyus, Okinawa, Japan

Metabolism/mitochondria — Room 8 (7F, Bldg. No. 1)

P2.74 Gestational diabetes affects cytotrophoblast metabolism and lipid storage in term human placenta
Amy Valent, Kevin Kolahi, Haeri Choi, Kent Thornburg
Oregon Health and Science University, OR, USA

P2.75 The response of placental mitochondrial electron chain complexes and AMPK activation to increasing birthweight centiles differs with fetal sex
Yu Wang[1], Matthew Bucher[1], Alina Maloyan[2], **Leslie Myatt**[1]
[1]Oregon Health & Sciences University, Obstetrics and Gynecology, [2]Oregon Health & Sciences University, Knight Cardiovascular Institute, OR, USA

Metabolomics/proteomics — Room 8 (7F, Bldg. No. 1)

P2.76 Placental proteomic analysis of placenta accreta
Yoshinori Moriyama, Seiji Sumigama, Teruyuki Mizutani, Masataka Nomoto, Takafumi Ushida, Kenji Imai, Tomoko Nakano, Tomomi Kotani, Fumitaka Kikkawa
Nagoya University, Aichi, Japan

Oxidative stress — Room 8 (7F, Bldg. No. 1)

P2.77 Supraphysiological maternal hypercholesterolemia associates with increased PCSK9 levels and changes in the lipoprotein anti-oxidant function
Claudette Cantin, María Jesús Garchitorena, Bárbara Fuenzalida, Lorena Carvajal, Susana Contreras-Duarte, Andrea Leiva
Pontificia Universidad Católica de Chile, Santiago, Chile

P2.78 Targeted antioxidant treatment in the placenta: A superoxide dismutase mimic plus catalase rescues trophoblast growth after oxidative challenge
Olivia Holland[1], Keith Kwan Cheung[1], Marloes Dekker[2], Filip Radenkovic[3], Anthony Perkins[1]
[1]Griffith University, Gold Coast, Australia, [2]University of Queensland Centre for Clinical Research, Brisbane, Australia, [3]University of Queensland Centre Australian Institute for Bioengineering and Nanotechnology, Brisbane, Australia

Placental dysfunction — Room 8 (7F, Bldg. No. 1)

P2.79 Placental capillary pericytes release more exosomes and immunomodulatory and growth factors in response to hypoxia
Carolina Motta-Mejia[1,2], Furqan Bari[3], Lubna Kouser[4], Manjot Gill[2], Ain Neuhaus[2], Yvonne Couch[2], Wei Zhang[2], Neva Kandzija[2], Ana-Sofia Cerdeira[2], Christopher Redman[2], Uday Kishore[1], Manu Vatish[2]
[1]Brunel University London, London, UK, [2]University of Oxford, Oxford, UK, [3]Dow University of Health Sciences, Karachi, Pakistan, [4]Imperial College, London, UK

P2.80 The importance of histopathological examination for hydatidiform mole in missed abortion
Yunhui Tang[1], Xiaoying Yao[1], Qi Chen[1,2]
[1]The Hospital of Obstetrics & Gynaecology, Fudan University, Shanghai, China, [2]The University of Auckland, Auckland, New Zealand

P2.81 Placental morphology and pregnancy complications in full-term pregnancy
Takafumi Ushida, Teruyuki Mizutani, Masataka Nomoto, Yoshinori Moriyama, Kenji Imai, Tomoko Nakano, Tomomi Kotani, Fumitaka Kikkawa
Nagoya University, Aichi, Japan

P2.82 A retrospective cohort study on risk factors of retained products of conception after miscarriage or termination in the second trimester of pregnancy
Tomoko Noguchi, Michihisa Shiro, Naoyuki Iwahashi, Sakiko Nanjo, Madoka Yamamoto, Nami Ota, Yasushi Mabuchi, Shigetaka Yagi, Sawako Minami, Kazuhiko Ino
Department of Obstetrics & Gynecology, Wakayama Medical University, Wakayama, Japan

P2.83 Gestational age-specific risk of stillbirth during term pregnancy according to maternal age
Hyun Sun Ko, Jeong Ha Wie, Rayon Kim, Singyoung Kim, In Yang Park, Jong Chul Shin
Catholic University of Korea, Seoul, Korea

P2.84 The risk for placenta abruption among pregnant women with thyroid diseases
Tomomi Kotani, Tomoko Nakano, Kenji Imai, Yoshinori Moriyama, Masataka Nomoto, Teruyuki Mizutani, Fumitaka Kikkawa
Nagoya University Graduate School of Medicine, Aichi, Japan

P2.85 Acute kidney injury requiring hemodialysis following placental abruption: a case report
Akiko Konishi, Takashi Ashida, Masaya Tanaka, Eri Takashima, Norio Takeda, Go Ichikawa
Kawaguchi Municipal Medical Center, Saitama, Japan

P2.139 Placental T2* estimated by magnetic resonance imaging and fetal weight estimated by ultrasound in the prediction of birthweight differences in dichorionic twin pairs
Ditte N Hansen[1,2], Sofie S Poulsen[1], Marianne Sinding[3], David A Peters[4], Jens B Frøkjær[5], Anne Sørensen[1,2]
[1]Department of Obstetrics & Gynecology, Aalborg University Hospital, Aalborg, Denmark, [2]Department of Clinical Medicine, Aalborg University, Aalborg, Denmark, [3]Department of Obstetrics & Gynecology, Viborg Regional Hospital, Viborg, Denmark, [4]Department of Clinical Engineering, Central Denmark Region, Aarhus, Denmark, [5]Department of Radiology, Aalborg University Hospital, Aalborg, Denmark

P2.140 Striking increase in villous hemosiderosis in placentas of children with high genetic ASD risk
Harriet Pais[1,2], Ruchit G Shah[1], Phillip Necaise[1,2], Craig Newschaffer[3], Kristen Lyall[3], Sanford Lederman[4], Carolyn M Salafia[1,2,4]
[1]Placental Analytics LLC, NY, USA, [2]Institute for Basic Research, NY, USA, [3]AJ Drexel Autism Center, PA, USA, [4]New York Presebyterian Brooklyn Methodist Hospital, NY, USA

Preeclampsia — Room 8 (7F, Bldg. No. 1)

P2.86 Elevated neprilysin in placental vesicles derived from preeclamptic pregnancies
Manjot Gill, Carolina Motta-Mejia, Neva Kandzija, Kirsten White, Boonyakiat Thammasate, Rannya Ri, William Cooke, Sofia Cerdeira, Wei Zhang, Christopher Redman, Manu Vatish
University of Oxford, Oxford, UK

P2.87 Glycosylated Siglec6 expression in syncytiotrophoblast-derived extracellular vesicles from preeclamptic placentas
Kirsten White, Dionne Tannetta, Neva Kandzija, Carolina Motta-Mejia, Manjot Gill, Wei Zhang, William Cooke, Boonyakiat Thammasate, Sofia Cerdeira, Rannya Ri, Christopher Redman, Manu Vatish
University of Oxford, Oxford, UK

P2.88 Endoplasmic reticulum stress occurs in association with the extrusion of toxic extracellular vesicles from human placentae treated with antiphospholipid autoantibodies
Yunhui Tang[1,2], Yan Chen[2], Katie Groom[2], Anthony Hickey[2], Larry Chemley[2], Qi Chen[1,2]
[1]The Hospital of Obstetrics & Gynaecology, Fudan University, Shanghai, China, [2]The Department of Obstetrics & Gynaecology, The University of Auckland, Auckland, New Zealand

P2.89 Oxygen as possible regulator of early gestation angiotensin II Type 1 receptor and its localisation shown by *in situ* hybridisation based padlock-probe technology at placental endothelium
Olivia Nonn[1], Sabine Maninger[1], Amin El-Heliebi[1], Thomas Kroneis[1], Desiree Forstner[1], Monika Siwetz[1], Florian Herse[2], Denise Hoch[3], Gernot Desoye[3], Ulrich Pecks[4], Berthold Huppertz[1], Martin Gauster[1]
[1]Department of Cell Biology, Histology and Embryology, Gottfried Schatz Research Centre, Medical University of Graz, Graz, Austria, [2]Max Delbrueck Centre for Molecular Medicine, Experimental Clinical Research Centre Campus Buch, Charité Berlin, Berlin, Germany, [3]Department of Obstetrics and Gynaecology, Medical University of Graz, Graz, Austria, [4]Department of Gynaecology and Obstetrics, University Hospital Schleswig-Holstein Campus, Kiel, Germany

P2.90 Preeclampsia is associated with an imbalance in the protein expression of LDLR and SR-BI, total cholesterol levels and autophagy markers in the human placenta
Lorena Carvajal[1], Claudette Cantin[1], Bárbara Fuenzalida[1], Susana Contreras-Duarte[1], Jaime Gutiérrez[2], Eugenia Morselli[1], Andrea Leiva[1]
[1]Pontificia Universidad Católica de Chile, [2]Universidad San Sebastián, Santiago, Chile

P2.91 The effect of low dose aspirin on decidual derived mesenchymal stem/stromal cells in preeclampsia
Ramin Khanabdali[1,2], Aida Shakouri-Motlagh[1], Sarah Wilkinson[1], Harry Georgiou[1,2], Shaun Brennecke[1,2], Bill Kalionis[1,2]
[1]Department of Maternal-Fetal Medicine, Pregnancy Research Centre, The Royal Women's Hospital, Melbourne, Australia, [2]Department of Obstetrics and Gynaecology, The University of Melbourne, Melbourne, Australia

P2.92 A pre-eclampsia cell model: effect of hypoxia and hypoxia-reoxygenation in the primary cytotrophoblast
Sampada A. Kallol[1], Jonas Zaugg[1,2], Michael P. Lüthi[1,2], Ruedi Moser[3], Hiten D. Mistry[4], Henning Schneider[1], Christiane Albrecht[1,2]
[1]Institute of Biochemistry and Molecular Medicine, University of Bern, Bern, Switzerland, [2]Swiss National Centre of Competence in Research (NCCR) TransCure, University of Bern, Bern, Switzerland, [3]Lindenhofspitalgruppe, Bern, Switzerland, [4]Division of Child Health, Obstetrics & Gynaecology, University of Nottingham, Nottingham, UK

P2.93 Adverse obstetric and perinatal outcomes between singleton and twin pregnancies complicated by preeclampsia: a systematic review and meta-analysis
N.L Zang, Y.W Wen, Q.T Huang, M Zhong
Department of Obstetrics and Gynecology, Nanfang Hospital, Southern Medical University, Guangzhou, China

P2.94 Inflammatory factor TNF α induces SerpinF2 upregulation and excessive hyper-coagulation in preeclampsia
Yanlei Liu[1,2], Huifen Lu[1,2], Wentong Jia[1,2], Feihong Dang[1,2], Liyang Ma[1], Yu-xia Li[1], Xuan shao[1], Yan-ling Wang[1,2]
[1]State Key Laboratory of Stem Cell and Reproductive Biology, Institute of Zoology, Chinese Academy of Sciences, [2]University of Chinese Academy of Sciences, Beijing, China

P2.95 Hyperandrogenemia induces damage to mitochondrial respiration in placenta: Implications for preeclamptic placental insufficiency
Jay Mishra[1], Kathirvel Gopalakrishnan[1], Chellakkan Blesson[2], **Sathish Kumar**[1]
[1]University of Wisconsin, WI, USA, [2]Baylor College of Medicine, TX, USA

P2.96 Autophagy failure induces dysregulation of TEFB and lysosomal proteome, resulting in lysosomal storage disease in preeclamptic placenta
Akitoshi Nakashima[1], Tae Kusabiraki[1], Aiko Aoki[1], Azusa Sameshima[1], Tomoko Shima[1], Osamu Yoshino[1], Shi-Bin Cheng[2], Surendra Sharma[2], Shigeru Saito[1]
[1]Department of Obstetrics and Gynecology, Faculty of Medicine, University of Toyama, Toyama, Japan, [2]Department of Pediatrics, Women and Infants Hospital-Warren Alpert Medical School of Brown University, RI, USA

P2.97 HMGB1, a damage-associated molecular pattern produces toxic trophoblastic debris possibly via the autophagy machinery
Haiyan Liu[1,2], Pamela Htain[2], Katie Groom[2], Michelle Wise[2], Peter Stone[2], Larry Chemley[2], Qi Chen[1,2]
[1]The Hospital of Obstetrics & Gynaecology, Fudan University, Shanghai, China, [2]The Department of Obstetrics & Gynaecology, The University of Auckland, Auckland, New Zealand

P2.98 Association of steroid hormone imbalance with coagulatory factor SerpinF2 excess in preeclamptic placenta
Xuan Shao[1], Yongqing Wang[2], Yanlei Liu[1,3], Xuejiang Guo[4], Dong Li[1], Ran Huo[4], Wentong Jia[1,3], Guangming Cao[1], Yu-Xia Li[1], Ming Liu[1], Jiahao Sha[4], Yangyu Zhao[2], Yan-Ling Wang[1,3]
[1]Institute of Zoology, Chinese Academy of Sciences, Beijing, China, [2]Peking University Third Hospital, Beijing, China, [3]University of Chinese Academy of Sciences, Beijing, China, [4]State Key Laboratory of Reproductive Medicine, Nanjing Medical University, Nanjing, China

P2.99 Melatonin and hypoxia/reoxygenation modulate differently autophagy and inflammation in the human placental syncytiotrophoblast
Lucas Sagrillo-Fagundes[1], Eugênia Maria Assunção Salustiano[1], Ruano Rodrigo[2], Regina P. Markus[3], **Cathy Vaillancourt**[1]
[1]INRS-Institut Armand Frappier, QC, Canada, [2]Mayo Clinic College of Medicine, Maternal-Fetal Medicine Division, MN, USA, [3]Institute of Bioscience, University of São Paulo, São Paulo, Brazil

P2.100 Gas6/AXL signaling increases placental redox and decreases mitochondrial respiration in the development or a rodent model of preeclampsia
Juan Arroyo
Brigham Young University, UT, USA

P2.101 Serum cell-free DNA in preeclamptic women induces inflammatory responses in human placental cells
Koumei Shirasuna[1], Ayae Ozeki[1], Hironori Takahashi[2], Akihide Ohkuchi[2], Hisataka Iwata[1], Takehito Kuwayama[1]
[1]Tokyo University of Agriculture, Kanagawa, Japan, [2]Jichi Medical University, Tochigi, Japan

P2.102 Water-soluble extract of *cinnamomum cassia* and *zingiber officinale* increase placental growth factor and decrease sFlt-1 secreted from endothelial and placental cells
Kenji Onda[1], Sally Beard[2], Rhotaro Shiota[1], Masaru Sakamaki[1], Stephen Tong[2], Toshihiko Hirano[1], Natalie J Hannan[2]
[1]Tokyo University of Pharmacy and Life Sciences, Tokyo, Japan, [2]University of Melbourne, Melbourne, Australia

P2.142 Immunological effects of plasma derived exosomes on BeWo cells under in vitro hypoxic conditions
Kaminee Maduray, Preenan Pillay, Jagidesa Moodley, Irene Mackraj
University of Kwazulu- Natal, Durban, South Africa

Prenatal diagnosis — Room 8 (7F, Bldg. No. 1)

P2.103 Inflammatory changes across gestation in relation to pregnancy complications
Marie-Eve Brien[1,2,3], Ines Boufaied[1,2], Nathalie Bernard[4], Jean-Claude Forest[4,5], Yves Giguère[4,5], Sylvie Girard[1,2,3]
[1]Ste-Justine Hospital Research Center, Montreal, Canada, [2]Department of Obstetrics and Gynecology, Universite de Montreal, Montreal, Canada, [3]Department of microbiology, infectiology and immunology, Universite de Montreal, Montreal, Canada, [4]Centre de recherche du Centre Hospitalier Universitaire de Quebec, Quebec, Canada, [5]Department of Molecular Biology, Medical Biochemistry and Pathology, Faculty of Medicine, Universite Laval, Quebec, Canada

P2.104 Investigation tothe future of placental examination for the mother's and child's health
Masayoshi Arizawa
Tokyo Metropolitan Ohtsuka Hospital, Tokyo, Japan

P2.136 Fetal cell-free DNA fraction in maternal plasma is affected by fetal trisomy
Nobuhiro Suzumori[1], Takeshi Ebara[2], Takahiro Yamada[3], Osamu Samura[4], Junko Yotsumoto[5], Miyuki Nishiyama[6], Kiyonori Miura[7], Hideaki Masuzaki[7], Yoshimasa Kamei[8], Jun Murotsuki[9], Hideaki Sawai[10], Juan-Sebastian Saldivar[11], Nilesh Dharajiya[11], Haruhiko Sago[6], Akihiko Sekizawa[12]
[1]Department of Obstetrics and Gynecology, Nagoya City University, Aichi, Japan, [2]Department of Occupational and Environmental Health, Nagoya City University, Aichi, Japan, [3]Department of Obstetrics and Gynecology, Kyoto University Graduate School of Medicine, Kyoto, Japan, [4]Department of Obstetrics and Gynecology, The Jikei University School of Medicine, Tokyo, Japan, [5]Department of Genetic Counseling, Ochanomizu University, Tokyo, Japan, [6]Center of Maternal-Fetal, Neonatal and Reproductive Medicine, National Center for Child Health and Development, Tokyo, Japan, [7]Department of Obstetrics and Gynecology, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan, [8]Department of Obstetrics and Gynecology, Saitama Medical University, Saitama, Japan, [9]Department of Obstetrics and Gynecology, Tohoku University Graduate School of Medicine, Miyagi, Japan, [10]Department of Obstetrics and Gynecology, Hyogo College of Medicine, Hyogo, Japan, [11]Sequenom Inc, CA, USA, [12]Department of Obstetrics and Gynecology, Showa University School of Medicine, Tokyo, Japan

Preterm labour and birth — Room 8 (7F, Bldg. No. 1)

P2.105 Genetics of pre-term birth suggest a role of a Wnt pathway gene in spontaneous preterm birth
Ortal Tamam[1,2], Louis Muglia[2]
[1]The Shraga Segal Department of Microbiology, Immunology & Genetics; Faculty of Health Sciences (A.B.), Ben-Gurion University of the Negev, Beer Sheva, Israel, [2]Center for Prevention of Preterm Birth, Cincinnati Children's Hospital Medical Center, OH, USA

P2.106 Synergistic induction of 11 β-hydroxysteroid dehydrogenase 1 by serum amyloid A1 and cortisol via STAT3 in human amnion fibroblasts-implications for labor onset
Yi Lu, Wangsheng Wang, **Gang Sun**
Shanghai Jiao Tong University, Ren Ji Hospital, Shanghai, China

P2.107 The clinical and pathological findings of placental abruption following fetoscopic laser photocoagulation for twin-twin transfusion syndrome using the Solomon technique
Seiji Kanazawa, Rika Sugibayashi, Katsusuke Ozawa, Seiji Wada, Haruhiko Sago
National Center for Child Health and Development, Tokyo, Japan

Stem cells — Room 8 (7F, Bldg. No. 1)

P2.108 Modeling Preeclampsia using induced human pluripotent stem cells
Mariko Horii, Tony Bui, Francesca Soncin, Omar Farah, Ching-Wen Chang, Morgan Meads, Louise Laurent, Mana Parast
University of California San Diego, CA, USA

P2.109 In vivo identification of a novel progenitor in the mesenchymal core of human placental villi
Anna Boss, Joanna L James, Anna E S Brooks, Larry W Chamley
University of Auckland, Auckland, New Zealand

P2.110 The FOXO3a axis in trophoblast stem cell differentiation
Nadejda Capatina[1], Myriam Hemberger[2], Graham Burton[1], Hong Wa Yung[1]
[1]Centre for Trophoblast Research, Department of Physiology, Development and Neuroscience, University of Cambridge, [2]The Babraham Institute, Cambridge, UK

P2.111 Angiogenic potentials of mesenchymal stem cells derived from the placenta in preeclampsia
Noriko Nagata[1], Naoki Fuchi[1,2], Kiyonori Miura[1], Tao-Sheng Li[2], Hideaki Masuzaki[1]
[1]Nagasaki University, [2]Department of Stem Cell Biology, Atomic Bomb Disease Institute, Nagasaki University, Nagasaki, Japan

P2.112 Are mesenchymal stem/stromal cells from growth restricted placentae poor stimulators of angiogenesis?
Anandita Umapathy, Arier Chi Lun Lee, Larry Chamley, Joanna James
University of Auckland, Auckland, New Zealand

P2.113 Signaling pathways activated during hepatic differentiation of amniotic epithelial stem cells
Rodrigo Riedel[1], Antonio Pérez Pérez[2], **Alejandra Erlejman**[1], Mariana Jaime[3], Ornella Parolini[4], Jose Luis Dueñas[2], Víctor Sánchez-Margalet[2], Cecilia Varone[1], Julieta Maymó[1]
[1]Departamento de Química Biológica, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires-IQUIBICEN-CONICET, Buenos Aires, Argentina, [2]Depto. de Bioquímica Médica y Biología Molecular, Universidad de Sevilla, Sevilla, Spain, [3]Hospital Nacional Alejandro Posadas, Buenos Aires, Argentina, [4]Centro di Ricerca E. Menni-Fondazione Poliambulanza- Istituto Ospedaliero, Brescia, Italy

Transport — Room 8 (7F, Bldg. No. 1)

P2.114 Involvement of prostaglandin transporter in murine placental PGE_2 degradation
Mai Inagaki[1], Tomohiro Nishimura[1], Takeo Nakanishi[2], Hiroaki Shimada[2,3], Saki Noguchi[1], Shin-ichi Akanuma[4], Masanori Tachikawa[5], Emi Nakashima[1], Ken-ichi Hosoya[4], Ikumi Tamai[2], Masatoshi Tomi[1]
[1]Faculty of Pharmacy, Keio University, Tokyo, Japan, [2]Faculty of Pharmaceutical Sciences, Kanazawa University, Ishikawa, Japan, [3]Faculty of Pharmacy, Kindai University, Osaka, Japan, [4]Graduate School of Medicine and Pharmaceutical Sciences, University of Toyama, Toyama, Japan, [5]Graduate School of Pharmaceutical Sciences, Tohoku University, Miyagi, Japan

P2.115 Effects of human serum albumin compared to plasma proteins on nanoparticle transport at the placental barrier
Michael Gruber[1], Uwe Lang[1], Christian Wadsack[1,2]
[1]Department of Obstetrics and Gynaecology, Medical University of Graz, [2]Bio TechMed-Graz, Graz, Austria

P2.116 The inhibitory effect of anti-hepatitis C drugs on the transport of L-carnitine in human placenta
Rona Karahoda, Martina Ceckova, Frantisek Staud
Department of Pharmacology and Toxicology, Faculty of Pharmacy in Hradec Kralove, Charles University, Hradec Kralove, Czech Republic

P2.117 Determination of physiological amino acid gradients across the materno-fetal barrier
Jonas Zaugg[1,2], Jean-Marc Nuoffer[3], Ruedi Moser-Hässig[4], Christiane Albrecht[1,2]
[1]Institute of Biochemistry and Molecular Medicine, Faculty of Medicine, University of Bern, [2]Swiss National Centre of Competence in Research (NCCR) TransCure, University of Bern, [3]Center for Metabolic Analysis, University Hospital, [4]Lindenhofspitalgruppe Bern, Bern, Switzerland

P2.118 Clearance of glibenclamide from the fetal circulation of the perfused human placenta is enhanced by bromosulphothalein
Emma Lofthouse, Bram Sengers, Jane Cleal, Rohan Lewis
University of Southampton, Southampton, UK

P2.119 Effects of polyunsaturated fatty acids on the expression of transporters in human placental choriocarcinoma cells
Kanako Ono[1], **Ayako Furugen**[1], Yuko Kurosawa[1], Naoko Jinno[1], Katsuya Narumi[1], Masaki Kobayashi[2], Ken Iseki[1,2]
[1]Faculty of Pharmaceutical Sciences, Hokkaido University, [2]Department of Pharmacy, Hokkaido University Hospital, Hokkaido, Japan

Trophoblast biology — Room 8 (7F, Bldg. No. 1)

P2.120 Three-dimensional vascularized human placenta from an iPSC-derived organ bud transplant
Mai Sato, Eiji Kondoh, Yosuke Kawamura, Hiroshi Takai, Yoshitsugu Chigusa, Haruta Mogami, Masaki Mandai
Department of Gynecology and Obstetrics, Kyoto University Graduate School of Medicine, Kyoto, Japan

P2.121 Effects of breast cancer treatment on placental tissue
Karolin Froehlich[1], Julia I. Heger[1], Andre Schmidt[1], Astrid Schmidt[1], Yvonne Heimann[1], Amelie Lupp[2], Rikst Nynke Verkaik-Schakel[3], Gitta Turowski[4], Sibylle Loibl[5], Torsten Plosch[3], Udo R. Markert[1]
[1]Placenta Laboratories, Jena University Hospital, Jena, Germany, [2]Institute of Pharmacology and Toxicology, Jena University Hospital, Jena, Germany, [3]Department of Obstetrics and Gynecology, University Medical Center Groningen,, Groningen, Netherlands, [4]Department of Pathology, University Hospital, Oslo, Norway, [5]German Breast Group, Neu-Isenburg, Germany

P2.122 Platelet derived factors impair trophoblast differentiation via activation of Smad3 signaling
Desiree Forstner[1], Sabine Maninger[1], Olivia Nonn[1], Gerit Moser[1], Gerd Leitinger[1], Elisabeth Pritz[1], Katharina Schallmoser[2], Monika Siwetz[1], Gunther Marsche[3], Akos Heinemann[3], Denise Hoch[4], Gernot Desoye[4], Berthold Huppertz[1], Martin Gauster[1]
[1]Department of Cell Biology, Histology and Embryology, Gottfried Schatz Research Center, Medical University of Graz, Graz, Austria, [2]University Clinic of Blood Group Serology and Transfusion Medicine, Paracelsus Medical University, Salzburg, Austria, [3]Department of Pharmacology, Otto Loewi Research Center, Medical University of Graz, Graz, Austria, [4]Department of Obstetrics and Gynecology, Medical University of Graz, Graz, Austria

P2.123 Genetic study on origins of choriocarcinomas by short tandem repeat analysis
Kimihiro Nishino[1], Kenichi Nakamura[1], Yoshiki Ikeda[1], Kaoru Niimi[1], Eiko Yamamoto[2], Toshimichi Yamamoto[3], Fumitaka Kikkawa[1]
[1]Department of Obstetrics and Gynecology, Nagoya University, [2]Department of Healthcare Administration, Nagoya University, [3]Department of Legal Medicine and Bioethics, Nagoya University, Aichi, Japan

P2.124 Placenta in toxicology: Effects of chemotherapeutics on trophoblast cells
Julia I. Heger[1], Karolin Froehlich[1], Lisa Uhl[1], Jana Henning[1], Ralf Mrowka[2], Amelie Lupp[3], Andre Schmidt[1], Udo R. Markert[1]
[1]Placenta Laboratories, Department of Obstetrics, Jena University Hospital, [2]KIMIII Department of Experimental Nephrology, Jena University Hospital, [3]Institute of Pharmacology and Toxicology, Jena University Hospital, Jena, Germany

P2.125 H_2S synthetase cystathionine γ -lyase inhibits trophoblast cells syncytialization through blocking AR dimerazation
Juan Liu[1,2], Feihong Dang[1,2], Ming Liu[1], Yu-xia Li[1], Shao Xuan[1], Yan-Ling Wang[1]
[1]State Key Laboratory of Stem Cell and Reproductive Biology, Institute of Zoology, Chinese Academy of Sciences, [2]University of Chinese Academy of Sciences, Beijing, China

P2.126 Apical secretion of apolipoprotein E: the anti-atherogenic impact of the placenta
Hassan Melhem[1], Xiao Huang[1], **Sampada Kallol**[1], Ruedi Moser[2], Regula Theurillat[3], Michael Lüthi[1], Wolfgang Thormann[3], Henning Schneider[1], Christiane Albrecht[1]
[1]Institute of Biochemistry and Molecular Medicine, University of Bern, [2]Lindenhofspitalgruppe Bern, [3]Institute for Infectious Diseases, University of Bern, Bern, Switzerland

P2.127 Fetal and maternal asymmetry in plasma membrane domains of syncytiotrophoblast layer-I cells are maintained by a polarity-regulating factor, KIBRA-like/Wwc2
Kana Tamura-Furukawa[1,2], Kazunari Yamashita[1,3], Shigeo Ohno[1]
[1]Dep. of Mol. Cel. Biol., Grad Sch. of Med., Yokohama City Univ, Kanagawa, Japan, [2]Laboratory for Lung Dev., RIKEN Center for Dev. Biol., Hyogo, Japan, [3]Dep. of Mol. Cel. Biol, Grad Sch. of Life Sci., Tohoku Univ, Miyagi, Japan

P2.128 Immunohistochemical analysis of miRNA processing molecules in the syncytiotrophoblast of the human first trimester placenta
Toshihiro Takizawa[1], Chaw Kyi-Tha-Thu[1], Hironori Takahashi[2], Manabu Ogoyama[1,2], Akihide Ohkuchi[2], Toshiyuki Takeshita[3], Shigeki Matsubara[2]
[1]Department of Molecular Medicine and Anatomy, Nippon Medical School, Tokyo, Japan, [2]Department of Obstetrics and Gynecology, Jichi Medical University, Tochigi, Japan, [3]Department of Obstetrics and Gynecology, Nippon Medical School, Tokyo, Japan

P2.129 Identification of a population of placental alkaline phosphatase negative syncytiotrophoblast exosomes using a multiplex exosome kit
Boonyakiat Thammasate[1], Wei Zhang[2], Nattiya Hirankarn[1], Christopher Redman[2], Manu Vatish[2]
[1]Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand, [2]Nuffield Department of Women's and Reproductive Health, University of Oxford, Oxford, UK

P2.130 Oriented sectioning of human placental blocks- Does it help?
Harriet Pais[1], **Carolyn Salafia**[1], Phillip Necaise[1], Thomas O'Connor[2], Ruchit Shah[1], Emily Barrett[3], Philip Katzman[2], Richard K Miller[2]
[1]Placental Analytics, LLC, NY, USA, [2]University of Rochester, NY, USA, [3]Rutgers University, NJ, USA

P2.131 Automated segmentation of the syncytiotrophoblast and classification of nuclear features: correlations of syncytial aggregate nuclear features and placental histopathology
Harriet Pais, **Carolyn Salafia**, Ruchit Shah, Phillip Necaise
Placental Analytics, LLC, NY, USA

P2.132 The kinetics of mercury in the human placenta: Relationship between genotype and phenotype in healthy and diseased placenta
Sebastian Granitzer[1,2], Christine Giuffrida[1,2], Elisabeth Straka[2], Raimund Widhalm[2], Isabella Ellinger[2], Harald Zeisler[2], Hans Salzer[3], Markus Hengstschläger[2], Claudia Gundacker[2]
[1]Karl-Landsteiner Privatuniversität, Krems, Austria, [2]Medical University of Vienna, Vienna, Austria, [3]University Hospital Tulln, Tulln, Austria

P2.133 The Usefulness of genetic analysis for differential diagnosis between complete and partial hydatidiform moles
Yuri Hasegawa, Kiyonori Miura, Ai Higashijima, Shuhei Abe, Hideaki Masuzaki
Nagasaki University, Nagasaki, Japan

P2.134 The regulation of gene networks involved in villous trophoblast differentiation and their impairment in preterm preeclampsia
Zsolt Gelencser[1], Roberto Romero[2], Yi Xu[2], Amanda Demeter[1], Balazs Gyorffy[3], Kata Juhasz[1], Janos Palhalmi[1], Katalin Kekesi[3], Gudrun Meinhardt[4], Offer Erez[2], Adi Tarca[2], Zoltan Papp[5], Martin Knöfler[4], **Nandor Than**[1]
[1]Hungarian Academy of Sciences, Research Centre for Natural Sciences, Budapest, Hungary, [2]Perinatology Research Branch, Eunice Kennedy Shriver National Institute of Child Health and Human Development, MI, USA, [3]Eotvos Lorand University, Budapest, Hungary, [4]Medical University of Vienna, Vienna, Austria, [5]Maternity Clinic, Budapest, Hungary

P2.137 Cervical molar pregnancy: A case report
Masahiko Kato, Tsuguto Notomi, Eika Harigane, Takehiko Fukami, Koichi Yoneyama, Toshiyuki Takeshita
Nippon Medical School, Kanagawa, Japan

P2.138 A case of complete hydatidiform mole coexistent with triplets
Youhei Tsunoda, Koichi Yoneyama, Takehiko Fukami, Toshiyuki Takeshita
Department of Obstetrics and Gynecology, Nippon Medical School, Kanagawa, Japan

P1.135
Polymer-based, biodegradable nanoparticles for the treatment of placental dysfunction

Rebecca Wilson[1], Jennifer Courtney[1], Kathryn Owens[1], Marcel Chuecos[2], Maira Carrillo[2], Natalia Schlabritz-Lutsevich[2], Helen Jones[1]
[1]Center for Fetal and Placental Research, Cincinnati Children's Hospital Medical Center, OH, USA, [2]Texas Tech University Health Sciences Center at the Permian Basin, TX, USA

Fetal growth restriction (FGR) is one of the leading causes of stillbirth and neonatal mortality. The majority of these cases are due to placental dysfunction and treatment options for FGR *in utero* are limited. We aimed to determine the suitability of a polymer-based, biodegradable nanoparticle in delivering DNA to human syncytiotrophoblasts using an *ex-vivo* perfusion model and an *in vitro* culture model.
Nanoparticles (NP) were created by complexing Texas-Red fluorophore labelled polymer with plasmid (human *Insulin-like Growth Factor 1* (*hIGF1*) under the placenta specific promotor PLAC1). Term, human placenta cotyledons (n=6) were perfused for 3.5hrs including approximately 1hr with nanoparticle. Fluorescence (625nm) was quantified in maternal and fetal perfusate using a fluorescent microplate-reader. For *in vitro* transgene expression, term, human cytotrophoblasts were isolated from placenta tissue (n=4) and allowed to spontaneously syncytialise into syncytiotrophoblasts. These were treated with nanoparticle for 48hr and RNA isolated. Collection and use of human placentas was approved by local IRB committees.
Maternal perfusate fluorescence significantly increased on addition of nanoparticle and declined by the conclusion of the experiment (mean minimum relative fluorescence units (RFU): baseline: -1.2±1.3 vs. NP addition: 322.4±62.1 vs. conclusion: 74.9±7.2; $P<$ 0.001, ANOVA). In contrast, negligible levels of Texas-Red were detected in the fetal perfusate (mean minimum RFU: baseline -0.7± 0.6 vs. NP addition 1.5±1.5 vs. conclusion 3.7±2.0; *NS*). Histological analysis of placenta following perfusion showed Texas-Red localisation within the syncytiotrophoblasts of the placental villi. *In vitro*, treatment with NP significantly increased *hIGF1* expression after 48 hr compared to untreated and DNA-only (mean normalised gene expression: untreated 1.03±0.12 vs. DNA-only 4.97±2.83 vs. NP 362.12±196.13; P<0.001, ANOVA).
We demonstrate successful NP-mediated delivery of nucleic acids in multiple models of human syncytiotrophoblast and increased transgene expression under a specific promoter representing a crucial advance in the development of treatment for placental dysfunction.

P1.136
Politics and the placenta

Priscilla Boyd, Adama Kasongo
Kongo University, Kinshasa, Congo

The relationship between science and politics has been likened to a marriage1, with the inference being that, to develop, the partners must not become alike but must respect their differences — and that the odd quarrel along the way is no big deal. Recently, however, science has taken the role of the meek, misunderstood spouse that has little influence over their all-powerful partner. Science must become stronger in this relationship; at present it does not have the respect it deserves from most politicians, and so its champions must become louder within the political arena if we are to address the grand challenges of the coming century.

Two recent incidents in the UK suggest that scientists hold little political power, with the real crux of the matter being a lack of science-literate politicians. Although some prominent politicians have science backgrounds (Margaret Thatcher and Angela Merkel were chemists) out of the 650 (pre-2010 election) UK members of parliament (MPs), 27 held science degrees and 584 admitted to having no political interest in science and technology — and taking into account upcoming retirements, it's about to get worse2. This alarming finding calls into question whether the people responsible for making important policy decisions, either based on scientific research or about its funding, fully understand its importance or crucially the scientific method at its core.

P1.137

Superb microvascular imaging and magnetic resonance imaging/ultrasound fusion for diagnosis of subchorionic hematoma in a pregnant woman with chronic abruption of the placenta

Masahiro Yamaguchi, Takeshi Umazume, Mamoru Morikawa, Hidemichi Watari
Hokkaido University, Obstetrics, Hokkaido, Japan

Introduction:
The new method of superb microvascular Imaging (SMI) can reveal the microscopic and slow blood flow in some organs. Magnetic resonance imaging (MRI)/ultrasound(US) fusion allows displaying and synchronizing the MRI and US images. We diagnosed the subchorionic hematoma (SCH) in a pregnant woman with chronic abruption of the placenta by these methods.
Case Presentation:
A 27-year-old nulliparous Japanese woman with gestational week (GW) 21-1/7 was referred to us for severe fetal growth restriction (FGR) without any other abnormalities. However, SCH were detected at GW 31-4/7 by MRI which was performed to evaluate the fetal central nerve system. The expansion of SCH might be critical, serial and frequent tests were necessary. But the conventional ultrasound examination could not evaluate the hematoma. We used MRI/SMI fusion for revealing the correct location, the extent, and sonographic characteristics of SCH and the placenta. The thin villi vessels branching from the chorionic vessels could be recognized in the parenchyma of placenta by SMI, but not be recognizedin SCH.
Non-reassuring fetal status necessitated an emergency cesarean section at GW 36-0/7. A male infant weighing 1126 g was born with 1 min and 5 min Apgar scores of 8 and 9, respectively, and umbilical arterial blood pH of 7.30.
The chronic abruption of the placenta was diagnosed based on the following macroscopic findings; the withered parenchyma of placenta which located on the SCH, and the exposed chorionic vessels on the maternal side of the withered placenta.
Discussion :
MRI has higher contrast resolution than ultrasound in discriminating hematoma. MRI/SMI Fusion may be useful for primary diagnosis of the chronic abruption of the placenta. SMI provide the better information of blood flow signals and the extent of SCH in following-up period.

P1.138

Determination of the diagnosis and management of retained placenta

Natsumi Furuya, Junichi Hasegawa, Nao Suzuki
Department of Obstetrics and Gynecology, St. Marianna University School of Medicine, Kanagawa, Japan

【Case 1】
A parous woman (gravida 2, para 1) who had no previous medical history delivered infant at 39 weeks' gestation. Since parturient had visited to the hospital due to fever up on 8th day after the delivery. Mild tenderness on the side walls of the uterus, and stinking purulent virginal discharge were observed. Laboratory test results showed: 19900/μL of leukocyte, and 12.54mg/dL of CRP. Ultrasonography revealed irregular echogenic mass with thinning myometrium in all layers. Since diagnosis of intrauterine infection due to the placental remnant but not strongly suspected invasive placenta was made, placenta removal under general anesthesia was decided. Placental tissue was completely removed using placental forceps under the guide of ultrasonography.
【Case 2】
A multiparous woman (gravida 5, para 2) who had three histories of miscarriage was delivered infant at 38 weeks' gestation. Fifteen minutes after delivery, vaginal bleeding due to placental separation was investigated. However, placenta could not completely detached from the uterus and vaginal bleeding was increased. Shock index went up gradually to1.3 at 21 minutes and 1.9 at 29 minutes after delivery. Since 3600g of the total amount of the bleeding was counted, immediately, manual placental removal under the general anesthesia was tried. However, it was failed and massive bleeding was continued, consequently hysterectomy was performed. Total amount of the bleeding was more than 8000g. Pathological examination indicated focal abnormal invasive placental tissue (5cm) in the myometrium.
Conclusion:
Long delay retained placenta may cause uterine infection and sepsis, while partial invasive placenta with partial detachment of the placenta cause hemorrhagic shock. Therefore, such pathologies should be determined and treated as soon as possible, when we encounter retained placenta. In the present report, the management protocol for retained placenta is discussed.

P1.139

Three-dimensional visualization of intrauterine conceptus through the uterine wall by tissue clearing method

Kyosuke Kagami[1], Yohei Shinmyo[2], Takashi Izuka[1], Takeo Matsumoto[1], Takeshi Obata[1], Ayumi Matsuoka[1], Shunsuke Orisaka[1], Junpei Iwadare[1], Rena Yamazaki[1], Masanori Ono[1], Hiroshi Kawasaki[2], Hiroshi Fujiwara[1]
[1]Department of Obstetrics and Gynecology, Graduate School of Medical Sciences, Kanazawa University, [2]Department of Medical Neuroscience, Graduate School of Medical Sciences, Kanazawa University, Ishikawa, Japan

Visualization of specific cells in the three-dimensional organ architecture is one of the key steps to develop our knowledge about pathophysiological mechanisms in various organs. In this study, we successfully obtained stereoscopic whole images of the intrauterine murine embryo and placenta through the uterus using a modified tissue clearing CUBIC method. By this procedure, we can recognize the three-dimensional relationships among various tissues within the pregnant uterus and analyze free-angle images of cross-sections with single-cell resolution using a computer system. Based on these data, we can select optimal cross-section angles and then produce the corresponding tissue slices that are adequate for further immunohistochemical examination. Furthermore, using transgenic mice, distinct images of an EGFP-positive embryo and the placenta can be obtained, confirming the precise three-dimensional location of invading trophoblasts in the feto-maternal interface in the uterus. These results indicate that this procedure will significantly contribute to analyzing pathophysiological mechanisms in reproductive organs.

P1.140

The placental pathology in pregnancy with Fontan circulation

Tae Yokouchi Konishi[1], Keiko Ohta Ogo[2], Hatsue Ishibashi Ueda[2], Chizuko A Kamiya[1], Masami Sawada[1], Tadasu Shionoiri[1], Atsushi Nakanishi[1], Chinami Horiuchi[1], Mitsuhiro Tsuritani[1], Naoko Iwanaga[1], Reiko Neki[1], Jun Yoshimatsu[1]
[1]Department of Perinatology and Gynecology, National Cerebral and Cardiovascular Center, [2]Department of Pathology, National Cerebral and Cardiovascular Center, Osaka, Japan

Background:
Fontan circulation is a palliative operation for patients with congenital heart diseases (CHD) lacking biventricular circulation. Pregnant women with Fontan circulation have a high risk of miscarriage, premature delivery, and small for date. However, their placental pathology has not been well investigated. The purpose of the current study is to investigate the placental pathology in patients with Fontan circulation.
Methods:
We retrospectively reviewed obstetric and cardiac data from the medical charts of 5 pregnancies in 5 women with Fontan circulation with various CHD delivered after 22 weeks gestation at our institution between 2006 and 2018. Five placentas were analyzed histopathologically, especially on the point of hypoxia and maternal perfusion.
Results:
During pregnancy, 1 out of 5 women took antiplatelet agent, 2 were commenced on heparin, 2 were administered both. One woman took beta-blocker and diuretic agent. The median gestational age at delivery was 34 (30-37) weeks gestation. Obstetric complications included gestational diabetes mellitus (n=1, 20%), preterm delivery (n=3, 60%) and babies as small for date (n=3, 60%, all < 3rd percentile). $SpO_2$was 94% (91-96) (median, range), central venous pressure was 10mmHg (9-11) and cardiac output was 4.16L/min (3.20-5.76), fetal/placental ratio was 4.91 (3.85-5.63). Histopathologically, all 5 placentas showed increased syncytial knots, villous branching, villous vascular congestion, and villous stroma fibrosis. Four placentas showed increased perivillous fibrin deposit and chorangiosis. Three placentas showed subchorionic hematoma and hemosiderosis. There was no evidence of deficient vasculo-syncytial membrane, increased giant cells, chronic villitis of unknown etiology, and decidual vasculopathy.
Conclusion:
Patients with Fontan circulation showed low $SpO_2$and low cardiac output. All placentas with Fontan circulation showed histological findings of placental hypoxia and maternal underperfusion. Both hypoxia and maternal underperfusion could berelated to severe fetal growth restriction.

P1.141

Quantitative analysis by image processing of differentiation to extravillous cytotrophoblast in human embryonic stem cell derived trophoblast

Victoria M Karakis
North Carolina State University, NC, USA

Objectives:
A variety of culture conditions have been explored to differentiate human embryonic stem cells (hESCs) into trophoblasts and its differentiated progeny. Culture conditions for terminal differentiation of hESC-derived trophoblast are often assessed by analysis of biomarker expression, e.g. HLA-G for differentiation to extravillous trophoblast (EVTs). Expression of these markers may exhibit variability in intensity and/or heterogeneity across different conditions, indicative of cell state. Visual analysis is subject to bias; therefore, quantification of biomarker expression is necessary to compare different conditions. Towards this end, we performed quantitative image analysis on immunostained cells cultured under various conditions.
Methods:
We developed a chemically defined culture system that allows differentiation of hESCs to villous cytotrophoblasts (vCTBs), and subsequent differentiation to EVTs. We explored the effect of removal of lipid component sphingosine-1-phosphate (S1P), and inhibition of Rho/ROCK signaling, during differentiation of hESCs to vCTBs, on terminal differentiation to EVTs. Additionally, we investigated expression level differences amongst clusters versus single cells, with intent to distinguish column and invasive EVTs. Differentiated cells were assessed using immunofluorescence and HLA-G expression was quantified using microscopy and image processing.
Results:
We developed image processing algorithms to quantify HLA-G expression in hESC-derived EVTs. Our algorithm shows with statistical confidence that HLA-G expression level decreases with Rho/ROCK inhibition, removal of S1P and in cell clusters.
Conclusion:
Our results quantitatively reinforce previous results suggesting that S1P and Rho/ROCK signaling are necessary for trophoblast differentiation from hESCs, in our chemically defined culture conditions. Our results also suggest that HLA-G expression level can correlate to invasive versus proliferative, column cells. More importantly, our image analysis tool can be utilized broadly, to determine relative expression levels of a biomarker from immunofluorescence images. This will enable quantitative assessment of the role of signaling pathways in trophoblast differentiation.

P1.142

Marked time-of-day variation in expression of clock genes near term in the spiny mouse placenta

Peter J Mark[1], Celeste, H Wale[1], Karen, M Moritz[2], David, W Walker[3], Brendan, J Waddell[1], Hayley Dickinson[3]
[1]School of Human Sciences, The University of Western Australia, Nedlands, Australia, [2]School of Biomedical Sciences, The University of Queensland, Australia, [3]The Richie Centre, Hudson Institute of Medical Research, Victoria, Australia

Objectives:
The spiny mouse (*Acomys cahirinus*) is a rodent with a number of biological traits that make it particularly useful for modelling aspects of human reproduction. Similar to humans but unlike most other rodents, the spiny mouse menstruates, and synthesises cortisol as its active glucocorticoid. Furthermore, gestation (39 days) is considerably longer than for other rodents, and the young are born precocial, with advanced development of organs including the kidney and liver. Fetal liver development in utero would be facilitated by daily peaks and troughs in nutrient supply; an effect likely mediated by circadian clock machinery within the placenta. We hypothesised that the term spiny mouse placenta would exhibit time-of-day variation in expression of clock genes.
Methods:
Livers and placentas were collected from pregnant spiny mice on day 37 of gestation at either zeitgeber time (ZT)1 (n=5) or ZT13 (n=5), and placentas were separated into the labyrinth zone (LZ) or spongy zone (SZ). RT-qPCR was used to evaluate levels of clock genes in male and female LZ and SZ. Ethics was obtained.
Results:
Bmal1 expression in the LZ at ZT1 was three-fold higher than at ZT13. In contrast, LZ expression of *Per2*, *Cry2* and *Reverb-a* was 2-4 fold higher at ZT13 than ZT1. Time-of-day variation was markedly lower in the SZ than the LZ. Clock gene expression was mostly consistent between male and female placentas. Furthermore, the pattern of clock gene expression within the LZ broadly followed that of the maternal liver.
Conclusion:
Considerable time-of-day variation exists for clock genes in the spiny mouse LZ; the zone responsible for maternal-fetal transfer of nutrients. Expression profiles of *Bmal1* were opposite of *Cry2* and *Reverb-a*, consistent with a functioning clock gene pathway. Peaks and troughs in nutrient supply, as a result of circadian placental function, could drive maturation of the fetal liver.

P1.143

Serum levels of nitric oxide synthase, proangiogenic and antiangiogenic factors in HIV infected pre-eclamptic women

I Ajadi[1], K Maduray[1], S Eche[2], I Mackraj[1]
[1]Department of Human Physiology, School of Laboratory Medicine and Medical Sciences, University of KwaZulu-Natal, [2]KwaZulu-Natal Research and Innovation Sequence Platform (KRISP), School of Laboratory Medicine and Medical Sciences, University of KwaZulu-Natal, South Africa

Objectives:
In South Africa, pre-eclampsia (PE) and HIV infection are major causes of pregnancy-related deaths. This study aimed to measure the serum levels of endothelin-1; endothelial nitric oxide synthase (eNOS); soluble fms-like tyrosine kinase 1 (sFlt-1); soluble endoglin (sEng) and placental growth factor (PlGF) in HIV infected and HIV uninfected pre-eclamptic and normotensive women.
Method:
mRNA gene expression levels of circulating endothelin-1 and eNOS were determined using real-time PCR, whereas serum levels of sFlt-1, sEng and PlGF were quantified using ELISA kits.
Results:
Mean sFlt-1 levels were significantly upregulated in the pre-eclamptic (HIV uninfected 4.39 ±1.29; HIV infected 5.10 ±1.10 ng/ml) compared to the normotensive groups (2.59 ±0.83; 2.20 ±0.85 ng/ml).Results indicated no significant differences in the mean serum sEng levels across the study groups. Mean PlGF levels were significantly lower in the HIV uninfected PE versus the infected normotensive groups (29.69 ±4.47 pg/ml vs 32.86 ±6.46 pg/ml; p = 0.002). Endothelin-1 mRNA expression levels were significantly higher in pre-eclamptic groups compared with the normotensives. mRNA expression levels of eNOS in the HIV infected pre-eclamptic group was significantly reduced compared to the other groups.
Conclusion:
This study shows evidence of sFlt-1, an anti-angiogenic factor being a key role player in the pathogenesis of PE. Higher mRNA expression levels of endothelin-1 observed in the pre-eclamptic groups supports the fact that it is a vasoconstrictor that contributes to increased blood pressure in hypertension. However, the selected biomarkers exhibited no alterations in serum expression levels as a consequence of HIV infection in this study. Thus, we propose that HIV infection may not have an effect on the incidence or disease progression of PE.

P2.135

Whole slide analysis of placental hematoxylin and eosin stained slides

Harriet Pais[1], Ruchit Shah[1], Phillip Necaise[1], Emily Barret[2], Tom O'Connor[3], **Carolyn Salafia**[1,4]
[1]Placental Analytics, LLC, NY, USA, [2]Rutgers University, NJ, USA, [3]University of Rochester, NY, USA, [4]New York State Institute for Basic Research for Developmental Disabilities, NY, USA

Objectives:
The analysis of entire tissue samples in a routine Hematoxylin and eosin stained preparation is important because any selection, even "random", may introduce measurement bias unless large numbers of samples are pulled. We have also hypothesized that retaining "orientation" of tissue samples, relative to the chorionic and basal plates and to other landmarks of the placental functional unit, may contribute information as "the company a lesion keeps" may increase or decrease its importance to the fetoplacental unit as a whole. Whole slide analysis provides information on the number and composition of the large fetal stems that contain the arterioles and venules and provide the largest percentage of total peripheral resistance perceived by the fetal cardiovascular system. Analysis of shapes of fetal stem and smaller villi tell us their orientation in this 2D view of the placental disk.
Methods:
Whole slides obtained from the UPSIDE study were acquired at 20x magnification (resolution 0.5µm), downsampled to 2.5x (FigureA, resolution 4 µm) and thresholded to segment tissue from the background (FigureB). Morphological operations were performed and tissue area was further segmented into three classes based on pixel features: Intervillous space, LowSD Areas and Functional Villi Area (FigureC). Foreground is spilt into 10x 10 pixel squares and those with low intensity variance in R channel are classified as "LowSDAreas" and indicate sparse nuclei, a characteristic of large stem villi, infarcts, large fibrin and chorionic vessel regions. The rest is classified as Functional Villi Area, which is sub-classified based on villus size, shape and other RGB features. Number, Total Area and various shape measures are summarized for the different villi groups.
Results:
Number, Total Area and various shape measures are summarized for the different villi groups.
Conclusion:
Whole slide analysis in conjunction with mapping of 3D shape and 2D surface vascular networks can provide a unique look at placental structure and function.

P2.136

Fetal cell-free DNA fraction in maternal plasma is affected by fetal trisomy

Nobuhiro Suzumori[1], Takeshi Ebara[2], Takahiro Yamada[3], Osamu Samura[4], Junko Yotsumoto[5], Miyuki Nishiyama[6], Kiyonori Miura[7], Hideaki Masuzaki[7], Yoshimasa Kamei[8], Jun Murotsuki[9], Hideaki Sawai[10], Juan-Sebastian Saldivar[11], Nilesh Dharajiya[11], Haruhiko Sago[6], Akihiko Sekizawa[12]

[1]Department of Obstetrics and Gynecology, Nagoya City University, Aichi, Japan, [2]Department of Occupational and Environmental Health, Nagoya City University, Aichi, Japan, [3]Department of Obstetrics and Gynecology, Kyoto University Graduate School of Medicine, Kyoto, Japan, [4]Department of Obstetrics and Gynecology, The Jikei University School of Medicine, Tokyo, Japan, [5]Department of Genetic Counseling, Ochanomizu University, Tokyo, Japan, [6]Center of Maternal-Fetal, Neonatal and Reproductive Medicine, National Center for Child Health and Development, Tokyo, Japan, [7]Department of Obstetrics and Gynecology, Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan, [8]Department of Obstetrics and Gynecology, Saitama Medical University, Saitama, Japan, [9]Department of Obstetrics and Gynecology, Tohoku University Graduate School of Medicine, Miyagi, Japan, [10]Department of Obstetrics and Gynecology, Hyogo College of Medicine, Hyogo, Japan, [11]Sequenom Inc, CA, USA, [12]Department of Obstetrics and Gynecology, Showa University School of Medicine, Tokyo, Japan

The purpose of this noninvasive prenatal testing (NIPT) study was to compare the fetal fraction of singleton gestations by gestational age, maternal characteristics, and chromosome specific aneuploidies as indicated by *z*-scores. This study was a multicenter prospective cohort study. Test data were collected from women who underwent NIPT. Relationships between fetal fractions and gestational age, maternal weight and height, and *z*-scores for chromosomes 21, 18, and 13 were assessed. A total of 7,740 pregnant women enrolled in the study of which, 6,993 met the study criteria after informed consent. Approximately 95.5% of this study cohort included women of 35 years age or older. As expected, fetal fraction was inversely correlated with maternal weight ($p<0.001$). The median fetal fraction of samples with euploid result (n=6,850) and trisomy 21(n=70) were 13.7% and 13.6% respectively. In contrast, median fetal fraction values for samples trisomy 18 (n=35) and 13 (n=9) were 11.0% and 8.0% respectively. The fetal fraction of samples with trisomy 21 NIPT result is comparable to that of samples with euploid result. However, the fetal fractions of samples with trisomy 13 and 18 is significantly lower compared to that of euploid result, which may make detecting these two trisomies more challenging.

P2.137

Cervical molar pregnancy: A case report

Masahiko Kato, Tsuguto Notomi, Eika Harigane, Takehiko Fukami, Koichi Yoneyama, Toshiyuki Takeshita
Nippon Medical School, Kanagawa, Japan

We report a case of cervical molar pregnancy.
34 years old, G1P0, no special notes in past medical history. From the last menstruation 5 weeks 3 days of pregnancy, she came to our hospital for a small amount of genital bleeding and positive for pregnancy reactions. GS was not found in the uterus by transvaginal ultrasonography at the first visit. A 7 - 8 mm white ring was found in the cervix. serum hCG level was 13277 mIU/mL. MRI also confirmed cervical pregnancy contradictory findings. So we administered MTX 75 mg (50 mg/m 2). The villous tissue was excreted on the 2nd day of MTX administration, no villous component inside the cervix was detected, and continuous bleeding from the uterus also disappeared. Pathological examination of the uterine contents was a diagnosis of the complete hydatidiform mole. serum hCG level quickly became less sensitive and no remnant tissue was found in the cervix. For that reason we did carefully follow serum hCG without doing additional MTX or curator. Thereafter, it has passed outpatient without re-elevation of hCG level until 4 months.

P2.138

A case of complete hydatidiform mole coexistent with triplets

Youhei Tsunoda, Koichi Yoneyama, Takehiko Fukami, Toshiyuki Takeshita
Department of Obstetrics and Gynecology, Nippon Medical School, Kanagawa, Japan

Complete hydatidiform mole coexistent with a fetus (CHMCF) is very rare. It has also been pointed out that the incidence of secondary disease of CHMCF. It is easy to develop hypertensive disorders of pregnancy when CHMCF exists. We reported a case of complete hydatidiform mole coexistent with triplets following ovulation induction. A 30-year-old woman was referred to our hospital due to a multiple pregnancy. She was administered aspirin because she developed anti-phospholipid antibody syndrome. We administered heparin and monitored her. However, she developed severe hyperemesis and was admitted at 9 weeks of gestation. We discontinued aspirin because she had drug-induced liver injury. Hyperemesis improved and she was discharged at 12 weeks of gestation. However, she developed hypertension at 15 weeks of gestation and was admitted. The next day, she developed acute renal failure and pulmonary edema and was transferred to the intensive care unit. We thought that it would be difficult to continue the pregnancy and decided on pregnancy termination. We recognized a multivesicle pattern in the transabdominal ultrasound image and suspected a hydatidiform mole coexistent with fetuses. We confirmed that the patient and her family no longer expected child birth. We performed hysterectomy after cesarean section. As a result of the pathological examination, we diagnosed the patient as having a complete hydatidiform mole which invaded the myometrium. Serum human chorionic gonadotropin was high at 11 weeks after delivery and we found two metastatic lung lesions in chest CT, bilaterally. Each lesion was less than 2 cm. We diagnosed low risk gestational trophoblastic neoplasia (GTN) and administered methotrexate. We monitored her and there was no recurrence. This case is consistent with past reports in which CHMCF was complicated by preeclampsia, with a high risk of developing GTN.

P2.139

Placental T2* estimated by magnetic resonance imaging and fetal weight estimated by ultrasound in the prediction of birthweight differences in dichorionic twin pairs

Ditte N Hansen[1,2], Sofie S Poulsen[1], Marianne Sinding[3], David A Peters[4], Jens B Frøkjær[5], Anne Sørensen[1,2]
[1]Department of Obstetrics & Gynecology, Aalborg University Hospital, Aalborg, Denmark, [2]Department of Clinical Medicine, Aalborg University, Aalborg, Denmark, [3]Department of Obstetrics & Gynecology, Viborg Regional Hospital, Viborg, Denmark, [4]Department of Clinical Engineering, Central Denmark Region, Aarhus, Denmark, [5]Department of Radiology, Aalborg University Hospital, Aalborg, Denmark

Objectives:
Intertwin birthweight (BW) difference is associated with an increased risk of adverse outcome. Ultrasound estimated fetal weight (EFW) is the current method to predict intertwin BW difference, however, the sensitivity is poor. Therefore, new methods are needed. Placental T2* estimated by magnetic resonance imaging (MRI) reflects placental oxygen environment and thus placental function. This study aimed to investigate placental T2* difference as a new predictor of BW difference, and to compare it to the EFW.
Methods:
We included 25 dichorionic twin pairs at 19-38 weeks' gestation. Placental T2* was obtained by MRI and EFW by ultrasound. Correlations between each predictor and BW difference were examined by simple linear regression, and the combined model was analyzed by multiple linear regression and likelihood ratio test.
Results:
Strong positive correlations were demonstrated between intertwin differences in placental T2* and BW ($r=0.80$, $p<0.005$), and EFW and BW ($r=0.64$, $p<0.005$). Placental T2* difference was a strong independent predictor of BW difference ($p<0.001$), and the combined model performed better than each predictor alone ($p<0.0001$).
Conclusion:
This pilot study demonstrates that placental T2* difference may be a predictor of intertwin BW difference irrespectively of fetal size. The clinical potential of this method deserves further investigation in a larger clinical study.

P2.140
Striking increase in villous hemosiderosis in placentas of children with high genetic ASD risk

Harriet Pais[1,2], Ruchit G Shah[1], Phillip Necaise[1,2], Craig Newschaffer[3], Kristen Lyall[3], Sanford Lederman[4], Carolyn M Salafia[1,2,4]

[1]Placental Analytics LLC, NY, USA, [2]Institute for Basic Research, NY, USA, [3]AJ Drexel Autism Center, PA, USA, [4]New York Presebyterian Brooklyn Methodist Hospital, NY, USA

Background and Goals:

Autism spectrum disorders (ASD) show disordered neuronal connectivity; aberrant angiogenesis (AA), particular intussusceptive (rather than sprouting) is seen in ASD brains. Oxidative stress (OS) may mark/mediate ASD risk. We hypothesized that placentas of Early Autism Risk Longitudinal Investigation (EARLI) high ASD risk sibs show more fetal-placental bleeding, marking both placental AA and OS given that iron is a potent oxidant.

Methods:

One wax block of placental disk tissue was selected at random from 161 EARLI placentas and one block from 32 cases delivered at New York Presbyterian Broolyn Methodist Hospital (low ASD risk controls). Study controls were selected to enhance likelihood of abnormal staining, including only cases with placental infarct, intervillous thrombus and chronic villitis. Slides stained Prussian Blue to identify the presence of hemosiderin.

Quantification of Hemosiderin staining on whole tissue slide:

Batch processing of whole slides used the image analysis software Definiens Developer. The whole tissue is extracted at low resolution of 2.5x. Tissue tiles are analyzed at 10x magnification. Intervillous space and villi areas are segmented. In villi areas, blue (hemosiderin) pigment is quantifed; stain objects

Results:

Both variables were non-normally distributed. Results differed <10% between the two TH variables; TH/TVA is presented. Mood's Median test identified a median TH/TVA of 0.296 for EARLI, and 0.045 for controls, with first and third quartile range of 0.333 and 0.010 respectively($p < 0.0001$). Figures 1-4 demonstrated both increased trophoblast basement membrane and villous stromal staining in EARLI compared to controls.

Conclusions:

We suggest genetic risk of ASD is associated with abnormal placenta AA and OS.

P2.141
Evolution of progesterone withdrawal in strepsirrhine primates

Priyadarshini Pantham[1], Saravanan Devendran[1,2], Michelle Goettge[1,3], Jonathan Bodnariuc[1,6], Owen Haupt[1,6], Priya Karkhanis[1,6], Martin Malik[1,6], Loni Sneed[1,6], Jason Ridlon[1,2], Louis Muglia[4], Erin Ehmke[5], Derek Wildman[1,6]

[1]Carl R. Woese Institute for Genomic Biology, University of Illinois at Urbana-Champaign, [2]Department of Animal Sciences, University of Illinois at Urbana-Champaign, [3]Department of Microbiology, University of Illinois at Urbana-Champaign, [4]Department of Pediatrics, University of Cincinnati, [5]Duke Lemur Center, [6]Department of Molecular & Integrative Physiology, University of Illinois at Urbana-Champaign, IL, USA

Progesterone plays a central role in the maintenance of pregnancy, blocking the onset of parturition, known as the "progesterone block" hypothesis. In several domestic and laboratory species (eg: dog, sheep, rat), parturition is triggered by a drop in maternal progesterone levels, termed systemic progesterone withdrawal. In humans, Old World monkeys, and guinea pigs, placental progesterone production persists during parturition, and regresses upon delivery of the placenta. Parturition in these species may be triggered due to reduced responsiveness of target cells in the uterine myometrium to the labor-blocking actions of progesterone, termed functional progesterone withdrawal. Understanding the evolution of the switch from systemic to functional progesterone withdrawal is central to our understanding of the trigger of parturition, and ultimately obstetric disorders such as preterm birth. We hypothesize that systemic progesterone withdrawal existed in the last common ancestor of primate and non-primate mammals, and the loss of systemic progesterone withdrawal occurred prior to the divergence of haplorrhines and strepsirrhines. Currently, there is a lack of data describing longitudinal progesterone measurements across gestation in strepsirrhines. We have utilized liquid chromatography-tandem mass spectrometry (LC-MS/MS) to measure progesterone in fecal samples collected longitudinally throughout pregnancy in four lemur species: *Eulemur collaris* (n=1 control, n=1 pregnant), *Eulemur mongoz* (n=1 control, n=1 pregnant), *Daubentonia madagascariensis* (n=1 control, n=1 pregnant), and *Varecia rubra* (n=3 control, n=1 pregnant). *Eulemur mongoz*, *Eulemur collaris*, and *Daubentonia madagascariensis* appear to undergo systemic progesterone withdrawal prior to labor, while in *Varecia rubra*, systemic progesterone levels do not drop until after labor. Preliminary results indicate that diverse mechanisms of progesterone withdrawal in parturition may be operational in different strepsirrhine species, and bodes further investigation in other species from which we have collected fecal samples throughout pregnancy (*Lemur catta*, *Eulemur coronatus,* and *Propithecus coquereli*).

P2.142

Immunological effects of plasma derived exosomes on BeWo cells under in vitro hypoxic conditions

Kaminee Maduray, Preenan Pillay, Jagidesa Moodley, Irene Mackraj
University of Kwazulu- Natal, Durban, South Africa

Objectives:
Pregnancy-associated hypertension (pre-eclampsia) can lead to severe complications for both mother and fetus, as pre-eclampsia is associated with placental hypoxia, dysfunction and may exhibit differential as well as specific exosome release profiles that may play a role in immune modulation. The aim of this study was to isolate and characterize plasma derived exosomes from pre-eclamptic (early and late onset) and normotensive (< 33 weeks and > 34 weeks) women, and investigate whether these exosomes influence cytokine (IL-8; IL-10 and leptin) levels in BeWo cells under hypoxic exposure.
Method:
This study was institutional approved by the Biomedical Research Ethics Committee of University of Kwazulu-Natal. BeWo cells were plated in twenty-four well plates and treated for 24 hours with cobalt chloride ($CoCl_2$), a chemical hypoxia-inducing agent. Following, co-incubation with characterized and quantified exosomes (100 µg/mL exosomal protein per pregnant group) for 24 hours, IL-8; IL-10 and leptin levels were determined using commercially available immunoassay kits. BeWo cells treated with exosomes under non-hypoxic conditions was used as a control.
Results:
Hypoxic BeWo cells treated with exosomes isolated from < 33 weeks normotensive; > 34 weeks normotensive; early and late onset women showed significantly increased IL-8 (pro-inflammatory) levels compared to the non-hypoxic control groups subjected to the same exosomal treatments (IL-8: 21. 26 vs 18.56; 38.37 vs 15.97; 44.16 vs 43.90; 55.12 vs 44.16 pg/mL respectively). Leptin levels increased significantly in the experimental compared to the control. Conversely, IL-10 (anti-inflammatory) levels were decreased in hypoxic BeWo cells treated with exosomes compared to the non-hypoxic control groups.
Conclusion:
In this study, plasma derived exosomes from pre-eclamptic and normotensive pregnancies have differential immunological effects under hypoxic conditions.