



## **SMBE NSW '15**

### **The 27<sup>th</sup> Annual Country Technicians' Training Seminar**

*Celebrating the Biomedical Engineering Team's Contribution to Advances  
in Healthcare Over the Past 27 Years*

**COFFS HARBOUR**

**23<sup>rd</sup> to 25<sup>th</sup> March 2015**

**Coffs Harbour Racecourse**

**62 Howard Street Coffs Harbour NSW 2450**



## **A message from the President on behalf of the Organising Committee**

Welcome to SMBE 2015, the 27<sup>th</sup> Annual Country Technicians' Training Seminar held this year in Coffs Harbour, where we are once again at the beach.

The venue is the Coffs Harbour Racecourse Function Centre on Howard Street, Coffs. The function centre is well versed in staging all types of functions and is arguably the only venue in town that is big enough for our conference. It has excellent facilities for the technical sessions and the trade exhibition with ample accommodation in the near vicinity. The trade exhibition is in its seventeenth year this year, and we have a total of 32 trade exhibitors spread over 38 booths.

The Welcome BBQ on Sunday night is being held at Dolphin Marine Magic / Pet Porpoise Pool, 65 Orlando Street, Coffs Harbour. Monday night's Conference Dinner is being held at Fisho's (Deep Sea Fishing Club) Jordan Esplanade, Coffs Harbour Jetty. We are promised great food and wine on both nights.

On Tuesday night we will be holding our AGM and this year all positions on the Council are up for election. I would encourage all members at the conference to attend and put their hands up for one of the Office Bearer or Council positions. After the AGM, is our networking night where delegates are encouraged to get out with their colleagues and the trade guys and "network". Coffs Harbour has plenty of venues to do this and I'm sure people will find their way to one or other of the venues.

The programme is designed to have something for everyone and we hope all delegates, visitors, sponsors and trade exhibitors will find something in the programme to suit them. As before we have tried to incorporate feedback from previous conferences and tried to include as much technical content as possible. Of course we can only have as much technical content as you, the participants offer, and augmented by presentations from people we co-opt to speak.

This year we have sessions on integrating medical equipment into the eMR, BME education, development aid, regulatory affairs and the usual array of clinical, technical and management presentations.

Tuesday afternoon will feature hands-on training workshops presented by three of our trade exhibitors including Teleflex Medical, Olympus and Arjo Huntleigh. The workshops will run concurrently in the last session on Tuesday and participants are encouraged to book in for any workshop they wish to attend. A schedule and booking sheets will be available at the Registration Desk from Monday morning.

Please enjoy the sessions on new equipment, medical equipment connectivity, education and training, and working overseas as well as the technical presentations and the workshops. Soak up the trade exhibition and have a good time at the social events, but most of all have fun and take the time if you can to have a look around Coffs Harbour and the surrounding areas.

Best wishes for a successful conference,

A handwritten signature in black ink, appearing to be 'Bruce Morrison', written in a cursive style with a long horizontal stroke extending to the right.

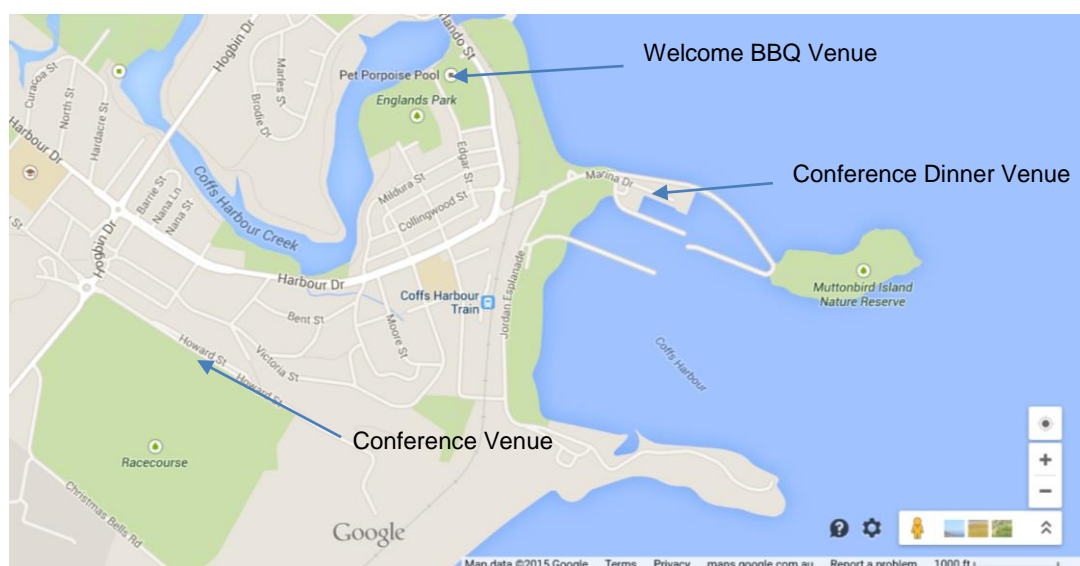
Bruce Morrison  
President SMBE NSW Inc.

## VENUE INFORMATION

**Coffs Harbour Racecourse, 62 Howard Street Coffs Harbour NSW 2450**

**Phone:** +61 2 6652 1488  
**Fax:** +61 2 6651 5390  
**Email:** [events@coffsracingclub.com.au](mailto:events@coffsracingclub.com.au)  
**Website:** [www.coffsracingclub.com.au](http://www.coffsracingclub.com.au)

All technical sessions, the Trade Exhibition, and the AGM will be held at Coffs Harbour Racecourse



Map courtesy of Google Maps

## ROOMS IN USE DURING THE CONFERENCE

CONFERENCE ELEMENTS	CONFERENCE VENUES	LOCATION
Trade Exhibition	The Merv Mercer Auditorium	First Floor
Lectures	The Jim Browning Lounge	First Floor adj. Merv Mercer Auditorium
In-service Training No. 1	The Jim Browning Lounge	First Floor adj. Merv Mercer Auditorium
In-service Training No. 2	The Corporate Lounge	Ground Floor alongside Parade Ring
In-service Training No. 3	The Trackside Lounge	Adjacent Main Grandstand Building
AGM	The Jim Browning Lounge	First Floor adj. Merv Mercer Auditorium

# **SPONSORS**

The organising committee and the SMBE (NSW) Inc. would like to thank the following sponsors for their generosity in supporting this important conference. Sponsorship of conferences such as this enables us to keep registration fees to a minimum. Our sponsors this year include:

## **PLATINUM SPONSOR**



# **COVIDIEN**

## **GOLD SPONSOR**

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## **MORNING TEA SPONSOR**



# **TRADE EXHIBITORS**

The Trade Exhibition provides us with an opportunity to examine at first hand the latest products our suppliers provide. Our sponsors benefit from having a mass of their customers in the one place obviating the need to travel vast distances across the State and country.

This is our seventeenth trade exhibition at the SMBE Conference and it is particularly pleasing for the organising committee to see the enthusiasm with which our suppliers continue to take up the booths.

## **LIST OF EXHIBITORS & BOOTHS**

Platinum Sponsor's Booth

Covidien Healthcare

Booth	Company	Booth	Company	Booth	Company
1	Domo-Technica	14	Philips Healthcare	27	Arjo/Huntleigh
2	Scopemed	15	Mortara Instruments	28	Arjo/Huntleigh
3	Baxter	16	Hospira	29	Olympus
4	Ecomed Trading	17	MEGA Medical	30	Olympus
5	Ecomed Trading	18	B.Braun	31	Continental Water
6	Ecolab	19	B.Braun	32	Fresenius-Kabi
7	Device Technologies	20	Chivaune Consultants	33	Fresenius-Kabi
8	Device Technologies	21	Ecomed Technical	34	U-Tech Medical
9	Emona	22	Draeger Medical	35	Master Instruments
10	The Medical Room	23	Reef Medical	36	Welch Allyn
11	Physio-Control	24	REM Systems	37	PD Medical
12	LSR Healthcare	25	Masimo		
13	Teleflex Medical	26	Parker Healthcare		

### **FUNCTIONS DURING THE 27<sup>TH</sup> SMBE CONFERENCE IN 2015**

<b>Welcome BBQ</b>	Sun 22 <sup>nd</sup> March 2015	6.30pm	Dolphin Marine Magic / Pet Porpoise Pool, 65 Orlando Street, Coffs Harbour.
<b>Conference Dinner</b>	Mon 23 <sup>rd</sup> March 2015	6.30pm for 7.00pm	Fisho's (Deep Sea Fishing Club) Jordan Esplanade, Coffs Harbour Jetty
<b>AGM</b>	Tues 24 <sup>th</sup> March 2015	5.30pm	At the conference venue.

### **PRIZES ON OFFER AT THE 27<sup>TH</sup> SMBE CONFERENCE IN 2015**

NAME OF PRIZE	WHEN DRAWN	PRIZE
Members' Prize	To be drawn at the conference dinner	Panasonic Lumix SLR Camera
Passport Competition	All entries to be collected by Tuesday afternoon tea, to be drawn on Wednesday morning	Nespresso coffee machine
Day 1 Draw	To be drawn at afternoon tea on Monday afternoon	Select from the list of three prizes below
Day 2 Draw	To be drawn at afternoon tea on Tuesday afternoon	Select from the two remaining prizes from the list below
Day 3 Draw	To be drawn at the closing ceremony	The remaining prize from the list below
Lucky Seat Prize	To be awarded at the conference dinner	Picnic Set
Australiana Quiz	To be contested & awarded at the conference dinner	Hamper
Best Presentation	To be awarded following collation of evaluation forms	JB Hi-Fi voucher to value of \$400

Daily draw prizes include:

iPad Mini tablet computer x 2, Bose noise cancelling headphones x 1

## ABSTRACTS RECEIVED

### MONDAY SESSION 1 – OPENING

#### S1.1 ***BME Going Forward***, Bruce Morrison

Biomedical Engineering is at the crossroads with technology becoming more complex and service contracts becoming the norm for major medical equipment. What do BME Departments need to do in order to continue to be relevant in the hospital setting.

#### S1.2 ***The Evolution of Healthcare Technologies and the Implications for Biomedical Engineers***, Josh Farrington, Cabrini Technology Group

This presentation will touch on three key issues:

- The Emergence of Consumer Products and Suppliers in the Healthcare Space
- Patient Treatment, Diagnosis and Care at a Distance
- The Convergence of BME and ICT

### MONDAY SESSION 2 – BME & ICT

#### S2.1 ***Systems Integration to deliver better patient outcomes*** – Robin Arian, HNE Clinical Technology

This presentation will discuss:

- Future proofing the technology concept
- Understanding and communicating the capabilities of your existing system

#### S2.2 ***Integrating medical devices into the eMR*** - Peter Wetherall, Cerner

This presentation will encompass:

- Why do we want to integrate Medical Devices into the EMR?
- Cerner's approach to integrating Medical Devices.
- Integration in action.

#### S2.3 ***eMR implementations*** - Mortara – Brenda Bell

- Mortara and DICOM
- Integration and workflow
- Stakeholders and Education
- Lessons learnt

#### S2.4 ***eMR implementations*** - Welch Allyn – David Cashion,

### MONDAY SESSION 3 – DEVELOPMENT AID

#### S3.1 ***Ulco Anaesthetic Machines find a home in Vietnam*** –

Steven Threlfo, John Hunter Hospital, Anaesthetics Department

The presentation, will outline the following:

- Why the Ulco machines became available in sufficient numbers to make a substantial donation possible.
- The preliminary technical visit to Lam Dong Hospital, Da Lat, Vietnam in March 2011 which led to the decision to direct help into the area of anaesthetic equipment.
- The support infrastructure which guided the machine configuration prior to despatch.
- The journey in preparation, set-up, packing and shipping.
- The on-site testing and commissioning process, taking into account differences in how equipment is managed and used in Vietnam.
- Dealing with the unexpected during on-site equipment customisation in November 2013.
- First use of the machines and the positive outcomes of the 2013 visit.
- The follow-up visit in 2014, covering some essential tips on taking tools and donated equipment into foreign countries.
- In conclusion, the importance of planning an exit strategy from the outset in making an effective and sustainable donation.

**S3.2 A Primer for BMETs contemplating short term assignments in foreign countries –**

Andy Lyons, BME, Royal Darwin Hospital

Short term aid deployment is a very uplifting experience for the deployee and generally, has a much higher chance of greatest impact than a long term deployment which tends not to be as focus, or task specific.

There are several things that need to be taken into account and prepared for to produce maximum impact from the deployee whilst minimising personal risk – currently the graphic and terrible result of the cyclone in Vanuatu is a timely example of one such risk but there are several areas of personal safety that the deployee needs to be aware of and plan on risk reduction strategies before going.

This presentation discusses some of the most common risks and suggests a method, using conventional risk management strategies where these risks can be accounted for and minimised, with the aim of maximising the successful impact of the deployment whilst minimising the personal risks the deployee may encounter.

**S3.3 Should Donations be Confined to Equipment Only –** Nehal Kapadia, SSCSiP

Most pacific island countries rely heavily on donated equipment but donation of used equipment contributes to the difficulty of maintaining equipment when PIC BMETs are not trained, are unaware of supplier information or unable to obtain parts because equipment is no longer supported by the manufacturer.

Though donations are quite common, it is infrequent to see a pacific island country receive equipment parts that may be 'dead stock' in an overseas hospital and are disposed.

PICs have begun to revise or develop their donation policies to promote receipt of useful equipment donations, but to assist them maintain donated used equipment, can there be a mechanism to allow PICs access applicable parts that will not be used again by the biomedical departments in overseas hospitals?

**MONDAY SESSION 4 – DEVELOPMENT AID & TECHNICAL TOPICS**

**S4.1 A discussion on Biomedical Technical Aid –**

Bruce Morrison, Nehal Kapadia and Steven Threlfo.

A panel discussion on what has worked in the delivery of Biomedical Technical Aid over the past decade and a half, lessons learned and where to from here.

**S4.2 What's all this Exponential stuff anyway –** Mark Littlejohn, Semacare

This presentation will attempt to de-mystify the theory around exponential measurements:

- Engineers need to be pragmatic.
- Electromedical Leakage Current, what are we trying to measure
- How do we determine "Safe"
- Whilst the Standards mandate certain parameters, that shouldn't stop us thinking about things.
- Are there other ways we can get a view into our measurements
- Most things like perception, sound, light, etc are logarithmic, not linear, in nature
- What are exponents, and how do they work.
- The dB scale is very useful for comparing things, ratios

**S4.3 Redevelopment, Refurbishment & Commissioning: A Personal Experience -**

Joe Maday, SSW LHD

This paper will discuss aspects of a hospital redevelopment project including:

- Understanding the project team & their roles.
- Appropriate and consistent equipment
- Deadlines & conflicting priorities
- Resources
- Efficiency & quality

## **TUESDAY SESSION 5 – BME EDUCATION**

**S5.1** *Update on the NSW TAFE Course* - Mark Gilbert, Tamworth TAFE

**S5.2** *Developing Biomedical Technical Training in Australia – The Medical Room story so far –*

Dani Forster, The Medical Room

The Medical Room started almost 2 years ago now with grand plans for developing the first practical Biomedical Technical Training course in Australia. Although the dreams of a qualification have not yet been realised, practical technical training is now available in Australia and will be available in a capital city near you soon. This is the story of The Medical Room so far; the trials and tribulations of establishing practical technical training in Australia and our plans for a complete biomedical technician training programme in the future.

**S5.3** *An Advanced Diploma of Biomedical Engineering online – what, why, who, how and when –*

Ric Harrison, EIT

This talk is focussed on what a potential student and employer would need to know about this new program, including:

- What content is included, what the potential gains may be, what it costs
- Why we developed the program, why a student may choose to study it, and why it is “online”
- Who reviewed the content, who can apply, who the lecturers are
- How delivery and assessment works, how to find out if it “works for me” (see also <http://www.eit.edu.au/eit-program-delivery-methodology> )
- When the sessions are held, when the next class is scheduled, and when enrolments open

## **TUESDAY SESSION 6 – REGULATORY AFFAIRS**

**S6.1** *Area Certification and compliance with AS3003:2011* – Dennis Seymour, MedTest

This paper will discuss:

- The Victorian perspective and certificate system,
- The NSW perspective and compliance declaration system,
- Other states,
- Retesting requirements, and
- Some grey areas in the Standard.

**S6.2** *The role of the Test and Commissioning Officer in the NT* – Andy Lyons, Royal Darwin Hospital

The test and commissioning officer in the Department of Health, Northern Territory is an interesting, challenging and varied role.

Despite what the job title says, actual test and commissioning of equipment is a very small part of the job, rather the main part of the job is a regulatory affairs one with the officer having a role in Department of Health acquisition and tendering advice and assessment, disposal of medical assets, acceptance test policy and procedures to ensure all equipment is safe and deployed correctly, the imparting of information by in-service or formal workshops to clinical, biomedical and even contracted staff of the department.

The officer also has a role in asset management, contract management and the design of periodic maintenance requirements for the many devices deployed in the NT health Service districts.

This position is about to become vacant and by presenting what the position is and represents it is hoped competent staff looking to step up into a regulatory position will consider applying and advancing the role.

**S6.3** *The need for and importance of device incident reporting* - Patrick O'Meley, TGA

## **TUESDAY SESSION 7 – CLINICAL & TECHNICAL TOPICS**

**S7.1** *Monitoring the resistance indices RI) of cerebral arteries with NIRS – part II –*

Dani Forster, Melbourne University

The OCHIE (Optimising Cooling for Hypoxic Ischemic Encephalopathy) hopes to give a better life to those babies suffering from oxygen deprivation at birth by optimising the hypothermia or cooling treatment to each individual baby. The hypothesis is that optimisation may be based on Cerebral Blood Flow (CBF) assessed by using Doppler Ultrasound and Near-Infrared Spectroscopy (NIRS). The first step on this long road has been to determine normal CBF in neonates using Doppler Sonography but did our controls yield the results we expected?



**S7.2 *Connecting the Circuits – Medical Use and Abuse of Electricity in the Last 150 Years –***  
Alex Watson, Premier Biomedical

Alex will pose several questions in his presentation, the answers to which will become apparent during the presentation.....

1. Why has the Electric Chair contributed to saving lives?
2. Was the Wizard of Menlo Park really such a wizard?
3. What is the connection between railway brakes and polyphase electricity?
4. How could David Bowie play a part in this presentation?
5. What was the first real Electrical Standards fight all about?

**S7.3 *Respiratory Compromise & SpO2 Derived Respiration Rate –*** Ric McAbee, Covidien

This presentation will delve into:

- Current status in Australia & USA
- Acute Pain Management and Obstructive Sleep Apnoea issues
- Current Monitoring guidelines & documenting importance of Resp Rate
- Monitoring Modalities currently available
- Product overview of SpO<sub>2</sub> derived RR and video

**S7.4 *Mutual advantages of vendor training for BMEs and BMETs –*** Paul Groot Obbink, Philips Healthcare

This presentation would cover such things as:-

- Types of training offered.
- Benefits to the Biomedical Engineer/Technician.
- Benefits to the Hospital.
- Benefits to the Vendor.
- When the best result is through facilitation.

**TUESDAY – SESSION 8 – HANDS ON WORKSHOPS**

**S8.1 *Testing of major pneumatic and electronic sub-systems of NI and invasive ventilators -*** Teleflex

**S8.2 *Scope maintenance -*** Olympus

**S8.3 *Flowtron ACS Tri Pulse DVT Prophylaxis System: Service and calibration –*** Arjo Huntleigh

## **WEDNESDAY – SESSION 9 TECHNICAL PRESENTATIONS**

### **S9.1 *Water Quality Requirements and Compliance with AS/NZS 4187:2014* – Surani Sappideen, Continental Water**

In order to meet the water quality requirements as stipulated in AS/NZS 4187:2014 for final rinse phase for Washer-disinfectors and also to produce clean / pure steam for the sterilization process Reverse Osmosis (RO) is required. But RO brings new concerns and challenges for infection control.

One major concern as well a challenge is meeting the microbial compliance. A purpose built RO system for infection control is critical for the safe and cost effective operation of a CSSD.

This presentation will present issues in a poorly designed water treatment plant and also the design requirements to meet compliance.

### **S9.2 *BTS Water Treatment Innovations* – Nathan Norman, BTS, Qld**

The BTS team of renal dialysis biomedical technicians have worked collaboratively to deliver innovative engineering solutions that allow more patients, particularly in rural and remote areas, to access home dialysis.

While it once may have been deemed too difficult to install home dialysis in rural and remote locations due to the water and infrastructure challenges, the BTS team have taken a proactive approach to finding and building solutions on a case-by-case basis. As well as helping the Hospital and Health Services meet their KPI targets, the team's work has played a critical role in delivering home dialysis and improving the quality of life of dialysis patients across Queensland.

## **WEDNESDAY – SESSION 10 TECHNICAL & MANAGEMENT PRESENTATIONS**

### **S10.1 *Optimising the Planned Maintenance Program* – Gordon Brown, BTS, Qld**

The BTS Health Technology Management (HTM) group situated at BTS Central has as one of its responsibilities the development and implementation of the organisation's Planned Maintenance program across the state. This includes the recording of new models into the CMMS, performing maintenance assessments on new equipment and the development of equipment test forms and procedures. A number of integrated computer based systems are utilised by this group to manage these tasks and ensure that the PM program meets and continually improves against set KPI's.

### **S10.2 *Digital operating rooms & the glass-walled operating theatre* – Michael Tsoukalis, Olympus**

In his presentation Michael will focus on the latest digital operating room technologies from Olympus as well as giving an interactive overview of these technologies. Michael will then talk about design elements that can be incorporated in a modern operating theatre focussing on the "glass" material that has been used in a number of recent Olympus installations within the Australian market"