



## FROM THE PRESIDENT

I attended the ESA Seminar Meeting at Twin Waters on the (non) Sunshine Coast last month and was impressed by the growth of the Meeting and also the ability for movement between the clinical and basic science streams. This is particularly important for those advanced physician trainees involved in translational research. The Meeting was a great success due to the hard work of Rosemary Wong and Belinda Henry and their respective ESA Clinical and Basic Committees. I thought the choice of Professors Dolores Shoback and Daniel Marks, both of whom have major roles in the US Endocrine Society, as international speakers was inspired. The Joint Plenary and the Bone Master Class were popular features with the audience, as was the debate "You're fat. It's your fault!" which was both fun and scientifically informative. Congratulations to Spiros Furlanos on his weight loss in preparation for the debate! Cordelia Fine's provocative talk on gender differences "So are men really from Mars and women from Venus?" created a lot of discussion and was very relevant given the gender complexities posed in endocrinology by both congenital adrenal hyperplasia and androgen insensitivity syndrome, and the fact that the vast majority of advanced physician trainees in endocrinology are female. Professor Matt Watt's plenary set the scene for the metabolic focus of the Basic Science Program.

Meanwhile ESA Council has been concentrating on two important tasks: the updating of the ESA website, the first version of which is now on-line, and the development of a new ESA logo. All ESA members will be given an opportunity to vote for their favourite version of the revamped ESA logo. We also encourage all ESA members to provide feedback on how the new ESA website can be further improved. ESA Treasurer, Associate Professor Warrick Inder has obtained financial advice regarding the Wynne estate endowment of \$533,000 and together with the other ESA investment and operating accounts, the ESA is in a very healthy financial state with assets of approximately \$1,838,000 thanks to his prudent stewardship.

Finally, the ESA Annual Scientific Meeting at the Sydney Convention Centre in Sydney from August 25-28 planning by Associate Professor Ann McCormack and her team is well advanced with outstanding plenary speakers. Topics include "Hypothalamic-Adipocyte-Bone Axis", "Hormones: New for Old, Old for New" and "Adrenal". Professor Matthew During will deliver the Harrison Lecture, entitled "Effects of environmental enrichment on energy balance and tumour growth", while Professor Anthony Hollenberg from Harvard Medical School (USA) will present the Taft Lecture "New Insights into Thyroid Hormone Action". Dr Mark Gurnell, from Cambridge University, will present his work on "Human PPAR $\gamma$  mutations" and Professor John Mattick, Executive Director of the Garvan Institute, will deliver a plenary on "The hidden layer of regulatory RNAs in human development, physiology and disease". The abstract deadline is Friday June 7, so please submit your abstract soon!

I look forward to seeing you all in Sydney in August.



**Professor Peter Ebeling**

### Important Items in this edition

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**THE ESA WEBSITE HAS A NEW FRESH LOOK!**

ESA is very excited to announce the launch of our new and improved society website.

With improvements throughout, the new ESA website is designed with a fresh innovative appearance and is easier to navigate to find exactly what you want.

Click: <http://www.endocrinesociety.org.au/> to see all the new user friendly updates. Easily find upcoming meeting information, view newsletters, pay online for your subscription dues and apply for the many awards and grants of the society. Check out the resources section which includes: trainee information and position statements.

All members are encouraged to view the new ESA website. We will be adding further content and encourage members to send any feedback and suggestions on how we can improve the new website even further.

**ESA Council**

**IMPORTANT DEADLINES:**

|  |                        |
|--|------------------------|
| <b>ESA Mid Career Award</b>                          | <b>23rd May 2013</b>   |
| <b>Abstract deadline</b>                             | <b>7th June 2013</b>   |
| <b>Novartis Junior Scientist Award</b>               | <b>7th June 2013</b>   |
| <b>Servier Award</b>                                 | <b>7th June 2013</b>   |
| <b>ESA Bryan Hudson Clinical Endocrinology Award</b> | <b>7th June 2013</b>   |
| <b>ESA Travel Grants</b>                             | <b>7th June 2013</b>   |
| <b>ESA IPSEN International Travel Grant Award</b>    | <b>1st August 2012</b> |

## ESA NEWSLETTER REPORT ON ASM 2013

The program for this year's ESA Annual Scientific Meeting will certainly appeal to both basic and clinical members of the ESA community. The meeting will be held in Sydney at the Sydney Convention & Exhibition Centre from 25th-28th August, 2013. Plenary speakers hold exceptional international profiles, and include Professor Matthew During (USA) who will deliver the Harrison Lecture with a talk entitled "Effects of environmental enrichment on energy balance and tumour growth". Professor Anthony Hollenberg (USA) will present the Taft Lecture on "New Insights into Thyroid Hormone Action". Dr Mark Gurnell, from Cambridge University, will present exciting new research findings in his plenary "Resistance to thyroid hormone – emergence of a new syndrome". Our final plenary is Professor John Mattick from the Garvan Institute of Medical Research, Sydney, who will deliver a talk titled "The hidden layer of regulatory RNAs in human development, physiology and disease".

There are many other highlights planned for the 2013 meeting. Joint symposia with SRB and Neuroendocrinology Australasia feature additional international speakers (Professor John Carroll, UK and Dr Johannes Veldhuis USA). Symposia themes include "Hypothalamic-Adipocyte-Axis", "Abuse of Hormones" and "Hormones: New for old, old for new". Additional clinical symposia have been included this year and we hope for audience participation in an ESA Debate "This house believes that measurement of vitamin D is over-rated".

The preliminary program is now available on the ESA-SRB 2013 website, along with speaker profiles. Abstracts can now be submitted online, and details of award categories are also available.

We look forward to seeing you in Sydney!

**Ann McCormack**



**Matthew During - Harrison Lecturer**

Professor of Molecular Virology, Immunology, Medical Genetics, Neuroscience and Neurosurgery at the Ohio State University, USA



**Anthony Hollenberg - Taft Lecturer**

Chief, Division of Endocrinology, Diabetes and Metabolism, Beth Israel Deaconess Medical Center, Professor of Medicine Harvard Medical School, USA



**Mark Gurnell**

University Lecturer & Honorary Consultant Physician, University of Cambridge, Metabolic Research Laboratories, Cambridge, United Kingdom



**John Mattick**

Executive Director, Garvan Institute of Medical Research, Sydney



**ESA SEMINAR WEEKEND****Clinical stream**

Novotel Twin Waters, Sunshine Coast

A stimulating and highly successful Seminar Weekend was held at Novotel Twin Waters, Sunshine Coast, April 5-7, 2013, at which we had a record attendance of 280. This was the final in a three-year cycle during which the Endocrinology curriculum is covered. Our international speaker, Professor Dolores Shoback, UCSF, presented the Plenary Lecture on "Osteoporosis: Hot Topics", and provided expert comments, alongside Prof Peter Ebeling, on fascinating Metabolic Bone Cases in a Masterclass, a new format we introduced last year.

Once again, the Registrars' Quiz which we introduced in 2011, was very well received and there were valuable prizes awarded. Congratulations to Western Health, Melbourne, for having their Registrar (Dr Hahn Nguyen, 2013; Dr Anne Trinh, 2012; Dr Fiona Bodey, 2011) win first prize for the third consecutive year!

Another initiative we launched in 2011 was the 'Endocrinology & Society Lecture', which was given this year by academic cognitive neuropsychologist, A/Prof Cordelia Fine from the Melbourne Business School. She gave a thought-provoking, humorous and inspiring lecture based on her acclaimed book, 'Delusions of Gender: The Real Science Behind Sex Differences'.

Two events were collaboratively undertaken with the Basic Science Stream: a Lecture given by Prof Shoback titled, "The Calcium-Sensing Receptor in Health and Disease"; and an extremely well-received Debate titled, "You're fat; it's your fault" with debaters Dr Spiros Fourlanos and Prof Brian Oldfield for the proposition, and Prof Iain Clarke and Prof Daniel Marks (from Oregon Health Sciences University, USA) for the opposition. We also had talks of outstanding quality from other local experts.

As I conclude my 3-year role, I am delighted that our new initiatives of having an international speaker, and diverse program formatting have seen the meeting strengthen in quality and numbers. I would like to thank the POC (listed below) and ASN Events, particularly Jim Fawcett and Mike Pickford for their excellent work and our new ESA President, Prof Peter Ebeling for his strong support of this meeting with his presence and multi-faceted participation.

**Ada Cheung**

**Mathis Grossmann**

**Mark Ng-Tang Fui**

**Duncan Topliss**

**Rosemary Wong (Chair, Clinical)**

**ESA SEMINAR WEEKEND****Basic Science**

Novotel Twin Waters, Sunshine Coast

In 2013, the Basic Science Stream incorporated the theme "Endocrine Regulation of Obesity and Metabolism". There was strong attendance across the weekend from both clinical and basic registrants. The weekend incorporated a number of themes including "Control of body weight: endocrine control of food intake, energy expenditure and metabolism", "Early life programming of body weight and obesity" and "Metabolic and endocrine consequences of obesity". On behalf of the POC, I would like to thank all of our invited speakers for an engaging weekend that was full of outstanding science. In particular, I would like to thank our plenary speakers Prof Daniel Marks (OHSU) and Prof Matt Watt (Monash University) for their excellent presentations on the neural control of cachexia and the use of 'omics' technology to study metabolic disease.

The basic science stream aims to bring together early-mid career researchers, senior scientists and post-graduate students in an intimate environment that will foster presentation of recent data, mentorship, networking and collaboration. To facilitate this we incorporated a highly successful Mentor Workshop that enabled students and ECR members to interact and to lead small group discussions with senior attendees. This was invaluable and I would like to thank all of our mentors for their involvement, including Mark Sleeman, Tim Cole, Margaret Morris, Matt Watt, Jenny Gunton, Karen Moritz and Nicolette Hodyl.

This year we held two joint sessions with the Clinical Stream, a lecture given by Prof Shoback titled, "The Calcium-Sensing Receptor in Health and Disease" and a Debate titled, "You're fat; it's your fault" with debaters Dr Spiros Fourlanos and Prof Brian Oldfield for the proposition, and Prof Iain Clarke and Dr Daniel Marks for the opposition. The debate was deemed a highlight of the program, being both informative and highly entertaining!

Congratulations to our ECR and student members that were selected for an ESA Basic Science Award. The following students and ECR members were recipients of a travel grant to attend the Annual Scientific Meeting in August-Miss Stephanie Simonds, Dr Daniel Fineberg, Miss Rachael Loughnan, Miss Rachael Crew, Dr Rachana Dahiya, Dr Kevin Lee, Mr Steven Yau, Dr Sarah Haas Lockie, Mr Hong Liu and Mr Sakda Hewagalamulage. Students and ECRs presented their work as a 3 minute "Research Snapshot" and awards were presented at the conference dinner.

Overall this new arm of the Seminar Weekend has been well received and we look forward to seeing you all next year.

**Chen Chen**

**Tim Cole**

**Nicki Hodyl**

**Belinda Henry (Chair, Basic Science)**

## MEDTONIC PARADIGM INSULIN PUMPS

The TGA recently published information about Medtronic Paradigm Insulin Pumps. The TGA's statement can be found at: <http://www.tga.gov.au/safety/alerts-device-medtronic-paradigm-insulin-pump-130410.htm>

## ESA IPSEN INTERNATIONAL TRAVEL GRANT AWARD 2013

### Aim:

To support younger members of the society to travel to international meetings, laboratories and/or clinics to further their training and knowledge in Endocrinology.

### Award:

One award of \$3500 will be awarded to assist with the costs of international travel - Deadline 1st August 2013

Visit ESA website: <http://www.endocrinesociety.org.au/awards.htm#ipsen>

## ESA MID-CAREER RESEARCH AWARD

The ESA is pleased to announce a new Mid-Career Researcher Award, designed to recognise an outstanding mid-career researcher in endocrinology. The award comprises a plaque and 20-minute lecture at the Annual Scientific Meeting, and complimentary meeting registration.

Eligible applicants are active ESA members with five to 12 years' research experience post-higher degree (PhD, MD or FRACP) at the deadline of application (exceptions can be made for career interruptions). The winner must attend the ASM to present their lecture. The award will be made by a selection committee comprising the ESA Council members and the Chair of the ESA POC.

Applicants will be notified at the close of abstract submissions for the ASM, and the winner will be asked to provide an abstract for their lecture within three weeks of notification, to be included in the ASM Proceedings.

The ESA encourages all eligible members to apply for this new award.

Application Deadline: 23 May 2013

Please note: Applications must be sent via email only.

Download the full instructions from: <http://www.endocrinesociety.org.au/awards.htm#mid>

## ULTRASOUND TRAINING SOLUTIONS

### Thyroid Ultrasound—I Day Course

Course Dates 2013

14 June, 2013

01 Nov, 2013

### About the Course

Ultrasound Training Solutions—in association with consultant endocrine surgeon Dr. Julie Miller—proudly presents a new course designed specifically for the needs of endocrine physicians with an interest in thyroid pathology. Our one day Thyroid Ultrasound [THUS] course focuses on the fundamentals of ultrasound to help you develop both pattern recognition of common thyroid pathology and needle guidance techniques.

The program is dominated by hands on practical scanning opportunities. By the end of the day you will have:

- An understanding of the basic principles of ultrasound, knobology, artifacts and image optimisation
- Gained experience in navigating the ultrasound system and its features
- Received an introduction to thyroid sonographic anatomy and basic image interpretation
- The ability to demonstrate basic practical proficiency in needle guidance techniques

Website: [www.ultrasoundtraining.com.au](http://www.ultrasoundtraining.com.au)

## ANNUAL GENERAL MEETING

The Annual General Meeting of ESA will be held at Sydney Convention Centre on Tuesday 27th August 2013. All members are encouraged to attend this meeting.

## ESA WOULD LIKE TO THANK

### ESA award sponsors

Ipsen Pty Ltd

Novartis Pharmaceuticals Australia Pty Ltd

Servier Laboratories (Australia)

## DISTINGUISHED ENDOCRINOLOGIST AND GIFTED MUSICIAN

**Jan Richard (Jim) Stockigt**  
28.12.1938 - 1.12.2012

Authors: Duncan Topliss & Shane Hamblin

Australia has lost one of its foremost endocrinologists with the death of Jim Stockigt from pancreatic cancer at the age of 73. He achieved an international reputation in two fields of endocrine research: first in the investigation of causes of hypertension, and then in the understanding of thyroid disease, particularly emphasising the strengths and weaknesses of laboratory assessment. He championed the role of the clinical-laboratory interface for optimal treatment of hormonal diseases. In addition to his distinguished medical career, he was a noted bassoonist both with the modern instrument and the baroque bassoon, becoming a collector and curator of the baroque bassoon repertoire.



He was born in Hamburg, the son of Hugh Arno Stöckigt, a member of the Hamburg Philharmonic from 1920-1948, and Isobel Elva Carter, an Australian clarinetist and pianist, who after graduating B. Mus (first class) and winning the Clarke Scholarship of the University of Melbourne in 1928, studied and performed in Europe between 1929-32 and 1936-46.

He came to Australia in 1946 and attended Trinity Grammar (1947-51) then won a scholarship to Scotch College (1952-1955). He entered the medical school of the University of Melbourne in 1956 and graduated in 1961. He described his undergraduate career as average but graduated 6th in his class with a prize in clinical surgery. During his medical studies he maintained his passion for music. He described one anxious moment when he went to the pathology oral exam in fourth year Medicine. The examiner greeted him with "Aha Mr Stockigt – I didn't know you were still doing the course – didn't I see you playing in the Symphony in the Melbourne Town Hall last night?"

After internship at the Royal Melbourne Hospital in 1962 he was a junior resident medical officer then registrar at the Alfred Hospital (1963-65) where he first commenced specialty training in endocrinology under Pincus Taft, one of Australia's premier clinical endocrinologists. He then became a teaching fellow (1966-68) at Prince Henry's Hospital in the new Monash University Department of Medicine headed by Bryan Hudson, a distinguished endocrinologist with a particular interest in steroid research.

Jim passed the MRACP examination in 1965 (FRACP 1973) then gained an MD by examination in 1966. In 1968 he was awarded a Squibb Fellowship to work in the Department of Physiology, University of California San Francisco, headed by William Ganong. Jim described how at the last minute, courtesy of Kevin Catt, an Australian medical researcher who subsequently had an eminent career at the National Institutes of Health in the USA, he learnt the then new technique of radioimmunoassay of angiotensin. Unthinkable these days, he took a thermos containing the antibody, tracer and standards to San Francisco and set up the first highly sensitive assay for renin in the world. His clinical studies in San Francisco were with Ed Biglieri. This was a key training period

for him. He established expertise in segmental renal vein sampling and renin assay to define secondary causes of hypertension and was a key co-author on the original publication on hyporeninaemic hypoaldosteronism. After a year (1971-72) at St Mary's Hospital in London, he returned to Melbourne as the Deputy Director of the Ewen Downie Metabolic Unit at the Alfred Hospital and an Associate Professor of Medicine at Monash University.

With Pincus Taft's support, he translated the Alfred Hospital laboratory, already with a strong focus on thyroid assays, to radioimmunoassay platforms. While continuing work on endocrine hypertension, thyroid disease became his major interest. He published on the new entity of T3-toxicosis where thyroid overactivity is only manifest by elevation of one of the two thyroid hormones. He made seminal contributions to the definition of familial dysalbuminaemic hyperthyroxinaemia, a thyroid hormone serum binding protein abnormality hitherto misdiagnosed as hyperthyroidism. He made important contributions to the understanding of changes in the circulating levels of thyroid hormone in critical illness, thus enabling correct diagnosis and treatment of true thyroid disease. He identified high-dose frusemide as an important inhibitor of thyroid hormone binding to albumin and a disruptor of free hormone assay in critically ill patients. At this time so-called free thyroid hormone assays were being introduced commercially and he undertook a prolonged critical assessment of these assays and achieved an international reputation in free hormone assay methodology. His work in this area was recognised by the award of a Fellowship of the Royal College of Pathologists of Australasia (FRCPA). He became Director of the Department in 1978. He was appointed a full Professor of Medicine in 1992. He remained Director until 1995, but with the restructuring of Victorian public hospitals initiated by the Kennett Government, he relinquished the directorship, continuing as a Senior Endocrinologist at The Alfred until 2005. He also commenced a private practice at Epworth Hospital in 1995 and continued to practise as a clinical endocrinologist until shortly before his death.

He made major contributions to professional collegiality. He was Secretary, and then President of the Endocrine Society of Australia (1990-1992). As a Vice-President of the Asia and Oceania Thyroid Association he was important in the establishment of this organization in the late 70s and early 80s. He forged strong links to sister bodies in America and in Europe, playing a major role in International Thyroid Congresses particularly the meeting in Sydney in 1980. He re-learned German, forgotten when he came to Australia as a small boy. Soon after German reunification, Jim offered Dr Gerhard Scholz from Leipzig University a Fellowship in the Department, and on return to Germany, Dr Scholz helped Jim set up a medical student program with Leipzig University. Over 30 students, all initially educated in the GDR, came to Melbourne for an elective period in the Department during the 1990s, a very positive experience for all concerned.

## DISTINGUISHED ENDOCRINOLOGIST AND GIFTED MUSICIAN

Jim was a very fine clinician with high standards and an expectation that others would meet those standards. He was passionate about teaching at the undergraduate and postgraduate level. His clear exposition of complex clinical problems, founded on careful medical history and examination, a profound understanding of physiology and disease, and precise use, documentation, and interpretation of laboratory tests, was inspirational to his colleagues and represented a standard of clinical excellence that the many endocrinologists who trained under him have sought to follow.

His musical career began by learning the clarinet at school ('nice tone if only he'd practise'), then the bassoon with Tom Wightman, who emigrated to Australia in 1950, an original member of the wind quintet founded by Dennis Brain. He played with the Australian Youth Orchestra (1958-60), including the Grieg piano concerto performed by a 15 year-old Daniel Barenboim, as part of the Melbourne Symphony Orchestra (1959-68), and as a member of the Astra Chamber Orchestra (1973-78). He was a member of the State Committee and National Board of Musica Viva Australia (1974-1985) but, as he said himself, as in medicine he found administrative manipulation less attractive than actually doing what he had been trained to do.

From 1982 he became one of the first in Australia to grapple, self-taught, with playing the eighteenth century bassoon. He performed with this instrument in Melbourne, Sydney, New Zealand (1984-2011) and regularly at the Kronach symposia in Germany (1987-1994). From 1995 he became a collector and curator of the baroque and classical aria repertoire with obligato bassoon. This collection has been progressively up-dated on the website [www.jimstockigtinfo.com](http://www.jimstockigtinfo.com) with the help of many collaborators in Australia, Europe and USA. Many of the arias were hitherto unpublished or rediscovered and made accessible for the first time on-line. This website documenting over 500 arias will likely remain a definitive resource for many decades.

He was a competitive tennis player and in his spare time loved to travel especially to Europe.



He is survived by his wife Janice (Jan), daughters Julia and Clara, grandchildren Tjimi, Eva, Jacob, Luka and Isaac, former partner Andrea, and son Michael. His family have been very touched by the many beautiful tributes to Jim they have received from around the world and across Australia, especially from the patients Jim cared for so well over the years.

He was a regular performer in the Bach cantata project with the Bach orchestra of St John's Lutheran Church, Southgate, where his memorial service will be held at 3 pm on 8 February 2013.

### About the authors:

Prof Duncan Topliss is Director of Endocrinology & Diabetes, The Alfred

A/Prof Shane Hamblin is an endocrinologist at The Alfred and Western Health.

Both were trained by Jim Stockigt and worked with him for many years.

## AUSTRALIAN WOMEN IN ENDOCRINOLOGY



*Professor Gail Risbridger*

It is a great honour for me to be the new Chair of AWE. I would like to express my sincere thanks to Professor Gail Risbridger who has been the AWE President for the past 3 years. Gail has done a tremendous job at maintaining sponsorship for AWE to provide travel funds for students and early-career ESA members to attend the US Endocrine Meeting each year. In addition, Gail has provided networking and career opportunities for female scientists through the Women in Endocrinology Symposium that is held every second year at the ESA Annual Scientific Meeting.

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The plight of Women in Science was highlighted last month in Nature (Volume 495, 6 March 2013), where it was stated that "By almost any metric, women have made great gains in closing the scientific gender gap, but female scientists around the world continue to face major challenges." As the incoming Chair of AWE, I endeavour to continue the work of my predecessors in maintaining funding to provide travel opportunities and to foster mentorship and networking for female members of our society. This year we will offer two Novo Nordisk sponsored travel grants for successful applicants to attend the US Endo meeting in San Francisco. I look forward to the challenges and to working towards the advancement of AWE.

**Belinda Henry (Chair of AWE)**



## HOT TOPICS! RECENT PUBLICATIONS FROM ESA MEMBERS

The exceptionally high calibre of research conducted by our members is evident in the number of recent articles published in high impact, international, peer reviewed journals.

Here we highlight recent outstanding publications by our members.

### **A preclinical xenograft model of prostate cancer using human tumours**

*Nature Protocols*, 8(5):836-48.

Lawrence MG, Taylor RA, Toivanen R, Pedersen J, Norden S, Pook DW, Frydenberg M, Australian Prostate Cancer BioResource, Papargiris MM, Niranjana B, Richards MG, Wang H, Collins AT, Maitland NJ, Risbridger GP.

Localised prostate cancer tissues are an important resource for research, but are notoriously difficult to grow. This manuscript describes the steps to efficiently xenograft prostate cancer tissue and study specific subpopulations of cells, including cancer repopulating cells and cancer-associated fibroblasts. These methods were developed through an on-going collaboration between the Prostate Cancer Research Group at Monash University and the Cancer Research Unit at the University of York to develop better preclinical models of prostate cancer.

### **HIF-1 $\alpha$ stimulates aromatase expression driven by prostaglandin E2 in breast adipose stroma**

*Breast Cancer Research* 2013, doi:10.1186/bcr3410

Samarajeewa NU, Yang F, Docanto MM, Sakurai M, McNamara KM, Sasano H, Fox SB, Simpson ER & Brown KA.

A team of researchers at Prince Henry's Institute in Melbourne have found further evidence supporting the link between obesity and breast cancer in older and post-menopausal women. The team has discovered that prostaglandin E2, an inflammatory factor produced in obesity and breast cancer, increases the expression of the protein hypoxia inducible factor-1 $\alpha$  (HIF1 $\alpha$ ) in breast fat. HIF1 $\alpha$  is best characterised for its role in mediating responses to low oxygen availability but the researchers found that prostaglandin E2 increases HIF1 $\alpha$  under normal oxygen tension. The team has linked HIF1 $\alpha$  to the stimulation of the expression of a key enzyme, aromatase, linked to the biosynthesis of oestrogen and increased risk of breast tumour development. These findings provide additional molecular evidence of the link between obesity and breast cancer in older women.

### **Functional link between bone morphogenetic proteins and insulin-like peptide 3 signaling in modulating ovarian androgen production**

*PNAS*

Glister C, Satchell L, Bathgate RAD, Wade JD, Dai Y, Ivell R, Anand-Ivell R, Rodgers RJ & Knight PG

Ovarian androgen synthesis is essential for normal ovarian follicle development and female fertility in animals and humans. However, ovarian androgen excess, a feature of the widespread polycystic ovarian syndrome in women, is detrimental to fertility and has other pathophysiological consequences. The findings highlighted in this paper reveal the importance of the intraovarian growth

factor insulin-like peptide 3 signaling for maintaining androgen production by ovarian theca cells and show that the suppressive action of bone morphogenetic proteins on androgen production is linked to their inhibitory effect on insulin-like peptide 3 signaling, likely mediated via down-regulation of the nuclear transcription factor steroidogenic factor-1. This mechanism could lead to ovarian androgen excess, and further research is warranted to evaluate this possibility in the context of PCOS.

### **Cardiovascular risk and bone loss in men undergoing androgen deprivation therapy for non-metastatic prostate cancer: Implementation of standardised management guidelines.**

*Andrology* (in press).

Cheung AS, Pattison D, Bretherton I, Hoermann R, Joon DL, Ho E, Jenkins T, Hamilton EJ, Bate K, Chan I, Zajac JD & Grossmann M

Androgen deprivation therapy (ADT), while effective for treatment of prostate cancer, is associated with significant toxicities consequent to the ADT-associated sex steroid withdrawal. The Andrology group at the University of Melbourne Austin Health has previously developed evidence-based guidelines for monitoring and treatment of ADT-associated bone and metabolic side effects, endorsed by the ESA, ANZBMS and USANZ (Grossmann et al, MJA 2011). In this 2-year prospective cohort study of 236 men with prostate cancer receiving ADT, they now show not only that such men have a high prevalence of cardiometabolic morbidity and reduced bone mass even before ADT is commenced, but they also show that implementation of these guidelines effectively mitigates ADT-associated risk by improving cardiovascular risk factors and prevention of bone decay.

### **A bioengineered microenvironment to quantitatively measure the tumorigenic properties of cancer-associated fibroblasts in human prostate cancer**

*Biomaterials*, 34(20):4777-4785.

Clark AK\*, Taubenberger AV\*, Taylor RA, Niranjana B, Chea ZY, Zotenko E, Sieh S, Pedersen J, Norden S, Frydenberg M, Grummet J, Pook D, Australian Prostate Cancer BioResource, Stirzaker C, Clarke SJ, Lawrence MG, Ellem SJ, Huttmacher DW, Risbridger GP. \*Joint authors.

Cancer-associated fibroblasts promote the progression of prostate cancer, but traditional in vivo models to study them are time-consuming, technically challenging and only semi-quantitative. Therefore, a new bioengineered in vitro co-culture system was developed through collaboration between Monash University, Queensland University of Technology and the Garvan Institute. This model enables the quantitative comparisons of the differences between normal and cancer-associated fibroblasts and can be used to better understand the role of the microenvironment in prostate cancer.



## HOT TOPICS

### RECENT PUBLICATIONS FROM ESA MEMBERS

#### **Nox1 Plays a Key Role in Diabetes Accelerated Atherosclerosis**

*Circulation*. 2013 Apr 5. [Epub ahead of print]

Gray SP, Di Marco E, Okabe J, Szyndralewicz C, Heitz F, Montezano AC, de Haan JB, Koulis C, El-Osta A, Andrews KL, Chin-Dusting JP, Touyz RM, Wingler K, Cooper ME, Schmidt HH, Jandeleit-Dahm KA.

In diabetes mellitus, vascular complications such as atherosclerosis are a major cause of death, with the key underlying pathomechanisms unclear. However, hyperglycemic oxidative stress appears to play a role with NADPH oxidase (Nox), the only known dedicated enzyme to generate ROS. Human aortic endothelial cells exposed to hyperglycemic conditions showed increased expression of Nox1, oxidative stress and proinflammatory markers in both a Nox1-siRNA and a Nox inhibitor reversible manner. The role of Nox1 on plaque development in-vivo was also examined in ApoE<sup>-/-</sup> mice 10 weeks after induction of diabetes. Deletion of Nox1, but not Nox4, had a profound anti-atherosclerotic effect correlating with reduced ROS formation and attenuation of pro-inflammatory, chemokine, vascular adhesion and pro-fibrotic markers. Similarly, treatment of diabetic ApoE<sup>-/-</sup> mice with the Nox inhibitor attenuated atherosclerosis development. These studies identify a major pathological role for Nox1 and suggest that Nox1-dependent oxidative stress is a promising target for diabetic vasculopathies including atherosclerosis.

#### **Women with polycystic ovary syndrome have intrinsic insulin resistance on euglycaemic– hyperinsulaemic clamp**

*Human Reproduction*, 2013 Mar;28(3):777-84.

Stepito N, Cassar S, Joham AE, Hutchison SK, Harrison CL, Goldstein RF & Teede HJ.

This paper significantly advances knowledge in Polycystic ovary syndrome (PCOS) to note firstly the prevalence of insulin resistance on clamp studies, surprisingly not previously documented and secondly we explore insulin resistance in women with Rotterdam diagnosed PCOS. In NHMRC funded research, we have shown that 75% of lean women with PCOS and 95% of overweight women with PCOS are insulin resistant by WHO criteria (average of 85%). In lean women diagnosed by Rotterdam criteria alone (not meeting the more severe NIH criteria, insulin resistance was present in 75% of cases of cases of PCOS. This work support the recent National Institutes of Health evidence based workshop recommendations to adopt the Rotterdam criteria for PCOS diagnosis internationally by demonstrating that the majority of women with Rotterdam diagnosed PCOS are insulin resistant independent of BMI. This along with other work in the field increasing supports the primary contribution of insulin resistance and hyperinsulinemia to PCOS aetiology.

#### **Safe introduction of a new surgical technique: remote telementoring for posterior retroperitoneoscopic adrenalectomy**

*ANZ Journal of Surgery*, 82 (2012) 813–816

Miller JA, Kwon DS, Dkeidek A, Yew M, Abdullah AH, Walz MK & Perrier ND

Posterior Retroperitoneoscopic Adrenalectomy (PRA) is a newer surgical approach to the adrenal gland, offering less pain and faster recovery than laparoscopic adrenalectomy. The technique, using 3 small ports in the back, is well established in Europe and the USA, and has recently become available in Australia. But how do surgeons introduce new techniques safely into their practice when the experts are all overseas? The authors describe the first known cases of remote telementoring using Skype, whereby a highly experienced Houston surgeon was able to mentor the Melbourne team embarking on their first three PRA procedures using secure readily available software. The Melbourne team has since performed more than 40 PRA procedures safely, many of them as day-case adrenalectomy, after which most patients required no prescription pain medication.

#### **The impact of iodine supplementation and bread fortification in a mildly iodine deficient population of pregnant women in South Australia**

*Nutrition Journal*, 2013, in press

Clifton VL, Hodyl NA, Fogarty PA, Torpy DJ, Roberts R, Nettelbeck T, Ma G & Hetzel B.

Mild iodine deficiency during pregnancy can have significant effects on fetal development and future cognitive function. In this study, the urinary iodine concentrations (UIC) of 169 pregnant women was assessed across pregnancy and related to the usage of iodine supplements and the impact of bread fortification. UIC increased in all women as pregnancy progressed but median concentrations remained in the mildly deficient range during pregnancy (UIC < 90 µg/L). Use of iodine-containing supplements significantly increased UIC in late gestation to sufficient levels, however the fortification of bread with iodized salt 9in October 2009) did not help women reach the sufficient iodine range. Pregnant women in this region of Australia were unlikely to reach recommended iodine levels without an iodine supplement, even after the mandatory iodine supplementation of bread was instituted.

#### **Diabetes and Nonalcoholic Fatty Liver Disease: A Pathogenic Duo**

*Endocrine Reviews*, 2013 Feb;34(1):84-129

Williams KH, Shackel NA, Gorrell MD, McLennan SV, and Twigg SM.

This review examines the pathogenic links and complex interplay between the pathologically defined nonalcoholic fatty liver disease (NAFLD) and the metabolic condition diabetes mellitus. Although the association of diabetes and NAFLD is likely to be partly the result of a “common soil,” it is also probable that diabetes interacts with NAFLD through specific pathogenic mechanisms. Through interrelated metabolic pathways currently only partly understood, diabetes appears to accelerate the progression of NAFLD to nonalcoholic steatohepatitis, defined by the presence of necroinflammation, with varying degrees

## HOT TOPICS RECENT PUBLICATIONS FROM ESA MEMBERS

of liver fibrosis. This review explores the epidemiological evidence in humans and in newer animal models, as well as the emerging technology to help non-invasively screen for differing pathological forms of NAFLD in the research setting, together with risk algorithms derived from peripheral blood profiling, and the potential role of preventive and therapeutic approaches for NAFLD in the setting of diabetes.

### Disparate bedfellows in a lasting drug union?

*Nature Reviews Endocrinology*, 9, 135–136 (2013)

Simpson ER & Fuller PJ

The authors comment on a recent article by Finan and colleagues who report a new approach to combination therapy for the metabolic syndrome—glucagon-like peptide 1 and oestradiol linked chemically to produce a fusion molecule. These studies suggest that the dramatic therapeutic benefits of this fusion molecule are a result of the combination of the incretin and satiety properties of GLP 1 combined with the leptin-like properties of oestrogen. These two properties synergize to give a decreased bodyweight beyond that achievable with either individual component alone, which results in markedly beneficial central effects on energy homeostasis. In addition to its enhanced metabolic efficacy, the steroid conjugate is essentially devoid of classic oestrogen action in the hypothalamic–pituitary–gonadal axis and its downstream reproductive tissues. Overall, treatment with this fusion molecule results in an improvement of the metabolic profile of mice with diet-induced obesity with a minimum of oestrogenic adverse effects.

### Bariatric surgery, bone loss, obesity and possible mechanisms

MM Brzozowska, A Sainsbury, J Eisman, P Baldock, J Center

This review has attracted considerable attention because of its novel content – the first to do a widespread analysis of current research into the complex interrelationships between fat, bone and nutritional restriction, describing the relationship between different kinds of bariatric surgery and bone loss. The story was printed in Sydney's Sun-Herald, Melbourne's Sunday Age and The Australian Financial Review. Radio National's AM broadcast interviews with Gosia, Jackie and a patient. Medical Observer, a weekly magazine circulated to GPs, also printed an article. ASBMR (American Society for Bone and Mineral Research) made it the first news item in its weekly e-News to members. The news was translated into many languages and achieved good internet spread.

## CONGRATULATIONS!

Congratulations to Professor Bu Yeap, whose research publishing excellence was recently recognised by the Journal of Clinical Endocrinology & Metabolism. Yeap and colleagues paper, entitled "Reference Ranges and Determinants of Testosterone, Dihydrotestosterone, and Estradiol Levels Measured using Liquid Chromatography-Tandem Mass Spectrometry in a Population-Based Cohort of Older Men" was selected for The Endocrine Society's **International Award for Publishing Excellence** in *The Journal of Clinical Endocrinology & Metabolism (JCEM)* in 2012. This prestigious award recognizes the 14 best clinical research papers published in JCEM each year. The publication is highlighted below.

### Reference Ranges and Determinants of Testosterone, Dihydrotestosterone, and Estradiol Levels Measured using Liquid Chromatography-Tandem Mass Spectrometry in a Population-Based Cohort of Older Men

*J Clin Endocrinol Metab*, November 2012, 97(11):4030–4039

Yeap BB, Alfonso H, Chubb SAP, Handelsman DJ, Hankey GJ, Norman PE & Flicker L

Testosterone (T) levels decline with increasing age, yet controversy exists over the threshold for classifying T as low vs. normal in older men. The relevance of assessing dihydrotestosterone (DHT) and estradiol (E2) also remains unclear. To assess the associations of T, DHT and E2 and establish reference ranges for healthy older men, morning plasma samples from 3690 community-dwelling men aged 70–89 yr from Perth, were assayed using liquid chromatography tandem mass spectrometry. Lower levels of T and DHT were independently associated with increasing age, higher body mass index and waist to hip ratio, dyslipidemia, diabetes, and higher LH. Increasing age, diabetes, and higher LH were associated with lower E2. In a reference group of 394 men aged  $76.1 \pm 3.2$  yr reporting excellent or very good health with no history of smoking, diabetes, cardiovascular disease, cancer, depression, or dementia, the 2.5th percentile for T was 6.4 nmol/liter (184 ng/dl); DHT, 0.49 nmol/liter; and E2, 28 pmol/liter. Applying these cutoffs to all 3690 men, those with low T or DHT had an increased odds ratio for frailty, diabetes, and cardiovascular disease. Men with both low T and DHT had a higher odds ratio for these outcomes.

**Do you have a publication hot off the press? To have it included in the next Hot Topics!, please forward a pdf of your manuscript and a short summary to the newsletter editor, Nicolette.hodyl@adelaide.edu.au**

**FUTURE MEETINGS****2013****27 April-1 May 2013**

15th European Congress of Endocrinology  
Copenhagen, Denmark  
Website: <http://www.ece2013.org/>

**28 May - 1 Jun 2013**

2nd Joint Meeting of the IBMS and the JSBMR  
Kobe - Japan  
Website: [www.ibmsonline.org/](http://www.ibmsonline.org/)

**30-31 May 2013**

Inaugural Sydney Diabetic Foot Conference  
Liverpool, Sydney  
Website: <http://www.swslhd.nsw.gov.au/liverpool/>

**15-18 June 2013**

ENDO  
San Francisco, California, USA  
Website : <http://www.endo-society.org/ENDO-2013-san-francisco.html>

**21-23 June 2013**

International Symposium on Prostate, Androgens and Men's Sexual Health  
InterContinental Hotel in Berlin  
Website: <http://www.issmessm2013.org/site/>

**10-14 July 2013**

2nd World Congress on Thyroid Cancer  
Sheraton Centre Toronto  
Website: <http://thyroidworldcongress.com/>

**29-31 July 2013**

APEG Annual Scientific Meeting  
Sydney, Australia  
Website: <http://www.apeg.org.au/>

**23-25 August 2013**

ESA Clinical Weekend  
Manly Pacific, Sydney  
Website : <http://www.esaclinicalweekend.org.au/>

**25-28 August 2013**

ESA/SRB ASM  
Sydney Convention Centre  
Website: <http://www.esa-srb.org.au/>

**28-30 August 2013**

ADS/ADEA Annual Scientific Meeting  
Sydney Convention Centre  
Website: [www.ads-adea.org.au](http://www.ads-adea.org.au)

**8-11 September 2013**

23rd ANZBMS Annual Scientific Meeting  
Hilton Hotel, Melbourne  
Website: [www.anzbms.org.au](http://www.anzbms.org.au)

**11-14 September 2013**

IFPA 2013  
Whistler, Canada  
Website: <http://www.ifpa2013.ca/>

**4-8 October 2013**

ASBMR Annual Meeting  
Baltimore, Maryland, USA  
Website: [www.asbmr.org](http://www.asbmr.org)

**21-24 November 2013**

The 5th International Conference on Fixed Combination in the Treatment of Hypertension, Dyslipidemia and Diabetes Mellitus  
Bangkok, Thailand  
Website: [www.fixedcombination.com](http://www.fixedcombination.com)

**12-15 December 2013**

IOF Regionals – 4th Asia Pacific Osteoporosis Meeting  
Hong Kong  
Website: <http://www.iofbonehealth.org/hongkong-2013>

**2014****23-25 August 2014**

ESA Clinical Weekend  
Victoria  
Website: : <http://www.esaclinicalweekend.org.au/>

**25-28 August 2014**

ESA/SRB Annual Scientific Meeting  
Melbourne Convention Centre  
Website: <http://www.esa-srb.org.au/>

**7-10 September 2014**

ANZBMS Annual Scientific Meeting  
Queenstown, New Zealand  
Website: [www.anzbms.org.au](http://www.anzbms.org.au)



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