BMETS Newsletter

January 2011

http://www.BMETS. org

SEP 2010—Aug 2011
BMETS Officers

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Rob Bain, Sinai Hospital

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The President's Thoughts

Presidents Message

We are heading into the second half of the year and have a lot planned. Philips, OEM, and GMI will be sponsoring meetings. The topics are: Monitoring solutions by Philips, Ultrasound medical solutions by OEM and a Nuclear Medicine class by GMI.

I am grateful for the attendance at our meetings as that is what measures both our success and the addition of new topics and sponsors. I already have a representative from Moog contacting me to present next year (they do pumps and other infusion solutions). I think that with this being said that members should feel a comfort level in taking over the leadership functions of the organization and continuing with where we are heading.

I can see down the road a possible symposium on healthcare (once a year) inviting all clinical people to learn about technology. This would include IS, Nursing , Physicians and technologists as well as manufactures and Clinical Engineers. It could be a long term goal to hold such an event in the spring (not to compete with AAMI) but to bring the medical community together as it should be . I hope we can make these dreams happen, lets have a great second half of the year

Rob Bain MS CBET pres. BMETS

Rob Bain

Hopkins BME ranked first in nation again

In U.S.News & World Report's latest rankings of graduate school specialty programs, the Johns Hopkins Whiting School of Engineering again ranks first in the nation for Biomedical Engineering. The Department of Biomedical Engineering also operates within the Johns Hopkins School of Medicine. USN&WR's 2010 rankings put the Johns Hopkins School of Medicine #2 overall among all U.S. medical schools for research programs. The rankings are based on surveys of deans, program directors, and senior faculty who are asked to judge programs in their field. USN&WR also surveys professionals who hire new graduates, and uses various statistical comparisons of programs.

What is a BMET?

A biomedical engineering technologist or biomedical equipment technician (BMET) is one who is knowledgeable in the theory of operation, the underlying physiological principles, and the safe clinical application of biomedical equipment. The BMET applies electrical, electronic, mechanical, chemical, optical, and other engineering principles to perform maintenance, service, repairs and overhaul of all medical equipment and medical systems. Examples of equipment may include imaging, hemodialysis, physiological monitoring systems; EKG's; lasers, sterilizers, dental equipment, etc. Due to the diversity of the equipment, specialization is sometimes required. The field of biomedical engineering is the application of engineering techniques in the solution of medical problems. The profession is interdisciplinary and combines technology and the life sciences.

RESPONSIBILITIES

The responsibilities of a BMET may include installation, calibration, inspection, preventive maintenance, and repair of biomedical and related technical equipment. Additional responsibilities may include operation of equipment, equipment control and safety. In research facilities, BMETs may also be involved in the modification of equipment.

EMPLOYMENT OPPORTUNITIES

Most BMETs are employed by hospitals, clinics, research labs, medical equipment manufacturers, and service organizations. The median total salary for an entry-level position is about $43,000* and varies from region to region.

* SOURCE: BI&T January/February 2008. Figure represents a median base salary.

PREPARATION

The requirement to become a BMET is generally the completion of a 2-year BMET program leading to an Associate of Science (AS) from an accredited institution. All accredited institutions that offer an AS in BME provide instruction in both engineering and technology (traditionally electrical engineering and computer engineering) and the life sciences (specifically human anatomy & physiology). In addition, BMETs need effective oral and written communication skills. To be effective, BMETs must know the relevant codes and standards that apply to both biomedical equipment and to healthcare facilities.

RELATED PROFESSIONALS

A Clinical Engineer is a professional who supports and advances patient care by applying engineering and management skills to healthcare technology. Clinical Engineers manage personnel, finances, instrumentation and projects to promote the safe and cost-effective application of technology. Such a person, while having an administrative function, also participates professionally with physicians, nurses, administrators, and other personnel of a healthcare facility. The preparation requires at least a 4-year degree (Bachelor's of Science) in engineering with significant knowledge in physiology, medicine, and clinical care of patients. Clinical Engineers are heads of most clinical/biomedical engineering departments of healthcare facilities. Clinical Engineers who work in a healthcare facility are sometimes referred to as Biomedical Engineers.

A Biomedical Engineer applies electrical, mechanical, chemical, opticals, and other engineering principles to understand, modify, or control biologic (i.e., human and animal) systems, as well as design and manufacture products that can monitor physiologic functions and assist in the diagnosis and treatment of patients. The Biomedical Engineer usually works in a corporate or university setting in the design and development of devices applicable to living organisms. The preparation requires at least a 4-year degree (Bachelors of Science), although most Biomedical Engineers in university settings hold a post-graduate degree.

AAMI 2011 (June 25-27, in San Antonio) offers educational, networking, and personal-development opportunities that will enable you to expand your expertise, increase your productivity, develop lasting relationships with your peers — and ultimately advance your career.

Educational Sessions focus on the key issues that you and your peers are dealing with today — from wireless networks to Joint Commission compliance — as well as long-term strategic issues. The Expo enables you to visit with more than 150 equipment manufacturers and service providers to learn more about the latest medical technologies and practices impacting your career.

AAMI News—Joint Commission Survey to be More In-Depth

Joint Commission expert, George Mills, gave a sneak peek at what clinical engineering departments can expect in their next Joint Commission survey in 2011. "We plan to revisit the importance of assessing the medical equipment management program with our surveyors," Mills, the senior engineer for the Joint Commission's standard Interpretation Group, said during an AAMI Webinar in December. Departments can expect a more in-depth survey as part of an agreement between the Joint Commission and the Centers for Medicare & Medicaid Services (CMS). The surveyors will evaluate a clinical engineering department's program "by looking at the accuracy of your equipment inventory," Mills said. "Surveyors could also ask questions on how you developed the inventory and edit it." Surveyors will ask questions about what strategies the department uses to complete preventive maintenance (PM) on devices. "Surveyors will wonder how you implement those strategies against the equipment that you serviced. What is your monitoring process to make sure the maintenance strategies are the right strategies?" Mills asked. Surveyors will also focus on talking to the people servicing the equipment to make sure they understand the maintenance process for that equipment. "We will also want to know that your staff fully understands the importance of patient outcomes," Mills said. Surveyors won't just limit themselves to the biomed shop." They will hear from users of the equipment on whether it is reliable, and if it does fail, what is the response time to get it repaired and back online," Mills added. The agreement stems from an effort by the Joint Commission to collaborate with CMS to allow healthcare facilities to use their choice of strategies for setting device PM rates. Those strategies are the manufacturer's recommendations, the device's level of risk, and previous experience with the device. Before the agreement, CMS' interpretive guidelines required facilities to abide solely by the manufacturer's recommendations which some clinical engineering departments found burdensome. Mills said that sometimes manufacturers create PM recommendations based on the worst-case use scenario. For example the same model of defibrillator that is used in an ambulance and in a nursing wing should be maintained differently. The ambulance defibrillator needs more PMs because of the environment it is used in, but that isn't the case with the nursing unit model, Mills said. The decision only impacts healthcare facilities accredited by the Joint Commission. CMS grants the Joint Commission authority to accredit hospitals, making them eligible to get reimbursed by Medicare and Medicaid. Some biomeds weren't worried by the new focus. "The more we are tested, the better our programs become," says Scott James, Director of clinical engineering at Intermountain McKay-Dee Hospital Center in northeast Utah.

Calendar of Events
Check the Web Page for Updates

December 2010 — No Monthly Meeting

January 2011 — No Monthly Meeting

February 9, 2011—Philips will be presenting in Feb on monitoring (a new device)

March 17, 2011—Ted Honeywell of OEM will be talking about ultrasound and his cost saving technical solutions

April 2011—GMI will present a class on Nuclear medicine and we will be handing out a certificate as it will be a lecture -class

Plan to attend our next meeting February 9, 2011
Sponsored by: Philips Healthcare

6:00 - 9:30 PM

- The focus will be the “Changing Environment of the Biomed”
- Historically Biomedical Engineers focused on product support, repair, etc.
- Biomedical Engineers can easily support Phillips Healthcare products.

The Biomedical landscape is changing and the field is becoming more IT focused. Philips Healthcare is working with Biomedical Engineers to simplify the changes in their Professional Responsibilities on wireless connectivity and other solutions.

PHILIPS

sense and simplicity

Tools of the Trade

The Model 8700 X-Ray Pulse Counter/ Exposure Time Meter is used to measure the time or duration of radiation output produced by a wide variety of x-ray generators. The x-ray sensor in the 8700 allows direct measurement of exposure from the x-ray head. Pulses produced by half-wave and full-wave x-ray are measured as 60 or 120 pulses per second. For DC, capacitor discharge and 3-phase x-ray, the 8700 measures the exposure time in milliseconds.

When testing x-ray timers and controls, the time of relay contact can be measured using the AC input feature.

The Model 8700 is "self-resetting". There is no need to reset the instrument after each reading. The reading is stored after each exposure, holding until the next exposure.

http://www.eccxray.com/8700.html

U.S. Food and Drug Administration

2010 Device Approvals

The products listed in this section include some of the newest medical technology from the year 2010. The products in each list contain information about what medical uses the device is cleared or approved for, when it can be used, and when it should not be used. This information, along with information from your doctor and other sources, can help make you an informed participant in your health care.

-Medical Devices Cleared or Approved by FDA in 2010

Device Name	Category	Date
Bard LifeStent and LifeStent XL Vascular Stent - P070014/S010	Stent	12/23/10
DePuy Orthopaedics Ceramax Ceramic Total Hip System - P070026	Hip Replacement	12/23/10
Arctic Front® Cardiac CryoAblation Catheter - P100010	Catheter	12/17/10
Endurant Stent Graft System - P100021	Stent	12/16/10
KODAK DirectView CR Mammography System - P080018	Mammography	11/03/10
Dako HER2 FISH pharmDx™ - P040005/S005	Cancer Test	10/20/10
Dako HercepTest™ - P980018/S010	Cancer Test	10/20/10
EC-3 Posterior Chamber Intraocular Lenses (IOLs), Models EC-3 and EC-3 Precision Aspheric Lens (PAL) - P100016	Intraocular Lens	10/19/10
Boston Scientific Cardiac Resynchronization Therapy Defibrillators - P010012/S230	Defibrillator	09/16/10
Abbott RealTime HBV Assay - P080026	HBV test	08/13/10
Implantable Miniature Telescope™ - P050034	Ophthalmic	07/01/10
OraQuick HCV Rapid Antibody Test - P080027	Antibody Test	06/25/10

BMETS Monthly Meeting Sponsors

Northfield Instrument Services

www.northfieldinfo.com

September 2009

STERIS

http://www.steris.com/index.cf

September 2009

Advantage Medical Cables

http://www.advantagemed.com/

November 2009

CONQUEST IMAGING

Official Leader in Used Ultrasound Parts, Probes, Systems, Service & Repair

http://www.conquestimaging.com/

February 2010

FLUKE Biomedical

http://global.flukebiomedical.com/busen/home/default.htm

September 2010

GMI

Defining Ultrasound Solutions

Global Medical Imaging

http://www.gmi3.com/

September 2010

Pilot Medical Products

http://www.pilotmedicalproducts.com/Products.htm

November 2009

BMETS Monthly Meeting Sponsors

http://www.destinysurgical.com/

October 2010

http://www.skytron.us/

October 2010

http://www.gehealthcare.com/worldwide.html

November 2010

http://www.healthcare.philips.com/us_en/

February 2011

BMETS Web Site Statistics

October 2010 = 17162 total hits

November 2010 = 17831 total hits

December 2010 = 15857 total hits