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International Federation of Placenta Associations 2019 (IFPA2019) and 8th Latin American Symposium on Maternal-Fetal Interaction and Placenta (VIII SLIMP)

Placenta: the origin of pregnancy health and disease

IFPA 2019 LOCAL COMMITTEE

Chair – Alicia Jawerbaum

CoChair – Estela Bevilacqua

Secretary: Evangelina Capobianco

Members
Alicia E. Damiano
Cecilia Varone
Nora Martínez
Alejandra Erlejman
INTERNATIONAL FEDERATION OF PLACENTA ASSOCIATIONS (IFPA)

President – Claire Roberts
Secretary – Padma Murthi
Treasurer – Cathy Vaillancourt
Executive Treasurer – Helen Jones

MEMBER ASSOCIATIONS AND EXECUTIVE COMMITTEE MEMBERS

Australian & New Zealand Placenta Research Association
Claire Roberts
Padma Murthi
Joanna James
Natalie Hannan

European Placenta Group
Steve Charnock Jones
Pascale Chavatte-Palmer (Spokesperson)
Annette Staff
Lopa Leach
(Alternates Udo Markert, Rohan Lewis)

Japan Placenta Association
Keiichi Isaka
Yoshiki Kudo
Aikou Okamoto
Kazuhiko Ino

Placenta Association of the Americas
Isabella Caniggia (President of PAA)
Nick Illsley
Alicia Jawerbaum
(Alternates Estela Bevilacqua, Luis Sobrevia)
Journal Editors
Martin Knöfler (Placenta)
Gendie Lash (Trophoblast Research)
Anthony Perkins (Placenta).
Yoel Sadovsky (Placenta)

Early Career Researcher Representatives
Priya Pantham (USA)
Josh Fisher (Australia)

Publications Committee Chair
Leslie Myatt

Awards Committee Chair
Padma Murthi
It is my pleasure to Welcome you to IFPA 2019 and VIII SLIMP. The long-term time for preparation reaches to end with the beginning of this exciting Meeting.

This is the second time that an IFPA Meeting is held in South America, and thus, this meeting in Argentina is highly expected in the countries of our region. On the other hand, IFPA Members from different countries will have the opportunity to experience the passionate nature of our South American cultures, and to meet an important number of Placental researches from Latin America. This interaction will nourish the progress of Placenta Research worldwide. The scientific and social program has a huge number of opportunities for this interaction.

The theme of this Meeting “Placenta: the origin of pregnancy health and disease” is highly comprehensive. We count with great International speakers, so I would like to thank all the speakers that will be part of this IFPA. It also has 12 workshops in different topics, and I would also like to thank the organizers in charge of them. It has long poster presentation sessions to allow having time to find and interact with your favorite presenting authors. We have included several ECR and educational activities, and I would like to thank those in charge of these interesting activities.

Now it is time to start and enjoy the program. During these four-day-meeting, I hope that all of you can enjoy, teach, learn and find something inspiring for the next step in your research in Placenta and Feto-Maternal interaction.

Welcome to IFPA 2019 Meeting in Buenos Aires! Bienvenidos!
As a co-chair of the meeting, I would like to welcome you to the International Federation of Placenta Associations – IFPA 2019 conference and the VIII Meeting of the Latin America Society of Materno-Fetal Interaction and Placenta (VIII SLIMP). It is our pleasure to host this international event we hope you find stimulating and rewarding.

This year, the conference is being held in Buenos Aires on the campus of the Pontificia Catholic University, in Puerto Madero, at the edge of the river and just a 10-minute walk from downtown. Buenos Aires is a city full of charm, a combination of Latin and European ambient, with many cultural attractions, that should not be missed. We look forward to seeing you, and other conference participants, at this delightful venue. The conference starts on September 10, followed by sessions covering diverse aspects of the research and innovation related to placental science, which will happen up to September 13. You will have the opportunity to participate and to present your work, to establish essential scientific collaborations, and to see presentations from leading academics and practitioners in placenta field. The meeting also supports and promotes young scientists with travel grants and dedicated presentations. We have worked hard to create a program consisting of the best quality, state of the art in placenta science. We hope this makes the conference an exciting and memorable scientific event for you!

We look forward to seeing you all in Buenos Aires!
It gives me great pleasure to welcome IFPA members and friends to Buenos Aires for the 2019 International Federation of Placenta Associations meeting held together with the 8th meeting of Sociedad Latinoamericana de Interaccion Materno-Fetal y Placenta (SLIMP). The meeting is chaired by Professor Alicia Jawerbaum, hosted by the Placenta Association of the Americas and sponsored by IFPA.

SLIMP was founded in 2000 by IFPA members attending the last Rochester Trophoblast and IFPA meeting in 2000. Since then Latin American placenta research has taken off encompassing comparative, basic and clinical placental science, as well as DOHAD research.

Latin America has an estimated 648 million people in 2019 with Argentina the 4th most populous with nearly 45 million people. Between 2015 and 2020 there will be over 52 million births in Latin America. At 10 million Latin American births each year and some very exotic eutherian and 73 metatherian (marsupial) species, the opportunities are endless for Latin American placenta researchers!

The IFPA/SLIMP 2019 program encourages new members and delegates from Latin America to join the IFPA network, to participate and contribute to global placenta research. We welcome new research priorities and collaborations on issues that impact the placenta and pregnancy success in the region and look forward to working further with SLIMP in the future.

The congress program has something for everyone in placenta science with both familiar and new faces. Importantly there are many opportunities for younger researchers to learn and engage with others in academic sessions, workshops and social functions. Take every opportunity you can.
<table>
<thead>
<tr>
<th>IFPA 2019 Scientific Committee</th>
<th>SLIMP 2019 Scientific Committee</th>
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<tbody>
<tr>
<td>Aikou Okamoto</td>
<td>Alexandre Boberly</td>
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<td>Carlos Salomon</td>
<td>Ana Maria Franchi</td>
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<td>Cathy Vaillancourt</td>
<td>Andrea Leiva</td>
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<td>Chie Pen Chen</td>
<td>Angela Cadavid</td>
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<td>Claire Roberts</td>
<td>Carlos Escudero</td>
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<td>Cristina Ibarra</td>
<td>Cecilia Soñora</td>
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<td>Gil Mor</td>
<td>Cilia Abad</td>
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<td>Graham Burton</td>
<td>Claudia Pérez Leirós</td>
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<td>Helen Jones</td>
<td>Débora Damasceno</td>
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<td>Isabella Canniggia</td>
<td>Dolores Busso</td>
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<td>John Aplin</td>
<td>Elisa Cebral</td>
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<td>Jürgen Pollheimer</td>
<td>Federico Jensen</td>
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<td>Larry Chamley</td>
<td>Graciela Panzetta</td>
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<td>Leslie Myatt</td>
<td>Joaelio Abbade</td>
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<td>Marijke Faas</td>
<td>Julio Bueno</td>
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<td>Melissa Westwood</td>
<td>Lawrence Hsu Lin</td>
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<td>Michael Soares</td>
<td>Leandro Oliveira</td>
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<td>Nick Illsley</td>
<td>María Laura Ribeiro</td>
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<td>Padma Murthi</td>
<td>Mariana Farina</td>
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<td>Silvia Daher</td>
<td>Patricia Palmeira</td>
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<td>Stacy Zamudio</td>
<td>Reinaldo Marin</td>
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<td>Theresa Powell</td>
<td>Ricardo Fretes</td>
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<td>Thomas Jansson</td>
<td>Rosanna Ramhorst</td>
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<td>Udo Markert</td>
<td>Rossana Francisco</td>
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<td>Ulrike Kemmerling</td>
<td>Verónica White</td>
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<td>Vicki Clifton</td>
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<td>Yoel Sadovsky</td>
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EARLY CAREER RESEARCHERS (ECR) COMMITTEE

IFPA ECR Representatives
Priya Pantham and Josh Fisher

Local Coordination
Daniel Paparini, Manuel Wolfson and Esteban Grasso

Local Members

CHAIR OF IFPA AWARDS COMMITTEE
Padma Murthi

CHAIRS OF TROPHOBLAST RESEARCH AWARD COMMITTEE
Mark Dilworth and Lynda Harris

CHAIR OF SLIMP AWARD COMMITTEE
Theresa Powell

WEB PAGE AND SOCIAL MEDIA
Esteban Grasso

LOGO ILLUSTRATION AND DESIGN
Ignacio García Lizziero
## September 10th (Tuesday)

<table>
<thead>
<tr>
<th>Time</th>
<th>Aula Magna</th>
<th>Foyer JPII</th>
<th>Juan Pablo II</th>
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<tbody>
<tr>
<td>8:45</td>
<td>By invitation: IFPA Executive Meeting and Lunch</td>
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<td>17:30</td>
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<td>SLIMP New Investigator Award Lecture Elsevier Trophoblast Research New investigator Award Lecture. NIH Award Lecture.</td>
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<td>18:00</td>
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<td>18:45</td>
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<td>Welcome Reception and YW Loke, Elsevier, NIH and SLIMP NI Awards Ceremony.</td>
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<td>19:00</td>
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## September 12th (Thursday)

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<th>Juan Pablo II</th>
<th>Microcine</th>
<th>Sala de Lectura</th>
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<tbody>
<tr>
<td>8:00</td>
<td>Writing a Paper in English: Tips for Spanish Speakers.</td>
<td>Placenta/TR Editorial Board Meeting by invitation.</td>
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<td>ES#3: Learning the Placenta Atlas Tool.</td>
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<td>9:00</td>
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<td>S#4: Stem Cells and Cellularity.</td>
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<td>9:30</td>
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<td>S#3: Inflammation.</td>
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<td>11:00</td>
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<td>Coffee</td>
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<td>12:15</td>
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<td>Oral Presentations.</td>
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<tr>
<td>12:45</td>
<td>Regional Meeting JPA &amp; Lunch box.</td>
<td>Regional Meeting EPG &amp; Lunch box.</td>
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<td>Andre Gruslin Award Lecture.</td>
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<td>13:45</td>
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<td>Regional Meeting PAA &amp; Lunch box.</td>
<td>Regional Meeting ANZPRA &amp; Lunch box.</td>
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<td>14:15</td>
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<td></td>
<td>Plenary Lecture &amp; Mid Career Short Presentations</td>
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<td>19:15</td>
<td>Regional Meeting SLIMP.</td>
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<td>Final Poster Selection SLIMP.</td>
<td>Mid Career Researchers - Short</td>
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<td>Final Poster Selection Elsevier NI TR Award.</td>
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<td>13:30</td>
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<td>Hot Topic Lectures: New Paradigms in Development</td>
<td>IFPA Meeting &amp; Lunch Box.</td>
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<td>16:00</td>
<td>Final Award Committee Meeting - Orals.</td>
<td>Final Award Committee Meeting - Posters TR NI Award.</td>
<td>Coffee</td>
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<td>Final Award Committee Meeting - SLIMP.</td>
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<td>16:35</td>
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<td>Plenary Lecture</td>
<td>IFPA Senior Award in Placentology Lecture</td>
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<td>Gala Dinner &amp; Awards.</td>
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<td>Closing Lecture.</td>
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<td>Closing Ceremony.</td>
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GENERAL INFORMATION

CONGRESS VENUE

The Universidad Católica Argentina (UCA), i.e. the Pontifical Catholic University of Argentina, is a private University, whose headquarters are located in Puerto Madero, Buenos Aires.

The Auditoriums of UCA are located in the modern, safe and comfortable neighborhood of Puerto Madero in the City of Buenos Aires. They are part of the UCA campus, which consists of four recycled docks, located in Dock 2 of this old Port. In the 1990s, the process of urbanization of the Old Puerto Madero began and this old port was incorporated to the City of Buenos Aires, combining the modern with the original design. In those days, UCA took the first steps towards building its campus in this neighborhood. The auditoriums were constructed with the latest technology and new designs, but also with noble materials recovered from the original construction.

ADDRESS

Alicia Moreau de Justo 1680 - Puerto Madero. The access to the Meeting is by the street Rosa Vera Peñaloza. Name of the UCA Building “EDIFICIO SAN JOSE”.

ROOMS AND FACILITIES

LEVEL 0

1 Venue Entrance
2 Secretariat/Registration
3 Microcine Room (Scientific sessions)
4 Auditorium Room (Scientific sessions)
GENERAL INFORMATION

LEVEL 1

5 Sala de Lectura Room
   (Poster display/ Coffee break)
6 Aula Magna Room (Scientific sessions)

LEVEL 2

7 Juan Pablo II Room (Scientific sessions)
8 Juan Pablo II Foyer
   (Poster display/ Coffee break)
9 Aula 203 Room (Speakers’ room)
SECRETARIAT OPENING HOURS

Tuesday 10 September from 7:30 h to 18:00 h.
Wednesday 11 September from 7:30 h to 18:00 h.
Thursday 12 September from 7:30 h to 18:00 h.
Friday 13 September from 7:30 h to 18:00 h.

EVENTS

Welcome Reception and YW Loke, Elsevier, NIH and SLIMP NI Awards Ceremony
Tuesday 10 September at 19:00 h.
Foyer Juan Pablo II. UCA.
Dress Code: Casual

Early Career Research Social Activity
Wednesday 11 September at 19:30 h
La Fernetería Bar - Serrano 1349

This requires pre-registration by sending an email to ifpa2019ecr@gmail.com before Wednesday 11 September at 10:00 h.

The bar is in Palermo neighborhood. New Investigators joining this social activity will meet from 19:15 to 19:30 at the entrance of UCA Auditorium.

Public transport (subway and 20 min walk) will be used to get there. The local ECR committee will help with this. If you will go by yourself, please ask for directions.
**Gala Dinner & Awards**

Friday 13 September at 20:30 h (Only for those registered for the Gala Dinner).

**Edificio Lahusen** - Av. Paseo Colón 301 (15 min walking from Congress Venue UCA Auditoriums).

*Dress Code: Smart casual or Elegant*
**GENERAL INFORMATION**

**OFFICIAL APP FOR IFPA 2019**

Available for attendees to access information about the full program, speakers and abstracts and to receive news on your mobile device

To download the app, please search for it in Apple Store/Google Play as IFPA 2019.

**WI FI**

Free available for the meeting attendees

**SPEAKERS PREVIEW**

Available from Tuesday 10 September, 7:30 h to Friday 13 September, 16:00 h at **room 203** (2nd floor). Please upload your presentation at least 2 h before the beginning of your session.

**CELL PHONES**

Please keep them silent during all sessions

**PHOTO/VIDEO**

Please do not take pictures/videos at the sessions unless specifically authorized by the speaker.

**SMOKING**

Smoking is not allowed at UCA University.

**SECURITY**

Please wear your name badge all the time.
Do not leave your personal belongings unattended at any moment.
We recommend to keep your passport at your hotel and only bring a copy or another type of identification document with you. We also recommend walking in groups or use a taxi after 22:30 h.

**CURRENCY/CREDIT CARDS**

Only Argentine pesos but most credit/debit cards are acceptable at stores, bars and restaurants.
GENERAL INFORMATION

TIPPING
A 5 to 10 % is suggested at bars and restaurants, as it is usually not included. It is not needed at Taxi cabs.

TAXIS
Usually found circulating within the city, but less frequently at Puerto Madero. Official App Buenos Aires Taxi (BA TAXI) at https://www.buenosaires.gob.ar/taxis/ba-taxi-innovacion-para-mejorar-tus-viajes

ELECTRICITY
Electric current is uniformly 220 V/50 HZ. Please bring your adaptor.

CERTIFICATES OF ATTENDANCE
The certificate of attendance will be available online from September 25 at www.ifpa2019.org.

PUBLICATIONS

Abstracts are published in Placenta Journal.

Placenta Issue 83
Pages e1 - e118
FUNDING AGENCIES

CONICET
FONCYT
FUNDACION HONORIO BIGAND

SPONSORS

Biodynamics
Gador

Sociedad Argentina de Biología
Sociedad Argentina de Diabetes
Sociedad Argentina de Endocrinología Ginecológica y Reproductiva
Sociedad Argentina de Investigación Bioquímica y Biología Molecular
Sociedad Argentina de Investigación Clínica
Sociedad de Obstetricia y Ginecología de Buenos Aires (SOGIBA)
The official IFPA 2019 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 2019 Congress App**
- To download Mobile App, search IFPA 2019 in your Mac App store/Google Play store.
It is our great pleasure to welcome you as a speaker at IFPA 2019 and VIII SLIMP in Buenos Aires.

In order to ensure a smooth course during your session, we kindly ask you to consider the following instructions.

**PLEASE PREPARE YOUR PRESENTATION ACCORDING TO THE ALLOWED TIME.**

Session moderators are instructed to rigorously enforce the schedule, i.e. to strictly obey the length of a presentation. We kindly ask you for your understanding and for your cooperation in keeping the schedule.

Please upload your presentation at least 2 hours before the session starts. For morning sessions, please upload your presentation the day before. Bring your presentation on a USB memory stick in Power Point format.

**THE PRESENTATION SHOULD BE UPLOADED AT THE “ROOM 203”, LOCATED AT THE 2ND FLOOR.**

You can there preview your presentation. Please bring your presentation to upload even if you plan to use your own computer (only allowed for Macintosh users and for presentations containing videos), so that will have a back up to switch to if needed.

A dataprojector and a PC will be available in all session rooms. The use of personal notebooks has to be announced to the technician in each session room before the session begins.
POWERPOINT INSTRUCTIONS

Please prepare your presentation in PowerPoint and clearly identify your presentation, saving it with your family name as part of the file name.

PICTURES/VIDEOS

JPG images are the preferred file format for inserted images. If you have embedded videos in your presentation; please test your presentation with the on-site PC several hours before your presentation. Generally, the WMV format should work with no difficulties. In case your video is not inserted in PowerPoint, it is possible to have it in other formats – MPEG 4 o MP4, AVI, MOV, o WMV. For MP4 or MOV the suggested codecs are H264, DivX and XviD.

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 room. Nevertheless, please upload a copy at least 2 h before the session so that the room technician will have a back up to switch to if needed.

OTHER INFORMATION

Your own computer for the presentation will be accepted only for Macintosh users and when required due to video Presentations. In this case, please do not forget to bring the adapter with you.

ALL SPEAKERS ARE REQUESTED TO KEEP THE TIME OF THEIR PRESENTATION.
POSTER PRESENTATION INSTRUCTIONS

ALL POSTERS SHOULD BE HANGED ON WEDNESDAY 11 SEPTEMBER FROM 8:00 TO 12:00 h.

Posters should be mounted as follows:

**JUAN PABLO II ROOM:** P1.1 to P1.6 - P2.1 to P2.8 - LA1 to LA 8.

**JUAN PABLO II FOYER:** P1.7 to P1.61 - P2.9 to P2.52.

**SALA DE LECTURA ROOM:** P1.61 to P1.155 - P2.53 to P2.161.

You can bring your own tape for hanging, and it will also be provided at the meeting.

POSTER SESSION 1

POSTER SESSION 1 WILL DEVELOP ON WEDNESDAY 11 SEPTEMBER FROM 16:00 TO 18:15 h.

IMPORTANT: At this session new investigators presenting odd poster numbers should stay at their posters from 16:00 to 17:00 h to be judged. Those new investigators presenting even poster numbers should stay at their posters from 17:15 to 18:15 h to be judged.

Topics in Poster Session 1:

**JUAN PABLO II ROOM:**
- Anatomy and Pathology: P1.1 to P1.6
- Late Abstracts: LA.1 to LA.8

**JUAN PABLO II FOYER:**
- Angiogenesis/Vasculature: P1.7 to P1.13
- Cell culture, proliferation and signaling: P1.14 to P1.22
- Developmental programming: P1.23 to P1.27
- Early pregnancy, implantation and invasion: P1.28 to P1.33
- Fetal growth restriction: P1.34 to P1.41
- Fetal Membranes/Preterm labour and birth: P1.43 to P1.51
- Hormones/Growth factors: P1.52 to P1.61

**SALA DE LECTURA ROOM**
- Immunology: P1.62 to P1.69
- Infection and inflammation: P1.70 to P1.82
- Metabolism and Metabolic Diseases: P1.83 to P1.97
- Periconceptional Health, embryo development and nutrition: P1.98 to P1.104
- Placental dysfunction: P1.105 to P1.118
POSTER PRESENTATION INSTRUCTIONS

- Preeclampsia: P1.120 to P1.133
- Stem cells and cellularity: P1.134 to P1.137
- Transport/ Nutrients: P1.138 to P1.145
- Trophoblast biology: P1.146 to P1.155

POSTER SESSION 2

POSTER SESSION 2 WILL DEVELOP ON THURSDAY 12 SEPTEMBER FROM 15:00 TO 17:15 h.

IMPORTANT: At this session new investigators presenting odd poster numbers should stay at their posters from 15:00 to 16:00 h to be judged. Those new investigators presenting even poster numbers should stay at their posters from 16:15 to 17:15 h to be judged.

Topics in Poster Session 2:

**JUAN PABLO II ROOM:**
- Anatomy and pathology: P2.1 to P2.8

**JUAN PABLO II FOYER:**
- Angiogenesis/ Vasculature: P2.9 to P2.15
- Comparative/ Animal models: P2.16 to P2.23
- Developmental programming: P2.24 to P2.29
- Early pregnancy, implantation and invasion: P2.30 to P2.37
- Fetal growth restriction: P2.38 to P2.44
- Genomics, epigenomics and transcriptional regulation: P2.45 to P2.52

**SALA DE LECTURA ROOM:**
- Imaging / New technologies: P2.53 to P2.58
- Immunology: P2.59 to P2.67
- Infection and inflammation: P2.68 to P2.81
- Metabolism and Metabolic Diseases: P2.82 to P2.95
- Metabolomics – Proteomics: P2.96 to P2.98
- Placental dysfunction: P2.99 to P2.113
- Preeclampsia: P2.114 to P2.128
- Stem cells and cellularity: P2.129 to P2.135
- Toxicology/ Oxidative Stress: P2.136 to P2.143
- Transport/ Nutrients: P2.144 to P2.151
- Trophoblast biology: P2.152 to P2.161
ALL POSTERS SHOULD BE RETIRED ON THURSDAY 12 SEPTEMBER from 19:00 to 20:00 h.

On Thursday 12 September at 19:00 h we will announce through the app, email and social media, the 10 selected new investigators that will present their posters for final selection of the Elsevier Trophoblast Research New Investigator Award and the 10 selected New Investigators from Latin America that will present their posters for Final selection of the SLIMP Award. The selected New Investigators should mount their posters at the Juan Pablo II Foyer on Friday 13 September at 8:00 h. Selected New Investigators of the Elsevier Trophoblast Research New Investigator Award will present their posters on Friday 13, from 9:00 to 10:00 h. Selected New Investigators of the SLIMP Award will present their posters on Friday 13, from 8:15 – 9:15 h.

POSTER PREPARATION INSTRUCTIONS

- The posters must be prepared entirely in English.
- Please prepare your posters in a material that allows an easy mounting with tape.
- The maximum usable surface of the display panels for the posters is 90 cm (width) x 140 cm (height).
- Please identify your poster with the number at the upper left side.
- Each poster should have the title, author’s names, author’s affiliations and contact author’s email address on the upper part of the Poster.
- The text of the poster should be concise and easily read at a distance of 2 meters. Diagrams should be simple. We recommend a font size of 22 pt or greater and lines at least 3 pt width.
- Poster contents should include the objective, methods, results and conclusion of the work.
- Posters not removed at Thursday 12 September 20:00 h will be dismantled and destroyed. Those posters selected for final award poster presentation on Friday Morning can be moved to the assigned place at the “Juan Pablo II Foyer” after 20:00 h or hanged on Friday 13 September at 8:00 h.
Dr. Myatt has served as Editor of Placenta (1997 to 2004) and President of IFPA (2002 to 2004). He studies the effects of maternal obesity, gestational diabetes and sexual dimorphism on mitochondrial respiration in the placenta and their relationship to epigenetic regulation of placental function and fetal programming. He has published over 280 papers.

Dr. Parast is a perinatal pathologist by clinical training, and placental biologist by research training. Her research focuses of the role of trophoblast stem/progenitor cells and their differentiated progeny in placenta-based complications of pregnancy and abnormal fetal growth.
A/Prof Natalie Hannan has a dedicated focus on Women’s health and understanding serious pregnancy complications, especially preeclampsia. Her preclinical research has attracted substantial funding support and has led to exciting clinical trials. A/Prof Hannan is President of the Australian and New Zealand Placental Research Association and is a veski Inspiring Women Fellow.

Tracy is a Professor of Pharmacology and Psychiatry, and Director of the Center for Epigenetic Research in Child Health and Brain Development in the School of Medicine, University of Maryland, USA. Dr. Bale completed her Ph.D. at the University of Washington and her postdoctoral work at the Salk Institute with Dr. Wylie Vale. She was previously a Professor of Neuroscience at the University of Pennsylvania for 15 years. Her research focuses on understanding the role of stress dysregulation in neurodevelopmental and neuropsychiatric diseases, and the sex differences that underlie disease vulnerability. Her groundbreaking work has uncovered the molecular mechanisms by which the environment influences parental germ cell signals and placental trophoblast development, altering fetal brain development and maturation. She has been the recipient of numerous awards for her research including the Richard E. Weitzman Memorial award from the Endocrine Society, the Medtronic Award from the Society for Women’s Health Research, the Daniel H. Efron award from the American College of Neuropsychopharmacology and the Joseph Erlanger Distinguished Lecturer Award from the American Physiological Society.
Dr Mancy Tong is a postdoctoral associate in the laboratory of Dr Vikki Abrahams at Yale School of Medicine. Mancy obtained her PhD from The University of Auckland, New Zealand in 2017 under the mentorship of Dr Larry Chamley. Her current research looks at innate immune function and signalling at the materno-fetal interface.

I am a biochemist from Pontificia Universidad Católica de Chile and I am currently working on my doctoral thesis focused on the characterization and effects of lipoproteins from hypercholesterolemic pregnant women on maternal vascular function.
ANNETTINE STAFF

Full-time Professor at the Faculty of Medicine, University of Oslo, Norway. Head of Research at the Oslo University Hospital, Division of Obstetrics and Gynaecology. Part-time work as a clinical consultant. Main research area is within molecular understanding of pregnancy complications, including preeclampsia, and future maternal cardiovascular health.

BRIAN COX

Brian Cox is an associate professor in the Dept. of Physiology at the University of Toronto and an expert in computational analysis of biological data sets with an emphasis on placental and trophoblast biology and pathology. He is an advisor to the NIH initiatives Placenta Atlas Tool and the Human Placenta Project.
Berthold is professor of cell biology and works on the human placenta since 25 years. He developed new concepts on the etiologies of preeclampsia and IUGR, pioneered the research on trophoblast apoptosis and identified new routes of trophoblast invasion. He has received the IFPA Award in Placentology (2009) and belongs to the most cited German speaking scientists in the field of reproductive biology (13,300 citations, h-index 60; google scholar).

Claire Roberts is the Lloyd Cox Professorial Research Fellow at the University of Adelaide and Deputy Director of the Robinson Research Institute. She is the current President of IFPA. She has expertise in placental development in a range of species but has a particular focus on the role of the placenta and modifiable maternal exposures in women that impact pregnancy outcome.
David Hill is Scientific Director of the Lawson Health Research Institute in London, Ontario, Canada; is VP Research for London Health Sciences Centre and St. Joseph’s Health Care London; and a Professor at Western University. His research has focused on the homeostatic mechanisms of β-cell expansion and insulin release, and the physiological changes underlying gestational diabetes and associated fetal development.

Elena Zambrano is a biochemistry scientist in the programming field. Her current research is on the DOHaD in maternal undernutrition and obesity and the effects on offspring metabolism, behavior, sexual development and reproduction. Her team works with rodents as an experimental animal model. In the obesity model the current research focuses on maternal intervention before and during pregnancy to prevent offspring outcomes due to maternal obesity. Affiliation: Instituto Nacional de Ciencias Médicas y Nutrición Salvador Subirán, Reproductive Biology Department.
Dr. Isabella Caniggia MD, PhD is a Senior Investigator at the Lunenfeld-Tanenbaum Research Institute of Sinai Health System and a Professor of Obstetrics and Gynaecology and Physiology at the University of Toronto. Dr. Caniggia is internationally recognized for her work on molecular mechanisms regulating normal placental development and diseases including preeclampsia and IUGR. More recently, she has established the relevance of sphingolipid metabolism in normal and pathological pregnancies and on placental cell death. She has received numerous honors and awards including the Ontario Women’s Health CIHR Mid-Career Award, the Castellucci Award from IFPA and, more recently, the Canada Research Chair (Tier 1) in Placental Biology in Pregnancy and Disease for her innovative research. Her work is funded by CIHR, NIH and NSERC.

Graham is the Marshall Professor of the Physiology of Reproduction at the University of Cambridge and the inaugural Director of the Centre for Trophoblast Research. He has a long-standing interest in the early development of the human placenta.
JOHN APLIN

John Aplin has spent many years researching implantation and placental development at the University of Manchester, UK. He has a particular interest in the development of in vitro models to overcome limitations in studying the early stages of pregnancy in human. He has contributed to IFPA meetings since the early days of the association.

KENT THORNBURG

Kent L.R. Thornburg is M. Lowell Edwards Chair and Professor of Medicine at Oregon Health & Science University where he directs the Center for Developmental Health. He studies how maternal influences alter placental function and fetal risk for later disease.
I am head of the Obstetrics, Nutrition and Endocrinology Group. I have published over 185 papers, 60 conference abstracts, 3 book chapters and delivered numerous lectures at national and international conferences. I have been the recipient of four postdoc fellowships and currently hold a University of Melbourne Senior Research Fellowship. My research interests include preterm birth and gestational diabetes. With respect to the gestational diabetes, a particular focus of the studies of my team is to unravel the cellular events involved in GDM, and test how modulating them can translate to improved outcomes.

Martin Knöffler is Associate Professor at the Medical University of Vienna and the current European Editor of Placenta. 2001. His main research interests include molecular mechanisms and signalling pathways regulating human placental development, trophoblast differentiation, decidualization as well as the trophoblast-decidual cross-talk.
MELISSA WESTWOOD

Professor of Endocrinology, interested in determining how maternal signals influence molecular mechanisms governing human implantation and placental development/function. Chair of Local Organising Committee, IFPA 2017.

MICHAL NEEMAN

Dr. Neeman earned her Ph.D. in chemistry from the Weizmann Institute. She has developed multiple unique methods for imaging the process of angiogenesis or blood vessel formation and growth, especially in ovarian cancer, when tumor growth often relies on new blood vessels. She specializes in images by magnetic resonance and has focus in mechanisms of angiogenesis and the influence of hormonal changes in these processes. Her studies revealed important insights in developmental and tumoral processes.

Professor Michal Neeman received in 1998 the Morris L. Levinson Prize in Biology, in 1999 the Lindner Award from the Israel Endocrine Society, the Honorary Member Award of the International Society of Magnetic Resonance in Medicine and the Abisch-Frenkel Award for Excellence in Life Sciences. Dr. Neeman was Dean of the Faculty of Biology at the Weizmann Institute of Science, and professor in the Department of Biological Sciences. Since 2014 she is the Vice President of the Weizmann Institute.
After time spent at the MRC in London, UCSF and Rutgers studying placental transport and metabolism, Dr Illsley is now a Senior Scientist at Hackensack University Medical Center. In the Center for Abnormal Placentation he is investigating the differentiation of cytotrophoblast into extravillous trophoblast and the abnormalities observed in invasion pathologies such as placenta accreta and preeclampsia.

Professor Parolini is considered an international leader and reference point for placental stem cell research and their application in regenerative medicine. She is author of over 140 publications, 2 patents, 12 book chapters, and is Editor of a book entitled “Placenta the tree of life”.
PEGGY PETROFF

Dr. Petroff was trained in the reproductive immunology laboratories of Joy Pate and Joan Hunt, and has made important contributions to our understanding of maternal immune tolerance to the fetus. Her work uses both human and murine models to understand mechanisms by which maternal immune cells respond to fetal antigens, and the contribution of the placenta in controlling this response.

RICHARD MILLER

Rich is Professor of Obs/Gyn, of Environmental Medicine and of Pathology and Clinical Laboratory Medicine. He is a founding member of IFPA and responsible for one of its predecessors – Rochester Trophoblast Conferences as well as Founding Editor of Trophoblast Research. He is Director of MotherToBaby UR Medicine and Co-Director of the NYS Children’s Environmental Health Center at URMC. His current research involves a number of NIH clinical studies in the USA and China focusing on the role of the placenta in predicting child health involving environmental exposures.
SPEAKER BIOGRAPHIES

ROHAN LEWIS

Professor Lewis is Professor of Placental and Integrated Physiology at the University of Southampton. His research takes an integrated approach to the mechanisms underlying placental transfer including membrane transport, metabolism and placental structure. He is then seeking to understand how these different factors determine placental transfer through the use of computational modelling.

STACY ZAMUDIO

Dr. Zamudio was trained in Evolutionary Biology/Anthropology at the University of California, Los Angeles, and the University of Colorado in Boulder. Much of her work has focused on placental hypoxia (high altitude) and applied ultrasonography for quantification of blood flows, oxygen and nutrient delivery and uptake in mother and fetus. As Director of Research in the Department of Obstetrics and Gynecology and the Center for Abnormal Placentation at Hackensack University Medical Center, she has been engaged in studies of Abnormally Invasive Placenta (AIP, aka Placenta Accreta Spectrum-PAS). Clinical-translational work, funded by the NIH Human Placenta Project, has focused on ultrasound-based quantitative diagnosis of AIP, clinical outcomes in mother and neonate, and the pathophysiology of AIP at the molecular level.
THOMAS JANSSON

Dr. Jansson has a distinguished publication record, serves regularly on NIH study sections, and is Principal Investigator on numerous NIH grants and the recipient of several awards, such as the 2005 International Federation of Placenta Associations (IFPA) award and the 2017 President’s Achievement Award of the Society for Reproductive Investigation. His translational research explores the cellular and molecular mechanisms that regulate placental function in normal pregnancy and in pregnancy complications and to investigate the role of the placenta in determining fetal growth and long-term health.

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 and Co Lead of the Brisbane Diamantina Health Partners Mothers and Babies Theme. Director of Clinical Research at the Lyell McEwin Hospital in Adelaide, Australia (2009-2014) and leader of the Allergy Research Priority. She is a past Editor of the Placenta Journal (2012-2018). She is currently an Executive member of the International Society of Endocrinology Board. Prof Clifton is internationally recognized for her research on asthma and pregnancy, birth cohort studies and her work in human placental physiology. Her current research focusses on the health of reproductive age couples and their children with a continued focus on pregnancy, placental function, fetal growth and childhood development. She leads the Queensland Family Cohort Study with a specific interest in the sex specific differences in the fetal-placental response to a complication of pregnancy.
UDO MARKERT

M.D. and professor, previous President of the American Society of Reproductive Immunology and President-Elect of the European Society of Reproductive Immunology, Editorial Board member of Placenta, JRI and AJRI (Associate Editor).

YOEL SADOVSKY

Executive Director, Magee Womens Research Institute, Elsie H Hillman Chair of Women’s Health Research, Distinguished Professor of OBGYN, Microbiology and Molecular Genetics, Associate Dean, Women’s Health Research and Reproductive Sciences.
# ABSTRACT BASED AWARDEES

## YW Loke New Investigator Travel Award

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<td>Aldilane Lays X. Marques</td>
<td>Federal University of Alagoas</td>
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<td>Ashley Meakin</td>
<td>University of Queensland</td>
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<td>Carlos Mario Rodríguez Colorado</td>
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<td>Carlos Palma</td>
<td>The University of Queensland</td>
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<td>Chanho (Peter) Park</td>
<td>Lunenfeld and Tanenbaum Research Institute</td>
<td>Canada</td>
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<td>Cherie Hernandez</td>
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<td>Gabriela Silva</td>
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<td>Julien Sallais</td>
<td>Institute of Medical Sciences, University of Toronto</td>
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<td>Julieta Schander</td>
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<td>Katrien De Clercq</td>
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<td>Lucila Gallino</td>
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<td>Nicholas Maurice</td>
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<td>Viviana Arroyo-Jousse</td>
<td>University of Chile</td>
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## ELSEVIER New Investigator Award

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<td>Anna Julia Pietrobon</td>
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<td>Daiana Debora Fornes</td>
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<td>Lisvaneth Medina</td>
<td>ICBM, Facultad de Medicina, Universidad de Chile</td>
<td>Chile</td>
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<td>Lorena Carvajal</td>
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<td>Facultad de Farmacia y Bioquímica-Universidad de Buenos Aires</td>
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<td>Melisa Monteleone</td>
<td>Instituto de Investigaciones Biotecnológicas</td>
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<td>Rafaela Batista Molás</td>
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<td>Rinaldo R. dos Passos Junior</td>
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</tbody>
</table>
### National Institutes of Health New Investigator Travel Awards

<table>
<thead>
<tr>
<th>Awardee</th>
<th>Affiliation</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amanda Bowman</td>
<td>Cincinnati Children's Hospital Medical Center</td>
<td>USA</td>
</tr>
<tr>
<td>Amber Moore</td>
<td>Stanford University</td>
<td>USA</td>
</tr>
<tr>
<td>Haley Ragsdale</td>
<td>Northwestern University</td>
<td>USA</td>
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<tr>
<td>Jennifer Courtney</td>
<td>Cincinnati Children's Hospital Medical Center</td>
<td>USA</td>
</tr>
<tr>
<td>Jiaqi J O'Reilly</td>
<td>The George Washington University</td>
<td>USA</td>
</tr>
<tr>
<td>Ludwik Gorczyca</td>
<td>The State University of New Jersey</td>
<td>USA</td>
</tr>
<tr>
<td>Marisol Castillo-Castrejon</td>
<td>University of Colorado Anschutz Medical Campus</td>
<td>USA</td>
</tr>
<tr>
<td>Qian-Rong Qi</td>
<td>University of California Irvine</td>
<td>USA</td>
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<tr>
<td>Rebecca Wilson</td>
<td>Cincinnati Children's Hospital Medical Center</td>
<td>USA</td>
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</table>
## SLIMP Mid-Career Travel Award

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Andrea Leiva</td>
<td>Pontificia Universidad Católica de Chile</td>
<td>Chile</td>
</tr>
<tr>
<td>Carlos Escudero</td>
<td>University of Concepción</td>
<td>Chile</td>
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<tr>
<td>Enrique Guzman-Gutierrez</td>
<td>Universidad de Concepción</td>
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<tr>
<td>Erika Chavira-Suárez</td>
<td>Universidad Nacional Autónoma de México</td>
<td>México</td>
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<tr>
<td>Jaime Gutiérrez</td>
<td>Universidad San Sebastián</td>
<td>Chile</td>
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<td>María Silvia Ventimiglia</td>
<td>CEFYBO – CONICET - Universidad de Buenos Aires</td>
<td>Argentina</td>
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<tr>
<td>Mariana Weigel Muñoz</td>
<td>Instituto de Biología y Medicina Experimental</td>
<td>Argentina</td>
</tr>
<tr>
<td>Mauricio Castro-Parodi</td>
<td>Facultad de Farmacia y Bioquímica-Universidad de Buenos Aires</td>
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<tr>
<td>Romina Higa</td>
<td>CEFYBO-CONICET - Universidad de Buenos Aires</td>
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<tr>
<td>Vanesa Hauk</td>
<td>IQUIBICEN- CONICET- Universidad de Buenos Aires</td>
<td>Argentina</td>
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</table>
“SCIENTIFIC ADVANCES OF CLINICAL IMPACT”

ROOM “JUAN PABLO II”

September 10th (Tuesday)

8:45 OPENING

Secretaries: DAMIANO, Alicia and VARONE, Cecilia

8:45-9:00 Welcome and introduction

JAWERBAUM, Alicia and BEVILACQUA, Estela. IFPA 2019 chairs.

SESSION 1 PLACENTATION AND MATERNAL-FETAL INTERACTIONS - NEW INSIGHTS

Chairs: DEMAYO, Sandra and VOTO, Liliana

9:00-9:30 Placental exosomes in maternal-fetal communication and viral resistance

SADOVSKY, Yoel. University of Pittsburg. USA.

9:30-10:00 Role of trophoblast invasion during placentation

HUPPERTZ, Berthold. Medical University of Graz, Graz, Austria.

SESSION 2 METABOLIC DISEASES IN PREGNANCY- NEW INSIGHTS

Chairs: GORBAN DE LAPERTOSA, Silvia and ROVIRA, Gabriela

10:00-10:30 Adaptive changes in the maternal pancreas to deal with the demands of the growing fetus

HILL, David. The University of Western Ontario. Canada.

10:30-11:00 The placenta and the epigenetic burden of programming

THORNBURG, Kent. Oregon Health & Science University, Portland, USA.

11:00-11:30 Coffee Break

SESSION 3 ROLE OF THE PLACENTA IN PREGNANCY DISEASES

Chairs: DI MARCO, Ingrid and BASUALDO, Natalia

11:30-12:00 Epidemiological, clinical and molecular insights into the pathophysiology of Abnormally Invasive Placenta (AIP)

ZAMUDIO, Stacy. Hackensack University Medical Center, NJ, USA.

12:00-12:30 Preeclampsia: current pathophysiological understanding

STAFF, Annetine. Oslo University Hospital. Norway.
SESSION 4  NEW TECHNOLOGIES IN PREGNANCY EVALUATION

Chairs: DI MARCO, Ingrid and BASUALDO, Natalia

12:30-13:00  MRI to evaluate placental function
Michal Neeman. The Weizmann Institute of Sciences, Israel.

13:00  CLOSURE
### September 10th (Tuesday)

#### Aula Magna  
**BY INVITATION**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>09:00 - 13:00</td>
<td>IFPA Executive Meeting</td>
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#### Aula Magna  
**BY INVITATION**

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<th>Time</th>
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<tbody>
<tr>
<td>13:00 - 14:00</td>
<td>IFPA Executive Lunch</td>
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#### Juan Pablo II  
**IFPA 2019 Opening**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>14:15 - 15:00</td>
<td>OPENING CEREMONY AND OPENING LECTURE</td>
</tr>
<tr>
<td>14:40</td>
<td>IFPA: At the forefront of placenta research</td>
</tr>
<tr>
<td></td>
<td>ROBERTS, Claire. <em>University of Adelaide, South Australia.</em></td>
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</tbody>
</table>

#### Juan Pablo II  
**Hot Topic Lectures**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>15:00 - 16:30</td>
<td>STEM CELLS, MicroRNAS AND 3D TECHNOLOGY</td>
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<tr>
<td>15:00</td>
<td>Key molecular pathways and model system in human placental development</td>
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<tr>
<td></td>
<td>KNÖFLER, Martin. <em>Medical University of Vienna, Austria.</em></td>
</tr>
<tr>
<td>15:30</td>
<td>Trophoblast communication with distant cells – messaging via extracellular vesicles and non-coding RNA</td>
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<td>MARKERT, Udo. <em>University Hospital Jena, Germany.</em></td>
</tr>
<tr>
<td>16:00</td>
<td>Multi-scale three-dimensional imaging of human placenta</td>
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<td>LEWIS, Rohan. <em>University, of Southampton, UK.</em></td>
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#### Foyer JPII

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<tr>
<th>Time</th>
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<tr>
<td>16:30 - 17:00</td>
<td>Coffee Break</td>
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</table>
September 10th (Tuesday)

Juan Pablo II Award Session

Chair: BEVILACQUA, Estela

17:00 - 17:30  SLIMP NEW INVESTIGATOR AWARD LECTURE

17:00  Supraphysiological maternal hypercholesterolemia modulates the composition and antiatherogenic functions of maternal and neonatal lipoproteins, beyond cholesterol levels during pregnancy
CANTIN, Claudette. Pontificia Universidad Católica de Chile, Chile.

Juan Pablo II Award Session

Chair: HARRIS, Lynda

17:30 - 18:00  ELSEVIER TROPHOBLAST RESEARCH NEW INVESTIGATOR AWARD LECTURE

17:30  Neutrophil activation and extracellular trap formation at the fetal membranes: relevance for preterm birth
TONG, Mancy. Yale School of Medicine, USA.

Juan Pablo II Award Session

Chair: MYATT, Leslie

18:00 - 18:45  NIH AWARD LECTURE

18:00  Parental stress delivery: somatic signals impacting development
BALE, Tracy. School of Medicine University of Maryland, USA.

Juan Pablo II SOCIAL ACTIVITY

19:00 - 21:00  WELCOME RECEPTION AND YW LOKE, ELSEVIER, NIH AND SLIMP NI AWARDS CEREMONY
### September 11th (Wednesday)

<table>
<thead>
<tr>
<th>Time</th>
<th>Venue</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:00 - 09:00</td>
<td>Auditorium</td>
<td>Awards Committee Meeting - Orals &amp; Light breakfast</td>
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<tr>
<td>08:00 - 09:00</td>
<td>Microcine</td>
<td>Awards Committee Meeting - Posters TR NI Award &amp; Light breakfast</td>
</tr>
<tr>
<td>08:00 - 09:00</td>
<td>Aula Magna</td>
<td>Awards Committee Meeting - SLIMP &amp; Light breakfast</td>
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</tbody>
</table>

**Aula Magna**

**Symposium**

*Chairs: FRANCHI, Ana and ARANY, Edith*

**S#1: METABOLISM & PROGRAMMING**

- **09:00** *Glucose and O-GlcNAcylated protein regulation of maternal-placental interactions*
  
  WESTWOOD, Melissa. The University of Manchester, UK.

- **09:30** *Understanding the cross-talk between the placenta and the pancreas in the regulation of maternal metabolism during pregnancy*
  
  HILL, David. Lawson Health Research Institute, Canada.

- **10:00** *Interventions to prevent adverse fetal programming due to maternal obesity*
  
  ZAMBRANO, Elena. Instituto Nacional de Ciencias Médicas y Nutrición Salvador Subirán, Mexico.

**Juan Pablo II**

**Symposium**

*Chairs: Fournier, Thierry and Graham, Charles*

**S#2: EARLY PREGNANCY**

- **09:00** *Trophoblast invasion and the etiologies of preeclampsia and IUGR*
  
  HUPPERTZ, Berthold. Medical University of Graz, Austria.

- **09:30** *Early steps in trophoblast differentiation*
  
  APLIN, John. University of Manchester, UK.

- **10:00** *Early placental development and the trophoblast-endometrial dialogue; new insights from organoid cultures*
  
  BURTON, Graham. University of Cambridge, UK.
September 11th (Wednesday)

Foyer JPII

10:30 – 11:00 Coffee Break

Juan Pablo II New Investigators Session

11:00 - 12:15 ORAL PRESENTATIONS

11:00 Conditional Deletion of Phd2 in Spongiotrophoblasts Mimics Early Onset Preeclampsia
SALLAIS, Julien. Institute of Medical Sciences, University of Toronto, Canada.

11:15 Transcriptome profiling reveals unique spectra of macrophage activation in decidua basalis and parietalis
VONDRA, Sigrid. Medical University of Vienna, Austria.

11:30 Sex-dependent differences in placental serotonin handling
KARAHODA, Rona. Faculty of Pharmacy, Charles University, Czech Republic.

11:45 Effect of neonatal exposure to endosulfan on myometrial adaptation during early pregnancy and labor in rats

12:00 Circulating CD31+ Exosomes are Significantly Elevated with a Proliferative and Angiogenic but Anti-apoptotic mRNA Signature in Pregnant Women with Placenta Accreta Spectrum
RONG QI, Qian. University of California Irvine, USA.

Juan Pablo II Award Session

12:15 - 13:00 IFPA AWARD IN PLACENTOLOGY LECTURE

12:15 Human trophoblast stem/progenitor cells and differentiated progeny in placental development and disease
PARAST, Mana. University of California San Diego, USA.
## September 11th (Wednesday)

### Aula Magna  
**Educational Session & Lunch**  
13:00 - 14:00  
*ES#1 - WOMEN IN SCIENCE: OVERCOMING CHALLENGES TO CAREER DEVELOPMENT*  
*Organizers*  
ZAMUDIO, Stacy  
ALEKSUNES, Lauren

### Juan Pablo II  
**Educational Session & Lunch**  
13:00 - 14:00  
*ES#2 - GETTING NOTICED - HOW TO COMPILE AND PUBLISH A PAPER*  
*Organizers*  
SADOVSKY, Yoel  
KNÖFLER, Martin  
PERKINS, Anthony

### Auditorium  
**Workshop**  
14:00 - 16:00  
*W#1: MOTHER-FETUS-PLACENTA INFECTION*  
*Organizers*  
IBARRA, Cristina  
KEMMERLING, Ulrike

### Aula Magna  
**Workshop**  
14:00 - 16:00  
*W#2: PREECLAMPSIA AND FETAL GROWTH RESTRICTION: SIMILAR OR DIFFERENT PLACENTAL SYNDROMES?*  
*Organizers*  
FARINA, Mariana Gabriela  
STAFF, Annetine

### Juan Pablo II  
**Workshop**  
14:00 - 16:00  
*W#3: FETO-MATERNAL COMMUNICATION VIA EXTRACELLULAR VESICLES - A CRITICAL VIEW*  
*Organizers*  
CHAMLEY, Larry  
SALOMON, Carlos
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>14:00 - 16:00</td>
<td>Microcine Workshop: W#4: COMPARATIVE PLACENTATION – ANIMAL MODELS</td>
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<td></td>
<td>Organizers: PFARRER, Christiane, WILDMAN, Derek</td>
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<tr>
<td>16:00 - 18:15</td>
<td>Poster Session</td>
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<tr>
<td>18:15 - 19:15</td>
<td>Meet The Expert Session</td>
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<tr>
<td>19:30 - 23:30</td>
<td>Early Career Research (ECR - New Investigators) Social Activity</td>
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### September 12th (Thursday)

**Aula magna**

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>08:00</td>
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<tr>
<td>08:00 - 09:00</td>
<td>Placenta/TR Editorial Board Meeting</td>
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**Auditorium**

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<tbody>
<tr>
<td>08:00</td>
<td>Sponsored Educational Session</td>
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<tr>
<td>08:00 - 09:00</td>
<td>WRITING A PAPER IN ENGLISH: TIPS FOR SPANISH SPEAKERS</td>
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<tr>
<td></td>
<td>Chair: CAPOBIANCO, Evangelina</td>
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<td>Organizer: EUSEVI, María Victoria</td>
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**Juan Pablo II**

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<tr>
<td>08:00</td>
<td>Educational Session</td>
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<tr>
<td>08:00 - 09:30</td>
<td>ES#3: LEARNING THE PLACENTA ATLAS TOOL</td>
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<td>Organizer: COX, Brian</td>
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**Aula Magna**

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<th>Time</th>
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<tbody>
<tr>
<td>09:00</td>
<td>Symposium</td>
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<tr>
<td>09:00 - 10:30</td>
<td>S#3: INFLAMMATION</td>
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<tr>
<td>09:00</td>
<td>Novel mechanisms and long-term implications of maternal tolerance to the semiallogeneic fetus during pregnancy</td>
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<tr>
<td></td>
<td>PETROFF, Peggy. <em>Michigan State University, USA.</em></td>
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<tr>
<td>09:30</td>
<td>Role of adipose tissue mediators in regulating placental function in gestational diabetes</td>
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<td></td>
<td>LAPPAS, Martha. <em>The University of Melbourne, Australia.</em></td>
</tr>
<tr>
<td>10:00</td>
<td>The regulation of placental inflammation by glucocorticoid receptor isoforms</td>
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<td>CLIFTON, Vicki. <em>University of Queensland, Australia.</em></td>
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</tbody>
</table>
September 12th (Thursday)

Juan Pablo II Symposium

09:30 - 10:30
S#4: STEM CELLS AND CELLULARITY

09:30 Amniotic membrane derivatives from bench to bedside: where do we stand?
PAROLINI, Ornella. Università Cattolica del Sacro Cuore, Italy.

10:00 In vivo and in vitro comparisons of trophoblast development at single cell resolution
COX, Brian. University of Toronto, Canada.

Foyer JPII

10:30 - 11:00 Coffee Break

Juan Pablo II New Investigators Session

11:00 - 12:15 ORAL PRESENTATIONS

11:00 Effect of polyclonal Immunoglobulins-G purified from sera of patients with different clinical manifestations of the antiphospholipid syndrome on endothelial cells and monocytes: possible pro-thrombotic mechanism.
VELÁSQUEZ BERRIO, Manuela. University of Antioquia, Colombia.

11:15 NLRP3 inflammasome expression by maternal and fetal cells in the decidua and its association with preeclampsia.
SILVA, Gabriela. Norwegian University of Science and Technology, Norway.

11:30 Placental TRPV2 expression is indispensable for normal fetal growth.
DE CLERCQ, Katrien. KU Leuven, Belgium.

11:45 A maternal diet enriched in olive oil prevents pro-inflammatory alterations in term placentas from diabetic pregnant women.
GOMEZ RIBOT, Dalmiro. CEFYBO-CONICET, University of Buenos Aires, Argentina.

12:00 Elucidating a role for Pw1/Peg3 in placental labyrinth formation and plasticity.
VALENTÉ, Mariana. PARCC-HEGP-INSERM, France.
## September 12th (Thursday)

### Juan Pablo II Award Session

*Chair: CANIGGIA, Isabella*

**12:15 - 12:45 ANDRE GRUSLIN AWARD LECTURE**

**12:15** Novel approaches to treat preeclampsia: from new drugs to innovative delivery  
HANNAN, Natalie. *University of Melbourne, Australia.*

### Regional Meeting

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>12:45 - 13:45</td>
<td>Auditorium</td>
<td>Regional Meeting JPA &amp; LUNCH BOX</td>
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<tr>
<td>12:45 - 13:45</td>
<td>Aula Magna</td>
<td>Regional Meeting EPG &amp; LUNCH BOX</td>
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<tr>
<td>12:45 - 13:45</td>
<td>Juan Pablo II</td>
<td>Regional Meeting PAA &amp; LUNCH BOX</td>
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<tr>
<td>12:45 - 13:45</td>
<td>Microcine</td>
<td>Regional Meeting ANZPRA &amp; LUNCH BOX</td>
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</tbody>
</table>

### Juan Pablo II Plenary Lecture

*Chairs: DAHER, Silvia and ZYGMUNT, Marek*

**13:45 - 14:15 PLENARY LECTURE**

**13:45** The role of maternal adiponectin and placental mTOR signaling in fetal programming of adult disease.  
JANSSON, Thomas. *University of Colorado Anschutz Medical Campus, USA.*
September 12th (Thursday)

Juan Pablo II  MID CAREER SESSION

Chairs: DAHER, Silvia and ZYGMUNT, Marek

14:15 - 15:00  SHORT PRESENTATIONS

14:15  The role of the tumour suppressor BRCA1-associated protein 1 (Bap1) in regulating trophoblast differentiation and invasiveness
   PÉREZ GARCÍA, Vicente. The Babraham Institute, UK.

14:35  Innate Lymphoid Cell Type 3 (ILC3s) antigen presentation potential and cytokine expression are regulated by local factors of early pregnancy
   MUZZIO, Damián. University Medicine Greifswald, Germany.

Sala de Lectura  Poster Session
Juan Pablo II  Foyer JPII

15:00 - 17:15  POSTER SESSION #2 & COFFEE

Auditorium  Workshop

17:15 - 19:15  W#5: CELLULAR SIGNALING IN THE PLACENTA
   Organizers
   LEIVA, Andrea
   POWELL, Theresa

Aula Magna  Workshop

17:15 - 19:15  W#6: NOVEL TECHNOLOGIES IN PLACENTAL RESEARCH
   Organizers
   HARRIS, Lynda
   MURTHI, Padma
## September 12th (Thursday)

<table>
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<tr>
<th>Location</th>
<th>Event</th>
<th>Time</th>
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<tbody>
<tr>
<td>Juan Pablo II</td>
<td>Workshop</td>
<td>17:15 - 19:15</td>
<td><strong>W#7: IMMUNOLOGY IN THE MOTHER/PLACENTA/FETUS</strong>&lt;br&gt;Organizers: FAAS, Marijke; RAMHORST, Rosanna</td>
</tr>
<tr>
<td>Aula Magna</td>
<td>Regional Meeting</td>
<td>19:15 - 20:00</td>
<td><strong>REGIONAL MEETING SLIMP</strong></td>
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</table>
### September 13th (Friday)

**Juan Pablo II**

#### MID CAREER SESSION

**08:00 - 10:00**

**SHORT PRESENTATIONS**

- **08:00**
  - Expression and localization of placental miRNAs in gestational diabetes mellitus pregnancies.
  - **FAVARO, Rodolfo**. University Hospital Jena, Germany.

- **08:20**
  - Genomic risk for schizophrenia converges into isoform-level coexpression network of the placental transcriptome.
  - **URSINI, Gianluca**. Johns Hopkins University, USA.

- **08:40**
  - Transcriptional co-activator TAZ controls extravillous trophoblast formation and function in the developing human placenta.
  - **HAIDER, Sandra**. Medical University of Vienna, Austria.

- **09:00**
  - Placental mTOR insufficiency during pregnancy predisposes female offspring to obesity-induced insulin resistance.
  - **ALEJANDRO, Emilyn**. University of Minnesota, USA.

- **09:20**
  - AMPK-GLUT3 mediated metabolic reprogramming in preeclamptic placenta.
  - **TONG, Chao**. The First Affiliated Hospital of Chongqing Medical University, China.

- **09:40**
  - Trophoblast fusion and function is regulated by biophysical features of the placental microenvironment during development and disease.
  - **MORAES, Christopher**. McGill University, Canada.

**Foyer JPII**

#### Poster Session

- **08:15 - 09:00**
  - FINAL POSTER SELECTION SLIMP AWARD

**Foyer JPII**

#### Poster Session

- **09:00 - 10:00**
  - FINAL POSTER SELECTION ELSEVIER NI TR AWARD

**Foyer JPII**

- **10:00 - 10:30**
  - Coffee Break
## September 13th (Friday)

### Juan Pablo II

#### Hot Topic Lectures

**Chairs:** HUPPERTZ, Berthold and CHAVATTE-PALMER, Pascale

<table>
<thead>
<tr>
<th>Time</th>
<th>Lecture</th>
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</table>
| 10:30 - 12:50 | **NEW PARADIGMS ON DEVELOPMENT**  
 10:30 | Is the term villous human trophoblast a 2-layered organ? THORNBURG, Kent. *Oregon Health & Science University, USA.* |
|          | 11:05 | Placental exosomes: the knowns and the known unknowns SADOVSKY, Yoel. *University of Pittsburg, USA.* |
|          | 11:40 | **MRI of embryo implantation**  
  NEEMAN, Michal. *The Weizmann Institute of Sciences, Israel.* |
|          | 12:15 | A multi-center national approach to studying the importance of the placenta to maternal-child health and environmental exposures: the NIH Environmental influences on Child Health Outcomes (ECHO) study MILLER, Richard. *University of Rochester Medical Center, USA.* |

### Juan Pablo II

#### IFPA Meeting

<table>
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<tr>
<td>12:50 - 13:30</td>
<td><strong>IFPA MEETING &amp; LUNCH BOX</strong></td>
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### Auditorium

#### Workshop

<table>
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| 13:30 - 15:30 | **W#9: PRETERM BIRTH AND LABOR**  
  Organizers  
  FRANCHI, Ana Maria  
  JENSEN, Cristian Federico |

### Aula Magna

#### Workshop

<table>
<thead>
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<th>Time</th>
<th>Event</th>
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</table>
| 13:30 - 15:30 | **W#10: VASCULAR ALTERATION IN THE PLACENTA: WHAT IS HAPPENING BEYOND PREGNANCY DISEASES**  
  Organizers  
  ESCUDERO, Carlos  
  ROBERTS, James |
## September 13th (Friday)

### Juan Pablo II Workshop

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<tr>
<td>13:30</td>
<td><strong>W#11: GENETICS AND EPIGENETICS OF THE PLACENTA: CURRENT CHALLENGES</strong></td>
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<td><em>Organizers</em></td>
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<td>CASANELLO, Paola</td>
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<td>ROBINSON, Wendy</td>
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### Microcine Workshop

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<tr>
<td>13:30</td>
<td><strong>W#12: METABOLIC DISEASES &amp; CONSEQUENCES IN OFFSPRING</strong></td>
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<td><em>Organizers</em></td>
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<td>WADSACK, Christian</td>
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<td>WHITE, Verónica</td>
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### Auditorium

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<tr>
<td>15:30</td>
<td><strong>FINAL AWARD COMMITTEE MEETING – ORALS</strong></td>
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### Aula Magna

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<td>15:30</td>
<td><strong>FINAL AWARD COMMITTEE MEETING - POSTERS TR NI AWARD</strong></td>
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### Microcine

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<tr>
<td>15:30</td>
<td><strong>FINAL AWARD COMMITTEE MEETING – SLIMP</strong></td>
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### Foyer JPII

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<tr>
<td>15:30</td>
<td><strong>Coffee Break</strong></td>
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## September 13th (Friday)

### Juan Pablo II  
**Plenary Lecture**

<table>
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| 16:00 - 16:35 | **PLENARY LECTURE**                                                   | **Me AMOT no me AMOT:** faulty oxygen sensing mechanisms in preeclampsia disrupts angiomotin function on trophoblast cell migration  
CANIGGIA, Isabella. *University of Toronto, Canada.* |

### Juan Pablo II  
**Award Session**

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| 16:35 - 17:25 | **IFPA SENIOR AWARD IN PLACENTOLOGY LECTURE**                   | **Sexual dimorphism in regulation of trophoblast respiration and metabolic reprogramming with obesity and gestational diabetes**  
MYATT, Leslie. *Oregon Health and Science University, USA.* |

### Juan Pablo II  
**Plenary Lecture**

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| 17:25 - 18:00 | **CLOSING LECTURE**                                                   | **Changes in time and space: the development of extravillous trophoblast in normal and pathological pregnancies**  
ILLSLEY, Nick. *Hackensack University Medical Center, USA.* |

### Juan Pablo II  
**Social Activity**

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<th>Time</th>
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<tr>
<td>18:00 - 18:30</td>
<td><strong>CLOSING CEREMONY</strong></td>
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### OUTSIDE THE VENUE  
**SOCIAL ACTIVITY**

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<tr>
<td>20:30 - 23:50</td>
<td><strong>GALA DINNER &amp; AWARDS</strong></td>
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W#1: Mother-fetus-placenta Infection

Auditorium  Wed. Sep 11  14:00 - 16:00

Organizers

CRISTINA IBARRA
Facultad de Medicina, Universidad de Buenos Aires, Argentina

ULRIKE KEMMERLING
Instituto de Ciencias Biomédicas, Facultad de Medicina, Universidad de Chile, Chile

SUMMARY: Infections during pregnancy lead directly and indirectly to a spectrum of adverse maternal and fetal/placental effects. Congenital transmission of pathogens is the consequence of complex interactions among the pathogen, maternal and fetal/newborn immune responses, and placental factors. Here we will discuss different topics about infection with different pathogens during pregnancy including the Shiga toxin producing Echerichia coli, Trypanosoma cruzi the protozoan parasite that causes Chagas disease and Zika virus. Intrinsic factors of the different pathogens, placental factors as well as the inflammatory/immune response triggered by these pathogens will be discussed.

Speakers

• Huishu Liu, Guangzhou Women and Children’s Medical Center, China.
• Alejandro Schijman, INGEBI, Argentina.
• Claudia Duarte dos Santos, Instituto Carlos Chagas, Fiocruz, Río de Janeiro, Brazil.
• Flavia Sacerdoti, Universidad de Buenos Aires, Argentina.
• María Laura Costa, UNICAMP, Brazil.
• Ulrike Kemmerling, Instituto de Ciencias Biomédicas, Facultad de Medicina, Universidad de Chile, Chile.
W#2: Preeclampsia and Fetal Growth Restriction: similar or different placental syndromes?

Aula Magna       Wed. Sep 11       14:00 - 16:00

Organizers

ANNETINE STAFF

MD, PhD. Professor, University of Oslo, Norway. Head of Research, Consultant, Division of Obstetrics and Gynecology, Oslo University Hospital, Norway.

MARIANA FARINA

Head of Laboratory of Physiopathology of Placenta, CEFYBO-UBA-CONICET, Bs As, Argentina

SUMMARY: This workshop is dedicated to discuss similarities and differences between the two common and life threatening placental syndromes preeclampsia and fetal growth restriction (FGR). The topics will include pathophysiology, placental morphology and function, biomarkers and relation to future maternal and offspring health. Dysfunctional placental function is common for both preeclampsia and FGR. Abnormal placental hypertension and abnormal trophoblast invasion and function is common both for early-onset preeclampsia and FGR. New-onset hypertension after gestational week 20 and FGR is today one of the clinical criteria to define preeclampsia in many revised definitions, in the absence of new-onset proteinuria. In this workshop, we will discuss the similarities and differences between these placental syndromes and discuss whether they represent separate or partly overlapping etiologies and pathophysiologies.

Speakers

• Chris Redman, University of Oxford, United Kingdom.
• Alicia E. Damiano, University of Buenos Aires, Argentina.
• Tu’uhevaha Kaitu’u-Lino, University of Melbourne, Australia.
• Juan Arroyo, Brigham Young University, UT, USA.
• Stefan Hansson, University of Lund, Sweden.
W#3: Feto-maternal communication via extracellular vesicles - a critical view

Juan Pablo II Wed. Sep 11 14:00 - 16:00

Organizers

CARLOS SALOMON
University of Queensland Centre for Clinical Research,
Australia

LARRY CHAMLEY
University of Auckland, Auckland, New Zealand

SUMMARY: The past decade has observed an extraordinary explosion of research in the field of extracellular vesicles (EVs). There are different population of EVs including nanovesicles (some of which are exosomes) microvesicles and in the specific case of the human placenta, macrovesicles. As this very rapidly expanding field grows we are learning that within the different sized vesicle populations there are additional specialized subsets of EVs that may have specific functions. For example, exosomes may be sub-classified as exomeres, exo-S and exo-L (accordingly to their size) Regardless of the type, all EVs carry complex cargos including various nucleic acids, proteins and lipids all of which may be biologically active. Placental EVs are targeted to specific maternal organs and have the potential to regulate maternal cellular and organ function during pregnancy. Thus, placental EVs may be major players in feto-maternal communication. Since placental EVs are present in the maternal blood they are also potentially readily accessible biomarkers of fetal well-being.

Speakers

• Yoel Sadovsky. University of Pittsburgh, USA.
• Udo Markert. University Jena, Germany.
• Luis Sobrevia. Pontificia Universidad Católica de Chile, Chile.
• Nanthini Jayabalanan. The University of Queensland, Australia.
• Rodrigo Barbano. University of the Region of Joinville, Brazil.
• Miira Klemetti. Lunenfeld-Tanenbaum Research Institute, Canada.
W#4: Comparative Placentation – Animal Models

Microcine  Wed. Sep 11  14:00 - 16:00

Organizers

CHRISTIANE PFARRER  DEREK E. WILDMAN

University of Veterinary Medicine Hannover. Hannover, Germany  University of South Florida (Tampa, USA)

SUMMARY: The placenta is one of the most variable features of mammalian anatomy and physiology. Because no other species has a placenta that is identical to the human it has been challenging to find appropriate animal models for comparative experimental studies. Each animal model species has advantages and disadvantages. In this workshop we will work to develop a workflow for deciding which species is appropriate for specific research questions. Some species may share anatomical or physiological features with human placentas while lacking good genomic resources while other species may have strong genomic and transgenic resources but have placental anatomy that diverges greatly from that seen in humans. We will also consider the placenta from the broad definition given by H.W. Mossman, any apposition of fetal and maternal tissue. With this broad definition in mind it is possible to consider placentation in non-mammalian species such as reptiles and invertebrate onychophoran velvet worms.

Speakers

• Hanna Allerkamp, University of Auckland, NZ.
• Anthony Carter, U Odense, Denmark.
• Claudio Barbeito, National Scientific and Technical Research Council, Argentina.
• Julie Baker, Stanford, USA.
• Christiane Pfarrer, University of Veterinary Medicine Hannover, Germany.
• Derek Wildman, University of South Florida, USA.
W#5: Cellular Signaling in the Placenta

Auditorium  Thu. Sep 12  17:15 - 19:15

Organizers

THERESA POWELL
University of Colorado, Aurora, Colorado, USA.

ANDREA LEIVA
Pontifical Catholic University of Chile, Santiago, Chile.

SUMMARY: The human placenta is critical for pregnancy success through its roles as an endocrine organ, establishing the relationship between maternal and fetal blood supplies and in nutrient delivery and gas exchange to ensure adequate growth. Multiple cellular signaling pathways are responsible of the regulation of these critical functions. This workshop is aimed to review some of the placental cellular signaling critical for placental development and highlight the cellular signaling events that modulate placental function, pregnancy outcome and life long health.

Speakers

• Amanda Sferruzzi-Perri, PhD, University of Cambridge, UK.
• Cathy Vaillancourt, PhD, Institut National de la Recherche Scientifique (INRS), Montreal, Canada.
• Martin Post, PhD, Hospital for Sick Children, Toronto, Canada.
• Theresa Powell, PhD, University of Colorado, USA.
• Elena Silva, PhD, University of Colorado, USA.
• Andrea Leiva, Pontifical Catholic University of Chile, Santiago, Chile.
W#6: Novel Technologies in Placental Research

Aula Magna  Thu. Sep 12  17:15 - 19:15

Organizers

PADMA MURTHI  LYNDASHA HARRIS

Monash University, Melbourne, Australia.  University of Manchester, UK

SUMMARY: The placenta plays many crucial roles for the maintenance of pregnancy. It is the chief regulator of fetal development by facilitation of transfer of nutrients, gases and waste products between the mother and fetus; synthesising hormones to support feto-placental growth; remodel the uterine spiral arterioles to establish an optimum vascular environment; and prevent and protect not only from immune-mediated rejection of the fetus but also from infectious agents and environmental insults. As such adequate placental function is instrumental for a successful pregnancy outcome and abnormalities of placental development and function contribute to major pathologies of pregnancy including spontaneous preterm birth, fetal growth restriction, and preeclampsia. Assessment of placental function across gestation is challenging due to the risks for the mother and the developing fetus. Thus far, reports on human placental development and function comes from studying placentas from pathological and uncomplicated pregnancies collected at third trimester or term deliveries. However, molecular changes in the placenta may initiate processes that lead to placental pathologies, well before clinical signs of pregnancy complications are detected. In this workshop we will discuss on novel technologies used in placental research in defining the structure and function of the human placenta, their use in clinical settings and also the model systems that have been developed to better understand abnormal development leading to pregnancy pathologies.

Speakers

• Johann Urschitz. University of Hawaii, Honolulu, USA.
• Rebecca Wilson. Cincinnati, USA.
• Michal Neeman. The Weizmann Institute of Science, Israel.
• Sandra Haider. Medical University of Vienna, Austria.
• Olivia Nonn. Medical University of Graz, Austria.
• Alexandre Borbely. Federal University of Alagoas, Brazil.
W#7: Immunology in the mother/placenta/fetus

Juan Pablo II          Thu. Sep 12     17:15 - 19:15

Organizer

MARIJKE FAAS
Department of Pathology and Medical Biology,
University Medical Center Groningen, the Netherlands

ROSANNA RAMHORST
Immunopharmacology Laboratory. School of Sciences,
IQUIBICEN-CONICET and University of Buenos Aires,
Argentina.

SUMMARY: Summary: Immune responses during pregnancy change, in order to tolerate the fetal semiallograft. The importance of the adaptations to pregnancy are obvious from the fact that many pregnancy complications are associated with aberrant immunological adaptations. During this symposium immunological adaptations in the mother during healthy pregnancy are presented both peripheral immune changes as well as changes in the placental bed. Actors that may interfere with these immune responses will be discussed as well as aberrant immune responses in some pregnancy complications will be discussed. Finally, developing fetal immune responses will be discussed and how these could be influenced by various maternal factors. During the symposium there will be plenty of time for questions and discussions.

Speakers

• Ana Zenclussen. Medical Faculty, Otto-von-Guericke University, Magdeburg, Germany.
• Silvia Daher. Department of Obstetrics Universidade Federal de São Paulo, Brazil.
• Claudia Pérez Leirós. School of Sciences, IQUIBICEN-CONICET and University of Buenos Aires, Argentina.
• Gendie Lash. Guangzhou Medical University, Guangzhou, China.
• Marijke Faas. University Medical Center Groningen, the Netherlands.
W#8: Newborn size: who decides? Mother? Fetus? Placenta?

Microcine  Thu. Sep 12  17:15 - 19:15

Organizers

LOPA LEACH  CAROLYN SALAFIA

School of Life Sciences, Faculty of Medicine, University of Nottingham, Nottingham, United Kingdom. Christiane Pfarrer University of Veterinary Medicine Hannover. Hannover, Germany

Placental Modulation Laboratory. Institute for Basic Research and Placental Analytics LLC, New York, USA

SUMMARY: This workshop will ask 3 experts to each speak to their specialization- cutting edge evidence as to why they think that the mother, the fetus or the placenta dictates the size of the newborn. The audience will quiz them and we will reach a conclusion as to whether there is synthesis of physiology, maternal/fetal genes, parental imprinting in this era of epigenetics.

Speakers:

• Carlos Salomon, University of Queensland. *Mother: Adipose Tissue-derived extracellular vesicles and their potential role in regulating placental metabolism and fetal growth.*

• Gernot Desoye, University of Graz, Austria. *Placenta: The Human Placenta in Diabetes and Obesity- Friend or Foe for the Foetus?*

• Tracy Bale, University of Maryland, USA. *Fetus: Fetal brain programming for lifetime growth.*

• Wrap up and future questions: Lopa Leach (University of Nottingham, UK) and Carolyn Salafia (Placental Analytics, New York, USA).
W#9: Preterm Birth and Labor

Auditorium  Fri. Sep 13  13:30 - 15:30

Organizers

ANA FRANCHI
Laboratory of Physiopathology of Pregnancy and Labor, CEFYBO (CONICET-UBA).

FEDERICO JENSEN
Laboratory for Immunology of Pregnancy, Center for Pharmacological and Botanical Studies, Medical Faculty, Buenos Aires University, Buenos Aires, Argentina.

SUMMARY: Preterm birth, defined as birth occurring before 37 weeks of gestation, is a leading cause of neonatal mortality and morbidity as well as the second cause of death in children under 5 years. 15 million babies are born prematurely every year, representing 5 to 18% of pregnancies worldwide. In addition, due to immaturity of multiple organ systems, neonates born preterm are more susceptible to develop short-term complications as well as neurodevelopmental disorders, such as cerebral palsy, intellectual disabilities, and vision and hearing impairments during post-natal life. Thus, despite extensive efforts, preterm birth has remained an intractable medical and public health challenge. Although it is considered a syndrome attributable to multiple pathogenic processes, intrauterine and systemic infection and/or inflammation are causally linked to preterm birth. In this workshop we will discuss the latest advances in the understanding of preterm birth pathophysiology.

Speakers

• Nardhy Gomez-Lopez. Wayne State University School of Medicine, USA.
• Kang Chen. National Institute of Allergy and Infectious Diseases, National Institutes of Health, USA.
• Felipe Vadillo-Ortega. Universidad Nacional Autónoma de México. UNAM, School of Medicine, México.
• Gang Sun. School of Medicine, Shanghai Jiao Tong University, Shanghai, China.
• María Silvia Ventimiglia, Laboratory for Immunology of Pregnancy, CEFYBO –UBA-CONICET, Argentina.
• Julieta Schander, Laboratory of Physiopathology of Pregnancy and Labor, CEFYBO – UBA –CONICET, Argentina.
W#10: Vascular alteration in the placenta: what is happening beyond pregnancy diseases

Aula Magna  Fri. Sep 13  13:30 - 15:30

Organizers

CARLOS ESCUDERO

JAMES M. ROBERTS
Global Pregnancy Collaboration and Magee-Womens Research Institute, Department of Obstetrics and Gynecology Epidemiology and Clinical and Translational Research University of Pittsburgh.

SUMMARY: Women with adverse pregnancy outcomes, including preeclampsia, gestational diabetes, preterm delivery, have excess risk of later life cardiovascular disease (CVD). Mechanisms of these disorders could be associated with an underlying high-risk vascular phenotype, that may have been programmed during intrauterine life. Since the placenta is a highly vascularized tissue, it may constitute a unique source of information of what and how vascular structure/function is affected in women with adverse pregnancy outcomes. Even more, placental evidence of impaired vascular function may serve as “a fingerprint” that may alert us to what would be the vascular response of women and their offspring in future life. In this symposium we aim to analyze evidence of impaired placental vascular structure/function and its relevance to future cardiovascular risk. This may suggest potential underling mechanisms and pharmacological targets. The relationship of placental structure/function to later maternal disease could provide unique insights in the field and help us to move forward in both the understanding of cardiovascular disease in women and to alert health care systems about future cardiovascular risk.

Speakers

• Janet Catov. University of Pittsburgh, Pittsburgh, PA, USA.
• William Parks. University of Toronto, Toronto, ON, Canada.
• Natalie Hannan. University of Melbourne, Heidelberg, Australia.
W#11: Genetics and epigenetics of the placenta: current challenges

Juan Pablo II  Fri. Sep 13  13:30 - 15:30

Organizers

WENDY ROBINSON
Department of Medical Genetics, University of British Columbia BC Children’s Hospital Research Institute (BCCHR), Vancouver, Canada.

PAOLA CASANELLO
Departments of Obstetrics & Neonatology, School of Medicine Pontificia Universidad Católica de Chile, Santiago, Chile.

SUMMARY: The placenta field has been strongly molded in recent years by the concept of epigenetic determinants of health. From less than 5 papers published in this field in 2005 to more than 80 in 2018, we are gaining a glimpse of how DNA methylation and chromatin remodeling are associated with the way maternal conditions and exposures during pregnancy are sensed by the placenta and compromise fetal and postnatal physiological responses. Epigenetic marks have often been interrogated independently of genetic variation. However, there is strong evidence showing the interaction between genetics and environment in mediating epigenetic variation. In this workshop we will offer talks with different looks from senior and young researchers in the field, with the objective of setting a fructiferous discussion on the current challenges that genetic and epigenetic studies in the placenta confront today.

Speakers

• Wendy Robinson. University of British Columbia BC Children’s Hospital Research Institute (BCCHR), Vancouver, Canada.
• Claire Roberts. University of Adelaide, South Australia, Australia.
• Soumen Paul. The University of Kansas Medical Center. Kansas City, Kansas, USA.
• Paola Casanello. School of Medicine Pontificia Universidad Católica de Chile, Santiago, Chile.
W#12: Metabolic diseases & consequences in offspring

Microcine  Fri. Sep 13  13:30 - 15:30

Organizers

**CHRISTIAN WADSACK**
Assoc. Prof., PhD. Vice-dean of Doctoral Studies. Medical University of Graz, Department of Obstetrics and Gynecology. Doctoral Studies. Medical University of Graz, Department of Obstetrics and Gynecology.

**VERÓNICA WHITE**
Assoc. Inv. Faculty of Medicine, University of Buenos Aires, CEFYBO CONICET. Laboratory of Reproduction and Metabolism.

**SUMMARY:** Maternal metabolic derangements in pregnancy are a worldwide growing problem and can induce placental and fetal anomalies. Notably, as a result of the disturbed intrauterine environment offspring’s metabolism might be compromised and may lead to long-lasting alterations as well. Affected newborns are at increased risk of developing related diseases like obesity, type-2 diabetes or cardiovascular disorders during life. The research in the field has explored and identified that excess of nutrients, a disturbed lipid profile, an altered hormonal milieu together with an imbalance of antioxidant/pro-inflammatory substances are the main stressors and causes of the anomalies observed in placentas, fetuses and offspring. This workshop focusses on the underlying mechanisms of these alterations on the feto-placental axis and offspring. A holistic view of this specific topical problem will be achieved through presentation of different experimental models and including the spatial-temporal axis of pregnancy.

**Speakers**
- Pascale Chavatte Palmer. French National Institute for Agricultural Research, France.
- Christianne Albrecht. Universität Bern. UniBe, Bern, Switzerland.
- Veronique Ferchaud-Roucher. University of Colorado, Denver, USA.
- Ilaria Del Gaudio. Medical University of Graz, Graz, Austria.
- Dolores Busso. Pontifical Catholic University of Chile, Santiago de Chile, Chile.
- Jonas Zaugg. Universität Bern, UniBe, Bern, Switzerland,
EDUCATIONAL SESSIONS

Wednesday September 11: 13:00-14:00h

Aula Magna

ES 1: WOMEN IN SCIENCE: OVERCOMING CHALLENGES TO CAREER DEVELOPMENT

ORGANIZERS

STACY ZAMUDIO
Hackensack University Medical Center. Department of Obstetrics and Gynecology, New Jersey, USA

Dr. Zamudio was trained in Evolutionary Biology/Anthropology at the University of California, Los Angeles, and the University of Colorado in Boulder. Much of her work has focused on placental hypoxia (high altitude) and applied ultrasonography for quantification of blood flows, oxygen and nutrient delivery and uptake in mother and fetus. As Director of Research in the Department of Obstetrics and Gynecology and the Center for Abnormal Placentation at Hackensack University Medical Center, she has been engaged in studies of Abnormally Invasive Placenta (AIP, aka Placenta Accreta Spectrum-PAS). Clinical-translational work, funded by the NIH Human Placenta Project, has focused on ultrasound-based quantitative diagnosis of AIP, clinical outcomes in mother and neonate, and the pathophysiology of AIP at the molecular level.

LAUREN ALEKSUNES
Department of Pharmacology and Toxicology, Ernest Mario School of Pharmacy, Rutgers, Environmental and Occupational Health Sciences Institute, New Jersey, USA

Dr. Lauren Aleksunes is Professor in the Ernest Mario School of Pharmacy and the Environmental and Occupational Health Sciences Institute at Rutgers University. Director of the Rutgers Toxicology Graduate Program. In 2019, Lauren received the Outstanding Young Investigator Award from the Women in Toxicology
SUMMARY

Women scientists have made significant contributions to placental research historically and in the present. While placental science has outstanding representation of women at the trainee and, more recently, mid-career levels, women are still underrepresented at senior academic levels or their non-academic equivalents. Our panel of three highly successful mid-career women scientists is led by IFPA 2019 Andrée Gruslin Award winner Dr. Natalie Hannan (University of Melbourne, President of ANZPRA, our SLIMP’s Pacific Rim sister society). Panelists will outline the greatest challenge they faced in becoming successful mid-career scientists. They will discuss how they resolved these challenges in the first half of our session. The second half will be dedicated to discussion, by panel and audience, of the two themes or questions regarding career development that have been identified by trainees attending IFPA 2019 as their most significant challenges.

SPEAKERS

NATALIE HANNAN, recipient of the 2019 IFPA/Elsevier Andrée Gruslin Award for mid-career women scientists, Lead Scientist, Therapeutics Discovery and Vascular Function Group, Mercy Hospital for Women, University of Melbourne, Australia. Natalie’s research is focused on developing therapeutic strategies that are safe in pregnancy and novel approaches to deliver therapies directly to the placenta.

ALINE LORENZON, Scientific Coordinator at Huntington Medicina Reprodutiva. Aline’s research is focused on early embryo implantation, placental development, gestational diseases and endoplasmic reticulum stress.

NARDHY GOMEZ-LOPEZ, Associate Professor, Obstetrics and Gynecology and Director of the Perinatal Immunobiology Unit (PRB) at Wayne State University School of Medicine, Michigan, USA. Nardhy’s research is focused on immunological pathways dysregulated in preterm birth and adverse perinatal outcomes.
EDUCATIONAL SESSIONS

Wednesday September 11: 13:00-14:00h

Juan Pablo II

ES 2: GETTING NOTICED - HOW TO COMPILE AND PUBLISH A PAPER

ORGANIZERS

YOEL SADOVSKY

University of Pittsburgh, Pennsylvania, USA.

Executive Director, Magee Womens Research Institute, Elsie H Hillman Chair of Women’s Health Research, Distinguished Professor of OBGYN, Microbiology and Molecular Genetics, Associate Dean, Women’s Health Research and Reproductive Sciences.

MARTIN KNÖFLER

Medical University of Vienna, Department of Obstetrics and Gynaecology, Vienna, Austria.

Martin Knöfler is Associate Professor at the Medical University of Vienna and the current European Editor of Placenta. 2001. His main research interests include molecular mechanisms and signalling pathways regulating human placental development, trophoblast differentiation, decidualization as well as the trophoblast-decidual cross-talk.

ANTHONY PERKINS

School of Medical Science, Griffith University, Queensland, Australia.

Professor Tony Perkins is a biochemist with particular interests in anti-oxidant enzymes systems in the human placenta. His research is focused on mitochondrial dysfunction and how oxidative stress influences placental cell turnover in complications of pregnancy such as preterm birth, fetal growth restriction and preeclampsia. Academic for the Health Group (2012-2018). He is currently on research sabbatical.
SUMMARY

In this educational session, the Editors of Placenta will discuss diverse aspects related to composing, assembling, writing, revising and publishing a scientific paper. In detail, Y. Sadovsky will summarize the structure of manuscript, explain the content of its different sections, and emphasize how previous published work is appropriately cited. A. Perkins will discuss the importance of choosing the right journal plus measures of publication quality such as the impact factors and citation rates. He will also elaborate on the peer-review process and the response to reviewers’ critiques. Finally, M. Knöfler will report on the requirements for authorship, language and style of a paper, and discuss ethics and plagiarism in science. Attendees at the session will become familiar with the considerations, effort, activities, and processes required to successfully publish a paper. There will be time for questions and answers, and a lively discussion.
Thursday September 12: 8:00-9:00h

Auditorium
Sponsored ES: WRITING A PAPER IN ENGLISH: TIPS FOR SPANISH SPEAKERS

CHAIR: EVANGELINA CAPOBIANCO

ORGANIZER

MARÍA VICTORIA EUSEVI
Biologist (University of Buenos Aires, Argentina), Certificate of Proficiency in English (University of Cambridge). Editor of scientific papers.

SUMMARY
Papers have a great importance in the life of any researcher, as their daily work involves not only reading but also writing papers. Spanish-speaking researchers have the additional difficulty that English is not their language and thus need to find the best way to express their ideas and thoughts clearly. Thus, this short talk has been designed to provide Spanish-speaking researchers with simple tips and tools to write their manuscripts with a correct, direct, and simple English language.
Thursday September 12: 8:00-9:30h

Juan Pablo II

ES 3: LEARNING THE PLACENTA ATLAS TOOL

ORGANIZER

BRIAN COX
Department of Obstetrics and Gynaecology, University of Toronto, Toronto, Canada.

Brian Cox is an associate professor in the Dept. of Physiology at the University of Toronto and an expert in computational analysis of biological data sets with an emphasis on placental and trophoblast biology and pathology. He is an advisor to the NIH initiatives Placenta Atlas Tool and the Human Placenta Project.

SUMMARY

In this interactive tutorial you will log on to the Placenta Atlas Tool (PAT) and run example case study investigations. You will learn the layout of the tool, available system resources and creation of a workspace to save your analysis results. Interested attendees should create an account at https://pat.nichd.nih.gov. The account is free. Tutorial will explore using PAT for investigating placental pathology and biology using key word libraries, images and gene expression analysis.
MEET THE EXPERT SESSIONS

Foyer JPII  

Wednesday September 11- 18:15-19:15 h

EARLY CAREER RESEARCH (ECR- NEW INVESTIGATORS) ACTIVITY

1. Do and don’t in oral and poster presentations?

   Peggy Petroff, Michigan State University, USA.
   Paola Casanello, Catholic University of Chile, Chile.
   Julio Bueno Sanchez, University of Antioquia, Colombia.

2. How to make a successful presentation, worthy of a travel award or international funding

   Thomas Jansson, University of Colorado, USA.
   Amanda Sferruzzi-Perri, University of Cambridge, UK.

3. How to have a great collaboration and how to make it successful

   Larry Chamley, The University of Auckland, NZ.
   Stefan Hansson, University of Lund, Sweden.

4. Translational medicine: the best experimental model for a clinical question

   Joelcio Abbade, UNESP – Paulista State University “Júlio de Mesquita Filho”, Brazil.
   Grazzia Rey, University of the Republic, Uruguay.
5. How to choose the best journal to publish your data

Gernot Desoye, University of Graz, Austria.
Lynda Harris, University of Manchester, UK.

6. Challenges and opportunities for researchers from developing countries

Elena Zambrano, National Institute of Medical Sciences and Nutrition Salvador Subirán, Mexico.
Ulrike Kemmerling, University of Chile, Chile.
Udo Markert, University Hospital Jena, Germany.

7. Finding academic mentors

Gustavo Leguizamon, Unit of high risk pregnancy from CEMIC, Argentina.
Charles Graham, Queen’s University, Canada.
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Francisco Acuña1,2, Claudio Gustavo Barbeito1,2, Fabián Nishida3,2, Enrique Leo Portiansky3,2, María Angelica Miglino4, Mirta Alicia Flamini1
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Séfora Braga, Alexandre Borbely
Cell Biology Laboratory, Institute of Health and Biological Sciences, Federal University of Alagoas, Maceió, Brazil

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Pontificia Universidad Católica de Chile, Santiago, Chile
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Erasmus MC, Rotterdam, Netherlands

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University of Southampton, Southampton, United Kingdom.

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Medical University of Graz, Graz, Austria.

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Jonathan Ausman1, Katelyn Bel1, Alex Post2, Nichole Pederson2, Jessica Pudwell1, Graeme Smith1,2  
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The Edith Wolfson Medical Center, Holon, Israel.
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Osvaldo Rafael Ramírez-Ibarra1, Lorena del Rocío Ibarra-Reynoso1, Yeniley Ruiz-Noa1, Juana Rosalba García-Ramírez2, María Luisa Lazo de la Vega1, Francisco Javier Anaya-Torres3, María Francisca Pineda-Cubillán, Mónica Preciado-Puga4, Gonzalo Arroyo-Díaz5
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Lorena del Rocío Ibarra-Reynoso1, Osvaldo Rafael Ramírez-Ibarra1, Yeniley Ruiz-Noa1, Juana Rosalba García-Ramírez2, María Luisa Lazo de la Vega Monroy1, Francisco Javier Anaya-Torres3, Alan Joel Ruiz-Padilla4, Gonzalo Arroyo-Díaz5
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CHARACTERIZATION OF THE EXPRESSION OF CALCIAL-ACTIVATED POTASSIUM CHANNELS (BKCA AND IKCA) IN PLACENTA OF GESTATIONAL DIABETES MELLITUS
Fernanda Neira1, Nataly Neira1, Camila Loyola1, Susana Rojas2, Marcelo González3
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T2* WEIGHTED PLACENTAL MRI IN RELATION TO PLACENTAL HISTOPATHOLOGY AND BIRTH WEIGHT:
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Emilie Hitzeder1,2, Rugina I. Neuman2,3, Michelle Broekhuizen1,2,4, Sinno H.P. Simons1, Sam Schoenmakers3, Irwin K.M. Reiss1, Birgit C.P. Koch5, Anton H. van den Meiracker7, Jorie Versmissen5, Willy Visser2,3, A.H. Jan Danser2
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PLACENTAL HISTOPATHOLOGY AND PREGNANCY OUTCOMES IN “EARLY” VS. “LATE”PLACENTAL ABRUPTION
Noa Gonen1,2, Michal Kovo1,2, Letizia Schreiber1,2, Lilach Kornblit Noy2, Giulia Bara1,2, Eldar Volpert1,2, Jacob Bar1,2, Eran Weiner1,2
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A NEW PIPELINE FOR CLINICO-PATHOLOGICAL AND MOLECULAR PLACENTAL RESEARCH UTILIZING FFPE TISSUES
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Julio C. Bueno-Sánchez², Marisol Campuzano², Bernardo Agudelo-Jaramillo², Juan Carlos Quintana-Castillo², Juan Guillermo Maldonado-Estrada³, Gerard Chaouat³
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Felipe Gallardo¹, Cecilia Cornajo¹,², Rodrigo Escalona¹, Jaime Gutierrez¹,²
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Kaimin Guo, Huishu Liu
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Kazuhiro Kajiwara¹,², Ritsuko Kobayashi¹, Osamu Samura¹, Jean-Francois Mouillet², Yoel Sadovsky², Aikou Okamoto¹
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Mercedes Olaya-C¹, ², Marta Garrido³, Jorge A Franco¹, Jorge Luis Rodríguez¹,², Magda J Vargas¹,², Ana Aula-Olivar³, Santiago Ramón y Cajal³, ⁴
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Rabia Anwar1, Manvendra Singh1, Florian Herse2, Zsuzsanna Izsak1, Ralf Dechend2
1MDC, Berlin, Germany. 2ECRC, Berlin, Germany

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Katarzyna Stefanska1, Natalia Marek-Trzonkowska2, Maciej Zielinski2, Dorota Zamkowska3, Przemyslaw Adamski1, Joanna Jassem3, Katarzyna Leszcynska1, Martyna Jankowiak2, Krzysztof Preis1
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Abhirup Bandyopadhyay1, Saumaya Bhagat2, Iqbal Alam1, Gausal Khan1
1Jamia Hamdard, New Delhi, India. 2DIPAS, New Delhi, India. 3Fiji School of Medicine, CMNHS, FNU, Suva, Fiji

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Sonya Frazier1, Hannah Morgan2, Martin McBride1, Angela Bradshaw2, Helen Mulvana1, Delwyn Graham3
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Paola Ayala-Ramírez1, Angie Garzón2, Rodríguez Jorge2, Natalia Serrano3, Luis Silva4, Rodolfo Martínez5, Mercedes Olaya-C6, Reggi García-Robles5
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Natalia Szpilbarg1, Yollyseth Medina1, Bernardo Maskin2, Abril Seyahian1, Mauricio Castro-Parodi1, Alicia E. Damiano1,3
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P1.132 NITRATION OF PLACENTA AQUAPORINS AFFECTS THE SURVIVAL OF VILLOUS TROPHOBLAST CELLS
YOLLYSETH MEDINA1, Mauricio Di Paola1,2, Carolina Anud2, Bernardo Maskin3, Alicia E. Damiano2,1
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Karla Castro1, Karen Prado1, Aline Lorenzon-Ojea1, Rossana Francisco2, Marcelo Zugaib2, Mara Hoshida2, Eliane Alves2, Mariana Veras3, Estela Bevilacqua1
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Rodrigo Riedel1,2, Antonio Perez Perez3, Mariana Jaime4, Ornella Parolini5, Roberto Casale4, José Dueñas4, Víctor Sánchez Margalet3, Cecilia Varone1,2, Julieta Maymó1,2
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Anna Boss, Anna Brooks, Larry Chamley, Jo James
The University of Auckland, Auckland, New Zealand

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Adam Mischler, Victoria Karakis, Adriana San Miguel, Balaji Rao
North Carolina State University, Raleigh, USA

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Teena Gamage, Jasper Perry, Vicky Fan, Katie Groom, Larry Chamley, Jo James
University of Auckland, Auckland, New Zealand

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Evgeny Knyazev1,2, Anna Khristichenko1,2,3, Diana Malteva1,2, Tatiana Gerasimenko1, Olga Kindeeva1,4, Vladimir Petrov1,5, Dimitri Sakharov1,6
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Barbara Fuenzalida1, Claudette Cantin1, Lorena Carvajal1, Valentina Pasten1, Jaime Gutierrez2, Susana Contreras-Duarte1, Andrea Leiva1
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Birgit Hirschmugl1,2, Nermeeen Fawzy1,2, Magdalena Grill3, Rudolf Schicho3, Uwe Lang3, Robert Zimmermann1,2, Christian Wadsack1,2
1Department of Obstetrics and Gynecology, Medical University of Graz, Graz, Austria. 2BioTechMed-Graz, Graz, Austria. 3Institute of Molecular Biosciences, University of Graz, Graz, Austria. 4Otto Loewi Research Center, Department of Pharmacology, Medical University of Graz, Graz, Austria
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Fatima Merech, Elizabeth Soczewski, Vanesa Hauk, Daniel Paparini, Rosanna Ramhorst, Claudia Pérez Leirós, Daiana Vota Laboratorio de Inmunofarmacología. Instituto de Química Biológica de la Facultad de Ciencias Exactas y Naturales (IQUIBICEN), CONICET-Universidad de Buenos Aires., Buenos Aires, Argentina

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Erika Castaño-Moreno1,2, Cherie Hernandez2, Maria Luisa Garmendia1, Ana María Ronco3, Paola Casanello4
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Rona Karahoda, Hana Horackova, Petr Kastner, Lukas Cervena, Cilia Abad, Frantisek Staud
Department of Pharmacology and Toxicology, Faculty of Pharmacy in Hradec Kralove, Charles University, Hradec Kralove, Czech Republic

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ROLE OF TROPHOBLAST INVASION DURING PLACENTATION

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So far, extravillous trophoblasts were believed to invade into the uterine connective tissues as well as the walls of spiral arteries. The recent identification of new pathways of trophoblast invasion into all luminal structures of the uterine wall shows that our understanding of placentation and support of the embryo and fetus needs to be taken to a next level. The first luminal structures eroded by trophoblasts are uterine glands. Invasion of endoglandular trophoblasts starts a few days after implantation to assure nutrition of the embryo as early as possible (uterine milk). During further placental development, invasion of glands at the margin of the growing placenta allows endoglandular trophoblasts to escape the uterine wall and to reach the uterine cavity and cervix. The next luminal structures eroded by extravillous trophoblasts are uterine veins. Invasion of endovenous trophoblasts is essential for the backflow of any maternal fluids from the placenta back into the maternal system. Shortly afterwards, endoarterial trophoblasts invade spiral arteries, connect them to the intervillous space of the placenta as well, but block blood flow to the placenta via arterial plugs. Hence, during the first trimester of pregnancy, the arteries are still plugged by endoarterial trophoblasts, while the veins are already open and linked to the placenta. This allows a flow of plasma (arteries) and glandular secretion products (glands) towards the placenta and the backflow into the maternal circulation (veins).

Since alterations of any of the newly identified pathways of trophoblast invasion (glandular, venous as well as lymphatic) have not been studied so far, the new invasion pathways (trophoblast invasion 2.0!) allow the development of new concepts to elucidate the impact of altered trophoblast invasion into any luminal structure of the uterus to further identify the causes of pregnancy pathologies.

THE ROLE OF MATERNAL ADIPONECTIN AND PLACENTAL mTOR SIGNALING IN FETAL PROGRAMMING OF ADULT DISEASE

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In women, maternal circulating adiponectin levels are inversely correlated to birth weight suggesting that maternal adiponectin limits fetal growth. Consistent with this concept, infusion of full-length adiponectin to pregnant mice in rates that increased circulating levels 2-3-fold caused intrauterine growth restriction. Studies in cultured primary human trophoblast cells and in mice in vivo have demonstrated that these effects are likely to be due to direct actions of adiponectin on the trophoblast. In contrast to its well-known insulin-sensitizing effects in skeletal muscle and liver, adiponectin inhibits placental insulin and mTOR signaling and amino acid transport. This effect is mediated by activation of trophoblast PPARα signaling, which increases ceramide synthesis, resulting in inhibition of IRS-1. Overweight and obese women have low circulating adiponectin levels and have an increased risk to deliver large babies, associated with an activation of placental function, in particular nutrient transport. We have developed a mouse model of maternal obesity with extensive similarities to the human condition, including elevated levels of maternal leptin, glucose intolerance, activation of placental insulin and mTOR signaling, increased placental nutrient transport and fetal overgrowth. Restoration of normal circulating levels of adiponectin in obese pregnant mice the last four days of pregnancy completely prevented placental dysfunction, fetal hyperglycemia and overgrowth. In addition, normalization of maternal adiponectin levels in obese dams during late pregnancy, prevented the development of obesity, glucose tolerance, insulin resistance, liver steatosis and cardiac diastolic dysfunction in the offspring. Our findings demonstrate that low circulating adiponectin in maternal obesity is mechanistically linked to activation of mTOR signaling, increased placental nutrient transport and fetal growth and offspring metabolic and cardiovascular health. Thus, adiponectin constitutes an important endocrine link between maternal adipose tissue and the placenta, with powerful impact on placental signaling, fetal development and offspring long-term health.
MRI OF EMBRYO IMPLANTATION
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Focal maternal angiogenesis surrounding the adhered embryo is one of the hallmarks of implantation and decidualization. Characterized by highly regulated vessel expansion, sprouting and enhanced vascular leak, this angiogenic response enables detection of very early pregnancy using dynamic contrast enhanced (DCE; 1). By application of MRI on advanced genetic mouse models we were able to detect multiple regulatory checkpoints that impact the success of implantation. Using transgenic mice in which the dendritic cells (DCs) express diphtheria toxin, we could show that selective ablation of DCs was sufficient to obstruct the maternal angiogenesis and abort pregnancy (2). Similar failure of implantation was observed with mice carrying selective deletion of connexin 43 (3). Recently we reported that trophoblast expression of tissue transglutaminase 2 and factor XIII regulate maternal angiogenesis at implantation, and that selective over expression or deletion of either of these enzymes selectively in the blastocyst trophectoderm impacts implantation (4). Finally, the same approach of selective manipulation of the trophectoderm, was applied for demonstrating the role of hyaluronan deposition and degradation on spatial-temporal vascular morphogenesis during implantation (Hadas et al submitted).

LA.1

PLACENTAL AND ENDOTHELIAL DYSFUNCTION CAUSE IUGR PHENOTYPE IN MURINE MATERNAL OBESITY AT E15.5

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Objectives and Methods: The incidence of maternal obesity is on the rise in western societies throughout the last decade and various studies have attributed increased risks for maternal health and perinatal programming of offspring to overweight before and during pregnancy. In our mouse model of maternal obesity, which is induced by a high fat diet (HFD), we investigated molecular and physiological changes of the placenta at E15.5 regarding the proteomics profile of the transfer zone, endothelial cell homeostasis, the ultrastructure, and materno-fetal transfer.

Results: Not only did feeding a HFD cause weight gain in dams, it also led to an IUGR phenotype in the offspring which is reversed at the end of pregnancy (E18.5), where HFD fetuses display similar weights as controls. We sought to further characterize the vascular morphology of HFD placentas by stereological means to determine surface area, volumes, and length of the materno-fetal transfer zone, placental structures, and fetal capillaries, respectively. Interestingly, the capillary profile was significantly altered while volumes of the placental tissue zones remained nearly unaffected in terms of volume changes. Proteomics profiling revealed alterations of adherens junction markers in the transfer zone of HFD placentas which was further investigated by western blot of whole placental lysates. On the ultrastructural level, the basement membrane, cell-cell contacts, EC and trophoblast integrity seemed altered in the transfer zone of HFD placentas. Further, we found a significant change in materno-fetal transfer of radioabeled tracer in HFD placental units.

Conclusions: Taken together, these results indicate placental and endothelial dysfunction, and suggest placental barrier alterations, changes in cell-cell adhesion, and a HFD-specific phenotype of placental units from HFD dams, which demands further investigation of the underlying mechanisms.

LA.2

CONSEQUENCES OF HUMAN PLACENTAL BARRIER EXPOSURE TO NANOCERIA AND TO BENZO(A)PYRENE

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Objectives: Air pollution is a major concern and exposure of pregnant women can lead to harmful effects on both fetal growth and pregnancy outcome. The offending pollutants crossing other barriers could reach the placenta and impair its integrity and functions. We investigate here the impact of two distinct pollutants found in air pollution, Benzo[a]Pyrene (BaP) and Cerium dioxide nanoparticles (CeO2 NP), on human placental barrier integrity and functions.

Methods: We used primary cultures of villous cytotrophoblasts purified from term placenta that differentiate into syncytiotrophoblasts in vitro. The concentrations range of pollutants used for the assessments were from very low, to mimic the concentrations found in the blood, up till the highest airborne level measured at Paris. We evaluated the internalization of CeO2 NP by TEM and the dose and time-dependent cytotoxicity of NP and BaP by WST-1 assay. At subtoxical level, we determined the impact of these pollutants toward the formation of the syncytium (under confocal microscopy) and hormonal functions (by measuring steroid and peptide hormones secretion).

Results: We demonstrate the ability of CeO2 NP to be uptaken by the trophoblasts at any concentration tested. In regard to cell viability, BaP make no difference either after 3 days of incubation with high doses, whereas CeO2 NP are cytotoxic to primary trophoblast cells in a dose and time-dependent manner. Furthermore, BaP induces an increase of reactive oxygen species (ROS) production in trophoblasts from low doses while there is a decrease of ROS production with NP at high doses. Moreover, at non-cytotoxic doses, CeO2 decrease the capacity of differentiation of cytotrophoblasts and disturbs both hCG and P4 secretion in culture media.

Conclusion: Both BaP and CeO2 NP impacts placental functioning. To our knowledge, this is the first study that addresses the consequences of CeO2 NP and of BaP on human primary trophoblasts from term placenta.
LA.3
SECRETION OF SFIT-1 BY FIRST TRIMESTER CHORIONIC VILLI: INVOLVEMENT OF THE NADPH OXIDASE / P38 MAPK PATHWAY
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Objectives: The aim was to study the implication of NADPH oxidase/p38 MAPK pathway on sFlt-1 secretion in first trimester chorionic villi.

Methods: First trimester chorionic villi explants (7-9 GW) were cultured for 72 h. After 24 h of culture, the villi were treated with TGF-β1 (10 ng / ml) for 48 h or pre-incubated with p38 MAPK pathway inhibitor (SB203580 - 10 μM). Treatment with a NADPH oxidase inhibitor (DPI - 2.5 μM) was also performed. Expression levels of p38 and smad2 (total and phosphorylated) were studied by Western blot. The secretion assay of sFlt-1 in supernatants after 72 h of culture was performed by ELISA (R&D Systems®). The localization of p38 in chorionic villi (7-9 GW) was studied by immunohistochemistry and observations were realized by confocal microscopy.

Results: We showed that the p38 protein is mainly expressed in the villous cytotrophoblast in first trimester chorionic villi. The activation of p38 using TGF-β1 significantly increases the secretion of sFlt-1 in culture supernatants at 72 h (n = 7, p < 0.05). This effect is reversed when chorionic villi are pre-incubated with the p38 inhibitor (n = 7, p < 0.05). A downward trend of sFlt-1 secretion is observed when the villi are treated with DPI (p = 0.1250, n = 4). Furthermore, the treatment in the presence of TGF-β1 showed smad2 activation regardless of the p38 MAPK pathway activation.

Conclusion: In first trimester chorionic villi, p38 is preferentially localized in the villous cytotrophoblast and is involved in the sFlt-1 secretion, independently of smad2 activation. NADPH oxidase also appears to be involved in the sFlt-1 secretion in this model.

LA.4
LIPODYSTROPHY-ASSOCIATED PPARG VARIANTS INDUCE A DECREASED CELL FUSION AND MIGRATION IN HUMAN VILLOUS CYTOTROPHOBLAST AND FIBROBLAST, RESPECTIVELY

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Objectives: PPARy (Peroxisome proliferator-activated receptor gamma) belongs to the superfamily of nuclear receptor acting as a transcription factor on target genes. PPARy is involved in adipogenesis and is essential for placentation development, vasculogenesis and trophoblast differentiation. Alterations in its expression and/or activity are associated with preeclampsia and intrauterine growth retardation. To date, the molecular regulation of PPARy in cytotrophoblast differentiation and in the underlying mesenchyme has been poorly studied and remains to be explored. Vascular placental abnormalities have been described in Familial Partial Lipodystrophy type 3 (FPLD3) due to PPARG pathogenic variants. The objective of the project is to study the impact of heterozygous mutations in the LBD of PPARG on trophoblastic differentiation (PPARGΔE352Q) and on fibroblast cell migration (PPARGWT / PPARGΔE352Q, PPARGL339X / PPARGΔE352Q).

Methods: Villous cytotrophoblasts (VCT) (n=3) were isolated from human term placenta, plated on plastic culture dishes and cultured for 72h in DMEM/10% FCS. PPARy reconstitution experiments were performed after 16h of culture by transfecting cells with 100 pmol/ml PPARy siRNA and/or 2 μg/ml siRNA-insensitive plasmids GFP-PPARyWT or GFP-PPARGΔE352Q. Fusion index was assessed by nuclei counting of GATA3 immunostaining. Skin fibroblasts from 3 control subjects and 2 patients bearing the PPARy p.R262G or p.L339X heterozygous variants, were assayed for migration using the IncuCyte® Live-Cell Analysis Imaging System.

Results: In vitro, PPARy silencing in VCT led to a significant decrease in syncytiotrophoblast formation and compared to the reconstitution with PPARyWT, PPARyΔE352Q led to a significant lower restoration of the trophoblast fusion. Compared to controls, fibroblasts bearing the PPARy p.L339X mutation, or, to a lesser extent, the p.R262G variant, show a significantly decreased cell migration.

Conclusion: Missense variants in the LBD of PPARy inhibit significantly the cell fusion and migration processes in villous cytotrophoblasts and fibroblasts, which could play a role in vascular placental abnormalities associated with FPLD3.
LA.5
TARGETED DELIVERY OF FLUORESCENT LIPOSOMES TO THE PLACENTAS OF NON-HUMAN PRIMATES

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Objectives: To reduce the risk of detrimental side effects associated with systemic drug administration in pregnancy, approaches that facilitate uteroplacental-specific drug delivery are being investigated. We have previously developed targeted liposomes which selectively deliver payloads to the placentas of pregnant mice. In this pilot study, we assessed whether systemic administration of targeted liposomes resulted in selective delivery to the non-human primate placenta.

Methods: Liposomes were produced using the thin-film method, decorated with the placental homing peptide CRGDKGPDC (iRGD) and loaded with carboxyfluorescein. Liposomes were instilled intravenously into a marmoset (gestational day (GD) ~92; term = GD155) and a cynomologous macaque (GD~81; term = GD165), or were administered via intra-placental injection into a rhesus macaque (GD~135; term = GD165). After 24h, animals were deeply anaesthetised, received cardiac saline perfusion and were euthanized. A variety of maternal, uteroplacental and fetal tissues were harvested; biopsies were immediately frozen in liquid nitrogen. Tissue sections were prepared, stained with DAPI and viewed using a fluorescence microscope.

Results: Targeted liposomes were well tolerated, with no adverse reactions reported. Microscopy revealed liposomal accumulation in both placental discs of each animal, which varied in intensity and tissue distribution. Liposomal fluorescence was also observed in the maternal liver of the marmoset, with a much weaker signal observed in the spleen and heart. Limited fluorescence was noted in the maternal livers of both macaque species, but no visible signal was observed in any of the other maternal organs, or in any fetal tissue examined.

Conclusion: These preliminary observations suggest that iRGD-decorated liposomes selectively accumulate in the placentas of three different non-human primate species in vivo, but are not transferred to the fetus. Their composition appears to be compatible with short term treatment, indicating this nanoparticle formulation may be suitable for targeted placental delivery of therapeutic payloads in human pregnancy.

LA.6
INVESTIGATION OF THE PLACENTAL STERIDOGENESIS DISRUPTION CAUSED BY BISPHENOL AND THE ROLE OF SULFATE

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Objectives: Bisphenols are contained in the manufacture of polycarbonate plastics and epoxy resins, leading to the various toxic effects such as reproductive disorders. Notably, it is suggested that bisphenols are transferred to the fetus through the placenta in the pregnant. In addition, placenta produces steroids which affect pregnancy and parturition; however, steroidogenesis disruption caused by bisphenols in the placenta is not well described. In this context, we investigated the effect of bisphenol A (BPA) and bisphenol F (BPF) on steroidogenesis in the human derived placental trophoblast (BeWo) cells in the present study.

Methods: To evaluate effects of BPA and BPF on steroidogenesis in BeWo cyto-trophoblasts, steroidogenic proteins were detected by immunoblotting after treatment of BPA and BPF (100 nM). mRNA expression of these molecules were also quantified. In addition, enzymatic activity of sulfotransferases and transporter activity of the organic anion transporter were investigated by measuring BPA and BPF by using LC-MS/MS.

Results: We initially confirmed whether BeWo cells express proteins regarding the steroidogenic pathway. As the result, we confirmed gestagen producing molecules such as TSPO, P450sc, 3β-HSD1 and P45017α in BeWo cells. Notably, protein expression of TSPO and P450sc, which are related to progesterone (PGS) biosynthesis, were significantly decreased in 48 hrs by treatment of BPA and BPF in the cells. In addition, protein expression of P450sc and TSPO were decreased by treatment of the BPF-sulfate (100 µM) conjugate.

Conclusion: Cholesterol, the initial substrate in the steroidogenic pathway, is trafficked to inner-mitochondrial membrane by TSPO, subsequently converted to pregnenolone mediated by P450sc, indicating that exposure of BPA and BPF might disrupt PGS biosynthesis in BeWo cells. We will investigate the mechanisms underlying suppression of TSPO and P450sc caused by BPA and BPF in BeWo cells and placental transfer of bisphenols through the metabolites (glucuronide and sulfate of bisphenols).
THE TARGETED PESTICIDES AS ACETYLCHOLINESTERASE INHIBITORS AND PESTICIDES EXPOSURE RELATED PLACENTAL PATHOLOGY AND BIRTH OUTCOME AMONG TEA GARDEN WORKERS

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Objectives: We investigated the impact of in-utero pesticides exposure during pregnancy on birth weight and placenta of mothers working in tea gardens.

Methods: In the cross-sectional study, 102 pregnant tea garden (TGW) and 73 housewives (HW) were included with normal birth weight (NBW) and low birth weight (LBW) babies. Acetyl Choline Esterase (AChE) levels in maternal blood, placenta and umbilical cord blood were measured. Pathological changes in placental tissues by the analysis of Hypoxia-Induced Factor-1α (HIF-1α) expression were also evaluated. Molecular docking and dynamic simulation studies were also performed to investigate the binding interaction of AChE with its standard substrates acetylcholine and pesticides.

Results: Low levels of AChE were observed in maternal blood and cord blood in TGW as compared to HW in the LBW group. However, in the NBW group, AChE in maternal blood and placenta was comparatively higher than the LBW group. In silico approach, Docking and MDS results also revealed that pesticides have a comparatively higher binding affinity with AChE than its standard substrate acetylcholine. In adjusted regression analysis according to occupations, birth outcome (birth weight-BW, head circumference-HC, infant’s length-IL, and ponderal index- PI) showed a significant and positive association with AChE levels of maternal blood, placenta and cord blood in TGW (p<0.05). The placental weight was found to be positively correlated with maternal blood and placental levels of AChE in TGW when compared with housewives. In HW, birth weight expects HC, IL, and PI, was also significantly and positively associated with AChE level. However, compared with TGW, the relative weight of placenta (RWP) showed a significant and inverse association with AChE in maternal blood and placenta in housewives (<0.05). Histologically, placental syncytial knots, fibrinoid necrosis, and stromal fibrosis were significantly higher among TGW with LBW babies. Scanning Electron Microscopy, revealed micro-infarction, increased deposition of fibrinoid material in the placental tissue of TGW and HW exposed to pesticides along with other atypical characteristics of villi, such as the balloon-like formation of microvilli. IHC exhibited increased HIF-1α expressions in placental tissues of TGW and HW exposed to pesticides.

Conclusion: The study revealed that In-utero exposure to pesticides might be associated with pathologic changes and increased HIF-1α expression, decreased AChE levels in the placenta of TGW and HW might present implications such as adverse pregnancy complications. In silico analysis also established that pesticides act as competitive acetylcholine inhibitors. The findings strengthened the evidence that pesticides exposures during pregnancy may restrict fetal growth and placental development.
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