



# TRANSLATIONAL REPRODUCTIVE BIOLOGY AND CLINICAL REPRODUCTIVE ENDOCRINOLOGY

Conference theme: Paradigm changes you may not hear about elsewhere!

NOVEMBER 17-20, 2016 • NEW YORK, USA

## I. Activity Title, Date and Location

*Translational Reproductive Biology and Clinical Reproductive Endocrinology*

November 17-20, 2016

Grand Hyatt Hotel, New York, NY, USA

## II. Commercial Support Acknowledgment

We would like to thank the following companies for providing educational support of this activity:

- Ferring Pharmaceuticals, for the support of the faculty dinner.

## III. Course Description

This program involves a mid-size-group of physicians and basic scientists and a curriculum that will provide participants with a review of the latest research in reproductive biology and clinical reproductive endocrinology, leading to paradigm changes in the treatment of female infertility. This will be followed by a series of lectures and debates where participants will learn how to more effectively identify so presented medical problems and how to treat them correctly. The program will particularly focus on areas of practice, where recent research has demonstrated that current practice patterns may not in patients' best interest.

## IV. Target Audience

This course is designed for health care professionals that treat patients with infertility, including reproductive endocrinologists, medical endocrinologists, urologists, general obstetricians and gynecologists and pediatric endocrinologists, geneticists, primary care physicians, nurse practitioners, physician assistants, nurses, pharmacists, and other healthcare providers wishing to work more effectively with their patients to promote better medication adherence and more successful self-management.

## V. Learning Objectives

At the completion of the conference participants should be able to:

- Recognize state-of-the-arts developments in reproductive biology and their translational potential for clinical practice in reproductive endocrinology and infertility.
- Identify paradigm changes in clinical reproductive medicine, driven by new discoveries in reproductive biology.
- Evaluate current popular infertility treatments in selected patient populations.
- Apply individualized infertility medicine based on age and functional ovarian reserve of female patients.

VI. Program Schedule/Agenda

<p><b>WORKSHOP A</b>  <b>13:00-14:45</b>  <i>In vitro</i> follicle/oocyte maturation from primordial stages</p>	<p><b>WORKSHOP B</b>  <b>13:00-14:45</b>  A new paradigm in clinical IVF: Age-specific stimulation and embryology</p>
<p>Chair: <b>Evelyn Telfer</b>, PhD, Scotland, UK</p>	<p>Chair: <b>David H. Barad</b>, MD, MS, USA</p>
<p>13:00  Culture systems to support activation and growth of primordial follicles  <b>Evelyn Telfer</b>, PhD, Scotland, UK</p>	<p>13:00  Early luteinization of follicles in women with low functional ovarian reserve  <b>Yan-Guang Wu</b>, PhD, USA</p>
<p>13:20  Manipulating the P13K pathway in vitro: Pros and Cons  <b>Evelyn Telfer</b>, PhD and  <b>J. Richard Anderson</b>, MD, PhD, Scotland, UK</p>	<p>13:30  Age-specific adjustment of ovulatory trigger to protect against premature luteinization  <b>David H. Barad</b>, MD, MS, USA</p>
<p>13:40  Culturing pre-pubertal tissue  <b>J. Richard Anderson</b>, MD, PhD, Scotland, UK</p>	<p>14:00  Modifying ovulation induction based on age-specific criteria to maximize IVF success  <b>Raoul Orvieto</b>, MD, Israel</p>
<p>14:00  Maturing IVG oocytes  <b>David F. Albertini</b>, PhD, USA</p>	<p>14:30  Discussion</p>
<p>14:20  Discussion</p>	
<p><b>14:45-15:15</b>  <b>Coffee Break</b></p>	
<p><b>WORKSHOP C</b>  <b>15:15-17:00</b>  An <i>In vitro</i> implantation model: Peaking into the "black box of implantation"</p>	<p><b>WORKSHOP D</b>  <b>15:15-17:00</b>  The biological basis for the demise of preimplantation genetic screening (PGS)</p>
<p>Chair: <b>Gist Croft</b>, PhD, USA</p>	<p>Chair: <b>Raoul Orvieto</b>, MD, Israel</p>
<p>15:00  Basic principles of implantation in mammals  <b>David F. Albertini</b>, PhD, USA</p>	<p>15:00  Introduction  <b>Raoul Orvieto</b>, MD, Israel</p>
<p>15:45  Imaging and image reconstruction techniques</p>	<p>15:20  Accuracy of assessing embryo ploidy of human</p>

to study the in vitro attached human embryo <b>Gist Croft, PhD, USA</b>	embryos with PGS in association with IVF <b>Norbert Gleicher, MD, USA</b>
16:30 Discussion	15:50 Extended culture of blastocyst: Advantages and disadvantages and in which patients? <b>Catherine Racowsky, PhD, USA</b>
	16:10 Origin, mechanisms, prevalence and clinical consequences of embryo mosaicism in humans <b>David F. Albertini, PhD, USA</b>
	16:40 Discussion

<b>Day 1</b>	
<b>Friday, November 18, 2016</b>	
<b>08:30-12:45</b>	<b>PLENARY SESSION</b>
<b>08:30-08:45</b>	<b>Welcome and announcement of the "Young Investigator Awards"</b> <b>Norbert Gleicher, USA and Zeev Shoham, Israel</b>
	The "Breaking News" Lecture
<b>08:45-09:15</b>	Building the mouse and human embryo: Cell fate and plasticity <b>Magdalena Zernicka-Goetz, UK</b>
<b>09:15-11:15</b>	<b>PART I: THE FUTURE OF FERTILITY CARE</b>
Chairs:	<b>Norbert Gleicher, USA and Ali H. Brivanlou, USA</b>
09:15-09:45	From stem cells to oocytes and sperm <b>Ali H. Brivanlou, USA</b>
09:45-10:15	Preventing mitochondrial diseases with 3-parent IVF? <b>Hong Ma, USA</b>
10:15-10:45	Eliminating mitochondrial diseases in embryos <b>Juan Carlos Izpisua Belmonte, USA</b>
10:45-11:15	Ethical considerations on crossing the germline <b>Arthur L. Caplan, USA</b>
<b>11:15-11:45</b>	<i>Coffee Break &amp; Poster Viewing</i>
<b>11:45-12:45</b>	<b>PART II: THE FUTURE OF FERTILITY CARE</b> <i>continued</i>
Chairs:	<b>Juan Carlos Izpisua Belmonte, USA and Zeev Shoham, Israel</b>

11:45-12:15	Can we learn to <i>in vitro</i> mature primordial follicles? <b>Evelyn Telfer, UK</b>
12:15-12:45	Shining some light into the black box of implantation <b>Gist Croft, USA</b>
12:45-13:15	<i>Get your lunch "to-go"</i>
<b>LUNCH BREAK DEBATE - bring your lunch</b>	
<b>13:15-14:15</b> Chair: <b>Eli Y, Adashi, USA</b> <b>Ovarian stem cells: Should we be considering and preparing for Clinical application?</b> It's Premature: <b>David F. Albertini, USA</b> The time is now: <b>Evelyn Telfer, UK</b>	
14:15-14:30	<i>Technical Break</i>
14:30-17:15	<b>PARADIGM CHANGE I: EXPANDING INFERTILITY TREATMENTS FROM THE GONADOTROPIN-SENSITIVE TO EARLIER STAGES OF FOLLICLE MATURATION</b>
14:30-16:00	<b>PART I: IMPORTANCE OF ANDROGENS</b>
Chairs:	<b>David F. Albertini, USA</b> and <b>Eli Y. Adashi, USA</b>
14:30-15:00	Animal models demonstrating the importance of androgens for early stages of follicle maturation <b>Aritro Sen, USA</b>
15:00-15:30	Androgen supplementation, a model for therapeutic interventions into early stages of follicle maturation in humans <b>Norbert Gleicher, USA</b>
15:30-16:00	The potential diagnostic importance of conversion dynamics of DHEA to testosterone <b>Aya Shohat-Tal, USA</b>
16:00-16:30	<i>Coffee Break &amp; Poster Viewing</i>
16:30-17:15	<b>PART II: CLINICAL RELEVANCE AND PRACTICAL ADVICE</b>
Chairs:	<b>Milton Leong, Hong Kong/Canada</b> and <b>Andrea Weghofer, Austria</b>
16:30-16:45	Are we intervening too late with embryo selection? <b>David F. Albertini, USA</b>
16:45-17:00	Is human growth hormone effective in improving ovarian stimulation? <b>David H. Barad, USA</b>
17:00-17:15	How introduction of unproven new treatment modifications to IVF has negatively affected treatment outcomes around the world <b>Vitaly A. Kushnir, USA</b>

**Day 2****Saturday, November 19, 2016**

*PARADIGM CHANGE I: EXPANDING INFERTILITY TREATMENTS FROM THE GONADOTROPIN-SENSITIVE TO EARLIER STAGES OF FOLLICLE MATURATION continued ...*

**08:30-11:00 PART III: CAN WE LEARN TO CLINICALLY CONTROL FOLLICLE RECRUITMENT?**

Chairs: **Aritro Sen**, USA and **David B. Seifer**, USA

08:30-09:00 Genetic control of follicle recruitment  
**Aleksandar Rajkovic**, USA

09:00-09:30 The *FMRI* gene in human reproduction  
**Aya Shohat-Tal**, USA

09:30-10:00 Physiology and clinical utility of AMH in follicle recruitment and growth  
**David B. Seifer**, USA

10:00-10:30 Piercing out AMH's ovarian function in small animal models  
**Aritro Sen**, USA

10:30-11:00 Pharmacological control of follicle recruitment?  
**Kara N. Goldman**, USA

*11:00-11:30 Coffee Break and Poster Viewing*

**11:30-13:00 PARADIGM CHANGE II: EARLY DIAGNOSIS OF PREMATURE OVARIAN SENESENCE, OFFERING WOMEN MORE AND BETTER REPRODUCTIVE OPTIONS**

Chairs: **Aleksandar Rajkovic**, USA and **Kara N. Goldman**, USA

11:30-12:00 Risk-screening algorithm for young women to detect premature ovarian senescence at younger ages  
**Vitaly A. Kushnir**, USA

12:00-12:30 A candid assessment of social fertility preservation via oocyte cryopreservation  
**Pasquale Patrizio**, USA

12:30-13:00 Fertility preservation in young cancer patients  
**Vitaly A. Kushnir**, USA

*13:00-13:30 Get your lunch "to-go"*

**LUNCH BREAK DEBATE - bring your lunch****13:30-14:30**Chair: **Raoul Orvieto**, Israel**Are twins an adverse IVF outcome?****YES:** The majority view on multiple births in the modern era of fertility promotion**Eli Y. Adashi**, USA

<b>NO: The single embryo transfer myth</b> <b>Norbert Gleicher, USA</b>	
<i>14:30-14:45 Technical Break</i>	
<b>14:45-16:15 PARADIGM CHANGE III: RECONSIDERING EMBRYO SELECTION</b>	
Chair:	<b>Pasquale Patrizio, USA</b>
14:45-15:15	As practiced today, embryo selection, marginally benefits few - while potentially harming many <b>Norbert Gleicher, USA</b>
15:15-15:45	A critical review of routine utilization of PGS in IVF <b>David H. Barad, USA</b>
15:45-16:15	Reviewing routine clinical utilization of closed incubation systems with time lapse photography <b>Catherine Racowsky, USA</b>
<i>16:15-16:45 Coffee Break and Poster Viewing</i>	
<b>16:45-17:45 PARADIGM CHANGE IV: INDIVIDUALIZATION OF INFERTILITY CARE</b>	
Chairs:	<b>Catherine Racowsky, USA and David H. Barad, USA</b>
16:45-17:15	Individualization of ovarian stimulation protocols <b>Raoul Orvieto, Israel</b>
17:15-17:45	Premature luteinization of follicles and indication for individualization of timing hCG administration based on "ovarian age" <b>Yan-Guang Wu, USA</b>
<b>Day 3</b> <b>Sunday, November 20, 2106</b>	
<b>09:00-13:10 SCEPTICAL OF CURRENT CLINICAL PRACTICES? HERE ARE SOME ANSWERS!</b>	
<b>09:00-11:00 PART I</b>	
Chairs:	<b>David F. Albertini, USA and Andrea Weghofer, Austria</b>
09:00-09:20	What constitutes "futile" fertility treatments? Are we pushing patients too early into egg donations? <b>David H. Barad, USA</b>
09:20-09:40	Are frozen eggs really equivalent to fresh donor eggs? <b>Vitaly A. Kushnir, USA</b>
09:40-10:00	The controversy about the relative relevance of thyroid-function and thyroid autoimmunity for IVF success? <b>Andrea Weghofer, Austria</b>
10:00-10:20	Is the immune system (i.e. autoimmunity and inflammation) really irrelevant to IVF success - as suggested by some? <b>Norbert Gleicher, USA</b>

10:20-10:40	Access to infertility care in the US: The realities of the public and private sectors <b>Eli Y. Adashi, USA</b>
10:40-11:00	Does it matter how we stimulate the poor responder with low functional ovarian reserve? <b>Raoul Orvieto, Israel</b>
11:00-11:30	<i>Coffee Break</i>
11:30-13:10	<b>PART II</b>
Chairs:	<b>Yan-Guang Wu, USA and Vitaly A. Kushnir, USA</b>
11:30-11:50	Does ICSI really increase autism risks? <b>David H. Barad, USA</b>
11:50-12:10	Does embryo aneuploidy really significantly increase with gonadotropin dosages? <b>Andrea Weghofer, Austria</b>
12:10-12:30	Immunological pregnancy loss <b>Norbert Gleicher, USA</b>
12:30-12:50	The myths of mild stimulation and natural cycle IVF <b>Raoul Orvieto, USA</b>
12:50-13:10	What is the real evidence that endometrial injury improves IVF outcomes? <b>Zeev Shoham, Israel</b>
13:10	<b>CLOSING REMARKS</b> <b>Norbert Gleicher, USA</b>

## VII. Planning Committee & Faculty/Presenter List

### Conference Chairs

David F. Albertini, PhD

*Editor-in-Chief, Journal of Assisted Reproduction and Genetics (JARG), Director, Division of Laboratories and Senior Scientist, The Center for Human Reproduction-New York, and Professor, Department of Molecular and Integrative Physiology, University of Kansas School of Medicine*

Ali Brivanlou, PhD, MD

*Robert & Harriet Heilbrunn Professor, Rockefeller University, Head of Laboratory, Stem Cell Biology and Molecular Embryology Senior Visiting Scientist Fellow, The Center for Human Reproduction-New York; Professor (Adj.) Columbia University Graduate School of Architecture*

Norbert Gleicher, MD

*Medical Director and Chief-Scientist, The Center for Human Reproduction- New York; Professor (Adj.), Rockefeller University, Stem Cell Biology and Molecular Embryology Laboratory; President, The Foundation for Reproductive Medicine*

Zeev Shoham, MD

*Director Reproductive Endocrinology and IVF Unit, Kaplan Medical Center, Rehovot, Israel, Professor of Obstetrics and Gynecology, Hadassah Medical School of Hebrew University, Jerusalem, Israel*

### Program Committee

Eli Y. Adashi, MD, MS, MA, Rhode Island, USA

David H. Barad, MD, MS, New York, USA  
 Juan Carlos Izpisua Belmonte, PhD, California, USA  
 Vitaly A. Kushnir, MD, New York, USA  
 Milton Leong, MD, Hong Kong and Montreal, Canada  
 Raoul Orvieto, MD, Israel  
 Pasquale Patrizio, MD, MS, Connecticut, USA  
 Catherine Racowsky, PhD, Massachusetts, USA  
 Aleksandar Rajkovic, PhD, MD, Pennsylvania, USA  
 David B. Seifer, MD, New Hampshire, USA  
 Evelyn Telfer, PhD, Scotland, UK  
 Andrea Weghofer, PhD, MD, MS, MBA, Austria  
 Magdalena Zernicka-Goetz, PhD, UK

**VIII. Disclosure Summary**

It is the policy of PCN to ensure balance, independence, objectivity and scientific rigor. All persons involved in the selection, development and presentation of content are required to disclose any real or apparent conflicts of interest. All conflicts of interest will be resolved prior to an educational activity being delivered to learners through one of the following mechanisms 1) altering the financial relationship with the commercial interest, 2) altering the individual's control over CME content about the products or services of the commercial interest, and/or 3) validating the activity content through independent peer review. All persons are also required to disclose any discussions of off label/unapproved uses of drugs or devices. Persons who refuse or fail to disclose are disqualified from participating in the CME activity. Participants will be asked to evaluate whether the speaker's outside interests reflect a possible bias in the planning or presentation of the activity. This information is used to plan future activities.

<b>Speaker Name</b>	<b>Name of Commercial Interest</b>	<b>Nature of Relevant Relationship</b> Employee, Grants/Research Support recipient, Board Member, Advisor or Review Panel member, Consultant, Independent Contractor, Stock Shareholder (excluding mutual funds), Speakers' Bureau, Honorarium recipient, Royalty recipient, Holder of Intellectual Property Rights, or Other
David Albertini, PhD	EMD Serono	Speaker's Bureau
David H. Barad, MD,MS	Fertility Neutraceutical OvaNova Laboratories	Consultant Consultant, Stock Shareholder
Arthur L. Caplan, PhD	AbbVie Janssen Pharmaceuticals	Consultant Advisory Board
Norbert Gleicher, MD	Fertility Nutraceuticals	Stock Shareholder



	OvaNova Laboratories	Stock Shareholder
Catherine Racowsky, PhD	Ferring Pharmaceuticals, Inc.  Life Global	Speaker's Bureau  Consultant
David Seifer, MD	Rutger's Medical School  Massachusetts General Hospital  Women's Integrated Network	Royalty Recipient (co-inventor of AMH)  Royalty Recipient (co-inventor of AMH)  Consultant

***The following have no relevant financial relationships to disclose: Eli Y. Adashi, MD, MS, MA, J. Richard Anderson, MD, PhD, Juan Carlos Izpisua Belmonte, PhD, Ali H. Brivanlou, MD, PhD, Gist F. Croft, PhD, Kara Goldman, MD, Vitaly A. Kushnir, MD, Milton Leong, MD, Hong Ma, MD, PhD, Raoul Orvieto, MD, Pasquale Patrizio, MD, MS, Aleksander Rajcovic, MD, PhD, Aritro Sen, PhD, Zeev Shoham, MD, Aya Shohat-Tal, PhD, Evelyn Telfer, PhD, Andrea Weghofer, MD, PhD, MA, MBA, Yan-Guang Wu, PhD, Magdalena Zernicka-Goetz, PhD***

**The CME staff, meeting planners, planning committee and CME committee reviewers do not have any relevant financial relationships to disclose.**

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## **IX. AMA Credit Designation Statement**



This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of Primary Care Network (PCN) and the Foundation for Reproductive Medicine. Primary Care Network is accredited by the ACCME to provide continuing medical education for physicians.

Primary Care Network designates this live activity for a maximum of 21.75 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**X. Exhibitor Acknowledgement**

We would like to acknowledge the following companies and organizations for exhibiting at this conference.

- American Outcomes Management
- Cook Medical
- EMD Serono
- Esco Global
- Fertility Nutraceuticals
- Galen
- Generation Medical Associates (What's My Fertility)
- Hamilton Thorne
- Journal of Assisted Reproduction and Genetics
- Life Global
- Metro Drugs
- Nanosonics
- Seattle Sperm Bank