



SMBE NSW '14

The 26th Annual Country Technicians' Training Seminar

*Celebrating the Biomedical Engineering Team's Contribution to Advances
in Healthcare Over the Past 26 Years*

WOLLONGONG

24th to 26th March 2014

**Novotel Wollongong Northbeach
2-14 Cliff Rd North Wollongong NSW 2500**



A message from the President on behalf of the Organising Committee

Welcome to SMBE 2014, the 26th Annual Country Technicians' Training Seminar held this year in Wollongong, in a beautiful beachside setting.

The venue is the Novotel Wollongong Northbeach Hotel at 2-14 Cliff Rd North Wollongong NSW 2500. The hotel's convention centre boasts excellent facilities for the technical sessions, the trade exhibition and features high standard accommodation as well. The trade exhibition is in its fifteenth year this year, we have 32 trade exhibitors.

The Welcome BBQ on Sunday night is being held at Illawarra Brewery, WIN Entertainment Centre - Cnr Crown & Harbour Streets, Wollongong. Monday night's Conference Dinner is being held at Seacliff Restaurant, 16 Cliff Street, North Wollongong. We are promised great food and wine on both nights.

Tuesday night after the AGM, is our networking night where delegates are encouraged to get out with their colleagues and the trade guys and "network". Wollongong has plenty of venues to do this and I'm sure people will find their way to one or other venue.

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 to update participants on NSW projects such as ICCIS, Provation and Cardiac Reperfusion. HealthShare staff will update us on contracts and the catalogue as well as NEHTA. And there will be the usual array of clinical, technical and management presentations.

Tuesday afternoon will feature hands-on training workshops presented by five of our trade exhibitors including Welch Allyn, Masimo, Olympus, Covidien and Dräger. The workshops will run concurrently in the last session 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, remote servicing 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 Wollongong and the surrounding areas.

Best wishes for a successful conference,

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

Bruce Morrison
President SMBE NSW Inc

VENUE INFORMATION

Novotel Wollongong Northbeach Hotel at 2-14 Cliff Rd North Wollongong NSW 2500

Phone: +61 2 4224 3111

Fax: +61 2 42243141

Email: h1654@accor.com

Website:

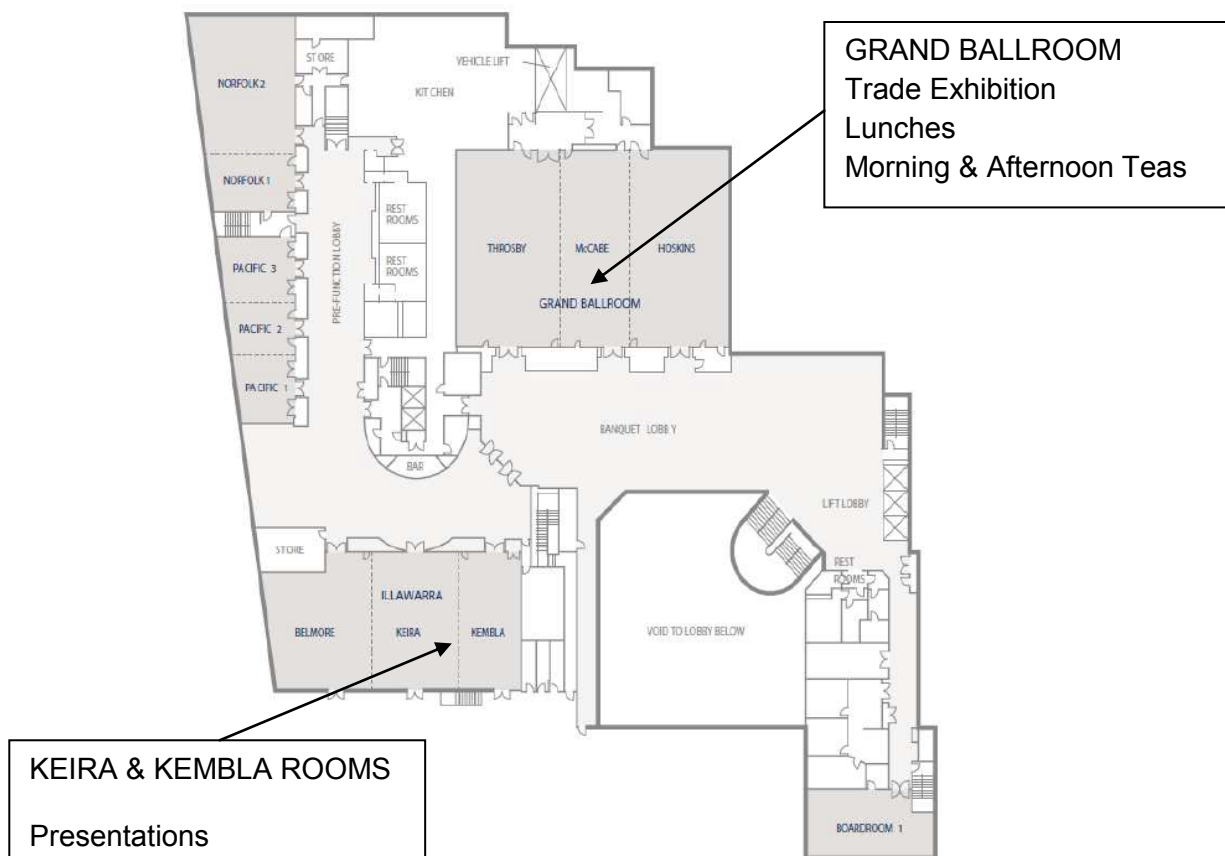
<http://www.novotel.com/gb/hotel-1654-novotel-wollongong-northbeach/index.shtml>

All technical sessions, the Trade Exhibition and the AGM will be held at Novotel Wollongong Northbeach.



Map courtesy of Google Maps

ROOMS IN USE DURING THE CONFERENCE



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:

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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 sixteenth 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.

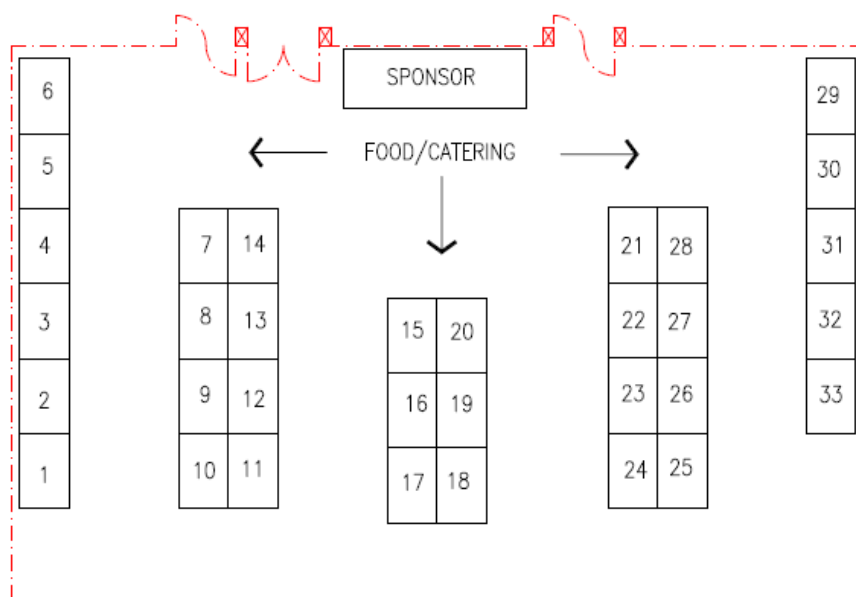
This year there are 32 companies exhibiting at the Conference. See below:

List of Exhibitors & Booths

Booth	Exhibitor	Booth	Exhibitor
1	Ecomed Trading	18	MEMIE A'ASIA
2	B.Braun	19	Medical Equipment & Gases
3	B.Braun	20	Emona Instruments
4	Ecomed Technical	21	Fresenius Kabi
5	REM Systems	22	Fresenius Kabi
6	Domo Technica	23	AMA Medical
7	U-Tech Medical	24	Philips Healthcare
8	Zoll Medical Australia	25	Welch Allyn
9	Mindray Medical Australia	26	Device Technologies
10	Dräger Medical	27	GE Healthcare
11	Physio-Control	28	Mortara Instrument
12	The Medical Room	29	Mayo Healthcare
13	Maquet Australia Pty Ltd	30	Master Instruments
14	Chivaune Consultants	31	Masimo
15	Olympus Australia	32	Hospira
16	IN-A-TICK	33	MD Solutions
17	Reef Medical		

Sponsor Covidien Healthcare

Layout of Booths in the Grand Ballroom



FUNCTIONS DURING THE 26TH SMBE CONFERENCE IN 2014

Welcome BBQ	Sun 23 rd March 2014	6.30pm	Illawarra Brewery, WIN Entertainment Centre - Cnr Crown & Harbour Streets, Wollongong.
Conference Dinner	Mon 24 th March 2014	6.30pm for 7.00pm	Seacliff Restaurant, 16 Cliff Street, North Wollongong.
AGM	Tues 25 th March 2014	5.30pm	At the conference venue.

PRIZES ON OFFER AT THE 26TH SMBE CONFERENCE IN 2014

NAME OF PRIZE	WHEN DRAWN	PRIZE
Members' Prize	To be drawn at the conference dinner	Digital SLR Camera
Passport Competition	All entries to be collected by Tuesday afternoon tea, to be drawn on Wednesday morning	JB Hi-Fi voucher to value of \$300
Day 1 Draw	To be drawn at the conference dinner	Apple iPad
Day 2 Draw	To be drawn at afternoon tea on Tuesday afternoon	Apple iPad
Day 3 Draw	To be drawn at the closing ceremony	Apple iPad
Best Presentation	To be awarded following collation of evaluation forms	TBA

**TECHNICAL PROGRAMME
&
SELECTED ABSTRACTS**

Monday 24th March 2014

REGISTRATION: 8.00am – 9.15am

SESSION 1 – Opening Session 9.15am – 10.15am

Topic	Presenter	Position	Organisation
Welcome & Official opening.	Bruce Morrison	President, SMBE NSW	Health Infrastructure
S1.1- Big Data, the Internet of Things and Iterative Learning = Smart Buildings.	Al Sheehan	Enterprise Strategy Consultant	Microsoft Inc.
Housekeeping announcements.			

MORNING TEA: 10.15am - 10.45am

SESSION 2 – Technology & Systems Developments 10.45am – 12.15pm

Topic	Presenter	Position	Organisation
S2.1 - State Cardiac Reperfusion Strategy.	Bridie Carr & Karen Lintern	Cardiac Network Manager Project Officer, Cardiac Network	ACI
S2.2 - ICCIS: Clinical Information Systems for ICUs across NSW.	Brett Avery		ICCIS Project
S2.3 -			

LUNCH: 12.15pm - 1.30pm

SESSION 3 – HealthShare Update 1.30pm – 3.00pm

Topic	Presenter	Position	Organisation
S3.1 - Introduction.	Rodney Wilson	Manager, Tendering & e-Business	HealthShare, Business Procurement Services
S3.2 - Update on HealthShare contracts.	Leonie Hardy	Team Leader - Clinical Contracts	HealthShare, Business Procurement Services
S3.3 - Update on Cataloguing & NEHTA.	Valentino Bulaon	Manager Catalogue and Procurement Information	HealthShare, Business Procurement Services
S3.4 - Provation: The Endoscopy Information System.	Andrew Young	Program Manager	HealthShare, Program Management Office

AFTERNOON TEA: 3.00pm - 3.30pm

SESSION 4 – Technical & Managerial Presentations 3.30pm – 5.00pm

Topic	Presenter	Position	Organisation
S4.1 - An inside view: The Aisys anaesthetic ventilator.	Steven Threlfo	Senior Technical Officer, Div of Anaesthesia	Hunter New England LHD
S4.2 - Is it time to consider industry based standards of common practice.	Kevin O'Brien	Principal	MEMIE A/asia
S4.3 - Technical aid in the Guatemalan Highlands.	Lawry Goodwin	Senior Biomedical Technician Coordinator	BTS, Queensland

6.30pm - CONFERENCE DINNER at Seacliff Restaurant, 16 Cliff Street, North Wollongong

Tuesday 25th March 2014

SESSION 5 – Clinical and Technical Presentations

9.00am – 10.15am

Topic	Presenter	Position	Organisation
S5.1 - Challenging our understanding of theories in Obstetrics. Why not do the experiment?	A/Prof Chris Georgiou	Associate Professor Obstetrics and Gynaecology & Consultant Obstetrician and Gynaecologist	University of Wollongong & Wollongong Hospital
S5.2 - Monitoring the resistance indices of cerebral arteries with Near-Infrared Spectroscopy.	Dani Forster	PhD Student & Director	Melbourne University & The Medical Room

MORNING TEA

10.15am – 10.45am

SESSION 6 – Clinical and Technical Presentations

10.45am – 12.15pm

Topic	Presenter	Position	Organisation
S6.1 Emerging Bio-threats.	Dr Nicky Gilroy	Infectious Diseases Physician	Blood & Marrow Network, ACI
S6.2 - Reducing hospital acquired infections through environmental cleaning.	Dr Kerry Newlin	Manager Clinical Initiatives	Blood & Marrow Network, ACI
S6.3 - Containerised CR X-ray for remote areas.	Alex Watson	Principal	Premier Biomedical Engineering

LUNCH

12.15pm – 1.30pm

SESSION 7 – ICT & Technical Presentations

1.30pm – 3.00pm

Topic	Presenter	Position	Organisation
S7.1 - WiFi networks in hospitals: Opportunities & challenges.	Robin Arian	Deputy Biomedical Engineer, HNE Clinical Technology.	Hunter New England LHD
S7.2 - Customer supplied network for telemetry : a case study.	Jae-Won Choi	Biomedical Engineer, Clinical Technology Service.	Northern Sydney LHD
S7.3 - The use of Telehealth within the NSW Agency for Clinical Innovation.	Chloe Moddel	Telehealth Implementation Officer.	Agency for Clinical Innovation

AFTERNOON TEA

3.00pm – 3.30pm

SESSION 8 – Concurrent, hands-on equipment workshops

3.30pm – 5.00pm

Organisation	Topic	Details
S8.1 - Welch Allyn	Servicing the new Connex CVSM	Tips & tricks related to servicing the monitor.
S8.2 - Masimo	Battery maintenance & common questions	Introduction to the Masimo range of devices; Common Queries; Battery Life/Rad 5 Trend settings; Sticky Settings; Deep Discharge Radical/Radical 7; Batteries; Testing devices, sensors and Cables; OEM items; Cables and Sensors Testing for queries; SafetyNet support 24 hrs; Interactive Demo.
S8.3 - Olympus	Scope maintenance	Scope Handling, troubleshooting and including sample damaged scopes etc.
S8.4 - Covidien	TBA	
S8.5 - Dräger	ServiceConnect & Infologger	Navigation tips on ServiceConnect with live demo; Infologger with error log analysis / live demo; Frequently Asked Questions.

ANNUAL GENERAL MEETING

5.00pm

Wednesday 26th March 2014

SESSION 9 – Technical and Managerial Presentations

9.00am – 10.15am

Topic	Presenter	Position	Organisation
S9.1 - A workshop in developing Fluke test templates using Ansur.	Donald Hazra	Biomedical Engineer	Biomedical Engineering, Sydney LHD.
S9.2 - A new non-invasive cardiac output computer.	Mark Littlejohn	Principal	ElectroLAB
S9.3 - Distributed Antenna Systems: In-building coverage for mobile devices.	Bruce Morrison	Project Advisor, Clinical Technology & ICT	NSW Health Infrastructure

MORNING TEA

10.15am – 10.45am

SESSION 10 – Technical Presentations and Closing

10.45am – 12.00pm

Topic	Presenter	Position	Organisation
S10.1 - From Crystal Oven to Raspberry Pi: Changing nature of repairs over the years.	Wayne Ussher		Port Macquarie Private Hospital
S10.2 - The sky is falling, the sky is falling: Doomsday or Nirvana?	Willy Van Den Berg	Principal Engineer, Electromedical	Department of Public Works
Closing ceremony - Wrap up of the Conference and announcement of next year's venue, prize draws			

LUNCH & DEPARTURE

12.00pm +

ABSTRACTS

S1.1

S2.2 - Overview of the ICCIS project and current progress

Brett Avery, HealthShare

ICCIS is the Intensive Care Clinical Information System which is due to roll out over the next couple of years. This presentation provides an overview of the ICCIS project and current progress; it details the timeframes for delivery; and the size and scope of the project;

It also canvasses how Biomedical Engineers will interface with ICCIS and touches on the importance of local support staff and the challenge of configuration management of local ICU environments in a central system deployment such as ICCIS.

S4.1 - An inside view: The Aisys anaesthetic ventilator

Steven Threlfo - Anaesthetics Department, John Hunter Hospital, Newcastle

The GE Aisys ventilator is a component in a much larger system, however, it has brought the capabilities and accuracy of a modern ICU ventilator into an anaesthetic machine.

How the ventilator drive system is calibrated during annual maintenance provides a basis for understanding how the system works. The ventilator hardware platform is component minimal, simple and in combination with accurate flow and pressure measurement, is the key to its universal application under software control.

The presentation will give a brief introduction to “bellows in canister” anaesthetic ventilators and where the ventilator is positioned with the circle breathing system of an anaesthetic machine. The basic design of a solenoid operated proportional valve will be explained followed by a physical demonstration of how a proportional valve can accurately deliver gas flow and maintain pressure. Using these concepts, annual calibration of the GE Aisys ventilator will be explained and the major components of the complete system identified using a simple diagram.

The phases of ventilator operation in pure volume and pressure control will be explained with comments on how volume and pressure control is blended to give the range of ventilator modes available. The presentation will conclude with a simple explanation of flow compensation and its importance in volume controlled ventilator operation.

S4.2 - Is it time to consider industry based standards of common practice?

Kevin O'Brien, MEMIE A/asia

In this presentation Kevin explores why electrical safety testing is getting harder when it should be getting easier as Medical Devices are being made better than ever, while in some parts of the USA, they have dropped electrical safety testing all together.

The presentation delves into the whys and wherefores of 3003 and 3551 and proposes four strategies are suggested to enhance electrical safety testing.

S6.3 - Containerised CR X-Ray for Remote Areas

Alex Watson AM, Premier Biomedical Engineering

Late in 2013, the Republic of Nauru Hospital (RON Hospital) was severely damaged by a fire which destroyed, amongst other areas of the hospital, the X-Ray Department. Prior to this, the Department was fully operational with a conventional fixed x-ray, mobile and an ultrasound scanner. X-rays were developed by conventional chemical means, and read by the radiographer. There is no radiologist in Nauru, and X-rays that requiring more expert analysis were sent by air to Fiji, often along with the patient.

Reconstruction of the part of the RON hospital that was damaged would take many months if not years. There are no other x-ray facilities on the island so reinstatement of an x-ray facility became a priority.

A containerised CR X-ray system was devised that could be transported to Nauru by sea, be located easily in the hospital grounds and, with power, could be fully functional in a short time. Approval was given to go ahead, and the hospital subsequently received the container fitted out with the CR X-ray system. It was in use less than one week after arriving there.

Such systems are ideal for remote areas, and can be fully tested at the factory prior to delivery. This can eliminate 'on-site' problems that may occur otherwise.

The presentation shows the construction and fitting out of the container, x-ray machine and CR system.

S7.1 - WiFi Networks in hospitals, opportunities and challenges

Robin Arian, HNE Clinical Technology

Most of our medical devices are capable of wireless connectivity. Therefore it is vital for people in the field of Biomedical Engineering to understand and apply the appropriate Standards and Protocols in this area.

The use of WiFi brings about a lot of advancements in the way we connect our devices into the hospital IT network infrastructure and WiFi will also introduce new challenges.

Here we look at some of the challenges and opportunities in using WiFi for medical equipment connectivity.

S9.2 - A new non-invasive cardiac output computer

Mark Littlejohn, ElectroLAB

The scientific basis of this medical device is on the established knowledge that Cardiac Output is obtained by dividing Mean Arterial Pressure by the Systemic Vascular Resistance.

Mean Arterial Pressure has been accurately measured by non-invasive methods for many years but the technology for measuring Non-invasive Systemic Vascular Resistance is recent. The technological basis for obtaining the resistance value is as follows: In a closed system such as the Systemic Vascular System in diastole, (After the aortic valve has closed) the Time Constant of the system is the product of the Compliance and Resistance, so that Resistance may be determined from the measurement of the Time Constant and Compliance. Both these can be accurately measured by infrared optical methods: The Time Constant from the exponential pressure drop of a calibrated optical waveform, and Compliance from pulse delay along the arteries as Compliance is inversely proportional to pulse wave velocity.