



**BFS STUDY WEEK**

**19-22 June 2017**

**Pelvic Ultrasound  
e-PROGRAMME**

This event is paperless  
Please save or print your e-Programme

Millennium Gloucester Hotel, Kensington, London

[www.bfsstudyweek.org.uk](http://www.bfsstudyweek.org.uk)

@BritFertSoc @UKEmbryologists

# FOREWORD

On behalf of the BFS I would like to welcome you all to *Study Week 2017*, which will be the largest one yet. Those of you who have been before will notice many changes. To accommodate our rapid growth, we have moved venue to the very pleasant Millennium Gloucester Hotel. To ensure that you have the latest up to date information and to make the event more 'green' and efficient we have gone 'paperless'.

We are delighted to have two new additional *Study Days* this year (*Fertility Nursing* and *PGD/PGS*) and there have been changes to some of the existing *Study Days* too, to ensure that you are getting the very best experience. I would like to thank the Speakers for taking time out of their busy schedules to come and teach at the event; as well as the sponsors who generously support our educational program.

I would particularly like to thank the delegates for coming, because you really make the event the success that it is. We hope that you all enjoy it and leave London with knowledge that will aid your personal development and the care of your patients. Please ask the speakers questions, we are here for you.

If you aren't already a BFS member, please consider joining and also, consider enrolling for the highly regarded *BFS Training Modules* that are linked to many of the *Study Days*. All the relevant details are on our website [www.fertility.org.uk](http://www.fertility.org.uk). Feel free to share your opinions on social media @BritFertSoc and @UKEmbryologists and do please complete the feedback form which will be sent to you after the event online, we want to know what you think.

Now, get ready, it's time to be educated!

All the very best wishes,



Kevin McEleny  
Chair of Education and Training  
British Fertility Society

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# PELVIC ULTRASOUND PROGRAMME

## CROMWELL ROOMS 3&4

07.45 Registration, welcome refreshments, exhibition

08.50 Chair's opening welcome *Ippokratis Sarris*

09.00 Image Optimisation, Ultrasound Artefacts and Safety *Neil Pugh*

09.45 Normal Anatomy and Physiology *Nazar Amso*

10.30 Refreshments, exhibition and networking *\*Please make use of the Transvaginal simulator in the exhibition*

11.00 Interactive Lecture 1 – Image Optimisation and Machine Controls *Neil Pugh*

12.30 Lunch, exhibition and networking *\*Please make use of the Transvaginal simulator during this extended lunch*

14.00 Interactive Lecture 2 - Orientation & Measurements *Nazar Amso*

15.30 Refreshments, exhibition and networking *\*Please make use of the Transvaginal simulator in the exhibition*

16.00 Diagnostic Ultrasound *Geeta Nargund*

17.00 Close of day and Networking

*\*There will be Transvaginal Simulators in the Exhibition area available at breaks and lunch on both Monday and Tuesday for delegates to engage with, guided by Nazar Amso.*

# PELVIC ULTRASOUND PROGRAMME

## CROMWELL ROOMS 3&4

07.45 Welcome refreshments, exhibition *\*Please make use of the Transvaginal simulator in the exhibition*

08.50 Chair's opening welcome *Ippokratis Sarris*

09.00 Ultrasound Guided Procedures in Fertility Treatments *Harish Bhandari*

09.45 Pelvic Pathology *Shyamaly Sur*

10.30 Refreshments, exhibition and networking - *\*Please make use of the Transvaginal simulator in the exhibition*

11.00 Follicle Tracking/Endometrium Measuring *Mostafa Metwally*

11.45 Early Pregnancy Scanning *Jane Stewart*

12.30 Lunch, exhibition and networking *\*Please make use of the Transvaginal simulator in the exhibition*

13.30 3D ultrasound *Jayaprakasan Kannamannadiar*

14.15 HyCoSy / Hysterosonography *Gidon Lieberman*

15.00 Refreshments, exhibition and networking *\*Please make use of the Transvaginal simulator in the exhibition*

15.30 Applications of Doppler *Stuart Campbell*

16.30 Close of day and Networking

Please note there will be Transvaginal Simulators in the Exhibition area available at breaks and lunch on both Monday and Tuesday for delegates to engage with, guided by Nazar Amso.

# PELVIC ULTRASOUND ABSTRACTS AND BIOGRAPHIES

## Image Optimisation, Ultrasound Artefacts and Safety

### Neil Pugh

#### Key Learning Points:

1. To give a basic understanding of the physical principles underlying the formation of an ultrasound image and how to improve the image.
2. Common ultrasound artefacts and how to overcome these artefacts will be discussed.
3. At the end of the lecture, the trainee should understand the following: • The factors which lead to an optimal image • How the basic controls can be used to manipulate the ultrasound image • How to improve image quality • How to use ultrasound safely • Common B-mode artefacts and, where possible, how to overcome them

#### The topics covered in this lecture will include:

- What does image quality depend on? • Factors influencing image resolution • Factors influencing signal strength

#### Importance of the following on signal strength:

Acoustic power / Gain / TGC / Focus

#### Importance of the following on resolution:

Frequency / Focus

#### The importance of the following B-mode artefacts:

Resolution artefacts / Reverberation / Refraction / Shadowing Enhancement / Other artefacts

Neil Pugh graduated from the University of Wales College Swansea with a degree in physics, and took up his first post as a medical physicist in Manchester. Whilst there, he completed a part time M.Sc. in Medical Physics at Leeds University. He returned to South Wales in 1985, working for 3 years in nuclear medicine before switching to the Doppler ultrasound department. During his time in Doppler ultrasound, he completed a PhD thesis investigating the effects of contrast media on the peripheral circulation. In 2001, he was appointed to the post of Consultant Medical Physicist and Head of Ultrasound Physics in the Medical Physics and Clinical Engineering directorate, with responsibility for vascular ultrasound and quality assurance. He holds an Honorary Professor post in Engineering at Cardiff University, where he runs modules in Medical Ultrasound and Foundation Science on undergraduate & PGC/PGD/ MSc courses. He heads an active research group containing several PhD students, along with personal research interests in ultrasound in the diagnosis of vascular disease and ultrasound vascularity assessment in gynaecology and fertility, both of which have resulted in many publications.

## Normal Anatomy and Physiology

### Nazar Amso

#### Key Learning Points:

1. Ultrasound features of pelvic anatomy
2. Normal changes during the menstrual cycle
3. Systematic approach to transvaginal ultrasound scanning technique

In this presentation, delegates will be introduced to the principles of modern ultrasound training and education, essential patient, image and machine skills as well as the basics of the ultrasound examination technique. In the presentation, I will also explain the cyclical changes of the menstrual cycles and the impact of hormonal changes on uterine and adnexal features.

With regard to the imaging technique, the following will be explained and demonstrated: (1) Orientation principles and conventions, (2) Pelvic anatomic structures, (3) Demonstration of the uterus and cervix, (4) Examination of the uterus, (5) Examination of the endometrium and endometrial cavity, (6) Examination of the adnexa and (7) Examination of the pouch of Douglas. Few scanning tips and examples of uterine and ovarian pathologies will be demonstrated as well.

Nazar Amso is an Emeritus Professor in Obstetrics and Gynaecology, Head of the Academic Department of Obstetrics and Gynaecology, School of Medicine, Cardiff University (2001-2002 and 2010-2013) and Senior Consultant in Gynaecology and Reproductive Medicine since April 1998. He qualified from the College of Medicine, University of Baghdad, Iraq in 1974, MRCOG in 1985 and PhD in reproductive medicine, London University in 1996. Nazar's clinical interests include gynaecological ultrasound, reproductive surgery and minimally invasive techniques. He was the Director of Cardiff University Ultrasound Masters programme (2004-2016). His research interests included reproductive medicine, minimally invasive treatments, gynaecological ultrasound and the role of simulation in ultrasound education. He was the founding President of the British Society for Gynaecological Imaging (2007-2016).

# PELVIC ULTRASOUND ABSTRACTS AND BIOGRAPHIES

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## Diagnostic Ultrasound

### Geeta Nargund

Geeta Nargund is the Founder and Medical Director of CREATE Fertility. She is also the Lead Consultant for Reproductive Medicine at St George's Hospital, London.

She is the President of the International Society for Mild Approaches in Assisted Reproduction (ISMAAR). Her research and clinical interests include physiological approaches to assisted reproduction and the use of advanced ultrasound technology in reproductive medicine. She is the Founder and Chief Executive of UK charity, Create Health Foundation. This charity funds and supports fertility education in schools. She is also a Director of the Walking Egg Foundation, a Belgian Charity dedicated to making fertility treatments accessible globally. Geeta was appointed as Vice President for British Red Cross in London.

# PELVIC ULTRASOUND ABSTRACTS AND BIOGRAPHIES

## Ultrasound Guided Procedures in Fertility Treatments

**Harish Bhandari**

**Key Learning Point:**

1. To provide an overview of various ultrasound-guided interventional procedures in assisted reproductive technology

Ultrasound is an important tool for undertaking assisted reproductive technology (ART) related procedures and this presentation would provide an overview of these procedures. Trans-vaginal ultrasound guided approach is the gold standard technique for oocyte retrieval, which can be safely undertaken under sedation. Trans-abdominal ultrasound guided embryo transfer procedure appears to be associated with better pregnancy outcomes when compared to clinical-touch technique. Persistent simple ovarian cysts which fail to resolve spontaneously or with hormonal manipulation can be aspirated under ultrasound-guidance (trans-vaginal or trans-abdominal) prior to ART. Significant hydrosalpinx which becomes apparent during controlled ovarian stimulation could be aspirated under ultrasound-guidance with antibiotics cover. Trans-vaginal ultrasound-guided methotrexate injection, complemented with systemic methotrexate has been found to be safe and effective for the management of clinically difficult ectopic pregnancies (interstitial and caesarean scar).

**Mr Harish Bhandari** is a Consultant Gynaecologist and Sub-specialist Reproductive Medicine in Leeds. He graduated (MBBS) from India and completed his Specialty Training in Obstetrics and Gynaecology and Sub-specialty Training in Reproductive Medicine in the UK. He is a member of the Royal College of Obstetricians and Gynaecologists (MRCOG) and was awarded the Doctorate of Medicine (MD) by University of Warwick for his research work evaluating the effects of obesogenic environment on peri-implantation endometrium. He has special interests in recurrent miscarriage, recurrent implantation failure, reproductive immunology and endometrial research.

## Pelvic Pathology

**Shyamaly Sur**

**Key Learning Points:**

1. The use of transvaginal ultrasound, 3D ultrasound and saline ultrasonography in the diagnosis of pelvic pathology
2. During this interactive session, delegates will be introduced to the features of common benign endometrial, myometrial, tubal and ovarian pathology.
3. To enable delegates to recognise pathology at pelvic ultrasound.

**Shyamaly Sur** is a consultant obstetrician and gynaecologist and subspecialist in reproductive medicine with a special interest in early pregnancy at Queen Charlotte's Hospital, London. She graduated from Pembroke College, at the University of Cambridge and went on to train in the field of O&G within the Oxford Deanery. She also subspecialised in reproductive medicine in Nottingham, having completed her PhD there, investigating the pre-conceptual and first trimester predictors of pregnancy outcome in the IVF population. Her research interests lie within the field of early pregnancy and reproductive medicine, specifically the use of 3D USS and power Doppler to characterise pelvic pathology and first trimester measures of embryonic growth in relation to singleton and twin pregnancies as well as miscarriage which she has published in.

## Follicle Tracking/Endometrium Measuring

### Mostafa Metwally

#### Key Learning Points:

1. To understand the physiological changes of the ovary and endometrium during natural and stimulated cycles
2. To be able to identify and measure developing follicles and the endometrial lining during the course of assisted conception treatment
3. To be able to identify and manage problems with follicular or endometrial development during assisted conception treatment

This presentation will discuss the practical aspects of monitoring of endometrial and follicular development during the course of assisted conception treatment. A basic understanding of the endocrine control of the ovarian follicular recruitment and development as well as cyclical control of endometrial development are necessary and will be briefly covered. Common problems encountered during follicular and endometrial monitoring will also be covered.

A firm understanding of the endocrine control of follicular and endometrial development is essential for the interpretation of the findings of ultrasound follicle tracking and endometrial monitoring during the course of assisted conception treatment. This talk introduces the basic principles necessary to competently monitor follicular and endometrial development and also identify and manage potential abnormalities detected during the course of monitoring.

**Key summary** • Endometrial thickness is measured in the longitudinal plane from the endometrial/myometrial junction • Persistently thick endometrium may point to the possibility of an endometrial polyp or be associated with a functioning ovarian cyst • Persistently thin endometrium may point intrauterine adhesions • Follicles are measured in the largest diameter and in two perpendicular planes • How to deal with asynchronous, hyper and poorly stimulated follicles

**Mostafa Metwally** is a consultant Gynaecologist and Accredited Subspecialist in Reproductive Medicine and Surgery at the Jessop Wing, Royal Hallamshire Hospital, Sheffield and a member of the BFS Training Subcommittee. He previously worked as a Consultant at Ninewells Hospital and Medical School in Dundee, Scotland. His particular interests include Reproductive Surgery and Assisted Conception research and he is an active member of the Cochrane Menstrual Disorders and Subfertility Group with several published meta analyses in this area.

## Early Pregnancy Scanning

### Jane Stewart

#### Key Learning Points:

1. Describe the landmarks of normal early pregnancy development detected on ultrasound including those of multiple pregnancy.
2. Describe the normal pathway of miscarriage its ultrasound features and those of ectopic pregnancy including the use of adjuvant tests.
3. Consider the sensitivities around managing and describing problems in early pregnancy.

The development of transvaginal ultrasound scanning and the related modalities has revolutionised the diagnosis and management of early pregnancy problems. The introduction of Early Pregnancy Assessment Clinics has significantly reduced the gynaecology emergency workload and avoided sometimes quite lengthy hospital stays for many women. This presentation will cover not only the ultrasound findings in early pregnancy and its associated problems but will discuss these in the context of the clinical setting and the associated approaches to diagnosis and management as well as its application in the fertility clinic.

**Dr Jane Stewart** heads the Newcastle Fertility Centre. The largest NHS Centre in the North East of England. With over 30 years Gynaecology service including 10 years as Lead Clinician for Newcastle Hospitals Early Pregnancy Service, she brings her experience of early pregnancy scanning and management to this course. She is a Subspecialty trainer, Person Responsible for the Centre and Chair Elect of the BFS.



## 3D ultrasound

Kannamannadiar Jayaprakasan

### Key Learning Points:

1. To understand the principles of 3D ultrasound
2. To learn advantage and disadvantage of 3D ultrasound
3. To learn the practical applications and techniques of 3D ultrasound in Reproductive medicine

2D ultrasound essentially provides us with two-dimensional images of three-dimensional structures, which appear as real-time cross-sectional slices through the structures being examined. In contrast, 3D ultrasound techniques rely upon production of a series of multiple two-dimensional scan images, computing software then fill in the gaps between these images to produce a solid 3D volume. The acquired 3D ultrasound volume can then be displayed collectively in a variety of imaging modalities, which maximise the display of the acquired 3D images. Therefore, the benefit that 3D ultrasound relates to improved spatial orientation and additional image planes and post processing such as coronal plane, which is unique to 3D ultrasound. 3D ultrasound is moderately easy technique to learn, but experience in 2D ultrasound is essential to obtain the images required for 3D visualisation. Other than its application in the assessment and differentiation of uterine anomalies there is very little evidence that 3D ultrasound results in clinically relevant benefit or negates the need for further investigation.

Kanna Jayaprakasan is a subspecialist in Reproductive Medicine and surgery and is currently working as lead Consultant in the fertility unit of the Royal Derby Hospital, Derby and as honorary Associate Professor at University of Nottingham. He has widely published peer reviewed research articles and reviews and edited text books on fertility and ultrasound related topics.

## HyCoSy / Hysterosonography

Gidon Lieberman

TO BE ADDED

## Applications of Doppler

Stuart Campbell

TO BE ADDED